Mangapapa is a decile 5 school in Rua Street, Gisborne. Opening in 1903, the school has since played a major part in the lives of many of the community’s children and their families. Mangapapa has always been a popular school. We have a history of sound governance by capable Boards of Trustees, quality teaching and learning programmes, a very successful, positive school culture, and happy children who get on with each other and are ready to learn.

We collaboratively plan to ensure all our students have a successful learning journey. We do this by providing caring, kind staff who have a genuine interest in learning alongside children – ethic of care. Parents feel the school understands and wants to help their child. We keep positive and professional communications with outside agencies eg: RTLB, ensuring they are welcome and are valued when on school site.

What’s it All About? The Heart of the Matter.

The child is the heart of the matter for parents, staff and Board of Trustees of Mangapapa School
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Editorial

At the time of writing this editorial, the Minister of Education, Hekia Parata had just made a pre-budget announcement of a further $60 million over four years towards the Positive Behaviour for Learning Programme (PB4L) which is presently being implemented in some schools in New Zealand. An extra 200 primary and intermediate schools will have access to PB4L, and by 2016 it will be available to all secondary schools in New Zealand. Preliminary findings into the efficacy of PB4L indicate that it is having a positive effect on the behaviour and learning of children and young people, therefore it is pleasing to see a commitment to a programme such as this one.

Where their effectiveness is proven, programmes such as PB4L are important tools in New Zealand’s progress towards a more inclusive education system. If inclusive education as a concept is to move from rhetoric to reality, we must all focus our attention and resources on evidence-based practice that provides positive and practical approaches and solutions to increasing the presence, participation and learning of all students. Research over the last 20 or so years has provided us with a wealth of information regarding the barriers and enablers to inclusive education. Now is the time to focus our attention on evidence-based programmes and approaches that will bring about the world-class education system in New Zealand to which we all aspire.

As with all editions of Kairaranga, this one is made up of articles that focus on this important objective with a spotlight on the promotion of effective practice and relevant research in inclusive education. Korohere NgaPou reminds us of the importance of Maori language being taught accurately and in the early stages of initial teacher education programmes. The second article by Ivanka Soljan, Yvonne Stanghan and Anna Henry, outlines some of the theory regarding reflection, and examines reflection within an ‘RTLB Community of Practice’. Mike Ness, Josh Couperus and Matthew Willey provide a critical evaluation of the Lexia Reading Programme, followed by an article where Llyween Couper, Dean Sutherland and Anne van Bysterveldt explore the place of the school playground in the lives of children with Autism Spectrum Disorder. In the next article, Emma Dobson reviews the Rainbow Reading Programme, drawing on the research evidence to evaluate its validity and reliability as a reading intervention for use by educational practitioners in the New Zealand context.

Research into the schooling experiences of students from cultural minorities such as those in the next article is very scarce. In this article, Heather Smyth contributes to the literature in this area by examining what Somali students in a New Zealand primary school think about their school and the aspects of school which challenge or support their cultural identities. The final two articles in this edition focus on two of the principles as outlined in the Resource Teachers: Learning and Behaviour Toolkit (2011). Celeste Litchie investigates evidence-based practice and Sandiyao Sebastian explores the ecological approach.

We welcome your feedback about any aspect of the journal, and this can be sent to our email address: kairaranga@massey.ac.nz. We also welcome your submission of your work for publication. We accept practice papers, position papers, research papers and storied experience. Please refer to the last page of each edition for a description of these types of papers, and for instructions on how to submit.

Alison Kearney (for the editing team)
‘Mainstreaming’ Te Reo Māori: Beyond Indifference and Tokenism in the Classroom

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ABSTRACT
This paper examines why Māori language needs to be taught accurately at the early stages of initial teacher education programmes and continue for the duration of a teacher education student’s degree.

If teacher education faculties are permitting their students to mispronounce Māori names or words, they are in fact doing a disservice, not only to the Māori language, but also to the students destined to teach in English medium schools and the children who attend these schools.

This paper defines some of the challenges and questions in regards to the inadequate fostering of the Māori language in many initial teacher education programmes and what needs to be done to rectify this situation. This paper also covers the state of the Māori language, attitudes towards it and strategies for teachers to use in a mainstream teaching setting.

Practice Paper

Keywords: Initial Teacher Education, language conservation, Māori language

INTRODUCTION
Beyond Tokenism and Indifference

Māori is an official language of New Zealand and has value not only as a cultural treasure but as a powerful tool to further educational development.1 Researchers have, for some time now, asserted that learners who are bilingual or multilingual have a powerful cognitive as well as cultural advantage (Garcia, 2008).2

According to Te Aho Arataki Marau (Ministry of Education, 2009a) the rewards for Māori language learners include the enhancement of multiple facets of their social and cultural lives.

Research shows that the opportunity to learn an additional language has many cultural, social, cognitive, linguistic, economic, and personal benefits for students. While these benefits apply to all language learning, there are some specific advantages for New Zealand students in learning te reo Māori (p.13).

Beyond this curriculum-based affirmation of improved learning is a more immediate challenge to capture and transform the underlying understandings that educators have when they consider the utility and necessity of the language to themselves, their students, and society. This has been a continuing issue for those who have led the revitalisation of te reo Māori. Indeed, despite progress made in the last thirty years to save the language from total eradication, proponents of te reo Māori have struggled to transform mainstream attitudes beyond the negative and tokenistic perspectives that are well entrenched in the New Zealand public consciousness.

Of note is the way in which power differentials between Pākehā and Māori have contributed to this tokenism. Nevertheless, as Jim Cummins (2004) reminds us, what matters most is the ‘interpersonal relationship’ between teacher and student.

What educators bring into the classroom reflects their awareness of and orientation to issues of equity and power in the wider society, their understanding of language and how it develops in academic contexts among bilingual children and their commitment to educate the whole child rather than just teach the curriculum. To educate the whole child in a culturally and linguistically diverse context it is necessary to nurture intellect and identity equally in ways that, of necessity, challenge coercive relations of power (pp. 5-6).

In the 1970s, members of Ngā Tamatoa agitated and campaigned for change, and by 1989 the Waitangi Tribunal Claim lodged by Ngā Kaiwhakapūmāu i te reo Māori had commenced the proactive recovery

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1 The Māori language and New Zealand sign language are both official languages of New Zealand
2 The central thesis of Garcia’s book is that ‘bilingual education is the only way’ to educate children in the twenty-first century.
and resurgence of the language (Harris, 2004).

Since then, groups like Ngā Tamatoa have accentuated a supposed race-based ‘privileging’ and ignited pro-nationalist discourses urging Māori to leave their past and language behind and become ‘one-nation’, subsumed within a mono-cultural and mono-lingual ‘New Zealand’ identity. Tania Ka’ai (2004) has argued that it is these types of attitudes that:

...have brought the Māori language to the edge of extinction over the past 150 years of Pākehā settlement. The process has been brought about by a culmination of political power and social pressure which has seen significant elements of Māori culture undergo a steady, cumulative deterioration (p. 202).

The threat of language extinction is a very real danger despite the advent of kōhanga reo, kura kaupapa Māori, wharekura, the establishment of Māori broadcasting agencies and the presence of the Māori Language Commission. Painting a positive picture regarding the health of the language, or rather the initiatives in motion that support the growth of the language, has contributed to a sense of apathy and indifference within mainstream New Zealand. During the 2012 ‘Te wiki o te reo Māori/ Māori Language Week’ promotions and debates, various commentators expressed surprise at the seriously declining state of the language, while others questioned the validity of the statistics regarding the health of te reo Māori. For those who have paid close attention, the grave concerns expressed by experts in the past year were voiced as early as 2006 in findings from a report ‘Te Oranga o te Reo Māori’ which found that:

Despite the improvements in the health of the Māori language in recent times, and the apparent success of current revitalisation initiatives, the Māori language is still a language at risk ... it is spoken almost exclusively by Māori people, and, in total only 4% of New Zealanders can speak the language (Te Puni Kōkiri, 2008, p. iv).

In the Te Reo Mauriora document released in 2011 it stated that:

The Minister of Māori Affairs established an Independent Panel on the 15 July 2010 to inquire into the state of the Māori Language, given the view that a sum of at least $225 million was recently being spent on the language. Yet the recent Waitangi Tribunal prepurchase of Wai 262 showed a decline in the level of ‘Māori te reo speakers (Te Puni Kōkiri, 2011, p. 5).

Therefore more time and planning needs to be invested in the revitalisation of te reo Māori if it is to survive, and greater appreciation for the reality of its place within mainstream society is vital for those who are tasked with its dissemination to New Zealand students. The unrealistic assumptions and misunderstandings regarding the plight of te reo Māori have been highlighted by Bauer (2008) who observed that:

The statistics [do] not support [the] optimistic view of the state of te reo Māori. The figures from the national surveys and the censuses do not present the same picture and that must cast doubt on the reliability of the data we have. I believe from the figures available that the language is still struggling and there are disturbing signs that it continues losing ground, rather than gaining it (p. 34).

Ensuring that educators and the general public, which includes Māori, understand the still-endangered predicament of te reo Māori is an important step, but recognising this issue and taking responsibility for it requires a significant shift beyond tokenistic approaches. This of course also refers to political figures, who play an active and critical part in terms of at least being accurately informed about the present status of the Māori language.

On a recently televised panel discussion Marae Investigates and Waka Huia (Melbourne & Rasch, 2012) Don Brash, the former leader of the National Party, signalled indifference to the language arguing that the future security of te reo Māori is not a national issue but simply a Māori one.

Leaving the fight to Māori alone is not only an unethical and insensitive position to take, but it lacks the foresight and understanding of just how central te reo Māori is, and will be, to the development of New Zealand identity and the social and cultural well-being of the country in the future. Brash’s myopic and xenophobic views are hardly surprising given his negative stance on issues Māori. Nevertheless, if teachers similarly lack genuine interest, are equally apathetic or ill-informed, then the consequences for generations of learners will be potentially catastrophic. There is simply no room for complacency in the current climate, particularly in light of the real and present danger that minority languages face in the coming years. Of this looming peril Cantoni (2007) has warned that:

1 Māori ‘privilege’ has become an increasingly topical research issue following National Party Leader, Don Brash’s infamous Drewa speech in 2004. For further reading see Meihana, P. (2010). The idea of Māori privilege. Te Pouhere Kōreo IV: Māori History Māori People (pp. 41-50). Wellington, New Zealand.

4 The Māori Language Commission was established under the Māori Language Act 1987 to foster the use of the Māori language. It affirms te reo Māori as an official language of New Zealand which has jurisdiction in commissions of inquiry, courts of law, and tribunals.
About 90% of the world’s languages may be extinct in the next century, to be supplanted by those, such as English, Spanish, or Chinese that have been more widely taught and used. The danger of language extinction and of the loss of linguistic diversity parallels and exceeds the severity of the decline of plant and animal diversity on our earth (p. vii).

Educators for the future, who will be teaching in mainstream schools, must understand that their personal commitment to provide opportunities to speak and hear the Māori language may be the only connection many students have with te reo Māori. Beyond the reliance on the goodwill of a few individual teachers there are key underlying policies and documents that urge all educators to think carefully about how they will cater for Māori language learning in their schools.

The Ka Hikitia strategy (MOE, 2009b), for instance, has proposed that students should be able to:

- access the Māori language education options they want
- build mātauranga and knowledge of tikanga Māori
- see the broad value of te reo Māori in society
- develop quality reo Māori through proficiency, accuracy and complexity (p.20).

The Aronga Māori5 course offered at the University of Waikato (2012) facilitates the learning and teaching of te reo and tikanga Māori in school settings, developing teaching strategies that draw on second language learning and teaching techniques. Before lecturers commence teaching any new Aronga Māori classes for the semester, they ask simple but important prior knowledge questions to their students. These include: “Has anyone had any real exposure while at school to the Māori language?” “Has anyone been part of a kapa haka group, or Māori performing arts?” “Do you know that the Māori language is an official language of New Zealand?”

Lecturers have found from personal teaching experience in Aronga Māori that more than three quarters of the students who participate in the Aronga course are likely to have had little or no tangible exposure to Māori culture before. Subsequently, it is no surprise that many of the student teachers who undertake the Aronga Māori course find it exceptionally challenging. Some appear apprehensive and uncomfortable at the beginning, particularly when they are asked to pronounce Māori names, articulate phrases, and repeat general expressions. Recognising and addressing these initial barriers of ambivalence and mispronunciation are perhaps the first major steps towards the better delivery and teaching of te reo Māori in mainstream classrooms.

The Ambivalence of Mispronunciation

From the author’s teaching experience of students who take the Aronga Māori course, most have limited or no knowledge of the Māori world or language, and at the completion of the paper many are still unable to correctly enunciate basic Māori words. Key reasons for this are proposed:

Firstly, the duration of the Aronga Māori course is far too short for new learners of Māori to manage the workload outlined in Footnote 5. The broad aims of this course, its strategies and topics, are simply too expansive for a short half paper. Moreover, developing each student’s knowledge base, basic pronunciation skills, their ability to plan units and utilise resources, necessarily requires more sustained attention beyond a short semester course. Additionally, in previous years, Aronga students were challenged to practise what they had learnt in their tutorials and lectures. In their local primary school placement each student was expected to teach a 50 minute lesson containing basic elements of Maori language to a small number of junior school children. The most immediate and problematic issue that emerged in these lessons was the widespread mispronunciation and incorrect modelling of Māori words and phrases. Some of these simple mispronunciations included ‘Pay-pay –tooh – ah –new-kew’ instead of Papa-tū-ā-nuku and ‘Mow-ray-nah’ in place of mōrena.6 Mispronunciation of te reo Māori is a widespread issue in New Zealand and is not only a problem for school teachers and lecturers, but also for radio and television presenters whose mispronunciation is regularly heard and ‘normalised’ as part of the evolving ‘Kiwi’ dialect. Akonga students have also been guilty of the incorrect spelling of Māori words including missing macrons from words

5 Aronga Māori – This paper is a compulsory paper for all primary teacher trainee students. The workload for the Aronga Māori course is equivalent to a half paper, with a credit value of 7.5 points. It is expected that students will complete a minimum of 75 hours of study, which includes attending a minimum of 25 hours of scheduled lectures and tutorials to successfully obtain a passing grade. During the course, trainee teachers are introduced to several basic topics relating to Māori cosmology, protocols of the Marae, Māori greetings and directional commands, along with a range of simple Māori songs. In addition, students practice varying skill-based strategies to more effectively ‘apply’ the language through kōrero (speech), whakaaro (listening), whakatau (visual), tuhitahi (writing), and waiata (song). To complement their learning, and to add to their teaching kete or ‘tool-kit’, trainees are also exposed to a range of Māori language resources such as audio files of Māori waiata and phrases, which also comprise a number of verbal activities to aid the students’ progress in terms of their diction, phraseology, and general knowledge of Māori culture. Trainees are also instructed on how to set out lesson plans that align with the Māori language curriculum document Te Aho Arataki Marau mō te Ako i Te Reo Māori, (Ministry of Education, 2009). Aronga Māori aims to provide teaching strategies for second language learners, encouraging trainees to adopt better practice and theory when ‘integrating te reo Māori into their class programmes’ (University of Waikato, 2012, p. 3).

6 Papa-tū-ā-nuku ‘is the name given in Māori for the ‘earth mother’, while ‘mōrena’ means ‘good morning’.
on charts, songs, and other work displayed on classroom walls.

Providing sensitive leadership and ‘buddy systems’ for both trainee teachers and experienced teachers is perhaps one internal way to deal with these issues. Building a stronger classroom community, particularly when te reo Māori is involved, should embrace the idea of whakatika or ‘correction’. The notion of simple correction is espoused in the Māori phrase ‘mā te whakatika o te hē, ka tika te whakahua (through the correction of a mistake, comes the correct pronunciation’). In finding ways to help teachers with the pronunciation of foreign words Ur (1991) offers a range of suggestions that includes:

- the imitation of teacher or recorded model of sounds, words and sentences
- the recording of learner speech, contrasted with native model
- systematic explanation and instruction (including details of the structure and movement of parts of the mouth)
- imitation drills: repetition of sounds, words and sentences
- choral repetition of drills
- varied repetition of drills (varied speed, volume, mood)
- learning and performing dialogues (as with drills, using choral work, and varied speed, volume, mood)
- learning by heart of sentences, rhymes, jingles (p. 54).

These are only a few of the possible activities that can improve current language learning and pronunciation. However, teachers need to be confident and competent in what they are modelling, preferably beforehand, but when necessary should be constantly re-assessing, correcting and paying attention to their own performance.

Correct pronunciation is just the starting point. There are deeper issues to consider regarding language acquisition and pedagogy. For example, Hill (2010) highlights the need for primary teachers who teach te reo Māori to know the intricacies of second language teaching. Hill explains:

Moreover, an even greater challenge in relation to teaching a second language lies in the ability to speak the target language (content knowledge). Given the largely monolingual English nature of the teaching force, this challenge would appear particularly daunting. As such the pedagogical and content knowledge required in second language teaching must form an integral element of any course designed to up skill generalist teachers who are not yet fluent speakers of the target language (p. 37).

Not only will teachers need to familiarise themselves with a new language they will also need to develop their confidence to impart that knowledge to students.

As one can see this is not a quick fix, cannot be achieved and delivered in a state of ambivalence, and certainly not in a limited timeframe. In this regard, in retrospect, it can be questioned whether the Aronga Māori course goals are in fact attainable. While the course intends to progressively build skills, correct enunciation, provide strategies and foster the desire to teach te reo Māori, its short length means that trainees do not have the time needed to gain the proposed competencies and consequently struggle to ‘stay afloat’, let alone assist in the language development of others. This is simply an unrealistic time frame to adequately learn even the most basic levels of language diction, intonation, and pronunciation. Learning components of a new language is a long and difficult process. To learn a new language, or at least become familiar with a new language, one needs to attempt to take on the culture wholeheartedly. This is affirmed by Brown (2007) who asserts that:

Learning a second language is a long and complex undertaking. Your whole person is affected as you struggle to reach beyond the confines of your first language and into a new language, a new culture, a new way of thinking, feeling, and acting. Total commitment, total involvement, a total physical, intellectual and emotional response is necessary to successfully send and receive messages in a second language (p. 1).

Because the Aronga Māori course is only offered in the first year of initial teacher education, students are often unable to retain, or develop, the information they are taught over three years. This severely limited time allocated to specific training in Māori language delivery reinforces the view that te reo Māori is unimportant in mainstream classrooms.

In some respects the course may in fact be doing more harm than good by reinforcing a condensed paper that tinkers around the superficial edges. If these attitudes are to change, and the indifference, ambivalence and tokenism dissolved, then courses like Aronga Māori must be provided for the duration of the trainee’s degree. This would enable closer attention to be paid to the building blocks required to establish a stronger foundation in the level of Māori language competency among the teacher trainees.

The embarrassment and discomfort students feel when teachers mispronounce their names in front of their peers has long-term effects. Some Māori have
When he took exception to the in-class teasing, name was repeatedly mispronounced by teachers. In his first year at a local high school, was ridiculed by other pupils because his cultural significance of their ancestors, and their iwi (tribe).

The author’s son, in his first year at a local high school, was ridiculed by other pupils because his name was repeatedly mispronounced by teachers. When he took exception to the in-class teasing, he was punished and given detention by staff. His classmates were also given detentions because they laughed at their teachers’ mispronunciation. Why were the students disciplined when it was the teachers who created the problem in the first place? Educators, who hold positions of power in the classroom, need to take responsibility for their actions, find the strength to admit when they have made mistakes and model transformation to their students. Rather than punishing their students, these teachers need to look more closely at themselves. Taking ownership of one’s own learning and professional development is crucial. Far too many mainstream teachers look for shortcuts when it comes to using te reo Māori in the classroom. Making the effort to get names right is vital to building confidence and a sense of belonging for students. When the dominant language and culture is so pervasive in mainstream schools, educators must be open to creating space to allow other cultures and languages to flourish. However, this requires an improved skill set, for some a change of heart, a broader vision for the future and a desire to see it mature.

The mispronunciation of names is all too common, almost epidemic to the point that even the most basic recurring Māori words are said incorrectly in mainstream New Zealand society. Indeed, one of the most mispronounced words in New Zealand is ‘Māori’, often pronounced ‘Mow –ree’ by a large number of people.

As mentioned earlier, according to the research produced within the Te Kotahitanga project, Māori students are more likely to positively respond to teachers who try to say their names properly, rather than those who read their names out with no regard for correct pronunciation.

In 2013, with modern technology and a major push to revitalise the Māori language, there is no excuse for teachers who refuse to work on correct pronunciation. Prolonged and more intensive preparation within tertiary institutions can significantly improve the pronunciation and delivery of te reo Māori in mainstream classrooms.

‘Mainstreaming’ te Reo Māori

How can educators nurture a language that essentially holds second-class citizenship in its own country? If Māori language preparation for initial teacher educators can be effectively taught with an increase of intensive class instruction, then it will be vital to reflect that value within the mainstream syllabus. Thus, for te reo Māori to be truly appreciated
by teachers and students alike, it must be elevated above its current station in wider society; shifted beyond a state of indifference and tokenism. Some have debated for years that the status should be recognised by making it a compulsory part of New Zealand mainstream schooling. However, until this day arrives, there are a number of different resources that have been devised to help aid the learner and teacher of te reo Māori in many New Zealand schools.

Grounding students within a well-devised, fun and creative language programme is essential to improving te reo Māori in mainstream schools. Integrating te reo with other curriculum subjects is an effective first step beyond tokenistic approaches. This can naturally occur when Māori stories, legends, poems, waiata (songs), and games are regularly used to teach other aspects of the curriculum from science to maths, physical education, reading and writing. Using various resources such as harakeke (flax), shells from the sea, or the coloured rods used in the teaching of Aataarangi, is a great way to draw the language into the everyday practical experiences of learners and not restricting it to a specified time-slot between other activities. When children acquire a second language they do more than simply listen: they evaluate and eventually build confidence to express those words in their day to day vocabulary. Brown (2007) points out it is important to understand how human beings feel, respond, believe and value when they encounter a new language. This, he writes, is an exceedingly ‘important aspect of [the] theory of second language acquisition’ (p. 154). In this regard, teachers need to encourage second language modelling for their students in mainstream schools and should practise the basic fundamentals of Māori vowels and consonants with students every day until they can move to simple words, phrases and greetings. This pedagogical approach is emphasised in the Tihë Mauri Ora syllabus (MOE, 1990):

Caring teachers can help children to reach more accurate expression and clearer understanding through explanation and practice, and through giving learners time to listen, to understand, to speak. Praise and encouragement to speak, in spite of initial errors, are most important (p. 19).

To encourage correct modelling, teachers can employ popular word charts and waiata (songs) that offer highly useful fundamental exercises. These basic exercises are made up of ngā pū o te reo Māori (the letters of the Māori alphabet), ngā oropuare (the vowels), and ngā orokati (consonants). Once teachers know how to pronounce these basic sounds themselves, they are free to create games and fun exercises that suit their students’ levels and abilities.

Continual repetition of these songs works as simple building blocks and should be understood that way. In a sense they are ‘warm up’ exercises that precede the building of vocabulary by enabling learners to familiarise themselves with the sounds that are central to recognising new words when they see them. In addition, teachers can, and should, support their students to attain accurate expressions and clearer understanding through effective modelling.

Teachers, therefore, need to keep learning and upskilling their proficiency in the Māori language and adding new words and sentences to demonstrate the use of these basic vowel sounds when their pupils encounter new kūpau (words). Two of the more effective ways of mainstreaming te reo Māori are to enable and encourage students to communicate with each other in their everyday classroom environment. Teachers can begin by creating an atmosphere where new words, feelings, pleasantness, commands, agreements or even disagreements are introduced

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1 Te Ataarangi was developed in the late 1970’s by well-known Māori language guardians Dr Kāterina Te Hei Koho Mataira and Ngoingoi Pewhairangi. Te Ataarangi was adapted from the model of The Silent Way which was first developed by Caleb Gattegno, which utilises cuisenaire rods (rākau) and spoken language.

2 Depending on the year level of the class and knowledge of the students, the teacher can simplify or increase the difficulty of sentence structures, commands and other formalities.

3 There are five vowel sounds in Māori: they can be pronounced long or short. A, E, I, O, U. Māori vowels sound much like those in Sāmoa, France, Rarotonga and Spain. There are ten consonant sounds in the Māori language (p, t, k, m, n, ng, wh, ch, w).
and modelled. These phrases and words cannot hang on walls waiting to be read, but should be uttered repeatedly by teachers, rewarded when heard and ‘normalised’ as part of the students’ common classroom vocabulary. In order for students to feel comfortable speaking Māori in the classroom, they must hear and see it being used by their teachers.

Building plans and strategies to ‘mainstream’ te reo Māori is not a difficult process. In recent years, researchers have gathered some outstanding online resources that have been specifically devised for the basic instruction of te reo Māori in mainstream classrooms. These materials and teaching ideas are available for all. Utilising this growing armoury of resources in Māori language learning is an important part of professional development. Teachers should pay particular attention to some of the new websites that offer access to innovative programmes and resources. The Māori Language Commission (MLC) along with Te Kete Ipurangi (TKI) have also, over the years, produced some excellent resources relevant to beginners, intermediate, and advanced learners and teachers of te reo Māori. Searching through the available mass of current resources, teachers will find a variety of recordings formulated to model the rehearsal of vowels, consonants and diphthongs.\(^{10}\)

Advances in technology have provided a rich reservoir of opportunities to the modern learner of te reo Māori. The issue is not about a lack of resources, but rather a lack of desire, motivation and confidence to implement and ‘mainstream’ these resources, weaving them into the fabric of the common New Zealand classroom experience.

**Conclusion: Building Brighter Futures?**

‘Building Brighter Futures’ is a catch phrase in recent New Zealand National Party rhetoric.\(^{11}\) However, te reo Māori is conspicuously absent in their plans for the future; it is also notably absent from English medium classrooms. A brighter future for New Zealand is one that embraces te reo Māori as a central part of the country’s identity and language set. Leaving the health and wellbeing of the language to Māori immersion schools, kōhanga reo, and institutions alone is tantamount to serious cultural neglect. But first, the general public, and educators especially, should be aware of the real and present danger that is threatening the survival of the Māori language: tokenism and indifference. Beyond that initial recognition is the challenge to take ownership and normalise the language as part of the everyday schooling experience. For teachers, this requires better, more intensive, preparation and an on-going in-service support and development.

If we expect certain aspects of the Māori language to be taught within New Zealand mainstream schools, then we need to have adequate courses for our initial teacher education students. This paper contends that initial teacher education students in all institutions preparing teachers should undertake a compulsory and vigorous Māori language course for the entire three or four years of their teaching degree, and not a condensed one semester paper. New Zealand English medium schools and teacher education facilities need to work together not only to contribute to the revitalisation of the Māori language, but also to give students in English medium education opportunities to embrace and take ownership of one of the more precious and unique treasures this country has to offer.

In addressing the state of the language as it is currently taught, educators should be more aware of the vital need to correct mispronunciation. Developing an awareness of the cultural meanings and value of the language is important, but there are also a number of strategies and plans that can be put in place to avoid making the same mistakes on a continuing basis. Making use of the growing resources available to teachers is part of this process, yet in all instances the underlying aim to ‘normalise’ and ‘mainstream’ te reo as a common part of daily classroom activities should serve as the foundation when developing plans and strategies. A brighter future can be found when teachers make personal decisions to move beyond tokenism and indifference, when they decide to take ownership of their own language learning and delivery. This transformation can be made easier and more comprehensive when courses like Aronga Māori become a central aspect of initial teacher education, rather than a quick introductory course without long term commitment and foresight.

\(^{10}\) Grouping of two vowel sounds comprising one or two vowels that is the combination of two sounds said one after the other.

REFERENCES


AUTHOR PROFILE

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His background in Māori Education includes teaching in Kura Kaupapa Māori, and mainstream secondary schools. He currently works exclusively with students at the University of Waikato studying in the primary, secondary and masters programmes. His passion and research is in the areas of revitalisation of te reo Māori and tikanga in the Hauraki region, and he continues to facilitate many wānanga reo in the Hauraki region.

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Looking at Reflection within a Community of Practice of RTLBs

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ABSTRACT

The term ‘reflection’ is defined as a contemplation of one’s teaching craft with the view to improving it (Edwards & Thomas, 2010). Reflection is supported by a number of theories and is considered a key component of RTLB work. A community of practice (CoP), when used as a space for reflection, provides the potential for multiple and critical lenses to examine practice and enables a deeper, clearer understanding of casework. This article discusses some of the theory relating to reflection, positions reflection within a community of practice, and illustrates how it can be applied in the RTLB context.

Practice Paper

Keywords: Community of Practice, professional practice, reflection

INTRODUCTION

It has long been accepted that a good teacher is a reflective teacher, and indeed reflection has been woven into contemporary professional practice (The New Zealand Teachers Council, 2009). Similarly, for Resource Teachers: Learning and Behaviour (RTLB), reflection is now one of the seven fundamental principles that guide practice (Ministry of Education, 2011). The RTLB Toolkit (2011) describes the principle as “recognising and valuing the importance of evaluating practice for future improvement” (p. 31). RTLB are expected to reflect on the match between their behaviour and intentions, the effectiveness of outcomes, the outcomes for student, whānau and community, and all with reference to established theory. How this translates into practice is dependent on individual preference and on specific systems defined by cluster management. This article outlines some of the theory that supports reflective practice and then foregrounds how reflection can be incorporated into the RTLB workplace through a community of practice.

Edwards and Thomas (2010) define reflective practice for teachers as the process through which teachers contemplate their teaching practice with the view to improving it. Much of the literature that supports teacher reflection is theory-driven rather than research-based. Dewey (1933, cited in Scales (2008, p. 10) was one of the first educationalists to highlight the value of incorporating reflective thinking into professional practice. He discussed the idea of moving from routine action to reflective action which is characterised by on-going self-appraisal and development. Schön (1987) was most influential in incorporating reflection into practice for the modern day. His theory focused on two actions: reflection on action and reflection in action. Reflection on action refers to thinking about one’s practice after the fact, while reflection in action refers to the ability to “evaluate, assess and act in order to shape on-going activity in the moment” (Enfield & Stasz, 2011, p. 113). According to Schön (1987), the mark of a professional is the ability to anticipate outcomes, and reference multiple criteria to reshape action. Both types of reflection are essential activities for teachers, and Schön adds to these by differentiating between technical knowledge and tacit knowledge. He describes technical knowledge as the theoretical learning of classroom practice, the understanding of the teaching craft. Technical knowledge and understanding do not always play out in practice, as some actions teachers take are based on beliefs that have been built through experience over time. These beliefs are often unexamined or tacit, and some are supportive of student learning, while others are not. It is argued that reflection helps teachers examine their tacit understandings, and brings to light some of the unseen reasons behind their action (Ross, Bondy & Kyle, 1993).

Larrivee (2000) takes the concept of tacit understandings a step further by making the point that effective teaching is more than a compilation of skills and strategies: it is a “deliberate philosophical and ethical code of conduct” (p. 294). She encourages teachers to critically reflect on their practice and highlights that teachers need to examine personal and professional belief-systems, and to
consider the ethical implications of their practice. As all experiences are fashioned by society and culture, teachers make judgements that are influenced by their culture and personal biases. Becoming a critically-reflective practitioner requires teachers to examine deeply-rooted beliefs concerning human nature, human potential, and human learning, and to question assumptions and existing practices, thereby accessing a new lens that alters perspectives (Larrivee, 2000). This process can lead to a state of dissonance where there is a gap between prior beliefs and new learning. If teachers are able to reconcile this sense of uncertainty it can help create new ways of thinking and reframe values out of which new practices can emerge (Larrivee, 2000).

As reflection is a fundamental principle for practice, how does this play out in the RTLB role? The RTLB practice sequence (Ministry of Education, 2011) easily lends itself to reflection. It is essentially the final step in the sequence and is akin to Schön’s (1987) reflection on action. The practice sequence also allows for reflection in action as, although not explicitly stated, many of the stages encourage RTLB to analyse data, context and wider social perspectives. The model allows for technical and critical reflection. The question arises as to how RTLB ensure that the reflective element provided for in the model is incorporated in practice. One way that this could be facilitated is through a community of practice (CoP) approach. A CoP is defined by Wenger (2009) as a group of people who share a concern or a passion for something they do and learn how to do it better as they interact regularly. This description perfectly captures the community of practice referred to in the rest of this article.

The Birth of A Community of Practice

The CoP came about through the new study requirements for RTLB, a two-year postgraduate diploma in specialist teaching. As the study was mostly conducted on-line, a group of students situated geographically in the same region decided to meet regularly face-to-face to discuss their learning and to review assignments. It was felt that face-to-face interactions were needed to enhance understanding. Initially, the CoP was informal, meeting together once a term to chat and ‘unpack’ study concerns. The attendees grew in number and it became difficult to cover all contributions in the allotted time, therefore meetings became formalised with an agenda and minutes. During this time, the meetings continued to focus on RTLB study and workload. Issues and ideas were discussed, questions were raised and solutions offered. In this phase, the talk was about refining ideas and concepts. It was a highly creative exercise and reflections would occur randomly both throughout the process, and after the fact.

As the first year of study came to an end the CoP intended to continue for the second year, however the RTLB transformation impacted the members’ ability to fully commit due to work and cluster expectations. That left four of the original members. These residual participants decided to meet together with a focus of exploring different methods of peer support and feedback. The Dynamic Ecological Analysis model (DEA) (Hannant, Lim & McAllum, 2010) was chosen as a way of achieving this. The model involves practitioners sharing, with a group of professionals, a difficult case in which they have reached an impasse in their analysis, and are unsure of what to do next. The team pose questions around the data presented and offer reasons as to why they have asked those questions. Information is accumulated through the questioning process, and at its conclusion, the RTLB is hopefully provided with an overview of the case, potential assessment gaps that may need filling and a pathway for the next steps. The questioning nature of this model encourages individuals to think critically about each other’s cases, while simultaneously reflecting on their own work. This format has potential to encourage both critical reflection and technical reflection.

The Reflective Hub:

The Reflective Hub (Figure 1) is a visual representation of how the CoP and reflective processes combine to reframe thinking, actions and beliefs. Though the hub is designed in a cyclical manner, it is not intended to be a prescribed flow, as one can move in and around each phase through the centre of the hub. The core values of the CoP are included in the centre.
of the model. These are to learn, to support, and to encourage, and are considered to be at the heart of the CoP process. The outer cycle is viewed as the learning framework.

The initial reflection phase can be initiated by an individual’s experience or can result from a discussion that has taken place within a CoP meeting. This is aligned to Schön’s (1987) reflecting in action and on action. By using questioning, the analysis and challenge phases ensure the issues are critically examined and reflected upon through multiple lenses, which can help to uncover tacit beliefs. Following that, the individual considers the new ideas, hence prompting a second form of reflection. They then evaluate whether there needs to be a shift in practice or whether the status quo should remain.

The advantage of looking at reflective practice in this way is that it provides structure for reflection, while still allowing for flexibility within the application of the approach. All individuals have a personal bias; therefore there may be a danger of missing the critical nature of reflection. Having a structure to follow highlights areas that may be overlooked due to selective filters. The hub helps remind us to consider beliefs and assumptions that underpin practice in a group setting. The key is being deliberate about the nature of the analysis, discussion and reflection and ensuring that there is a critical element to it. As filters are challenged and alternative responses are considered, practitioners become open to more possibilities and all responses are examined (Larrivee, 2000).

The hub, while providing structure, also enables flexibility. There is an organic nature to it. The CoP provides a space for dialogue that is centred around the narratives of the students with whom RTLB work. The nature of the hub means that these stories can ebb and flow through the different phases, and not be tied into any particular pattern or arrangement. It becomes a more holistic, fluid process.

**Does a Community of Practice Assist with Reflective Practice?**

A community of practice has the potential to be a highly effective means of promoting quality reflective practice. The feedback from the CoP participants reinforced this view. As one member stated, “the collective voice is always more powerful than a single thought” (CoP member, 30 August, 2012). Through engaging in this experience a number of advantages were identified.

Sharing experiences within a group enables the members to learn from, and co-construct ideas with, their peers (Reynolds, 2011). The CoP format reinforces Vygotsky’s (1978, cited in Pollard, 1997) view of the social nature of learning. The act of sharing all facets of study and casework enabled a collective evaluation of practice, which strengthened each individual’s understanding of their work.

One of the advantages of reflection within a CoP, which is also related to the co-construction of learning, is the provision of multiple viewpoints. One of the critiques of self-reflection is that it is difficult for people to see ‘outside’ of themselves, as they don’t know what they don’t know. Our own beliefs and assumptions lead us to draw conclusions based on selected observation. Argyris (1990, cited in Larrivee, 2000) calls this the reflexive loop, a circular process by which we select data, add personal meaning, and make assumptions based on our interpretations of that selected data. We stay in the loop, and our beliefs stay hidden and unexamined. The CoP enabled us to see ‘outside’ of ourselves, and to recognise that experience is “culturally and personally sculptured” (Larrivee, 2000, p. 296). It provides multiple lenses through which an experience can be explored and possibly redefined. This was evidenced through a story related by one CoP member when discussing a negative reaction they had experienced whilst working with a parent. The parent who had initially been supportive, unsettled the RTLB by doing an apparent ‘U-turn’ when implementing planned interventions. In unpacking this within the CoP, it was suggested that the parent may have been experiencing grief in accepting the child’s current circumstances, and the discussion around modifying the class programme could have triggered that grief. Having this extra perspective helped the RTLB to reframe the issue, and move forward with a slightly altered and revised approach. She was able to think ‘outside’ of herself.

The value of this approach is clearly evidenced by the literature (Pollard, 1997; Reynolds, 2011; Ross, Bondy & Kyle, 1993; Smyth, 1993) and as Sparks-Langer and Colton (1991) state, “beliefs must be examined critically from various perspectives to allow for a flexible and thoughtful approach to teaching” (p. 43).

A further benefit of reflecting within a community of practice is using communication to clarify one’s thinking. When sharing thoughts and ideas as part of a collective activity, a person has to structure their thinking to express it coherently. This action forces us to communicate clearly so that others can understand and respond appropriately (Enfield & Stasz, 2011). In essence, it changes vague scattered notions into lucid well-reasoned thoughts. One of the CoP members noted “by articulating thoughts, it clarifies your thinking” (CoP member, 30 August, 2012). This clearer, systematic picture was also useful for the
CoP as it enabled group discourse around hypotheses and potential actions. Emery (1996), states that “oral language can promote exploration and extension of teacher knowledge and teacher self-confidence to generate knowledge about teaching, two aims of reflective practice” (p.110).

Alongside dialogue within a community sits another benefit to reflection within a CoP. It provides some accountability for follow-up action, as insights are only beneficial if they lead to further action (Harrison, Lawson & Wortely, 2005). At each CoP session, questions were asked regarding previously discussed cases and their progress. These questions were born out of a genuine concern for CoP members rather than checking up on practice, and prompted further reflection about any new actions. The purpose of reflective practice is that through ‘reflection plus action’ we develop, refine and improve our practice (Harrison et al. 2005). This accountability toward action supports that purpose.

**CONCLUSION**

In terms of RTLB practice, using the Reflective Hub process and having a multi-lens approach to reflection and casework has a number of advantages. It encourages clear articulation of analysis and decisions, which are key components of the RTLB practice sequence. Being able to express ideas and thoughts within a group enables RTLB to have a clearer and deeper understanding of the casework undertaken. The CoP questioning and discussion provides a method to clarify thoughts and therefore create a stronger platform upon which to base one’s action. The hub was effective in promoting deeper levels of reflection. It provided a collaborative perspective to RTLB work and challenged underlying assumptions and beliefs. The experience of reflecting within a CoP illustrated in a practical manner how quality reflection can positively impact RTLB practice. It brings the concept of learning with and from others to life.

**REFERENCES**


AUTHOR PROFILES

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Yvonne Stanghan is a Resource Teacher: Learning and Behaviour in the Manawanui Cluster in the Papatoetoe/Otara area. She has been in this role since 2008. Yvonne has recently graduated from the new qualification for RTLBs, the Specialist Teaching Diploma, through Massey University. She has a strong interest in literacy and the process of achieving equitable access to quality literacy teaching and learning for all students.

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A Comparison Study of the Effectiveness of the Lexia Reading Programme.

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ABSTRACT

This study evaluates the efficacy of the Lexia Reading (LR) programme with a cohort of 37 students in a Decile 1 primary school. The students were randomly assigned to experimental (who used LR) and control groups (who did not use LR). The WIAT-II was used to provide pre and post measures of literacy skills. Results indicated that students who used LR did not outperform students in the control group and no statistical significance was found between the two groups at post-test. The study discusses the evidence base that Lexia presents in support of LR and raises questions in relation to LR efficacy. The study concludes that the LR computer programme’s evidence base and efficacy is equivocal.

Research Paper

Keywords: Evidence-based practice, literacy, reading

INTRODUCTION

Computers are now ubiquitous in schools and as a result there is an ever-growing number of computer software packages being marketed to schools. Some of these packages appear to offer effective solutions to some of the most intractable problems faced by teachers and many, such as Lexia, now target students who might be described as presenting with special needs. As such, these programmes may appear very attractive to schools. Packages are generally targeted at individual students underpinned by the rationale that the students will benefit from Computer Assisted Instruction (CAI).

When using a computer, students can be presented with auditory, visual and tactile-kinaesthetic stimuli as they learn. Carlisle and Rice (2002) write that CAI was primarily developed as a way of increasing instructional time and practice for students without placing further demands on teacher time. They further note that CAI enables instruction to be tailored to individual students, can allow for self-paced learning, can provide immediate feedback to students and that CAI can be both fun and engaging for students, especially for those who have reading difficulties. One other possible ‘benefit’ for the student is that they are withdrawn from classroom work which may be of less interest to them than spending time on the computer. In this way CAI can be quite appealing to students.

There has been extensive debate over the last 20 years as to the effectiveness of CAI. Slavin, Cheung, Groff and Lake (2008) conducted a review of the literature in relation to CAI. Of the eight studies that were reviewed (involving a total of 12,984 students) the overall weighted mean of the effect size of CAI programmes was +0.10. This is a very weak positive correlation and is on the verge of being negligible (Coolican, 2007). These findings are in line with practice guidelines for reading instruction from the US Department of Education’s Institute of Education Sciences, which found that while there was little evidence to show that CAI was effective, CAI was an area that could have some potentially positive effects for students who used it (US Department of Education, 2010).

Lexia Reading is one of the main programmes marketed by Lexia Learning Systems (LLS). Lexia Reading (LR) is a computer-based supplementary reading tool aimed at improving reading skills. It has an age range of 4 years to adult (and can also be used for ESOL students). LR is designed to supplement and complement classroom instruction; however it can be used as a stand-alone tool (Lexia Learning Systems, 2006). LR uses games and interactive activities to “build skills with explicit practice in phonemic awareness and phonics while promoting gains in vocabulary, fluency and comprehension” (Lexia Learning Systems 2010, p.2).

As students begin LR they are placed at a level that matches their ability. In order to progress through the levels they are required to complete tasks, which they must achieve before being able to move on to a higher level.
Within the Lexia programme a multisensory approach is intended to engage learners with the material. Students use headphones to listen to words/word sounds, and then interact with the computer, using a mouse to click on images to provide responses to the questions related to the word/sound. Other exercises do not require the students to listen to sounds/words but rather to complete the task on the screen using the mouse or keyboard.

Lexia offer three main sources of supporting information by way of providing an evidence base: the first is peer-reviewed journal articles and the second is testimonial studies largely written by RTLBs and schools. Lastly, the company offers a webinar.

There are three articles, cited on the Lexia website, from peer-reviewed academic journals. In exploring this evidence it appears that these articles were all written following extensive work in the United States of America with a group of public schools in Revere, Massachusetts (Macaruso, Hook & McCabe 2006; Macaruso & Rodman 2009; Macaruso & Walker 2008). It appears that Lexia was given a rare opportunity to tailor-make their programme to fit with the schools’ curriculum. These three studies appear to support the value for students who accessed the Lexia programme, particularly those students who were furthest behind (described as ‘at risk’).

There are a number of studies which have been written by Resource Teachers: Learning and Behaviour (RTLB), schools and a single personal testimonial which Lexia currently place on their website. These studies present information which is highly supportive of the Lexia programme.

Lexia also claim that the What Works Clearinghouse and the Florida Centre for Reading Research have positively evaluated the Lexia programmes.

The research team was invited to attend a webinar hosted by LR (a combined telephone/internet tutorial and discussion). During the Webinar the research team asked what progress might be expected from students who used LR. The LR representative confirmed that we might expect to see one years progress in one term (most likely in ‘at risk’ students) for students who used LR.

Schools with a high demand for literacy teaching could be considered as the target for the presentation of this positive evidence. In particular, schools may well feel that the amount of teacher-time they are able to direct to raising literacy is limited, and the promise of having the process automated to some extent can easily be seen as attractive. In particular, Lexia’s summary of the research shows potential:

- Lexia Reading Improves Reading Score in grades K – 3 and Middle School
- Lowest Performing Students Benefit the Most from using Lexia Reading
- Title 1 Students Using Lexia Reading Close the Achievement Gap (Title 1 Students is a term used in the USA. They are equivalent to NZ students functioning at Level 1 of the curriculum or below)
- Benefits of Lexia Reading are Tied to Strong Use Patterns
- Teachers Strongly Endorse Lexia Reading (Lexia International, 2011).

Given the positive indications the research team adopted the following hypothesis: given a single term of prescribed learning with LR, students will show significant improvement in literacy scores (one year in one term), when compared with students in a control group. The null hypothesis is that despite access to the Lexia programme (for the experimental group) no significant differences between the two conditions will be found.

METHOD

In order to further inform Lexia’s claims the research team sought to explore Lexia’s efficacy with ‘at risk’ students in a New Zealand educational context. The team were invited to help support a Decile 1 primary school which was considering purchasing the Lexia Reading Programme. Lexia provides free of cost, an unlimited number of licences for the duration of a single term (10 weeks).

Participants

Forty students were identified, ten in each of four combined school year classes; Years 1-2, Years 3-4, Years 4-5, Years 5-6. All the children were identified by the school as ‘at risk’ in terms of their literacy i.e. their literacy was tracking at two years or more below their chronological age. The ten students from each class were randomly assigned to the control or the experimental condition. Two learners with English as an additional language were excluded from the study and one learner left the school, leaving a total of 37 participants.

Procedure

The students followed normal classroom programmes and curriculum with the exception that the experimental group took part in LR for at least 100 minutes per week for a single school term in 2010. Some students had significantly more time than this.
Measures

The pre and post tests for the study were selected from the Wechsler Individual Achievement Test, (WIAT-II, 2nd ed.). This test was selected as it is arguably comparable to the tests used in the three peer-reviewed studies on the LLS research website (Lexia International, 2011). Adjustments were made to allow for differences in the New Zealand and Australian education systems. For the administration of this test all five year old students were treated as pre-schoolers (as pre-schoolers, the 10 five year old children were only administered the Word Reading and Spelling subtests). The following tests and descriptions are taken directly from the WIAT-II manual:

**Word Reading** - assesses early reading (phonological awareness), word recognition and decoding skills.

**Reading Comprehension** - assesses the types of reading comprehension skills taught in the classroom or used in everyday life.

**Spelling** - assesses the ability to write dictated letters, letter blends, and spell words.

**Pseudoword Decoding** - assesses the ability to apply phonetic decoding skills to ‘nonsense’ words.

Additionally, the team sought to evaluate curriculum data supplied by the school alongside the results of the WIAT-II pre and post tests. The researchers also devised a ‘Student Voice’ questionnaire to explore learners’ self-perception and their enjoyment of the Lexia programme. Interviews with members of the teaching staff were also conducted.

Independent sample t tests on the pre-test data between the control and experimental conditions revealed no significant differences across the four WIAT-II subtests prior to beginning the trial.

Results

All children achieved levels of Lexia usage that fell within the required range. Using the WIAT-II data, age equivalencies were calculated in months for the purposes of data analyses. The following tables show the means and standard deviations across the two conditions and the four subtests. The difference between the pre and post test means are included at the end of each table. Tables 1 and 2 record the control and experimental data respectively, and Table 3 allows comparison of the control and experimental means across the four sub-tests.

Table 1

<table>
<thead>
<tr>
<th>Subtest</th>
<th>Pre-test mean</th>
<th>Standard Deviation</th>
<th>Post-test mean</th>
<th>Standard Deviation</th>
<th>Difference between means</th>
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<td>81.09</td>
<td>9.48</td>
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<td>0.73</td>
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Table 2

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<th>Post-test mean</th>
<th>Standard Deviation</th>
<th>Difference between means</th>
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<tr>
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Table 3

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<th>Experimental Pre-test mean</th>
<th>Control Post-test mean</th>
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A student voice questionnaire was also administered as an additional information source. The results are included in Appendix A.

The curriculum data supplied by the school was not complete at the end of the study and has therefore not been included in the results section.

When the independent sample t-tests were repeated on the post-test data between the experimental and control conditions across the four WIAT-II subtests, no statistical significance was found. The results do not serve or support any significant advantage for the experimental group. The null hypothesis must therefore be accepted that despite access to the Lexia programme (for the experimental group) no significant differences between the two conditions were found.

**Discussion**

From a Lexia standpoint these results would appear to be very disappointing. The cohort of 37 ‘at risk’ readers who completed the trial would arguably be Lexia’s target group. These learners all worked on Lexia at or above the minimum amount of time required by the programme as stipulated by Lexia for a period of a school term, which is supported by the trial period offered by Lexia to schools. In searching for a rationale for the uninspiring results generated by this research it seems important to revisit the evidence base in a little more detail.

The testimonial research, as it is presented on Lexia’s website, is typically narrative rather than experimental. Whilst acknowledging the excellent intentions of these projects, the research team found that there is little or no evidence of rigorously applied methodologies, the use of control groups, pre and post measures or statistical analysis. The researchers therefore struggled to see how they might convincingly support the evidence-base for Lexia.

In support of LR, the LLS website states “the What Works Clearinghouse (WWC) finds Lexia Reading to be effective, meeting the WWC research standards” (Lexia International, 2011). The WWC was established in 2002 by the US Department of Education’s Institute of Education Sciences to provide professions with guides to the effectiveness of programmes, practice guidelines and policies concerning education, including literacy and numeracy. LLS claims that the Lexia Reading programme is one of only ten programmes that meets the evidence standards set out by the WWC and shows “positive or potentially positive effects in at least two of the four beginning reading skills (alphabetic, comprehension, fluency and general reading achievement)” and “based on the studies reviewed by WWC, Lexia Reading was found to have potentially positive effects on alphabetic and reading comprehension, and showed statistically significant effects in general reading achievement for subgroups of at-risk students” (Lexia International, 2011).

The researchers examined the What Works ClearingHouse report pertaining to Lexia Reading. LLS presented 11 studies to the WWC for evaluation. Of these 11 studies, only two met the evidence standards with one further study meeting the evidence standards with reservations (US Department of Education, 2009). The other eight studies did not meet the evidence standards due to flaws in research design, methodology or conclusions. The WWC report determined that the evidence in support of the Lexia Reading programme to be “small for alphabetic, fluency, comprehension, and general reading achievement” (US Department of Education, 2009). The WWC found that the Lexia Reading programme had “potentially positive effects on alphabetic, no discernable effect on fluency, potentially positive effects on comprehension, and no discernable effects on general reading achievement” (US Department of Education, 2009). This appears to be at odds with the statements made by LLS.

On closer examination the team found the three Macaruso studies are far from unequivocal. Macaruso (2006) in the first of the trio of studies available, worked with 179 students from ten first grade classes, allocated to experimental and control conditions. Initially no significant difference was found between these two groups which was disappointing considering the advantages of matching Lexia directly to a literacy curriculum over a six month period. Macaruso et al., (2006) note this apparent failure and embark upon further analysis. These endeavours did reveal that there was apparently a significant advantage for those in the experimental group described as ‘at risk’ (also known as Title 1 Students in the USA) when compared with the same group of students in the control group. However, this advantage was only found for ‘letter sound correspondences’ in contrast to ‘recognising basic story words’ where no significant advantage was found.

The second study (Macaruso et al., 2008) examines Lexia in kindergartens. Encouragingly, the study claims to have shown significant differences between the experimental and control conditions. However, the research team noted that the pre and post test measures used were not the same. Instead, all children were tested on a reading test (the Gates McGinitie) by way of identifying differences only at the end of the Lexia programme. This proved
very difficult for the research team to overlook and arguably the team did not agree with the rationale shared in the study for this aspect of their methodology.

It would seem important for the research team to acknowledge that testing is seldom perfect and the use by the researchers of a test standardised on an Australian population is not, arguably, an ideal method of measurement. However it has only been used within this study’s specific experimental methodology. It has not been compared with other data gathered by the school or post hoc tests. Furthermore, the adjustment for ages discussed in the introduction provides some protection from the influence of age on literacy ability. The team aspired to include school curriculum data on reading development to further inform the study. However, this data was incomplete at the time the study finished and has therefore not been included.

The third Macaruso study appears to build on Lexia’s apparent benefit for a cohort of 47 sixth and seventh grade middle school students with identifiable special needs in the area of literacy. The participants are described as ‘attending remedial reading classes’. In contrast to the previous study, Macaruso et al., (2009) employs the Woodcock-Johnson III Tests for Achievement. This standardised test has seven subtests and has been standardised alongside the WIAT-II used in the present study. Through the use of statistical analysis, Macaruso et al. was only able to show a significant advantage for the experimental group for the Word Attack sub-test. No significant differences were found in any of the other six areas tested (letter-word identification, reading fluency, reading vocabulary, passage comprehension, oral comprehension and spelling). In making this claim the researchers noted that in the area of word attack the control group’s mean scores pre to post dropped from 87.7 to 85.3. As the post-test score for the experimental group was 88.3 it is not difficult to see that the apparent reversal of the control group has helped to make the findings significant. The question of why the control group made negative progress in this area is not fully explored.

A preference for simple statistical analysis might be seen by some as a potential weakness of the present study. In the Macaruso studies a number of tests and investigations were conducted with skill and rigour. However the present research group would argue that from the way in which Lexia is marketed the data gathered should be unequivocally in favour of those students in the experimental condition. In reading the discussion sections of the Macaruso articles it becomes clear that there are some very strong claims made in favour of the Lexia programme but these would not appear to be fully supported by the results.

By way of support for schools, Askov and Bixler offer a list of criteria by which to evaluate the appropriateness of computer software for educational purposes (1998, cited in Dunsmuir & Clifford, 2003). This list asks how well any given programme matches the more general curriculum objectives. The learners in the Macaruso studies “were taught with Language! An intensive reading programme that includes exercises to improve phonics skills” (Macaruso & Rodman, 2009, p.109). It may be that any advantages claimed by the Macaruso studies are as a result of the opportunity to match Lexia with the curriculum but even this argument appears to be insecure.

In the most recent of the Macaruso studies (2009) it is noted that in order for students to make progress “further instruction and practice are necessary” (Torgesen et al., 2003, cited in Macaruso 2009, p.109). In the same study there is a very brief reference made to additional study support on page 106: “Students … branch to more highly scaffolded practice activities when necessary”. This perhaps signals the use of additional one-to-one instruction which would potentially have a very significant influence on scores in the experimental group. Whilst almost an aside of the 2009 study, the researchers and the participating school found the use of one-to-one instruction to be a major issue.

When a learner has more than three failures on a task on LR, a yellow dot is placed on the record for the teacher to see. These dots are an indication to the teacher that the student requires one-to-one instruction. The LR system carries hundreds of pages of one-to-one instruction exercises to this end. When the school agreed to the LR trial they were unaware of these yellow dots. At no time were the yellow dots mentioned to the school or the researchers by LLS. When they began to appear on the student records the teachers were surprised to hear that they were then required to spend considerable additional one-to-one instruction time to the students. The school made the decision to not deliver the additional teaching materials to the students due to the extensive time demands of such individualised teaching.

It is important to note that all of the students had yellow dots on their records at some stage during the trial. When a student fails to make progress at LR a teacher is required to give the student one-to-one instruction in the specific skill until it is established. They are then able to go back on LR and pass the level they were stuck on. This pattern is repeated every time a student has difficulty with a skill-set in LR. It might be argued that LR was not delivered with fidelity during this study but the contrary argument
is that through the delivery of significant one-to-one tuition until the learner has successfully learnt the identified skill, a student cannot fail on LR.

We identify what appears to be a self-fulfilling prophecy. It would seem to the researchers that the benefits of LR lie not necessarily in the computer instruction medium, but rather in that it support teachers to provide students with targeted one-to-one instruction in specific skill areas that are key to literacy development. This form of instruction (one-to-one) is widely supported by evidence and research as being an effective way of supporting literacy development (Carlisle & Rice, 2002). LLS appear to support this notion in that these lessons are an integral part of supporting students to succeed on LR. It does seem important to note that a single yellow dot can require over 90 pages of colour photocopying alongside the teaching time to deliver these additional materials.

As this work has been completed there has been a growing concern within the research team that the marketing and efficacy of school targeted software do not necessarily share the same agenda. The team have questioned the evidence base and, at best, the answers have been equivocal.

It is an ubiquitous feature of conclusions to research articles that more detailed and exhaustive research needs to be undertaken and this case is no exception. This was, after all, a comparatively small study limited to a single school. The discovery of additional teaching materials requiring significant time and resources is a further variable which warrants further exploration. In the final analysis there seem to be two programmes at work for the learner: computer time and direct teaching time. The individual instruction ensures that any shortcomings of the computer programme are ameliorated.

CAI has a glamorous profile in schools but if it does not work, is it worth the investment of scarce school funds? This study found that CAI (as in LR) did not seem to help struggling readers. A future larger study is now needed to verify and extend the present results.

REFERENCES


APPENDIX A

The Student Voice Questionnaire

The student voice questionnaire contained seven questions. For all items, apart from Question 5, the participants were asked to indicate their answer on a scale ranging from 0 – 10, where 0 is the least and 10 is the most. The researchers followed a semi-structured set of instructions to make sure each participant understood how to offer an answer. Question 7 was only for those in the experimental group and asked how much they enjoyed being part of the programme. The mean result for Question 7 was 8.13 (with a standard deviation of 3.67) suggesting that, despite scores across a wide range, participants reported that they enjoyed working on the Lexia programme. Question 5 asked participants to list their strategies to reading an unfamiliar or difficult word. The table below (Table 4) presents the means across the two conditions for all items. Table 5 records the verbatim responses of the participants to Question 5.

Table 4
Questionnaire questions 1, 2, 3, 4, - , 6 and 7 mean scores for across conditions

<table>
<thead>
<tr>
<th>Question</th>
<th>Pre-test mean control</th>
<th>Post-test mean control</th>
<th>Pre-test mean experimental</th>
<th>Post test mean experimental</th>
</tr>
</thead>
<tbody>
<tr>
<td>How much do you like reading at home?</td>
<td>7.63</td>
<td>7.88</td>
<td>7.05</td>
<td>8.16</td>
</tr>
<tr>
<td>Like reading at school?</td>
<td>7.05</td>
<td>7.4</td>
<td>5.76</td>
<td>5.55</td>
</tr>
<tr>
<td>How good are you at reading?</td>
<td>7.3</td>
<td>7.18</td>
<td>5.84</td>
<td>7.32</td>
</tr>
<tr>
<td>How good does your teacher think you are at reading?</td>
<td>7.85</td>
<td>7.55</td>
<td>7.47</td>
<td>7.76</td>
</tr>
<tr>
<td>How much do you enjoy school?</td>
<td>9.23</td>
<td>7.55</td>
<td>8.68</td>
<td>8.89</td>
</tr>
<tr>
<td>How much did you enjoy Lexia?</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>8.13</td>
</tr>
</tbody>
</table>

Table 5.
Verbatim responses to Question 5.

<table>
<thead>
<tr>
<th>Control Group pre-test</th>
<th>Control Group post-test</th>
</tr>
</thead>
<tbody>
<tr>
<td>sound it out</td>
<td>sound it out</td>
</tr>
<tr>
<td>get another book</td>
<td>get a different book</td>
</tr>
<tr>
<td>sound it out</td>
<td>skip it</td>
</tr>
<tr>
<td>ask for some help maybe</td>
<td>sound it out</td>
</tr>
<tr>
<td>sound it out</td>
<td>sound it out or go back and read it again</td>
</tr>
<tr>
<td>sound it out</td>
<td>skip it or sound it out</td>
</tr>
<tr>
<td>sound it out in my head</td>
<td>chunking</td>
</tr>
<tr>
<td>sad because what one</td>
<td>you say I can’t do it</td>
</tr>
<tr>
<td>I think and then I know</td>
<td>ask a teacher</td>
</tr>
<tr>
<td>I ask teacher to help me</td>
<td>ask the teacher to help me read it</td>
</tr>
<tr>
<td>happy or sad</td>
<td>my teacher tells me what word it is</td>
</tr>
<tr>
<td>no answer</td>
<td>just look away just say it</td>
</tr>
<tr>
<td>put book back</td>
<td>I like going to the park I like going to the beach</td>
</tr>
<tr>
<td>just think</td>
<td>sound it out</td>
</tr>
<tr>
<td>look at picture and sound it out</td>
<td>sound it out</td>
</tr>
<tr>
<td>get a little angry and keep trying</td>
<td>have a go</td>
</tr>
<tr>
<td>sound it out</td>
<td>sound it out</td>
</tr>
<tr>
<td>sound it out</td>
<td>sound it out</td>
</tr>
<tr>
<td>stop and sound it out</td>
<td>sound it out</td>
</tr>
<tr>
<td>skip it</td>
<td>skip it and move on</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Experimental Group pre-test</strong></th>
<th><strong>Experimental Group post-test</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>don’t know</td>
<td>sound it out</td>
</tr>
<tr>
<td>sound it out</td>
<td>sound it out</td>
</tr>
<tr>
<td>try, chunk it</td>
<td>skip it</td>
</tr>
<tr>
<td>try to think it out and if you don’t know it you can skip it and come back to it</td>
<td>sound it out</td>
</tr>
<tr>
<td>don’t know (shrug)</td>
<td>sound it out</td>
</tr>
<tr>
<td>chunk it up</td>
<td>chunk it</td>
</tr>
<tr>
<td>my dad helps me when I don’t know it. He tells the girls to help you</td>
<td>ask the teacher</td>
</tr>
<tr>
<td>don’t know</td>
<td>ask the teacher</td>
</tr>
<tr>
<td>ask my mum</td>
<td>ask the teacher</td>
</tr>
<tr>
<td>I don’t like reading at home so I just like reading at school</td>
<td>I get sad when my mum always don’t give us food</td>
</tr>
<tr>
<td>ask mum</td>
<td>ask a teacher</td>
</tr>
<tr>
<td>say the word in front of the whole word (pointed at first letter of word)</td>
<td>I sound the first word out</td>
</tr>
<tr>
<td>no answer</td>
<td>fun</td>
</tr>
<tr>
<td>I don’t know</td>
<td>go to my teacher</td>
</tr>
<tr>
<td>miss it</td>
<td>sound it out</td>
</tr>
<tr>
<td>sound it out</td>
<td>sound it out</td>
</tr>
<tr>
<td>sound it out</td>
<td>sound it out with your arm</td>
</tr>
<tr>
<td>sound it out</td>
<td>chunk it up</td>
</tr>
<tr>
<td>sound it out</td>
<td>read on</td>
</tr>
</tbody>
</table>
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Children with Autism Spectrum Disorder in the Mainstream Playground

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ABSTRACT
This paper explores the place of the school playground in the lives of children with Autism Spectrum Disorder (ASD). We discuss the physical environment, school systems and practices that support the development of social competence and increased peer interactions for children with ASD in their school playground. Highlighted issues include the importance of play, and the value of the school playground as a curriculum resource with the potential to build a bridge to inclusion for children who experience difficulty developing skills in social interaction, verbal and nonverbal communication and play. Inclusion is more than just placement in regular classrooms. It is about feelings of belonging in the whole school community and that includes being able to participate in the school playground without feelings of anxiety, isolation, or vulnerability.

Practice Paper

Keywords: Autism Spectrum Disorder (ASD), inclusion, playground

INTRODUCTION
Have you spent time simply observing what is happening in your school playground? Perhaps you will see children participating, contributing and joining in activities with their peers, even playing traditional games that require them to follow rules and manage their behaviour when they are ‘out’ or feel angry. You may see and hear conflict, teasing, name calling, and students left out, wandering, or sitting on a bench. There may also be opportunities for children to make choices as they think through a challenge. You will possibly hear children communicating their needs, thoughts and feelings, and listening to others as they express theirs. You may see children relating to others, taking turns, joining in to get a job done, helping others, developing skills in cooperation and friendship - the ‘Key Competencies’ of the New Zealand Curriculum in action.

Take another look at your playground. You may see a child alone, flicking a leaf, continually touching a fence, running around the perimeter of the field, wandering or performing some obsessive behaviour while being watched or shadowed by an adult. You may be looking at the daily playground experience of a child with Autism Spectrum Disorder.

Play: What is it and Why is it so Important?

Play supports children’s brain development in unique ways (Perry, Hogan & Marlin, 2000). These researchers state that play, more than any other activity, fuels the healthy development of children of all ages and abilities. It is a natural learning tool that develops coordination with both fine and gross motor skills and because it is often fun, it helps to develop emotional wellbeing and stability. According to Pellegrini and Bjorklund (1996) play benefits the ability of all children to pay attention and learn. There is no basis to support assumptions that play should be confined to the preschool years, or that children with ASD do not need to play. Key characteristics of play are that it is fun and also a foundation for building friendships (Doll & Brehm, 2010). But play is actually hard to define (Sutton-Smith, 2001). Every child knows what it is to play, but the rest of us can merely speculate because spontaneous play is what children do, not what adults organise them to do. Sometimes it is hard to find in school playgrounds. One reason is that some educators need convincing that time playing outside in the school playground matters as much as classroom instruction. Marginalising break-times by reducing and over-regulating time for play, especially for children with some form of disability, is limiting an opportunity for interaction with their peer group (Blatchford & Sharp, 1994). The decision is usually based on an assumption that negative behaviour will decrease or that the expanding curriculum requires more teaching and learning in the classroom. Little mention is made of the possibly detrimental effect this is having on developing skills in social competence, health and wellbeing, especially for those with difficulties with these.
skills such as children with ASD. One of the other opportunities for daily social interactions between children is the walk to school but this is perhaps being taken away for many children by the car ride to and from school (Blatchford, 1998; Pellegrini, 1995). Many children no longer engage in street games or visit parks without adult supervision, limiting another opportunity for peer-initiated interactions. Decisions that devalue time spent playing in the playground do not recognise this as an important time for contact with peers and the social curriculum that exists (Hurni, 2001).

Play often involves physical exercise with benefits that may be more important that just improving physical fitness. Physical exercise interventions have been shown to decrease stereotypy, aggression, off-task behaviour, development, and increase on-task behaviour, academic-responding and appropriate motor behaviour (Lang et al., 2010). Play, physical exercise and leisure activities have benefits which all children, including those with ASD, are entitled to enjoy (Brewster & Coleyshaw, 2010). The most commonly mentioned activities by children with ASD tended to be those confined to the home; watching television, playing in the garden, computer games and PlayStation. Safety issues arose when activities were suggested that required the children to be away from their parents. Many children played alone yet most said they wanted a friend and wanted to play with friends outside school hours (Brewster & Coleyshaw, 2010).

Inclusion in leisure activities parallels the situation in education. Inclusion “means more than simply placing a disabled person in a mainstream school and providing extra support. Inclusion demands major changes within society itself and should not be viewed in a vacuum” (Frecy & Swain, 2004, p.169). Improved access to leisure activities for children with ASD and their families would help young people reach their potential as adults. Future research is needed to document the benefits of play and also raise the profile of this aspect of children’s lives (Brewster & Coleyshaw, 2010).

Children with ASD

In recent years more students with ASD are being educated in mainstream settings rather than segregated environments (White, Scarhill, Klin, Koenig & Volkmar, 2007). In the UK between 1997 and 2001 there was a 16% increase of children with ASD attending mainstream schools (Keen & Ward, 2004). By 2010, the number had increased to 70% of children in England with ASD attending mainstream schools (Education, 2010). The expectation is for increased opportunities for social interaction and play between children with ASD and their typically-developing peers (Anderson, Moore, Godfrey & Fletcher-Flinn, 2004). Despite the increased numbers of children with ASD attending mainstream schools very little research has investigated the experiences of children with ASD and their time in their playgrounds (Ingram, Dickerson-Mayes, Troxell & Calhoun, 2007). Neither has mainstream playground design or equipment been seen as having the potential to increase the frequency of group play and overall social interactions (Yuill, et al., 2007).

Play for children experiencing typical development usually involves some form of interaction with a friend as well as the ability to initiate activities, to share objects and to follow some simple agreed rules without adult intervention. All of these are challenging for children with ASD and unfortunately can often result in social withdrawal, atypical behaviours or one-sided conversations (Marks et al., 1999). The skills to play the simplest game that requires interaction with a peer in the school playground often fill the child with ASD with fear and anxiety (Palmer, 2007). There are many decisions to be made about what to play, how to play, with whom to play and where to play. Active participation in this aspect of the school day is not easy for children with ASD (Brewster & Coleyshaw, 2010).

Children with ASD experience social difficulties, communicative limitations and a restricted range of interests and behaviours. Social rules such as how and when to look at others, how long to wait when responding to a question, making eye contact, greeting or using appropriate language in different contexts present endless challenges (Ingram, et al., 2007; Watson Holton & Andrew, 1998). Communication difficulties include delay or absence of spoken language as approximately 25% of children with ASD fail to develop functional or socially appropriate speech (Osterling, Dawson & McPartland, 2001).

Many researchers remind us that children with ASD are often victims of bullying and the playground is frequently the setting for this unacceptable aggressive behaviour (e.g., Doll & Brehn, 2010; Rowley et al., 2012). When incidents of negativity are reduced, competent social interactions are prompted, peer acceptance is increased, and friendships form and are maintained. This enables vulnerable students to avoid isolation and loneliness so that they can cope and defend themselves and others from intimidating behaviours. Having friends and siblings around may be the biggest deterrent to becoming a target for bullies according to MacArthur and Gaffney.
limited appropriate use of toys and rarely engage in dramatic play including imitation and pretend or social interaction. They need their peers to serve as models in the playground (Hess, 2006). The role of teacher-aides in the playground needs clarifying as their presence and practice can reinforce the notion that children with ASD are needy and different (Anderson et al., 2004). Other studies (Alston & Kilham, 2004; McVittie, 2005) confirm that increased teacher-aide contact can lead to supported students being socially excluded. Employing teacher-aides to track, shadow or protect students with ASD does not always promote their social integration in the playground (Anderson et al., 2004). Their study found that students were rarely encouraged to participate in typical play behaviour or peer interactions and were often discouraged from participating in certain activities (Anderson et al., 2004). Placing the student with ASD during break-time in the library with a computer programme is equally detrimental to gaining skills in social competence. This practice is counterproductive as the more children with ASD are isolated from their peers the more likely they are to develop rigid play routines that lack pretence or social interaction. They need their peers to serve as models in the playground (Hess, 2006).

**Play and Children with ASD**

Impairment in play skills such as symbolic, socio-dramatic play including imitation and pretend play is a well-documented feature of ASD (Lydon, Healy & Leader, 2011). The result is that from a very young age children with ASD may demonstrate limited appropriate use of toys and rarely engage in creative, spontaneous or pretend play (Wolfberg, 1995). Instead they tend to engage in repetitive and ritualistic actions with toys. They may line up toys by shape or colour rather than sharing the action with someone else (Hobson, 1993; Paterson & Arco, 2007; Wolfberg, 1999). This limits their ability to actively participate in their school playground unless some supports and adaptations have been made to the physical environment and decision makers are sensitive to the individual needs of children with ASD.

Compared with other individuals, children with ASD are more likely to have difficulties with motor development including balance, postural stability, gait, joint flexibility, and speed of movement (Lang et al., 2010). In a study that sampled 101 children with ASD across a range of intellectual functioning, 79% had definite movement impairment and another 10% were rated as borderline (Henderson & Sugden, 1992). Deficits may be exacerbated by lack of opportunities to participate in physical activities such as their school playground. Other research shows that children with ASD are actually a special risk group because their sedentary life-style increases the risk of heart disease, diabetes and obesity (WHO, 2002).

The physical environment of the school playground provides valuable steps in a child’s development by contact with nature and with peers (Robinson & Browning, 2011). Educators are reminded of the importance of activities that allow children to climb to develop upper body strength, as well as sliding, swinging, bouncing and spinning structures that are important for vestibular development. Robinson and Browning (2011) support the use of slides, rockers, spring discs and all varieties of swings which can be adapted with straps and cushions for those who need extra support. They suggest that there should be quiet places to which children can escape when they are finding social situations and sensory overload too much. Without somewhere legitimate, children may resort to toilets for security or privacy. To foster independence they like to use signs, cues, interesting pathways and landmarks to identify and provide direction to designated areas. Wheeled toys that need two people to keep them moving help children play together, and to keep friends talking and socialising there are shady benches or log shelters for sitting and watching. An ecological approach such as this, expects that changes will enable the environment to accommodate the child rather than the child changing to fit the environment which is a lingering example of the medical model associating disability with deviance and difference (Oliver, 1992).
The mainstream playground should be a positive learning place for play. Children with ASD need time in the playground as this is where many aspects of language are acquired including non-verbal cues, turn-taking, joint attention and the regulation of behaviours through requesting and other social behaviours (Terpstra, Higgins & Pierce, 2002). More intensive instructional support may be needed but there is evidence that children with ASD can be taught to interact socially with their peers (Campbell, Schopler, Cueva & Hallin, 1996; Green, 1996; Kohler, Anthony, Steighne & Hoyson, 2001; Lovaas & Smith, 1989). In their mainstream school playground they should engage in more adaptive play behaviour, learn through modelling, imitation and observation than in any other setting (Lovaas & Buch, 1997).

Instruction in play skills for children with ASD can encourage social interactions and improve language, social skills and cognitive functioning (Bates, 1979; Dauphin, Kinney & Strommer 2004; Sigman & Ungerer, 1984). The developmental readiness of the child needs to be considered when choosing age-appropriate play activities (Lifer, Sulzer-Azaroff, Anderson & Cowdery, 1993).

A few simple strategies will help inclusion occur naturally:

- The skills to play simple games are taught prior to time in the playground.
- Some specific skills that are required to play popular games that allow interaction with peers are included in Individual Educational Plans.
- Teachers seek opportunities to prepare peers to include the child with ASD in their playground activities (buddy programmes, Circle of Friends, mentoring programmes).
- Forward planning occurs providing for some quiet time activities for the child with ASD who may need solitude as well as social contact.
- Teacher-aides and teachers have shared goals around student independence so that teacher-aides do not get in the way of friendship or interaction opportunities with peers.

Some research has shown that higher levels of play such as symbolic play can be learned. A variety of behavioural techniques have established, increased and improved play skills in children with ASD. Two prominent methods are Pivotal Response Training and Video Modelling (Lydon et al., 2011; Stahmer, Ingersoll & Carter, 2003). Improvements in spontaneous communication and play during free time was noted by Carr and Felce (2007) after only 15 hours of Picture Exchange Communication System (PECS) training. Not only were there changes in the interactions between the students but also their teachers who decreased their pre-emptive communications, increasing opportunities for children to initiate communication. Play with toys and joint attention improved during free play sessions as well as increased social interactions with peers at the schools (Kravits, Kamps & Kemmerer, 2002). Schoen & Bullard (2002) found that seven students with autism who functioned in isolation during the whole recess period noticed the social interaction skills of their peers when teachers prompted them by simply asking ‘What are the other children doing?’ Group games were taught to all students including same-aged peers. This research concludes that interaction between children with ASD and their same-aged peers in the mainstream is essential in developing and fostering social interactions (Schoen & Bullard, 2002). It also confirms that children with ASD, like many other children, can learn to play.

CONCLUSION

School playgrounds have been around since the mid-1800s but they have never been as important in the lives of children as they are today. Play and places to play, physical exercise and socialisation are fundamental for the health, wellbeing and development of all children. The school playground can still provide all children including those with ASD with a unique opportunity to experience feelings of belonging, friendship, acceptance and inclusion. Not only is the school playground a valuable curriculum resource but also the natural context where children, with a little help from their friends, can build a bridge to inclusion. Time in the school playground can seriously test inclusion. Take another look at your playground - does it pass or are there opportunities for development and support?

REFERENCES


AUTHOR PROFILES

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ABSTRACT
It has been 20 years since the Rainbow Reading programme was developed and trialled by its New Zealand creator, Meryl-Lynn Pluck. Rainbow Reading is an audio-facilitated reading programme, and is based on the method of assisted repeated reading. The programme is designed to provide older students reading below their chronological age with the opportunity to practise their fluency and comprehension at their instructional reading level. This article sets out to review the programme, drawing on the research evidence to evaluate Rainbow Reading’s validity and reliability as a reading intervention for use by educational practitioners in the New Zealand education context. Possible strengths and limitations of the programme are identified, and future directions for the programme are put forward. While the article concludes by suggesting some caution with regard to its use, it is evident that the effectiveness of an intervention such as Rainbow Reading is underpinned by practitioners taking an evidence-based approach in their professional practice.

Research Paper

Keywords: Audio-facilitated reading, evidence-based intervention, Rainbow Reading, repeated reading

INTRODUCTION
This year signifies the twentieth anniversary of when the Rainbow Reading programme was first developed and trialled in 1993 by its creator, Meryl-Lynn Pluck, a Resource Teacher of Reading (RTR) from the Nelson region of New Zealand (Pluck, 1995). Based on the technique of assisted repeated reading, Rainbow Reading is an audio-facilitated reading programme. According to Pluck (1995; 2006) the programme was developed in response to the significant number of referrals received by the RTR in Nelson from schools requesting assistance for students who were underachieving in reading. As Pluck (2006) states, the programme “would need to reach readers at a ‘rainbow’ of levels” (p.193); hence its name – Rainbow Reading Programme.

Given this 20 year milestone, it is therefore timely to review the programme, and to evaluate its validity and reliability as a reading intervention for use by educational practitioners with students in New Zealand schools. In order to undertake this review, the article first provides an outline of how the Rainbow Reading programme is used in the school setting, including its purpose and relationship to key government documents, such as The New Zealand Curriculum and Success for All – Every School, Every Child (Ministry of Education (MOE), 2007; 2010a). The article then investigates the evidence base that underpins the programme through examining relevant theory and research, before moving on to discuss the expected outcomes for students using the programme. This discussion provides the context for identifying possible strengths and limitations of it. The article concludes by addressing the question of ‘Where to next?’ for Rainbow Reading, considering future directions for the programme.

What is Rainbow Reading? Its Purpose and Use
The Rainbow Reading programme is divided into eight colour-coded levels, ranging from the Silver Level (reading age of 5 - 5.5 years) through to the Purple Level (reading age of 11-12 years). Each level contains a set of 20 books, with each book accompanied by an audio CD or MP3 audio file of the text, and text-related activities, such as cloze (text completion), word search and writing activities (Rainbow Reading Programme Ltd., 2013a).

The purpose of the programme is to meet the needs and interests of older, struggling readers at the primary, intermediate and early secondary school levels through providing them with the opportunity to practise their reading fluency and comprehension at their instructional reading level, thus developing the

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1 The Rainbow Reading programme has been commercially available in New Zealand since 1995 (Nalder, 2002).
Rainbow Reading is designed to complement (rather than replace) existing class reading programmes, and is “most effective when introduced as part of the regular reading programme” (Pluck, 2002, p.5). Dowhower (1994) argued that such assisted repeated reading techniques should not be used in isolation, but integrated into daily literacy instruction. However, according to Pluck (2002) a teacher-aide can also manage a group of students using the programme by withdrawing them from their classroom for daily practice or supervising them within their classroom. This raises the issue of the extent to which the programme facilitates inclusion in the classroom environment.

In order to support the implementation of the Rainbow Reading programme, a teacher’s manual and training DVD are available. However, there are three factors educational practitioners need to address before implementing the programme – identifying how the programme will be organised (i.e. integrated as part of the class reading programme or used as withdrawal); setting up a box for each level that contains the necessary equipment and materials (e.g. CD players, headphones, batteries, books, audio CDs, text-related activities), and establishing the student’s starting level on the programme (Pluck, 2002). Once these factors have been addressed, there are four steps involved in running the programme: 1. ‘orientation’ of the book with the tutor (i.e. teacher or teacher-aide); 2. ‘reading practice’ using the book and audio CD; 3. ‘reading alone’ with the book; 4. ‘conferencing’ with the tutor (Pluck, 2002). Depending on the outcome of the conference, the process begins again with a new book at the student’s level. It is recommended that students practise on the programme for 30 minutes five times a week, for approximately ten weeks (Pluck, 2002).

While Rainbow Reading was developed nearly 15 years prior to the current primary and secondary school curriculum, the programme remains relevant to The New Zealand Curriculum document in two areas (MOE, 2007). The first area is that of the key competencies such as ‘using language, symbols and texts’ and ‘managing self’ (MOE, 2007). Pluck (2006) believes that the programme aims to foster independence through allowing students to make decisions with regard to their reading, such as when to ‘read alone’ or to ‘have a conference’. This relates to the key competency of ‘managing self’, which is associated with self-motivation and students seeing themselves as capable learners (MOE, 2007). Such a view also aligns with the Government’s Success for All – Every School, Every Child, whereby the vision is to “foster confident children”, (MOE, 2010a, p.1), with schools and teachers understanding that students learn at different rates. However, at a deeper level, the Rainbow Reading programme could be seen to be in conflict with Success for All’s plan to “achieve a fully inclusive education system” (MOE, 2010a, p.1), as the issue has been raised of the extent to which the programme promotes an inclusive learning environment.

The second is the learning area of English (MOE, 2007). According to The New Zealand Curriculum, through engaging with text-based activities, students become increasingly skilled and sophisticated speakers and listeners, writers and readers, presenters and viewers (MOE, 2007). In effect, the Rainbow Reading programme supports this aim of the English curriculum through the students listening to books on audio CDs, viewing the illustrations and text features in the books, reading the books independently or to a tutor, and undertaking text-related activities.

Further to the curriculum, the programme also links in with The Literacy Learning Progressions (MOE, 2010b). The progressions alert teachers to what students need to know and be able to do in reading and writing at specific points in their schooling from Years 1 - 8 (MOE, 2010b). Through using the progressions to monitor student progress in reading, Rainbow Reading could be employed as a preventative intervention. As Nalder (2002) advocates, a programme such as Rainbow Reading should be used not for remediation once students have fallen notably behind their peers, but rather for the prevention of reading difficulty. Such an argument sits within the Response-to-Intervention (RTI) model, which Reynolds, Wheldall and Madelaine (2011) perceive as a preventative approach in relation to reading difficulties. Tunmer and Greaney (2010) also recognise that an RTI model can be used as the basis for providing differentiated instruction to improve the educational outcomes for at-risk readers.

Where does Rainbow Reading come from? The Evidence Base

The Rainbow Reading programme is embedded in
constructivism whereby students play an active role in their learning and, more specifically, draws on Vygotski’s Zone of Proximal Development (ZPD) (Eggen & Kauchak, 1999). The technique upon which the programme is based, that of assisted repeated reading, allows students to work within their ZPD and provides the scaffolding that enables them to successfully move beyond the point at which they are able to work independently (Kuhn & Stahl, 2000). In this respect, students are scaffolded in their reading through listening to a book on a CD at their instructional reading level, before deciding that they are able to read the book well without audio support and to have a conference with their tutor (Pluck, 2002).

Assisted repeated reading is a form of repeated reading which is a method that emerged out of automaticity theory (Dowhower, 1994; LaBerge & Samuels, 1974, cited in Samuels, 1997). According to Samuels (1997), automaticity theory is when a fluent reader decodes text automatically, “leaving attention free to be used for comprehension” (p.379). However, automaticity theory does not attend to reading with expression and phrasing, which Kuhn and Stahl (2000) argue is an important aspect of reading fluency. Developing fluency requires practice, which “is where a technique such as assisted repeated reading comes in” (Rasinski, 2004, p.48). It is repeated reading with a model – this model can be an adult, a more proficient peer, or an audio CD (Chard, Vaughn & Tyler, 2002). However, there has been debate as to the effectiveness of assisted repeated reading that is audio-facilitated. In their meta-analysis of research on interventions for building reading fluency with students, Chard et al. (2002) state that repeated reading with a model is more effective than repeated reading with no model, but that audio-facilitated reading is not as effective as using an adult as a model. Such a view had already been espoused by Dowhower (1994), who argued that assisted repeated reading techniques that involve a student silently reading a text while listening to an audio CD do little to increase their overall fluency and comprehension. Yet, as Bircham, Shaw and Robertson (1997) identified, research conducted in the way of controlled studies demonstrating the efficacy of audio-facilitated reading programmes was limited.

In their review of research on fluency instruction, Kuhn and Stahl (2000) identified research by Chomsky in 1976 as the first to demonstrate measurable gains using audiotapes for assisted repeated reading. After ten months of working with five 8-year old students identified as reading below their chronological age, Chomsky found the students averaged a six-month gain in fluency and 7.5 month gain in comprehension (Kuhn & Stahl, 2000). In a different audiotape-based study, Carbo in 1981 worked with eight ‘learning disabled’ students in reading over a period of three months, and reported that the students demonstrated an average gain of eight months in their reading ability (Kuhn & Stahl, 2000). A further study by Shany and Biemiller (1995) of 29 third- and fourth-grade ‘poor readers’, which took place in Canada over a 16-week period, involved the students being divided into three groups: two experimental groups - one received practice in reading with teacher assistance and the other received practice while listening to an audiotape; and a control group - these students only received regular classroom reading instruction (Shany & Biemiller, 1995). The results showed that gains in reading fluency and comprehension in the experimental groups exceeded those in the control group, and that the group that practiced using an audiotape also had higher scores on listening comprehension (Shany & Biemiller, 1995). Such results are supported by Bircham et al., (1997) who, in their study of 27 eight to nine year olds in Scotland, found that using audio-facilitated reading was “as effective as teacher-led language-based activities” (p.184).

While the above research studies have been conducted in North America and the United Kingdom, in the New Zealand education context, a study was undertaken prior to the development of Rainbow Reading that compared an audio-facilitated reading programme with peer tutoring using the Pause Prompt Praise technique (Medcalf, 1989). The study took place over eight weeks and involved ten ‘low progress readers’ ranging in age from 9 - 11 years. The average gain for students using the audio-facilitated reading programme was 1.4 years, while the average gain for tutors and tutees on the peer tutoring programme was 2.5 years. However, those using the audio-facilitated programme made the greatest gains during the follow-up phase at six weeks, with an additional gain of nine months compared to two months for the students on the peer tutoring programme (Medcalf, 1989).

What are the Expected Outcomes for Students? Possible Strengths and Limitations

The expected outcomes of the Rainbow Reading programme are to raise students’ instructional reading age and, more specifically, to improve students’ reading accuracy, fluency and comprehension of practiced texts (Nalder, 2002; Nalder & Elley, 2003).

A total of four research studies have been undertaken on the programme within the New Zealand education context (Langford, 2001; Nalder, 2002; Nalder &
Elley, 2003; Piper, 2009; Pluck, 1995), while three studies have been conducted overseas – in Australia1, America and the United Kingdom (Lesnick, 2006; McGraw Hill School Education Group, 2012; Wheldall, 2000). All of the New Zealand studies, as well as the overseas case study undertaken in the United Kingdom, showed that the majority of students using the programme made positive gains in their reading age (Langford, 2001; McGraw Hill School Education Group, 2012; Nalder, 2002; Nalder & Elley, 2003; Piper, 2009; Pluck, 1995). For example, Pluck (1995) reported average gains from 2.2 to 4 years in reading age, Langford (2001) recorded an average gain of 1.2 years per student, while Nalder (2002) and Nalder and Elley (2003) reported gains of 2.2 years. However, such results should be treated with caution because as Kuhn and Stahl (2000) point out in their review of research on fluency instruction, while students may be “ahead of where they started” (p.9-10), they could still be behind in reading for their age. In this respect, the overseas studies undertaken in Australia and America, which both used control groups, found that the programme did not add value to an existing intensive literacy intervention programme (Wheldall, 2000), and had no significant impact on student fluency and comprehension (Lesnick, 2006).

However, of concern is the evidence encountered to support the effectiveness of the Rainbow Reading programme, which could be questioned in terms of its validity and reliability. None of the New Zealand research studies used control groups to measure the effectiveness of the programme objectively, and they also involved small groups of students (from 10 to 43), across a range of year levels (from Years 2 to 10). The length of these studies also varied, ranging from 8 to 32 weeks, and the extent to which the expected outcomes for students can be attributed solely to the programme is tenuous as the New Zealand studies did not consider the impact of the students’ regular in-class reading programme in relation to the Rainbow Reading programme. Moreover, all the studies undertaken on the programme in the New Zealand education context used Rainbow Reading in a withdrawal model, which brings into question, as mentioned previously, the inclusive nature of the programme (Langford, 2001; Nalder, 2002; Nalder & Elley, 2003; Piper, 2009; Pluck, 1995). Thus, it is how the Rainbow Reading programme is implemented that will illustrate whether it facilitates inclusion.

Needless to say, there are both strengths and limitations to the Rainbow Reading programme. One of the main strengths is that it scaffolds students in their reading, supporting them to move through the ZPD. This is because the programme is based on the technique of assisted repeated reading which enables the student to attend to different aspects of the text during each re-reading, such as word accuracy, expression or comprehension, thus increasing student control over the text and fostering fluency, comprehension and confidence (Pluck, 2002).

The programme is also learner-centred and encourages student independence (i.e. the key competency of ‘managing self’) through enabling students to retain an element of ownership over their reading and learning (Pluck, 2006). The programme allows students to make decisions with regard to their reading, such as when to ‘read alone’ or to ‘have a conference’.

Moreover, the content of the books is a mix of fiction and non-fiction and covers a wide variety of topics/themes in order to maintain student interest, particularly the interests of older students (Pluck, 2002). As Abadiano and Turner (2005) argue, student motivation and the type of materials used to motivate repetitive readings “play a prominent role in developing fluency” (p.55).

A final strength of the programme is that it is produced in New Zealand and, as such, not only links in with The New Zealand Curriculum (MOE, 2007), but the materials developed use New Zealand voices on the audio CDs and topics/illustrations relevant to New Zealand society (Pluck, 2006). However, this final point should be treated with caution, as it raises the issue of what does this New Zealand society ‘look like’, including whose beliefs and values are represented and whose interests are being served.

One of the most significant limitations of the programme is that it is expensive to purchase. While the programme is reusable, the cost of purchasing a set of 20 books and 20 audio CDs in a display box is NZ$430 (including GST) per level (Rainbow Reading Programme Ltd., 2013a). Hypothetically, a full primary (Years 1-8) may potentially need to purchase at least six levels, which is an initial total cost of NZ$2580 (including GST). However this price excludes CD players, headphones and batteries, which would also need to be purchased in order to implement the programme effectively. Moreover, there is the cost involved in maintaining the programme, such as replacing damaged books, and if a school chooses to employ a teacher-aide to run the

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1 Nalder (2002) and Nalder and Elley (2003) are readings on the same research study conducted on the Rainbow Reading programme in New Zealand. Their study was later published in Reading Forum NZ in 2004 (Pluck, 2008).
2 Pluck (2006, p. 199-200) refers to a study on the Rainbow Reading programme that was undertaken in 2001 at an intermediate school in Dunedin. However, this study is unpublished, and the decision has therefore been made not to include this study in the article.
3 The American study is of the New Heights programme, which is the American version of the Rainbow Reading programme (Lesnick, 2006).
From 2003-2005, Meryl-Lynn Pluck worked with Learning Media to develop Te Huinga Raukura – an audio-facilitated programme based on the same formula as Rainbow Reading, and across different levels of the compulsory school research studies of the programme undertaken. This involves robust, independent and controlled programme within the New Zealand education is that the effectiveness of the Rainbow Reading programme. One of the primary considerations for the future improving students’ instructional reading age.

Where to Next? Considerations for the Future

One of the primary considerations for the future is that the effectiveness of the Rainbow Reading programme within the New Zealand education context needs to be investigated more thoroughly. This involves robust, independent and controlled research studies of the programme undertaken across different levels of the compulsory school sector. Results should be published in internationally refereed journals in order to illustrate the validity of the research and extend the programme’s evidence base.

It is also important that the cost of purchasing the programme remain economically viable in order that schools and students from a diverse range of contexts (e.g. small/large schools, schools in rural/urban locations, low/high decile schools) can access the programme. The option of purchasing a disc of 20 MP3 audio files to accompany the books at each level is available for $185 (including GST – as opposed to a set of 20 audio CDs for $240 per level), which raises the issue of whether these files could be downloaded directly from the Rainbow Reading website in order to reduce costs further (Rainbow Reading Programme Ltd., 2013a).

Finally, consideration needs to be given to how the programme is implemented so that it is not used solely as a withdrawal programme for those students who are reading below their chronological age. The process for implementing the programme should address whether it can be effectively integrated into existing class reading programmes by teachers in a way that is ecological and promotes inclusion.

This raises the issue of whether it is possible to incorporate a form of peer tutoring into the Rainbow Reading programme, adapting the programme so that students are trained in the role of ‘tutor’. The programme draws on the same technique at the conferencing step of the process that Medcalf (1989) used in his comparative research study, that of Pause Prompt Praise (Medcalf, 1989; Pluck, 2002). Perceived as an inclusive educational practice, peer tutoring is effective in increasing the academic achievement and social interactions of a diverse range of students (Medcalf, Glynn & Moore, 2004; Mitchell, 2008).

CONCLUSION

Through undertaking this review of the Rainbow Reading programme 20 years on, which has involved considering its strengths, limitations and future directions, it could be argued that its use, as with any educational intervention, should be treated with some caution. This is because the article has raised concerns regarding the ‘robustness’ of the research conducted on the programme, the extent to which it promotes inclusion, and the financial cost of the programme.

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5 From 2003-2005, Meryl-Lynn Pluck worked with Learning Media to develop Te Huinga Raukura – an audio-facilitated programme based on the same formula as Rainbow Reading, and designed for use with students in Maori-medium schools and Maori-immersion classes who are learning to read, write and speak in Maori (The Nelson Mail, 2004).
While Rainbow Reading can be used with older students at the primary, intermediate and early secondary school levels who are reading below their chronological age, it is the students’ needs that should be primarily taken into account. Thus, educational practitioners need to consider why they are choosing to use this programme – What purpose will it serve? Do they believe that the programme will help facilitate achievement of the goals planned for the student(s) concerned? As Annan (2005) argues, practitioners cannot simply determine the applicability of an intervention by attempting to match it to a context in which the intervention may have previously been successful. The decision of whether to use an intervention such as Rainbow Reading should be based on integrating best evidence with practitioners’ professional knowledge and judgement, and with the preferences and needs of the student(s).

REFERENCES


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Somali Students’ Perceptions of a New Zealand Primary School

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ABSTRACT
Cultural diversity is growing in New Zealand and deserves to be celebrated for the richness and opportunities for understanding it brings to our lives. Culturally-responsive approaches to education accept diversity and enable students to draw on their unique cultural capital as a learning resource. The aim of this study was to contribute to the literature in this area by finding out what Somali students in a New Zealand primary school think about their schooling: the aspects of school which challenge or support their cultural identities. Three nine and ten year-old Somali students attending a primary school in the Greater Wellington region participated in focus groups. Open-ended questions were used to elicit their perspectives on pedagogical approaches and their interactions with their peers and teachers. The students identified numerous positive aspects of their school lives, including strong friendships and autonomy in the classroom, yet revealed that bullying is an on-going issue, for themselves and other students, in and out of school.

INTRODUCTION
New Zealand, like many other nations, features a multicultural society whose diversity continues to grow with the popularity of migration. This diversity can easily be seen in schools where many children, both born in New Zealand and abroad, are not from the European background from which the school system was originally derived. Educational environments which fail to affirm students’ cultures or require them to operate in conflict with values and norms taught at home may prevent students from experiencing academic and social success (Bevan-Brown, 2003; Gay, 2003; Milner, 2010). Culturally-responsive teaching approaches, which tap into students’ knowledge of their own cultures (Au, 2009), are increasingly being adopted to improve educational equity across cultures. Hearing from the students themselves can help to assess the responsiveness of our education; as to date there is only a limited amount of research on the perspectives of students from cultural minority backgrounds.

LITERATURE REVIEW
Reviewing studies which collected and analysed the perspectives of students from cultural-minority backgrounds highlighted a need for empirical studies involving smaller but growing populations in New Zealand. Somali students in particular were recognised as facing a large number of challenges due to their refugee backgrounds and cultural differences from most New Zealanders, in addition to challenges common to their age group (Bihi, 1999). As Somalis were both the first African and the first Muslim group to migrate to New Zealand (Beaglehole, 2011) when they arrived in the 1990s, religious support would have been scarce. Poole, Cheema and Thorburn (2011) identify numerous stressors which refugees face including being forced to relocate, having no time to prepare, being unable to bring belongings, farewell friends, or return to their home countries. Traumatic experiences of loss and war are likely to have compounded their difficulties.

While there are many differences between cultural groups, Bishop and Glynn (1999) claim all minorities may experience “enforced assimilation and cultural denial” (p. 52). Due to the scarcity of research involving Somali students, studies which investigated the perceptions of other cultural minority groups were also accessed. In New Zealand, four studies involving the perceptions of students from cultural-minority backgrounds were located. They all involved high school students: two studies with Somali students; one with Māori students; and one with Pasifika students. Burford, Hammonds, Morton and Clark (2008) sought the views of Somali youth with refugee backgrounds living in Wellington, and Humphage (2009) conducted similar work in Christchurch. Both studies found that the students faced many challenges at school.
including other students’ and teachers’ lack of cultural awareness, and school rules which were unresponsive to their cultural needs. In the study by Humpage (2009) Somali students had to choose between sitting important tests on Friday afternoons or attending the mosque for prayers. They were frustrated that the school was described as secular, yet scheduled around the Christian holy days, such as Sundays, Easter and Christmas, whilst inflexible to their religious schedule.

The perspectives of Ma‘ori students were gathered in the on-going national Te Kotahitanga project, revealing inconsistencies and misinterpretations between teacher, student and wha’au perspectives (Bishop, Berryman, Tiakiwai & Richardson, 2003). Siope’s (2011) work gathered the perspectives of Pasifika students and compared them to her own experiences as a student in the 1970s. Siope found that, similar to her own experience, Pasifika students’ lives outside of school were very separate and disconnected from their classroom learning, in spite of the shift towards culturally-responsive education.

The international research reviewed involved cultural minority participants from primary and secondary schools living in Australia (Dodds et al., 2010), the US (Howard, 2001; Oikonomidoy, 2009; Rodriguez, Ringler, O’Neal & Bunn, 2009), Canada (Zine, 2006), England (Kahin, 1997), Norway (Alhassan & Bawa, 2012) and Finland (Alitolppa-Niitamo, 2004).

Negative experiences, such as racism and discrimination (Alhassan & Bawa, 2012; Zine, 2006), confusion around school systems (Burford et al., 2008), and unmet educational needs (Alhassan & Bawa, 2012; Humpage, 2009; Kahin, 1997) were reported with greater frequency in all studies involving high school students compared to those with primary school students. This could be due to increased perceptiveness (Sakka, 2009) and self-consciousness of older adolescents, but perhaps more significant, is the reality that more of these students were refugees or first generation migrants, meaning that they had had less time to adjust than second generation migrants or children of refugees.

In contrast to the many negative experiences of high school students from cultural minority backgrounds, an Australian study (Dodds et al., 2010) found that on average, Somali primary school students rated themselves on a Likert scale as feeling happier about attending high school than non-Somali children. This was in spite of rating their need for various resources (“schoolwork, personal, social and financial”), (p. 523) as higher than non-Somali participants from both socio-economically disadvantaged and advantaged backgrounds. Other studies have also found primary school students from cultural minorities to have positive perceptions of school. Rodriguez and colleagues (2009) compared the perceptions of English Language Learners (ELLs) with those of monolingual students. They found that ELLs’ perceptions were just as positive if not more so than monolingual students’ perceptions. In Greece, Sakka (2009) compared the perceptions of migrant and non-migrant primary school students and found that perceptions were generally positive but less so for fourth and fifth grade students compared to younger students. Howard’s (2001) investigation with African-American students identified themes around students’ perceptions of successful classes, including caring teachers, a community feel and entertaining lessons.

The few studies which have investigated Somali students’ experiences or perceptions of school in New Zealand focused on high school students. Given the importance of research in a local context and the discrepancies between primary and high school students, a New Zealand-based, qualitative study with Somali primary school students was seen as addressing a gap in the literature.

Research Question

What are the perceptions of Somali students about their experiences of pedagogical approaches, teacher and peer interactions in a primary school in New Zealand?

METHODOLOGY

Qualitative research was chosen to explore this topic due to the lack of previous research conducted with this population. Quantitative methods such as administering questionnaires would have involved framing questions and creating pre-determined responses about the assumed issues for these students. In contrast, asking open-ended questions gave the students the control to raise the issues which they deemed to be more important, which the researcher may not have anticipated (Vaughn, Schumm & Sinagub, 1996). Vaughn and colleagues discuss several benefits of focus groups which led to their selection. Participants’ thinking and responses can be stimulated by the views shared by other group members. This allows a large amount of rich information to be collected in a short period of time. Furthermore, it was thought that the presence of peers in a group would offer a less intimidating situation than one-to-one interviews; making it more comfortable for the young participants (Vaughn et al., 1996). In addition, collecting spoken language meant that the information offered was not limited by the participants’ levels of literacy.

Teachers of Year 4-6 students in the selected school
approached Somali students in their classes to gauge their interest in participating in the study. The parents and caregivers of those interested students were invited to an information afternoon at the school where the research was explained to them orally in English and Somali languages. Written consent from the students’ parents or caregivers was also sought and only those students who returned signed consent forms became the participants.

The participants were three female Somali students, aged nine to ten years old in Years 5-6. The students had attended their current contributing primary school since they were five years old. Prior to attending this school, they attended the nearby kindergarten. The students were thought to have been born in New Zealand, however this was not probed due to the potential for such questions to evoke traumatic memories for caregivers or students (Dodds et al., 2010).

Two focus groups were held on the school grounds and the audio was recorded. After each focus group session, the recording was transcribed, and then a ‘member checking’ session was held to ensure that the points captured reflected how the participants felt. In each session, signed assent was obtained after the participants’ rights and the group rules had been explained or revisited. The transcripts were analysed using NVivo 10 software and constant comparison analysis (Glaser & Strauss, 1967), which involves coding responses according to underlying themes. Each new piece of text was compared to the existing categories and their contents, which allowed the themes to evolve. Inter-rater reliability was obtained by having a second researcher examine five categories and the references they contained.

As a Pākehā researcher, my research question and investigation were developed through a cultural lens which differed from that of the participants. Consultations with a Somali cross-cultural community worker and academic supervisor were held in an attempt to minimise the risks of making assumptions and being culturally insensitive.

DISCUSSION OF FINDINGS

The findings are discussed in relation to the literature under five interrelated categories which arose during thematic analysis: cultural identity and challenges; home-school connection; pedagogical approaches; perceptions of peers and interactions with them, and current and future perceptions of school. Though the research question was specifically around pedagogical approaches and peer interactions, the focus group probes were open-ended which resulted in the above themes.

Cultural Identity and Challenges

The students portrayed their cultural identities by excitedly sharing their cultural knowledge and experiences, for example, describing how they spend time during Eid. Somali students’ pride in their culture was also observed by Kahin (1997). The participants in the current study also spoke of other cultures in the school and some of the cultural differences they had noticed. The participants articulated some challenges in identifying with their cultures and carrying out their religious practices within the context of their school. One student said “We don’t pray here cos there’s, there’s nothing, like you need this like a little rug and then you pray … and there’s no rugs here so”. Another student said “They tease us about our culture, they think, like they say really racist things they even say swear word” [sic]. Zine (2006) and Humpage (2009) have speculated that the visibility of the hijab¹ makes female Muslim students an easy target for bullies, and given that the three participants wore hijabs, this could be a factor in their experiences of being teased. Of the two students who reported being asked to talk about Eid in class, one student relished the experience but the other participant reported that she did not enjoy it as she had been teased about it.

Home/School Connection

When asked to describe the good behaviours expected at home and how they differed from school, all three participants claimed there were no differences apart from sometimes having to speak Somali and Arabic at home. This could indicate that these students’ home lives are well-aligned with school. Another possibility is that they are not able to perceive or articulate nuances in expectations. The participants also offered plentiful indications of their families’ support and interest in their schooling. They generally portrayed their families as being well-connected with the school and knowledgeable of systems, which is not surprising given they had attended the school since they were five years old. This differs from other research in which the participants had arrived as teenage refugees after disrupted educations or none at all (Humpage, 2009) and felt embarrassed about their poor understanding of the way school worked (Burford et al., 2008). One student in the current study described parental expectations for dressing: “Well it’ll be good if you wear a skirt ... a long one, but if my Mum, she doesn’t force me to do it, but I just like wearing it ... and

¹ Scarf worn over head to cover hair and shoulders.
Pedagogical Approaches

All three students clearly described the behavioural expectations of their teacher and the classroom rules. The students were aware of consequences for misbehaving or not doing their work. They referred to the ‘violent list’, which was their term for the names the teachers wrote on the board as a warning. “Yeah be responsible and not irresponsible because um like they’re like on the violent list like naughty like 7 times”.

The participants’ responses revealed access to and enjoyment of an array of sports; swimming during the warmer months; and life skills through the Life Education Trust. The participants made many positive comments about classroom activities, implying that lessons are engaging: “Sometimes the teacher got some ideas, like, she brings she brings a toy to school, like her old toys. And she puts it in places, like she puts it in a jungle or in a forest … she puts like a dinosaur. And you have to write a story about that” [sic]. “...And then the next day we had to bring our own toys. And like we had to choose a partner and then we had to take pictures and then we had to print them ...”.

The participants described a few ways that their teachers helped them to learn, such as guiding them through the necessary steps to solve a maths problem, providing the answer and prompting them to work backwards, and encouraging them to sound out words phonetically when reading. Similar to Howard’s (2001) theme of entertaining lessons, the students identified the incorporation of games as being important to their engagement in a subject.

The participants claimed ‘hard’ work, teachers being too busy, and a lack of writing games to be barriers to their learning. It is unclear whether instructional mismatches existed, however the students did not seem disheartened and even appeared to take pride in the fact that they were assigned difficult work. Despite two of the students identifying writing as their least favourite subject, they all declared a love for writing fairy tales.

Aligned with Howard’s (2001) theme of caring teachers, all the participants described their teachers in positive terms; expressing admiration for their appearance, kindness, and the way they ran their classrooms. A prominent theme was the decisions their teachers allowed them to make; for example, they proudly reported decision-making power in the planning of a disco, a school trip and scheduling their breaks. This provides a stark contrast against Alhassan and Bawa’s (2012) study in which high school students from cultural minorities reported that their teachers were ineffective against racism; did not help them with their schoolwork; and failed to promote a sense of belonging.

As with Howard’s (2001) study, the strategies which students identified as successful were not related specifically to these students’ cultures. Instead, in the current study, the students’ emphasis on their ability to make decisions regarding their learning activities creates the impression that students could tailor opportunities to their culture if they so desired. This control is likely to have impacted positively on the students’ self-esteem, motivation and trust (Deci & Ryan, 1987; Ryan & Deci, 2009).

Peer Interactions

The participants’ answers to questions about their peers offered a spectrum from bullying at the negative end to strong friendships at the other. The students’ reports of bullying portrayed it as a chronic, pervasive and resistant problem, which was not limited to the school grounds: One student told of a violent incident which had occurred in her neighbourhood. It is possible, however, that the students could have over-generalised the meaning of bullying (as they do with ‘violent’), or there may have been ambiguity over definitions (Mattioni, 2012). The quote below was given as an example of bullying and being violent: “Well they umm act like cool they go they walk around and go ‘wassup?’ and then they go oh then the little kids walk in they swear and go shut up, we weren’t even talking to you. Some then they teased a little kid and the little kid just starts to crying” [sic].

It is also important to note that, while the participants report themselves to be targets of bullying because of their culture, they also identified other differences that attracted teasing. “About our culture, about our what kind of colour our skin is”. Another student said, “They tease how wide you are or skinny”.

The students contradicted themselves by sometimes claiming they were bullied a lot and other times downplaying it, possibly because of perceived stigma. Their responses align with Verkuyten and Thijs’ (2002) finding that members of disadvantaged groups report bullying to occur to other members of their racial group more than themselves.

The participants’ most common responses to bullying were withdrawing and telling their teacher or parents. However, one student was adamant that she did not report bullying to the teachers because it meant she was ‘tattle tale’. Consistent with other research (Crozier & Dimmock, 1999; Larochette, Murphy &
Craig, 2010), the students’ answers suggested that they would retaliate on some occasions. “Like if someone, if someone makes fun of my um um that boy’s culture [pointing to a boy outside] he um [what boy?] the guy outside umm [name withheld], you’d make fun of their culture”.

The classroom was reported to be free of bullying because of the presence of the teacher. Drawing on Verkuyten and Thijs’ (2002) finding that bullying was reduced when students saw that teachers took action against it, this may suggest that the teachers handle bullying effectively when they are aware of it.

One student offered a reason why the bullying occurred and what might be done to stop it: “I know what, [needs to happen for bullying to stop] maybe, maybe, they’re bullying just because they feel bad about themselves, and they wanna just umm put it on other people. They’re getting their anger out on other people ... like sort the problems out with that person”.

The participants had plenty of positive comments about their peers too. Despite the talk of bullies, they all described the other children at school as ‘nice’ and depicted school as a very social place, with friendships being one of their favourite things about school. This is similar to Oikonomidoy’s (2009) discussion of a ‘sisterhood’, except in her study, the group of friends consisted exclusively of Somalis, whereas in the current study, the participants’ friends included students from other cultural backgrounds. They were portrayed as allies against bullies, entertaining, and helpful with school work. The participants discussed a range of variations between themselves and their friends, such as race, ancestral heritages, looks, and styles, with an easy-going acceptance: “Yeah I got a friend, she’s punk [...] and another friend who’s goth. Her name’s [name withheld]. And [name withheld], she’s just normal”. “Well she’s Samoan and I’m Somalia ... and ... she’s a tomboy so she acts she’s like a tomboy”.

Perceptions of Schooling: Current and Future

When asked, the participants voiced some negative aspects of school, such as crowdedness, boredom and bullying. Comments about their older siblings’ experiences suggested that the participants perceived bullying to be a concern at every school. Despite this, aligned with research by Oikonomidoy (2009), Dodds et al. (2010) and Rodriguez et al. (2009), the students expressed positive feelings for school throughout the focus groups, frequently talking of friends and their enjoyment of sport, expressing pride in their school and work, and conveying a sense of mutual respect between teachers and students. As in Howard’s (2001) study, there was a sense of community, gained through observations such as the students addressing teachers by their first names, talk of community members taking care of each other, student reports of ‘working together’ to plan events and seeing their friends at the mosque.

When asked about attending intermediate school, the students voiced some apprehension about physical education, highlighting a palpable discrepancy between their enthusiasm for sport now and in the future. This uneasiness could be a result of uncertainty about how they will handle conflicting ideals and expectations, particularly around dress and interacting with the opposite sex, as they get older and Islamic protocol gets stricter (Humpage, 2009). The Somali high school students in Humpage’s study (2009) reported that playing co-educational sport was uncomfortable for them, as they would not normally socialise with the opposite sex, unless family, from 15 years of age.

Having relatives at intermediate and knowledge about how intermediate works gave these students reassurance about attending a new school. The expectation of new friendships was also cited as appealing. As with the students in Dodds et al. (2010) study, these students had high self-efficacy for succeeding at school in the future.

Limitations of the Study

The perceptions shared in this article belonged to three female Somali primary school students who had spent the majority, or all of their lives, in New Zealand. Limitations include the absence of perspectives from male students, students who had themselves arrived as refugees in New Zealand, other students and teachers. It is also important to acknowledge that students and parents who had had positive experiences at school may have been more inclined to participate.

Future research could address these limitations by including data collection from alternative perspectives and sources to gain a more complete picture. Longitudinal research to investigate the changes in Somali students’ perceptions over time could shed light on how acculturation and development occur concurrently and this information could assist teachers in delivering culturally-responsive education.

CONCLUSION AND IMPLICATIONS FOR PRACTICE

The purpose of this study was to contribute to the literature on culturally-responsive education by identifying aspects of school that challenge or support the cultural identities of Somali primary school
students. The positive aspects of responsive pedagogy identified in this study were the teachers' abilities to communicate clear expectations and approachability, prepare and present appealing lessons and provide opportunities to develop independence. In terms of peers, strong friendships were perceived to be a significant support to these students. The most challenging aspect of school was perceived to be bullying, in the form of verbal teasing. Sakka (2009) suggests that such problems require an open forum for discussion about diversity, with the goal of increasing understanding and fostering tolerance for the psychological wellbeing of all students.

Somali students may need to navigate situations at school in which the norms are in conflict with their cultural beliefs and practices, particularly as they enter adolescence. Ensuring all students are provided with adequate information about the schools they are transitioning to could allow them to prepare for such challenges. Further research could be useful for identifying ways to support Somali students in maintaining their values without compromising social and educational opportunities.

REFERENCES


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**AUTHOR PROFILE**

**Heather Smyth**

Heather Smyth is a full time educational psychology student with a background in teaching English as a second language and recruitment. She conducted this research in completion of her Master in Educational Psychology degree and is currently enrolled in the educational psychology internship programme.

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ABSTRACT
The purpose of this journal article is to investigate evidence-based practice (EBP) or He Ritenga Whaimōhio, as one of the seven principles outlined in the Resource Teacher: Learning and Behaviour (RTLB) Toolkit (2011) that guides RTLB practice; and to critique the principle of EBP through practical reflection.

Research Paper

Keywords: Evidence-based practice, reflection, RTLB Toolkit

WHAT IS EVIDENCE-BASED PRACTICE?
Evidence-based practice (EBP) is defined as the selection of clearly defined interventions or teaching strategies with the best empirical evidence (shown to bring about desired outcomes) regarding efficacy which are implemented with consideration of a delineated population of students and their best interests (Digennaro Reed & Reed, 2009; Mitchell, 2008; Mitchell, 2010). The selection of an EBP requires practitioners to make informed decisions about what constitutes evidence, where the evidence has been gathered, and what will best meet the needs of the learner.

Christiansen and Lou (2001) suggest that ‘ethical matters’ lay beneath judgements and, as such, practitioners need ‘objective principles’ to avoid ‘overlooking’ the limitations of evidence, such as design, validity, research bias, and conflicts of interest. Meta-analyses provide practitioners with a synthesis of best practice to help inform teachers and policy makers as to what is the current best evidence supporting various approaches or interventions (Alton-Lee, 2003; Hattie, 2009; Mitchell, 2008). Morrison, Sullivan, Murray and Jolly (1999) also recommend the use of checklists to critically appraise evidence reports, while Lin, Murphy and Robinson (2010) recommend a process for practitioners to follow such as formulating a question, searching for the best available evidence, critically analysing the evidence using a checklist guide, and then integrating the appraisal with the needs of the student before taking action and evaluating the outcomes of that action. Identifying actual outcomes and measuring the benefit of an evidence-based intervention also depends on variables such as consistent implementation to determine whether the intended effects were obtained (Digennaro Reed & Reed, 2007). Practitioners also need to consider the population base from which the research evidence was gathered, and whose voice dominates the research data.

Randomised control trials are referred to as the ‘gold standard’ for identifying EB approaches or interventions, but in special education other methodologies such as single-subject design studies, correlational methodologies, and qualitative methodologies may be more suited to informing practice (Odom et al., 2005). The debate around what is ‘evidence’ varies within the literature and care is needed to avoid confusing interventions that have an evidence base, and EBP. Davies (1999) suggests that teachers seek out EBP to inform their daily practice and attempt to solve problems (seek solutions) within ‘complex’ and ‘culturally-diverse’ communities. EBP is the basis upon which teachers “make professional judgments and deploy their expertise” (p118). Lin et al. (2010) argue that knowing what an EB approach is will not ensure implementation; while Schlosser and Sigafoos (2008) warn against referring to particular approaches as being EB unless the experiences of the ‘stakeholder’ and student perspectives are included.

Schlosser and Sigafoos (2009) further explain that EBP requires ‘the integration of at least three components: best and current research evidence, clinical [practitioner] expertise, and client [student] perspectives and values’ (p. 131). They call these three cornerstones the ‘E3’; evidence, expertise, and experience (values) of the client as the key components for EBP. Though each of the cornerstones are different, they are equally important – “the sum of the three cornerstones is greater than the parts
in adding social validity to the EBP” (p.135).

In Figure 1 below, Bourke, Holden and Curzon (2005) identify three types of ‘evidence’: those of the research; those of practitioner knowledge, skills and experiences; and those of the collective voices of students, whānau and families. The two diagrams illustrate the ‘three cornerstones’ or the three types of evidence necessary to calling a practice ‘evidence-based’.

Figure 1. Evidence-based practice: What constitutes evidence? (Bourke, Holden & Curzon, 2005)

In Figure 2, Macfarlane (2010) expands on the model to depict the Kaupapa Māori approach model (He Ritenga Whaimōhio) in order to provide a culturally-responsive perspective to working within EBP. Here the three components or ‘cornerstones’ are respectively aligned to the Māori concepts of tīka (research and literature that is culturally-grounded), aroha (respectful consultation and relationships with student and family) and pono (practitioner knowledge and expertise that is ethical). These three concepts remind practitioners to consider the context of the research evidence; their own levels of cultural competency, and the views and aspirations of the whānau. The area of overlap or intersection between the three circles of evidence is depicted, described by the Ministry of Education (2005) as ‘effective practice’ (see the Springboards to Practice initiative). In this model of EBP the sum of the three is again stronger than the parts.

Figure 2. He Ritenga Whaimōhio

Considering EBP from the three components raises further questions about what is then the nature and purpose of educational evidence. Hattie (2009) argues that “evidence is not neutral; that what is effective depends on judgements about what is educationally ‘desirable” (p. 254). Educational interventions might appear neutral but the purpose of the intervention is to bring about change in learning or behaviour which makes the act of teaching a ‘moral profession’ and involves personal relationships to affect change. Davies (1999) maintains that there is no such thing as context-free evidence, and what constitutes ‘relevance’ in research depends on what questions are asked, in what context, and for what practical end.

The demands of practice in one context may make a seemingly narrow and esoteric piece of research highly relevant and very enlightening for those who use it. Similarly, research that is apparently more
generalisable, cumulative, and based on highly representative samples for some purposes, may be of little value to those in which the research took place” (p111).

APPLYING EVIDENCE-BASED PRACTICE

Background

The context of the example of EBP that I have chosen to explore is embedded in the writers’ case work as an RTLB. I had been providing classroom teachers, parents, and fellow RTLBs with advice and support around social skills and the inclusion of students who are on the autism spectrum. I had previously trained in and trialled an evidence-based social intervention programme called the Secret Agent Society (SAS) - Solving the Mystery of Social Encounters Programme (Beaumont & Sofronoff, 2008), developed for use with children eight to twelve years of age who have high-functioning autism or Asperger’s. The programme aims to improve social skills, build self-esteem, improve relationships, reduce bullying, offset the development of depression in later years, and build the social capacity of students. These aims were consistent with the goals set for a particular group of students.

SAS target skills:
- Recognising simple and complex emotions
- Expressing feelings appropriately
- Managing anger and/or anxiety
- Conversation and play skills
- Detecting and dealing with bullying
- Coping with change and mistakes.

Programme details:
- Runs over 9 weeks with one 2 hour session per week (broken into two 1 hour sessions with either morning tea or lunch as a break between the sessions).
- Group sessions teach students how to apply the content of a structured computer game to everyday context; with a 3 and 6 month follow up session.
- Weekly sessions with parents to show how to support the generalising of skills at home and in the community.
- Weekly tip sheets for teachers to help show how to include goals in their class and the playground.
- The programme consists of a virtual reality computer game for the students to work on at home throughout the training. As students complete each level of the game they earn gadgets to move onto the next level.
- The group sessions (of 2-6 students) are designed to help students develop individual strategies to work on at home and school over the week. Students collect cards that summarise their strategies and earn points towards a reward as they complete their ‘missions’ (apply individual strategies).
- There are role plays, a game board, walkie-talkie activities, and other fun games during the sessions.

SAS Evidence base:

A randomised-controlled trial of 49 children who have Asperger’s were randomly assigned to intervention (n=26) or wait-list control (n=23) conditions over a two month intervention period. Students in the intervention group showed significant improvements in social skills across settings compared to the control group over a two month intervention period. Relative to children in the waitlist group, programme participants showed greater improvements in social skills over the course of the intervention, as indicated by parent-report measures (76% improved to within the range of typically developing children with skills maintained at a 5 month follow-up check). Teacher-report data also confirmed that children receiving the intervention made significant improvements in social functioning from pre to post treatment. Treatment group participants were better-able to suggest appropriate emotion-management strategies for story characters at post-intervention than at pre-intervention, whereas control participants were not. The study concluded that the SAS programme was effective in enhancing the social and emotional skills and understanding of children with Asperger’s Syndrome (Beaumont & Sofronoff, 2008).

The main weaknesses of the Australian-based study were firstly the small number of participants (n=49) which makes the outcome data of 76% social skills improvement less significant generally; and secondly, the involvement of the programme developer in the study. Potential bias could have been controlled by using a double blind approach of having unconnected research assistants gathering the pre and post data (Katzer, Cook & Crouch, 1991). However, there is a second randomised trial occurring with 27 children (20 males, seven females), two with ADHD and one with dyspraxia. This yet to be published study is also using the Spence Child Anxiety Scale (SCAS) as an additional outcome measurement.

Writer’s Experience with SAS Programme

The involvement of parents and whānau through the use of pre-course training, questionnaires, and regular parent and whānau meeting sessions during the programme enabled aroha. Pre-training for
The writer had delivered the SAS Programme on three separate occasions. One occasion was with two eight year old male students who had ASD (this data is incomplete as one student moved before the six month follow up session); the other was with a fellow-RTLB with a group of five male students aged 11-12 years (one who had autism, one who had high functioning autism, one who had Asperger’s, one who had ADHD, one who had specific learning disabilities). My most recent delivery was with a 10 year old male who has Asperger’s (this data is still being gathered). Data used for this report comes from the second group of five students. The RTLB sub-cluster decided to pilot the SAS programme with intermediate-aged students and review the pre and post data to determine the benefits of the programme for the students, their parents, and their teachers. Our contextual goal was to determine if the SAS programme offered the types of social outcomes we hoped for, for the target students, with the view of offering the intervention to other students and possibly training more RTLBs in the delivery of the programme. The data presented from the trial is not, therefore, context-free (Davies 1999) and the selection of this intervention above others was informed by the limited research (Beaumont & Sofronoff, 2008), the writers’ 15 years of experience with other social-skills interventions and cognitive behaviour therapy approaches (Attwood, 2004; Callesen, Moller, Nielsen & Attwood, 2005; Gutstein & Sheely, 2004; McAfee, 2002; LoGiudice & McConnell, 2004; Quill, 2000; Schroeder, 1997; 2001; 2008).

Pre, post, and follow-up data was gathered through an observational checklist, parent and teacher interviews, and the ‘Social Skills Questionnaire’ (parent & teacher); Emotion Regulation and Social Skills Questionnaire (ERSSQ) (parent and teacher), plus Attwood’s student vignettes ‘James and the Maths Test’, and ‘Dylan is being Teased’ (Attwood, 2004). Data was also gathered during the programme through a home-school diary sheet that had individual goals at the top and space for daily entries of progress below.

A pre-course two-hour training session was delivered to parents (who also met for a further hour weekly session during the course to discuss progress and ideas for generalising skills). Teachers also received a two-hour pre-course training session and weekly summary tip sheets of strategies with ideas of how to include other class peers in the missions. The tip sheets also covered using comic strip conversations, social buddies, and class-wide strategies for dealing with bullying.

**Participants**

There were three Year 8 students and two Year 7 students, with five teachers and the parents of the five students. The student participants were male, three were on the autism spectrum and two were identified by their RTLBs as needing social skills intervention.

**RESULTS**

Table 1

**Pre and Post Programme Parent Teacher Expectations and Concerns**

<table>
<thead>
<tr>
<th>Pre-programme parent and teacher expectations and concerns:</th>
<th>Post-programme parent and teacher comments:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Build or gain friendships (do what other kids do)</td>
<td>Better understanding of other people’s emotions</td>
</tr>
<tr>
<td>Build confidence (learn how to deal with bullies)</td>
<td>Listening and eye contact improved</td>
</tr>
<tr>
<td>Build relationships (peers and siblings; interact more, join in or initiate games)</td>
<td>Discusses frustrations</td>
</tr>
<tr>
<td>Build social communication skills (join in a conversation, share more about his feelings)</td>
<td>Explains himself with more detail</td>
</tr>
<tr>
<td>Develop coping strategies (less fired up when misreads social situations)</td>
<td>Developed friendships with other children from the group, is more confident and more talkative.</td>
</tr>
<tr>
<td>Work cooperatively</td>
<td>Recognises my face and tone in my voice a lot easier than before</td>
</tr>
</tbody>
</table>

A pre-course two-hour training session was delivered to parents, whānau, and education staff reflecting tika or sharing of new knowledge. Although there was no explicit evidence of kaupapa Māori, the programme used a He Ritenga Whaimōhio framework (Macfarlane, 2010) by bringing together parents, teachers, and research for the purpose of enabling students who have ASD to better generalise their learning during the programme.
Child Pre and Post Questionnaire Data:

Pre-programme child questionnaires were used to identify the students’ prior social problem-solving abilities. They needed to read or listen to two stories: ‘James and the Maths Test’ and ‘Dylan is Being Teased’, and then respond to questions about ‘What could James do and think to feel less anxious?’ and ‘What could you do and say to help Dylan keep cool and not get mad with them [bullies]?’

The pre-programme responses from the students were to ‘move away from the bullies’ or to ‘try their best on the test’. Only one of the five students recommended ‘talking to the relief teacher’ about the maths test. Although they all mentioned ‘walking away’ from the bullies, many of their actions or comments would have made the situation worse. For example, telling the bully to ‘get a life’ might escalate a social conflict; and another student responded that he was ‘unsure what he could do to be less anxious’.

From the post-programme child questionnaire four of the five students identified going to the relief teacher and explaining the concern about the maths test; the student who didn’t know what to do about feeling anxious said “You can ask for help if you feel anxious” as a strategy. In addition, there was evidence that the students were able to apply the strategies in their post-programme responses:

- ‘Tell him to breathe and keep calm and walk away’ (O2 Gadget)
- ‘Think of a good comeback, as long as it won’t make them mad’ (DECODER and Bully-guard armour gadgets); for example, ‘As long as you do your best you’ll be fine’ (helpful thought gadget).

Social Skills Questionnaire - Parents Versions

This questionnaire was used pre and post intervention and parents scored 0 = not true, 1 = sometimes true, and 2 = mostly true, to a series of 30 questions. The areas of greatest gain in this questionnaire were made by the three students who have ASD:

- Reacts appropriately if other kids tease him or say unkind things (increase from scores of ‘0-1’ to scores of ‘1-2’)
- Asks to join in activities with other kids in an appropriate manner (increases from a score of ‘0’ to a score of ‘1’)
- Controls his temper when told off or criticised by parents (increase from scores of ‘0-1’ to scores of ‘1-2’)
- Shares things with other kids his age (increases in scores from ‘0-1’ to ‘1-2’)
- Has an appropriate facial expression - not excessive grinning or aggressive (increases from ‘0-1’ to ‘ 1-2’)
- Apologises when he does something wrong (increases from scores of ‘0-1’ to ‘1-2’)
- Expresses sympathy or concern to others who are hurt or upset (increases from scores of ‘0-1’ to ‘1-2’)
- Shows that he is listening to others during conversations (increases in scores from ‘0’ to ‘1’)
- Can express his feelings of anger but without losing his temper (increases in scores from ‘0-1’ to ‘1-2’).

Emotional Regulation and Social Skills Questionnaire - Parents & Teachers Versions

This questionnaire was used pre and post intervention and parents scored 0 = never, 1 = rarely, 2 = sometimes, 3 = often, 4 = always, to a series of 27 questions. The areas of greatest gain in this questionnaire were again made by the three students who have ASD with 1 to 2 point gains in the following areas:

- Is aware of other people’s thoughts and feelings (correctly identify other people’s feelings from their facial expression, voice tone, and/or body posture)
- Controls his anger/anxiety effectively at school and at home
- Reduction in using comments that embarrass others
- Recognises when someone is bored by his conversation, and changes the topic (recognises when other are being sarcastic)
- Deals with social problems successfully and chooses appropriate solutions to social problems (effectively with bullying/teasing)
- Copes effectively when he makes a mistake, apologises when he does something wrong or hurt someone’s feelings
- Tries new tasks or activities.

Areas where the other two students (who do not have ASD) scored most strongly (ie. they improved) were in:

- choosing appropriate solutions to social problems
- dealing with social interactions/issues successfully
- coping effectively when making a mistake.
SAS Observer Coding Form Results:

The Secret Agent Society ‘Observer Coding Form’ is used to examine the child’s competency in specific skill domains targeted by the programme. The observation schedule is used pre and post intervention to track improvements in, and the areas requiring, further skills development. The five domains covered by the form are non-verbal communication, conversation skills, cooperation skills, conflict resolution, and emotional regulation. The scores from each domain are then averaged for a total social skills score (the lower the score the greater the level of social skill).

Table 2
Pre and Post Programme Scores

<table>
<thead>
<tr>
<th>Student/Domains</th>
<th>Student A</th>
<th>Student B</th>
<th>Student C</th>
<th>Student D</th>
<th>Student E</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre</td>
<td>Post</td>
<td>Pre</td>
<td>Post</td>
<td>Pre</td>
</tr>
<tr>
<td>Non-verbal Communication</td>
<td>1.3</td>
<td>1.1</td>
<td>2.2</td>
<td>1.5</td>
<td>1.5</td>
</tr>
<tr>
<td>Conversation Skills</td>
<td>1.7</td>
<td>1.5</td>
<td>2.5</td>
<td>2.25</td>
<td>2.0</td>
</tr>
<tr>
<td>Cooperation Skills</td>
<td>1.2</td>
<td>1.3</td>
<td>0</td>
<td>2.14</td>
<td>2.0</td>
</tr>
<tr>
<td>Conflict Resolution</td>
<td>1.5</td>
<td>1.0</td>
<td>1.1</td>
<td>2.85</td>
<td>2.28</td>
</tr>
<tr>
<td>Emotional Regulation</td>
<td>1.0</td>
<td>1.0</td>
<td>1.2</td>
<td>2.66</td>
<td>2.0</td>
</tr>
<tr>
<td>Score</td>
<td>1.3</td>
<td>1.8</td>
<td>1.2</td>
<td>2.3</td>
<td>1.9</td>
</tr>
</tbody>
</table>

NB: Student B had a long stint in hospital so data was incomplete, however comments from his mother were:

“For the first six weeks he found new people to talk to in [hospital] class and organised play dates to watch DVDs and play battleship against them ... we used them [gadgets] as survival strategies in difficult situations that were mostly out of our control”.

The students with ASD showed improvements in communication skills (non-verbal and conversation), and conflict resolution. The students without ASD both had improvements in emotional regulation. As a group there were improvements for all students in the areas of communication (non-verbal and conversational).

Intervention Conclusions

The pre and post data collected from teachers, parents, and the students during the (SAS) programme has resulted in all of the students making gains in the following target skills:

- Recognising simple and complex emotions
- Expressing feelings appropriately
- Managing anger and/or anxiety
- Conversation and play skills
- Detecting and dealing with bullying
- Coping with change and mistakes.

The longer term goals of building self-esteem and social capacity have recently become apparent with Student C who has ASD, developing friendships within his class group, participating in social dancing, and involving himself with his typical peers during break times (previously he would withdraw and walk circuits around the fringes of the playground). Student E showed the greatest social gains (total score improved from 1.8-0.7) indicating that the SAS programme has been successful in building the social capacity of the student; he also went on to joining the school production and inter-school literacy competitions. Based on the data gathered, the SAS Programme appears to be a valuable resource for students who struggle with social skills. The following comments are taken from the post-programme student satisfaction questionnaire:
CONCLUSIONS ABOUT APPLYING EVIDENCE-BASED PRACTICE

The writer followed a process of EBP by addressing the three cornerstones of effective practice. This was done firstly by critically drawing on current evidence-based research about the intervention. Secondly, this was done by considering the potential benefits of the intervention against prior experience with other intervention approaches and considering what the new approach offered above the other programmes:

- Randomised trial with controls
- Virtual reality computer programme
- Generalisation structure through ‘missions’ and diary sheets, and
- Weekly parent training and teacher support sheets.

Thirdly, consideration was paid to the participants themselves by including parents directly with personal goal-setting through the weekly ‘missions’.

Reflection on Practice

Findings from this example of EBP are not able to be generalised beyond the target students and the context in which this study occurred. The study is not able to determine what specific components of the SAS programme were responsible for the gains made by the students. However, the SAS programme brings together several key components of EB approaches such as the use of cognitive behaviour therapy and social skills training (Hattie 2009; Mitchell 2008), parent involvement and student self-regulation (Mitchell, 2008), and a metacognitive approach (Alton-Lee, 2003; Hattie, 2009; Mitchell, 2008).

There are many variables around what worked for which students such as the timeliness of the intervention to meet needs of the students, the level of parent and teacher commitment to the programme, the nature of the group sessions and the eclectic approach of the programme, the role of the virtual reality computer programme and student motivation, the skill of the facilitator, and the relationships of the students with the adults and each other during the programme.

The SAS programme uses many cognitive strategies and teaches the skills through ‘gadgets’:

- ‘imagery relaxation gadget’ involves visualising relaxing or happy scenes
- ‘DECODER gadget’ practices defining a problem and the emotional and body cues of the situation, exploring possible solutions, considering the consequences by predicting outcomes of choices, organising a plan, doing it, evaluating how it went, and rewarding yourself for using the gadget, planning, predicting, practising, using cues, and
‘Play gadget’, ‘conversation gadget’, and ‘damage control gadget’ require students to detect both situational and internal cues when engaging socially.

Students also acquire summary cards of each gadget to refer back to as they apply their personal ‘mission’ goals each week. The SAS programme encourages students to set goals that are of interest and motivating, and the group sessions (through fun activities and a board game) require students to role play various social responses and provide feedback to each other about what skills (gadgets) the student was using. The missions are recorded in their cadet journals or electronically by recreating episodes from the week when the student had used a skill or gadget (successfully or not successfully) and what they might change.

Areas of change for the writer delivering future SAS programmes would include:

- Formative data gathering (narrative stories of the students’ progress through the SAS programme and after the programme)
- Extending the follow-up from three and six months to a nine and/or 12 months (using the same pre/post measures)
- More support for class teachers to implement ideas into classrooms, and
- Encouraging the students, parents, and teachers to develop their own Comic Strip Conversations (Gray 1998) as they unpack experiences during group sessions in class, in the playground and at home.

This article has identified that EBP occurs when practitioners make ethical judgements about what evidence is and how relevant an EB approach or intervention is to a given situation within a set context to bring about improvements and benefits that are in the best interests of the students (Christiansen and Lou 2001; Digennaro Reed & Reed, 2009; Mitchell, 2008; Mitchell, 2010). Practitioners also need to be aware of the three corner-stones of culturally-responsive EBP, specifically the concepts of tika (research and literature that is culturally grounded), aroha (respectful consultation and relationships with student and family), and pono (practitioner knowledge and expertise that is ethical) to ensure that EBP is applied effectively and responsively for diverse populations (Bourke et al., 2005; Macfarlane, 2010). RTLB practice requires regular formulation of questions or hypotheses around issues and the principle focus of EBP then provides the system through which to critically analyse evidence for interventions, and to evaluate outcomes of interventions for the purpose of future planning and professional reflection.

REFERENCES


Schroeder, A. (2001). Time to talk: A programme to develop oral and social interaction skills at reception and key stage one. Cambridge: LDA.
AUTHOR PROFILE

Celeste Littek has a diverse and extensive background in the area of autism, grounded in both personal experience and professional practice. Her teaching experience has included teaching in early childhood, primary, early intervention, special schools, and currently as an RTLB in Ahuriri, Hawke’s Bay. She also worked for 10 years as a consultant on ASD developing and delivering training programmes such as TIPS for Autism; a 3 day RTLB intensive training course; EarlyBird; SPELL; HELP; and other programmes for professionals and parents while on contract to Autism NZ, the MOH and the MOE. Her research focus over the past fifteen years has been social inclusion of students who have ASD, and involved numerous action research studies, a four-paper Masters thesis, and research mentoring. Celeste’s interest in autism over much of her life has led her into exploring the best ways of helping students who have ASD to be included in their local schools and communities. Celeste has learned that we need to create villages to successfully raise and include children who have ASD and that the more we learn about ASD the more we learn about typical relationships.

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Exploring the Ecological Approach Used by RTLBs in Interventions for Students with Learning and Behaviour Needs

A Personal Perspective

Sandiyao Sebastian
Resource Teacher: Learning and Behaviour, Cluster 8 (Nga Manu Awhina), Auckland

ABSTRACT

The ecological approach, based on the RTLB Toolkit that guides RTLBs in New Zealand, is one of the seven principles used for interventions for students with learning and behaviour concerns. As a result of a paradigm shift moving from a functional limitations perspective to a more inclusive/ecological perspective in 1999, RTLBs have been trained using this model. This article explores the ecological approach and provides a brief overview of relevant evidence that informs best practice of this approach. A personal perspective based on the author’s experience is made, with suggestions and lessons learned.

Keywords: Ecological approach, evidence-based, interventions, RTLB

INTRODUCTION

Resource Teachers: Learning and Behaviour (RTLB) in New Zealand have been trained in the use of ecological approaches for intervention since 1999. The RTLB Toolkit (Ministry of Education, 2011) has seven principles that guide RTLB practice. The ecological approach forms one of these principles. It is well advocated by the Ministry of Education and is closely monitored by RTLB Cluster Management. The Toolkit describes the ecological approach as: “...the students’ needs, programmes, interventions and support provided must all be understood and shaped within the context of the students’ current learning environment ...” (p.31).

Hence a student’s learning and/or behaviour is assessed within the parameters of the regular class routine, the teaching and learning interactions that happen in class (student-teacher relationship, student-to-student relationship), and the interactions and routines in the school. The ecological perspective describes the student and their learning environment as integral to the relationship and the expectations. The learning is continuous, interactive and occurs in the said environment. The ecological assessment in this context is culturally-responsive to the learning behaviour of the student.

Evidence-based information about ecological approaches/models suggests that there is much benefit when this approach is proficiently and efficiently used (Mohsin, 2011; Thomson, 2004; Ysseldyke & Christensen, 1993).

Having formerly worked with the Ministry of Education (MOE) Special Education and with current experience as an RTLB, the author has had wide exposure to this approach. Ecological assessment is a major component of the RTLB Toolkit and the early, essential steps in this process involves the obtaining of information/data about the student from multiple sources, consulting and involving the teacher, school, and whanau. This is then followed with the triangulation of data and the analysis of the information. At the feedback and planning meeting, the facts and figures are collaboratively discussed and clarity is obtained about student concerns, intervention strategies and support required.

EVIDENCE-BASED PRACTICE

Researchers (Alton-Lee, 2003; Kaff, Teagarden & Zabel, 2011) have generally stated the difficulty in defining evidence-based practice. The Australian Capital Territory (2007) document defines evidence-based practice as “…the collection and analysis of relevant data and research and the application of this evidence to teaching and learning and to whole school improvement” (p.1). According to Hattie (2005), evidence-based practice is about “the language of progression” (p.14). He further states that practitioners should ask strategic questions about the data, how this data could be converted to information and knowledge, and how one can use this information wisely and put it into appropriate action.

The ecological approach used by RTLBs in New Zealand can be traced back to the work of Bronfenbrenner, Vygotsky and Dewey. Based on
the ecological model of Bronfenbrenner (1979), the child is centrally positioned within a series of interconnected environmental systems. This approach appears to be significant in that the student with learning and behaviour needs is given a vital place and is not viewed as a problem. Alternatively, all the other variables or elements that relate to and impact on the student are considered as the influences.

Both Bronfenbrenner (1979) and Vygotsky (1978) postulated that human development occurs within the social interactions among people. Dewey (1938) initially described this approach by stating that the actions of individuals are affected by the whole situation in which they are involved and people interact with one another to form it.

Similarly, Annan’s (2005) model of ‘situational analysis framework’ is based on the ecological approach which suggests that the problem is not within the child but outside of it. This framework for professional practice and research in educational psychology includes a set of principles that psychologists use to ensure their work is evidence-based, ecological, collaborative and constructive. The RTLB Toolkit embraces all these principles as well. Effective RTLB support includes and maintains an inclusive educational focus in all-encompassing environments, enables teachers to meet the needs of diverse learners, and achieve positive and measurable outcomes for students with learning and behaviour difficulties (Hancox & MacDonald, 2011).

The RTLB Toolkit (2011) explains that using an ecological approach to interventions means that student learning and/or behaviour is assessed within the regular routines, interactions and practices of the classroom and school. The ecological perspective is based on the understanding that the student and the learning environment mutually interact, learning is interactive and happens in relevant contexts and to effectively understand assessment, learning behaviour should be considered in the larger cultural context.

**RTLB APPROACH**

The author has qualifications in special education and educational psychology and has been working in these fields for more than 25 years. For close to three years now, he has been working as an RTLB in two Decile 1 schools, two Decile 9 schools and one Decile 10 school. For individual case work students, the ecological approach and practice used by the author involved the following:

1. At the initial meeting, data is gathered from the class teacher, school and parents. The presenting concerns, challenges and expectations for interventions are discussed and a shared understanding about the student is obtained. Reports from other professionals such as psychologists, speech therapists, occupational therapists, medical doctors and others are also considered necessary. A consensus is reached in regard to the nature and type of assessments that may be used, a service agreement is signed at this stage, if possible, and timelines are provided for the feedback and planning meeting.

2. This is followed by data collection in the classroom and school and may involve observing the student in the class, playground and his/her participation in related activities in the school. Depending on the nature of the observation, relevant data sheets are used to capture student behaviour/learning interactions in class (student-to-student and teacher-to-student interaction). Information from these observations is analysed and possible trends/patterns and triggers/antecedents are recorded. The focus here is to obtain an understanding of interactions in the class and school.

3. The next stage involves teacher interview/discussion about the student’s progress and challenges in class. Class/school assessment records of the student are also gathered and analysed. If required, a sociogram may be administered for all the students in the class to establish relationship patterns. A curriculum-based assessment is also carried out to ascertain the academic achievement of the student.

4. If the student is referred for behaviour and learning concerns in class/school, the following published assessments may be used:

   - **Dyslexia Portfolio Assessment (DPA)**: A fairly recent, literacy-based assessment developed by Turner (2008). It consists of eight, brief diagnostic tests that help identify areas of difficulty in literacy learning.
   - **Automated Working Memory Assessment (AWMA)**: A computer-based assessment of working memory skills, developed by Alloway (2007), and used to screen individuals for significant working memory problems.
   - **Behavioural and Emotional Rating Scale (BERS-2)**: Developed by Epstein (2004), it is designed to provide professionals with an assessment of emotional and behavioural strengths in children. It uses a strengths-based approach and focuses on three potential sources of data: the child, a parent or caregiver, and a teacher or therapist. If required, a functional behaviour assessment is carried out.
With reference to Rowe’s (2005) assertion that one should be ‘data informed’ and not ‘data driven’, the author also uses other assessments as appropriate to obtain reliable information on the status quo or potential strengths and needs of the student.

5. Parents are also consulted throughout this ecological process as they can provide perspectives on matters that serve in the best interests of the student (Comer & Haynes, 1991). A home visit is also included to gain some insight about the student’s home environment and lifestyle. Information from this visit can provide rich data on cultural-responsiveness and inclusion.

6. If necessary, visits or interviews may also be carried out with other professionals who come in contact with the student such as private tutors or support therapists. This ensures that information is widely gathered and there is a shared understanding (inter-professional practice) that all parties should work collectively and in the best interests of the student. Whenever possible, support professionals are also invited for the planning meetings.

7. Once all the identified elements of the ecological process are completed, the data is analysed constructively (identifying positive supports in the environment), using relevant research that is legitimate to inform and guide the process (evidence-based). The process is collaborative as all concerned parties have been consulted and their views considered.

In the majority of cases it was possible to follow most of the components of the ecological process above. However, there continues to be some challenges in regard to the breadth and depth of this process.

CHALLENGES IN THE PROCESSES OF THE ECOLOGICAL APPROACH

In their approaches to data gathering and analysis for case work, RTLBs need to be versatile to ensure effectiveness and acceptability of interventions (Elliot & Darveaux, 1985). The author’s individual experience in this is one of continued learning and reflection. Listening to the voices of students, school staff, whanau and the community is crucial for success and towards quality RTLB practice. Best practice in RTLB work is observed when every element of the ecological approach synergises to inform and guide effective, proficient understanding and planning for the student or project work.

The following are some of the challenges faced by the author when using the ecological approach in his RTLB practice:

1. **Timeframe**
   The RTLB Toolkit advises that the intervention plan or feedback should be completed within 3 to 4 weeks from the date of referral. Whilst this could be achieved in most cases, there are other factors that may impact on meeting the time frame or influence the quality of the process. This could be dependent on the workload of the RTLB (number of cases, projects, systems work, specific-focus group involvement - PB4L, research, assessment, Incredible Years and others).

2. **Data gathering**
   This should be sufficient and accurate to ensure that student outcomes are relevant to inform teaching practice and programme delivery. Making informed judgement on the quantity and quality of information/knowledge required can be arbitrary, and is dependent on the knowledge and experience of the RTLB.

3. **Collection, analysis and application of evidence**
   RTLBs need to consider and ensure that these are undertaken within the values shared by the school and community.

4. **Accuracy of evidence obtained**
   Ensuring this can be a complex process. How would RTLBs know that their data collection for assessment is valid, reliable and was undertaken with rigour and depth? RTLBs need to be guided by ensuring that the data/evidence gathered answers and brings clarity to the concerns raised in the referral/initial meeting. It must be also ensured that this data is comparable to other available data. Personally, the author is of the opinion that there is still potential for improvement for him in this process.

5. **Data reporting and the language used**
   These are crucial for the success of the ecological process. For instance, the author had to explain or re-write information numerous times to ensure team members clearly understood an assessment result, how the data was analysed, and the use of new terms. This can cause frustration or lack of buy-in (acceptance) from team members, and frequently, there is insufficient time during meetings to clarify or give adequate information.

6. **Constructive debate/discussion on the ecological assessment**
   This should be present at the initial meeting, and at the feedback and planning meeting. Empowering parents, and sometimes teachers, for this process is necessary. There have been occasions when the SENCO or a member from senior management would take over and influence
the meeting.
When there is a lack in the inter-professional practice process, it can result in goals not being met. Effective coordination and monitoring is required.

7. Consent procedures and confidentiality
Following these is crucial and must be respected. There have been occasions, due to timeframe requirements, when this procedure was not fully complied with. In some situations, school staff appear to openly discuss the casework students amongst themselves.

8. Evidence is linked to informed decisions about the instructional environment, school programme and resulting plan of action. This must be ensured as it forms the final result of the ecological assessment. Commonly during planning meetings, there can be an agreement to target goals and how the plan of action can unfold. However, this process can become weak during the implementation phase. If there is poor acceptability of the intervention or teacher buy-in, there can be a lack of integrity in the interventions proposed. Continuous monitoring and support is essential, and strategic decision-making is required at the right time. Making this possible is an on-going challenge for the author.

The main challenges faced by the author in using the ecological approach were in enabling effective gathering of evidence (rigour), and in ensuring that all team members had been consulted and their views documented efficiently. In addition, accessing evidence-based literature within the timeframe for the casework or project work, synthesising all the information and making constructive hypothesis for intervention posed another significant challenge.

LESSONS LEARNED
When undertaken proficiently and efficiently, the ecological assessment does support and improve learning (Masters, 2005). Masters suggests the following elements operate at both classroom and whole school levels:

a. Identification and planning (What do we know?)

b. Systematic observations and synthesis of evidence (What do we do?)

c. Reflection on what has worked well and what has not (What do we know now?)

d. Commitment to replicating effective practices (What do we do now?)

Though diligently following these elements may be challenging, it could form the direction and aspirations of RTLBs.

To a large extent, the RTLB practice is on increasing teacher and school capability and capacity. As aptly stated by Alton-Lee (2003), teachers have the greatest effect on students. RTLBs can and do provide individual as well as systems-level support in this respect. Understanding the classroom culture or ecology is considered important to the development of culture-specific, ecologically-valid interventions that are acceptable to the teacher (Nastasi, Moore & Varjas, 2004).

According to Detrich (1999), change is more likely to be sustainable if the interventions require teachers to enhance, develop and refine their practices rather than radically change their procedures or introduce new ones. A sense of self-efficacy is crucial for teachers to adopt and continue with new practices (Wong, 1997). Thomson (2004) states that RTLBs need theory, research-base and methodological rigour of the scientist, coupled with an understanding of the critical variables in the ecology of the classroom.

New research suggests that in order to serve children better from an ecological perspective, professionals need to provide efficient services to education systems (Meyers et al., 2012). This is the challenge for all RTLBs in New Zealand.

The RTLB study programme jointly organised by Massey University and Canterbury University is a cutting-edge programme preparing RTLBs for this role. Equipped with new knowledge, skills, competence and tools, we are also evidence-based and collaborative; enabling us to serve children more proficiently and efficiently.

Cultural responsiveness and evidence-based practice are two key competencies given much preference and motivation for effective RTLB practice. Ecological approaches used by RTLBs require serious consideration on multiple variables that may impact on Maori, Pasifika and other multi-cultural students (Acle, Roque & Contreras, 2004).

CONCLUSION AND SUGGESTIONS
The aim of this paper was to explore the ecological approach used by RTLBs in New Zealand, which is one of the principles of the RTLB Toolkit that guides RTLB practice. The paper also provided relevant information on the evidence that underpins this approach. The ecological approach used in RTLB practice was also examined critically, based on the author’s perspective and experience as an RTLB. Challenges on the use of the ecological approach were also described. Lessons learnt from the author’s experience provided the backdrop of personal and current RTLB practice.
Recent literature postulates that an ecological approach to gather reliable and valid data, and to inform evidence-based practice has high integrity and acceptance of interventions for students with learning and behaviour difficulties (Berryman et al., 2000; Mohsin, 2011; Thomson, 2004). The RTLB Toolkit (2011) highlights this principle as a shift from a functional limitations perspective towards a more inclusive/ecological perspective (Thomson, Brown, Jones & Manins, 2000). In addition, more relevant to using this approach is that it focuses on the active participation and consultation of the whanau and community. Using this approach, triangulation of data is highly evident (Altrichter, Feldman, Posch & Somekh, 2008).

The following are the main suggestions identified for an efficient and proficient ecological approach in RTLB practice, based on the author’s experience:

1. Consultation with school staff, whanau, relevant professionals, student, and the community needs to be thorough and well-documented.
2. Inter-professional practice involves a shared understanding of the problem or concern; thus pooling resources and crafting an efficient intervention for the student(s). This practice would require serious commitment and coordination to be deemed effective.
3. RTLBs workload should be balanced or realistic to ensure that it does not impact on the quality of their work.
4. The use of clinical assessments only, whilst necessary, should not significantly influence the planning of interventions. Information from other relevant sources especially from whanau, class and school environments is also crucial for student’s success. Thus, triangulation of data is essential for a balanced analysis (reliability and validity) and efficient planning of intervention. More rigour/effort is required in this respect.
5. The student’s psychological health and wellbeing requires attention and support besides academic achievement. Not all school staff have the ability or the knowledge to address this efficiently. A more concerted effort to make this possible is required.
6. Frequent home visits and establishing a good rapport with parents/whanau is highly recommended.

RTLBs need to ensure that consistency is observed in all areas of their work. The ecological approach is one of the principles that RTLBs have to follow for an efficient and credible outcome in the interventions proposed and implemented. Every effort should be made to ensure there is integrity in RTLB work. Thus, learning is continuous and reflective. Commitment and passion in RTLB practice can generate positive outcomes, making a significant difference in the learning and behaviour of children. Although RTLBs use evidence-based practice, we are still in the early years of this process. Our RTLB work is challenging yet rewarding; and that makes our practice meaningful and inspiring.

REFERENCES


**AUTHOR PROFILE**

**Sandiyao Sebastian**

Sandiyao Sebastian is an RTLB in Cluster 8, Nga Manu Awhina in Auckland, and has qualifications and working experience in the fields of special education and educational psychology. Having worked in the USA, UK, and Japan, Sandiyao has also taught at the Faculty of Education, University of Malaya in Malaysia for 16 years. Closer to home, he was a Special Education Advisor (SEA) with MOE Special Education, Hamilton for three years. Currently, he has keen interest in and is passionate about Working Memory and Functional Behaviour Assessment (FBA).

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Susan Dymock and Tom Nicholson

This is the latest in a series of books about the teaching of reading comprehension that has been written by these two authors. The book has just over 200 pages altogether and is divided into twelve easy to read chapters with the second half of the book taken up with examples of 14 lesson plans of suggested activities for teachers to follow that focus on particular reading comprehension strategies. Teachers are given examples of strategies which are presented via student-teacher dialogue discussions to highlight key teaching points of focus for each particular text. An effort is also made to highlight the different demands of teaching comprehension strategies using expository and narrative texts.

A major positive about this book is that all of the teaching resources that the authors refer to when giving lesson ideas are from New Zealand publications. For example, these teacher resources include stories from Ready to Read texts and the School Journals, both of which form a major resource that teachers use for teaching reading in New Zealand schools. Furthermore, this New Zealand-based element is missing from the overseas books that are written about reading comprehension. This is evident in the lesson examples that are presented in the second half of the book. For example, in all 14 lesson examples there are no specific word-level strategies presented or included that could focus the teacher on this particular issue. While there are a few examples of extending vocabulary (e.g. My Mother and Stan, Lesson 7, extension task), there are no specific examples of looking at possible decoding strategies that may be effective for decoding any of the potentially unfamiliar words. I would have liked to have seen a section at the beginning of each of the lesson examples where the teacher could complete a short ‘word focus’ where a selection of the potentially problem words are presented and discussed in terms of both their meaning and how they might be decoded. This could include looking at the letter-sound patterns, identifying any potentially problematic parts, and segmenting and blending the appropriate units. I know that the book is about reading comprehension and that efficient decoding is not all there is to reading, (i.e. necessary but not sufficient), but I suspect that the lack of any word-level focus in the book (and in the lesson plans) may give teachers the impression that decoding is not as important, or that teachers may assume that poor decoding may never be part of the reason for poor comprehension. I suggest this word study focus be at the beginning rather than the end of the lessons (or in the extension section) because teachers would be more likely to complete this particular task at the outset as a form of introduction. An extension section would most likely be ignored if lesson time constraints are present.

However, having said this, the book is timely and the contents effectively dovetail into the requirements of the National Standards and should help teachers...
when they are considering examples for making their overall teacher judgements (OTJs). The book is well written and is research-informed. The chapters are short and easy to read. I see this book would be particularly suitable for both pre-service teachers in training, for teachers already in schools and for literacy professional development leaders (e.g. RTLts, RTLBs) and for any others working with students who have reading and/or comprehension difficulties.

REVIEWER PROFILE

Keith Greaney, Massey University, Institute of Education

BIBLIOGRAPHICAL DATA

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Price: $60.00 approx.
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- We are looking to explore many varied and potentially contradictory views on issues relating to educational practice which may be included within the texts, resources or programmes. This could result in views being expressed that do not necessarily reflect the opinions of the Editorial Board.
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