

## **Alphabet and phonological awareness: Can it be enhanced in the early childhood setting?**

**Claire McLachlan**

*Massey University College of Education, New Zealand*

**Alison Arrow**

*Massey University College of Education, New Zealand*

There is a growing body of evidence that children who possess both alphabetic and phonological awareness on school entry are in a good position to make the transition from emergent to conventional literacy (Nicholson, 2005; Whitehurst & Lonigan, 1998). One of the challenges is how teachers can foster emergent literacy, including alphabetic and phonological awareness, within a holistic curriculum framework, such as New Zealand's early childhood curriculum, Te Whāriki. Drawing on our respective research studies into children's literacy (Arrow, 2007; McLachlan et al., 2006), we will discuss the implications for an early childhood intervention project which is aimed at promoting phonological awareness and alphabetic knowledge in children aged 3–5 years, through professional development of teachers. This paper examines the issues involved in challenging teachers' beliefs, the effectiveness of professional development, research with children and teachers and enhancing literacy opportunities in the curriculum.

### **INTRODUCTION**

Internationally, a great deal of recent attention has been directed towards the early years of children's lives, in which the foundational understandings of literacy develop. Research on emergent literacy indicates that children develop alphabetic and phonological awareness, two major predictors of literacy achievement, within their home and early childhood settings (e.g., Whitehurst & Lonigan, 1998). Our research focus is on how these understandings can be encouraged in the early childhood context, without resorting to watered down academic, skill and drill type activities. Of considerable interest is how literacy outcomes for children can be achieved within the framework of a holistic curriculum, with lots of opportunity for meaningful play. Research also indicates that many teachers have an inadequate understanding of how literacy develops (e.g., Moats & Foorman, 2003) and consequently miss many opportunities to encourage children's development within naturalistic settings. Too often, literacy is presented to children as skill and drill type activity, rather than as part of meaningful play and interaction. Our growing concern is that early childhood teachers' knowledge of what helps children to become literate is out of step with current research and furthermore, that our curriculum is lagging behind the research in this field. This paper will summarise recent research into children's alphabetic and phonological awareness, before discussing how well represented this research is in Te Whāriki, the New Zealand national early childhood curriculum document, along with other New Zealand Ministry of Education policies and initiatives. The challenges of enhancing teachers' understandings of phonological and alphabet awareness and their associated teaching practices will be examined and then our literacy intervention research will be discussed.

### **ALPHABETIC AND PHONOLOGICAL AWARENESS PRIOR TO SCHOOL ENTRY**

The term emergent literacy is used to 'denote the idea that the acquisition of literacy is conceptualised as a developmental continuum, with its origins early in the life of a child, rather than an all or none phenomenon that begins when children start school. This conceptualisation departs from other perspectives in reading acquisition in suggesting there is no clear demarcation between reading and pre-reading' (Whitehurst & Lonigan, 1998, p. 848). Emergent literacy means that children develop reading, writing and oral language concurrently and interdependently as a result of children's exposure to social contexts in which literacy is a component and in the absence of formal instruction (Whitehurst & Lonigan, 1998). A child's language development and family literacy patterns are also strong predictors of literacy achievement. Children who are language delayed or come from families where there is a known history of reading difficulties may likely have difficulties with literacy. Children who may be especially 'at risk' (Justice & Pullen, 2003) of literacy failure include: children with impaired vision or hearing; cerebral palsy; intellectual disability; specific early language disorder; attention deficit/hyperactivity disorder; emotional disturbance; and speakers of other languages. Second language learners are a particular group for attention in New Zealand, because of the cultural diversity of the population. These children are in danger of losing their emergent literacy skills in mainstream education settings (Tabors & Snow, 2001). A lower literacy achievement is not inevitable but these children may need dedicated help in order to develop literacy skills (Tagoilelagi-Leota, McNaughton, MacDonald & Ferry, 2005).

Phonological awareness and alphabet knowledge form part of the inside-out processes that comprise emergent literacy (Whitehurst & Lonigan, 1998). These two sets of knowledge are generally believed to be necessary, but not individually sufficient, for the acquisition of literacy (e.g., Muter, 1994). Each has a different role to play in the development of literacy, but together they form the basis for the acquisition of the alphabetic principle which is the understanding that speech sounds in spoken words are represented by graphemes in print (Moats, 2000). The combined knowledge means that children can use letters and their sounds to make phonemically correct representations of words when both reading and spelling (Nicholson, 2005). Differences in the levels of knowledge and awareness that children have during the preschool years can impact on the efficiency in which they can transition into conventional literacy in formal settings where accurate reading and spelling is desired (Tunmer, Chapman, & Prochnow, 2006).

There has been a recent resurgence of interest in examining the importance of letter-knowledge in the acquisition of literacy (e.g., Noel Foulin, 2005). An increasing number of studies demonstrate that alphabet knowledge provides beginning readers with the knowledge necessary to make connections between the spoken word and its print representation (e.g., Share & Gur, 1999). This knowledge of letters can continue to influence literacy achievement up to Grade 4 as Sénechal (2006) found when French parents provided their preschool children with tuition in the alphabet.

There are at least two ways in which alphabet knowledge can be used in the acquisition of literacy; through either letter-name knowledge or through letter-sound knowledge. Letter-name knowledge has been found to influence children's early spelling attempts and can make learning to read easier, if the words contain letter-name cues, such as JRF for giraffe (Ehri & Wilce, 1985). Additional studies on pre-readers and novice readers have also shown evidence of the role that letter-names may play in the development of word knowledge before they have acquired the alphabetic principle (e.g., Treiman & Rodriguez, 1999). This could be due to the use of the orthographic cues that letter-names generate, for example a two-year-old named Paige might identify any word starting with the letter P as their name because they use this letter as an orthographic placeholder. However, when children are faced with words containing the same subset of known letters they must begin to pay attention to the order of the letters (Arrow, 2007).

The second way children may make use of alphabet knowledge is to use their knowledge of letter-sounds. This may be one of the more important skills that children develop for attempting new and unfamiliar words. Arrow (2007) found that if children had good letter-sound knowledge they were able to make sublexical attempts at reading unfamiliar words, and to make phonemically correct attempts at spelling unfamiliar words. This is commensurate with the understanding that the best way for children to learn to break the alphabetic code is to learn letter-sounds in conjunction with phonological awareness (e.g., Foorman et al., 2003).

Phonological awareness is another important skill linked to the acquisition and development of literacy at school. This contributor to reading has received the most attention in reading research (see Anthony & Francis, 2005; Stuart, 2005). Children who have been taught phonological awareness prior to beginning formal instruction have been found to be better equipped for learning to read and spell than children who have not (e.g., Hindson et al., 2005). Children with greater phonological awareness at kindergarten or at school entry tend to be better readers (e.g., Sprenger-Charolles & Casalis, 1995).

Phonological awareness is most commonly understood to be a single ability that manifests itself in different ways at different points throughout development (Anthony & Francis, 2005). The conceptualisation is similar to that of a continuum, in which word and syllable awareness develops early on, usually during the years of early childhood, while more advanced awareness of rimes and phonemes develop later (Anthony & Francis, 2005). Rime awareness includes the ability to distinguish between words that rhyme and words that do not rhyme, and the more complex manipulation task of producing rhyming words. Based on the assumption that phonological awareness is a single unified ability, it is expected that rime awareness would contribute to the future development of phoneme awareness (Lonigan, Burgess, & Anthony, 2000), thus by teaching children rime awareness it may contribute to the development of literacy, mediated by phoneme awareness.

As mentioned, at the far end of the continuum of phonological awareness development is phoneme awareness. At the furthest end of the continuum is phoneme manipulation, which includes the ability to delete and substitute phonemes. Closer to the centre of the continuum is a sensitivity to phonemes which is the ability to identify if two phonemes are the same or different. A sensitivity to phonemes may be the first step to developing the alphabetic principle (Byrne, 1998) by providing the initial understanding that words consist of sounds. Noel Foulon (2005) even suggests that phoneme sensitivity is required for children to be able to make use of letter-names in early word learning, even prior to the acquisition of the alphabetic principle.

## **LITERACY RESEARCH IN NEW ZEALAND**

There is limited research in New Zealand on how children are supported to develop alphabetic and phonemic awareness prior to school entry. That which is available tends to be small scale studies, often completed as part of postgraduate studies. Our own research fits into this category. Claire's doctoral research (McLachlan-Smith, 1996) examined the policies and practices concerning emergent literacy in 12 New Zealand kindergartens in the early 1990's, prior to the advent of Te Whāriki, the national early childhood curriculum (Ministry of Education, 1996). She found that teachers espoused an eclectic understanding of literacy in the early years and that the amount and type of literacy experiences that children received in kindergartens differed according to teachers' beliefs about their role. More recent research (McLachlan, Carvalho, de Lautour & Kumar, 2006) demonstrates that although most teachers are now report providing language and literacy rich environments, fewer than 50% use Te Whāriki to support literacy in their centres and teachers report diverse understandings of both literacy and how to promote it. It was also not clear that

teachers were able to identify and support those children who could be considered 'at risk' of reading failure. These findings are reinforced in the studies by Hedges (2003) and Foote, Smith & Ellis (2004). A small study by Hedges (2003) found that teachers may find themselves in a dilemma when deciding whether or not it is their role to foster literacy and numeracy. Foote, Smith and Ellis (2004) found that although teachers were providing rich literacy experiences, when it came to literacy, they were tending towards formal skills based instruction, without necessarily being able to articulate why. These findings are of considerable concern, especially since other New Zealand research has found that systematic text-free teaching of phonemic awareness and phonological processing skills at school entry reduces the incidence of reading difficulties (Tunmer, Chapman & Prochnow, 2004) and there is a place for formal teaching of phonemic awareness and simple phonics in early childhood (Nicholson, 2005). Clearly there is a role for early childhood teachers in supporting the development of phonological and alphabetic awareness, although this does not mean resorting to skill and drill type activities.

Alison's doctoral research (Arrow, 2007) examined the development of phonological awareness, as an element of emergent literacy, in kindergarten children prior to beginning formal school instruction. She also examined the earliest acquisition of reading and spelling in more formal contexts through an intervention study that was carried out individually rather than through the kindergarten's themselves. She found that as children transition from emergent literacy to conventional literacy children with good alphabetic knowledge have multiple pathways to reading and spelling. She found evidence of the developmental nature of phonological awareness in which each component of phonological awareness had its own sets of precursors: children's receptive vocabulary and letter-name knowledge best contributed to rhyme awareness; and both rhyme and letter-sound knowledge were associated with higher levels of phoneme awareness. This research supports the importance of incorporating these understandings into the early childhood curriculum through increased recognition of not only phonological awareness, but also alphabetic knowledge and vocabulary development.

There has been some Ministry of Education funded research into literacy with 'at risk' children in the junior primary school, which is of relevance here. Phillips, McNaughton & McDonald (2002) found that many early childhood teachers had limited knowledge of how literacy develops and that professional development improved literacy outcomes for children. Timperley and Robinson (2001) found that teachers' perceptions of children's literacy on starting school shifted if they were encouraged to view literacy with alternative lenses and had their assumptions about achievement challenged. Research by Tagoilelagi-Leota, McNaughton, MacDonald and Ferry (2005) with Samoan and Tongan children from six months before school entry until a year after school entry indicates that children who were incipient bilinguals at the beginning of the study were supported to gain language and literacy skills in both their home language and English when they experienced programmes which focussed on the quality of teaching in reading to children, guided reading and telling, and retelling of stories.

## **LITERACY IN TE WHĀRIKI**

An analysis of Te Whāriki (Ministry of Education, 1996) reveals its holistic nature; and that it is open to diverse interpretation. The curriculum is seen as 'the sum total of experiences, activities and events, whether direct or indirect, which occur within an environment designed to foster children's learning and development' (Ministry of Education, 1996, p. 10). The curriculum outlines key curriculum requirements for infants, toddlers and young children, but only offers questions for reflection and suggested experiences to guide practice. The principles of empowerment, holistic development, family and community and relationships are all relevant as a framework for literacy,

but can be interpreted in many ways. Within the principles of holistic development, for instance (Ministry of Education, 1996, p. 41) it argues that 'the early childhood curriculum takes up a mode of learning that weaves together intricate patterns of linked experience and meaning rather than emphasizing the acquisition of discrete skills'. Although literacy is a pattern of linked experience and meaning, it also involves discrete knowledge and skills. References on how to promote literacy are non-specific. The major link for literacy in Te Whāriki is the Communication strand, in which children develop verbal and non verbal communication for range of purposes, experience the stories and symbols of their own and other cultures and discover and develop different ways to be creative and expressive. The strongest statements are in Goal 2, 'children experience an environment where they develop verbal communication skills for a range of purposes' (p. 76), where language skills, appreciation of rhythm, rhyme, alliteration, understanding of syntax and meaning and the ability to listen to and enjoy verbal communication is encouraged. Significantly, the major predictors of literacy achievement are not mentioned. Although awareness of numbers is listed in Goal 3, awareness of the alphabet and phonological awareness are not mentioned; unless 'a playful interest in repetitive sounds and words' (p. 76) is meant to indicate this.

However, as Nuttall (2005) argues, teachers do not simply apply a curriculum document. 'Instead, curriculum construction is most usefully thought of as an ongoing social construction, constantly reiterated through teachers' syntheses of reflection on their own and others' experiences (particularly those of children and families), constructs drawn from available curriculum frameworks (such as Te Whāriki), their own beliefs and value systems, and theoretical informants found in programmes of teacher education' (Nuttall, 2005, p. 20). As Nuttall argues, there is no empirical evidence that Te Whāriki makes a difference to children's learning and there is evidence from Kei tua o te pae, the assessment exemplars (Ministry of Education, 2005), that teachers are overlooking children's literacy practices in their learning stories, instead interpreting their observations in terms of dispositions such as collaboration and exploration. Blaiklock (2008) also critiques that the 'learning stories' narrative format that is used in Kei tua o te pae, arguing that it is a problematic form of assessment and that it hasn't yet been established if learning stories are an effective, valid, reliable and practical means of assessing and enhancing children's learning. Furthermore, Te Whāriki has never been evaluated as a curriculum, unlike the National Curriculum, which was evaluated twice prior to review and the recent release of a revised curriculum document (Ministry of Education, 2007a), which interestingly has been aligned with the principles of Te Whāriki.

## **LITERACY AND MINISTRY OF EDUCATION POLICY AND INITIATIVES**

New Zealand's current literacy strategy is a conglomeration of different approaches towards literacy that the Ministry of Education (Ministry of Education, 2003b) has developed to counter the literacy gap highlighted in international studies of literacy and reading (e.g., PIRLS and PISA). The strategy has included greater literacy-related professional development for primary teachers and further support, such as increasing numbers of Resource Teachers for Literacy. Other support has developed in response to the New Zealand Government Select Committee inquiry into the teaching of reading in New Zealand (New Zealand House of Representatives, 2001), such as the two new literacy handbooks for teachers, *Effective teaching of literacy: Years 1-4* (Ministry of Education, 2003a) and *Effective teaching of literacy: Years 5-8* (Ministry of Education, 2006).

The new curriculum document (Ministry of Education, 2007a) empowers schools to develop their own curricula. In this curriculum document the Ministry has identified that children must learn to decode as well as take meaning from text. The previous document, *English in the New Zealand Curriculum* (Ministry of Education, 1994) did not reflect that children needed to learn to decode, but assumed that they were able to begin reading from the beginning. The first

achievement objective for example, stated that ‘students should select and read for enjoyment and information a range of written texts, beginning to use semantic, syntactic, visual, and grapho-phonetic cues to gain meaning’ (p. 34). No exemplars indicate just how difficult it may be to do that if children are unable to read. The new curriculum document highlights that children will need to make connections between letters and sounds, and will slowly develop a sight-word reading vocabulary along with knowledge of text conventions (Ministry of Education, 2007a).

Although these skills and types of knowledge are necessarily brief in the curriculum document these have been extended through the development of literacy learning progressions (Ministry of Education, 2007b). The progressions provide milestones that are expected of children at school entry, after six months, after one year, and so on. The literacy progressions are based on a model in which there are three aspects to literacy acquisition: the first is the ‘learning of the code’; the second is to make meaning; and the third is to think critically. These are also outlined in the *Effective literacy practice* handbooks (Ministry of Education, 2003a; 2006).

The move to giving the ‘learning of the code’ a greater level of importance than previous Ministry of Education publications is highlighted by the inclusion of items such as ‘an awareness of rhyme ... distinguish some phonemes in spoken words’, ‘be able to read their own names’, ‘identify the first letter of their name’, ‘write their name’ for school entry. The milestones after six months at school also reflect this increased recognition with ‘know that sounds combine to form words’, ‘use their developing phoneme awareness to orally blend some phonemes’, ‘decode simple, regular words’, and ‘encode some simple, regular words’.

## **PROFESSIONAL DEVELOPMENT OF TEACHERS**

Although the Ministry of Education has revised guidelines for literacy in the primary sector, it has not yet directed attention to early childhood, despite the international evidence to do so (e.g. Fillmore and Snow, 2000) and strong New Zealand evidence that professional development of teachers influences children’s literacy achievement (Mitchell & Cubey, 2003; Timperley & Robinson, 2001; Phillips, McNaughton & McDonald, 2002)). Nuttall (2003) states that several things need to be taken into account when thinking about teachers in relation to implementing curriculum: teachers’ initial training; their awareness of various curriculum traditions and models in early childhood education; and their ideas about which aspects are part of the teacher’s role they consider to be part of the curriculum. Fillmore and Snow (2000) argue that teachers need intensive preparation in ‘educational linguistics’, in which most teachers gain inadequate preparation in their pre-service teacher education programmes. Kane’s (2005) review of teacher education programmes in New Zealand suggests this is true of early childhood programmes, where most students get minimal preparation on understanding literacy.

Cunningham, Perry, Stanovich and Stanovich (2004) state that research into the precursors of literacy has led to an increased focus on the literacy domain knowledge of teachers of children in the early years. They argue, ‘There are strong theoretical reasons to suspect linkages between teacher knowledge and the ability to teach reading effectively (e.g., being able to teach phonemic awareness and choose good literature’ (p. 160). They found that in their study of 722 kindergarten to third grade teachers that the knowledge base of teachers did not align with the body of research demonstrating the key role that component processes such as phoneme awareness and the alphabet principle play in learning to read. There is little evidence that teachers in New Zealand early childhood centres have this knowledge either (see Mitchell & Cubey, 2003; McLachlan, Carvalho, Kumar & de Lautour, 2006; Hedges, 2003; Foote, Smith & Ellis, 2004).

Cullen (2006) argues that complex political decision making around emergent literacy in New Zealand schools has meant that the early childhood sector has not seen itself as responsible for supporting children's initial competencies and skills related to literacy. She states that 'lack of attention to literacy competencies and meanings could reflect a gap in initial teacher education and professional development' (p. 5). Cullen (2006, p. 5-6) considers that early childhood teachers have three major responsibilities with regard to literacy education: to monitor gaps in children's competencies as well as strengths and interests; that curriculum should support both skills and meanings; and to engage in ongoing professional development about literacy and the implications for teaching practice.

So what can be done? Clearly, improving the content of teacher education programmes is one method and one which is the focus of much international research and debate (e.g. Snow, Burns & Griffin, 1998). Cunningham et al. (2004) consider that research needs to be done on 'knowledge calibration', that is, assessing the relationship between teachers' perceived and actual knowledge of literacy. In their study they found that knowledge and skills related to phonemic awareness in teachers was poorly calibrated. They also cite the work of Smylie (1988) who argues that teachers with high levels of self efficacy concerning teaching are more likely to seek out innovations in their practice and that receptivity to new ideas is based on good calibration of knowledge and experience. Being open and receptive to change is fundamental to successful professional development, but this may be difficult if teachers do not perceive the need to know more about how children develop alphabetic and phonological awareness. As Cunningham et al. (2004, p. 162) state 'it might also be the case that teachers do not always know what they do not know'.

Doubek and Cooper (2007) identify some critical variables for ensuring successful professional development for literacy: time; the importance of the role of the leader and their awareness of obstacles to effecting change; understanding of what constitutes an effective literacy environment; and receptiveness to change. Mitchell and Cubey (2003) in their 'Best evidence synthesis' for the Ministry of Education identified the following features of effective professional development: it builds on teachers' existing knowledge; includes alternative theoretical knowledge and practices; involves investigation and analysis of data by teachers in their own settings; involves critical reflection; inclusion of diversity; challenges beliefs and practices; and enhances insight into teachers' own thinking and actions.

## **A LITERACY INTERVENTION IN THE ECE SETTING**

Given the caveats around the limitations of professional development to create changes in teachers' beliefs and practices, we propose to trial an intervention within four early childhood settings to see if we can promote change in teachers' understandings of the importance of alphabetic and phonological awareness and their literacy practices with children. By deepening teachers' understandings of ways in which they can promote phonological and alphabetic awareness, we hope to promote change in children's developing knowledge and skills. We plan to conduct our intervention over a period of several months, beginning with observations of centres and literacy practices, pre and post testing of teachers' and children's knowledge of phonological and alphabetic awareness, and observations of teaching practices during the intervention period. One centre will be used as a control, whereby teachers will not receive the professional development until after the intervention period, so that we can evaluate whether any changes we monitor are the result of typical development, rather than changes in resources, activities or teaching practices. Thus, we will be using both qualitative and quantitative methodologies. Centres included in the study will be in low decile, multicultural communities as they are populations where it is possible that the most value can be added in terms of emergent literacy skills.

The translation of research into early childhood settings can be difficult due to both the cognitive demands made of children and the effectiveness of the intervention or instruction (O'Connor, Notari-Syverson, & Vadasy, 1996). With regards to phonological awareness one of the main concerns when working with young children is their ability to complete the tasks. As previously discussed, phonological awareness is a continuum of abilities ranging from rime awareness to phoneme awareness (Anthony & Francis, 2005), and children in early childhood may fit anywhere along that continuum (Arrow, 2007). Thus the intervention must ensure coverage of the entire range of potential abilities of children otherwise the cognitive demands made on children may be too high, or not high enough to expect increases in phonological awareness. Developmentally-appropriate resources and activities that are research and evidence based are the cornerstone of effective literacy intervention in preschool settings (Justice & Pullen, 2003).

The actual tasks themselves, even if pitched at the appropriate level must keep additional cognitive load at a minimum. Asking children to keep in their working memory a list of three words, and then to ask them to work out which one starts differently requires both phonological working memory and phonological awareness. The use of adequate pictorial cues is necessary for children at this level to ensure adequate coverage of task complexity and the reduction of memory load (Anthony & Lonigan, 2004). For this reason we have chosen a survey of teacher knowledge and teachers' phonemic awareness, based on previous research by McLachlan et al. (2006) and for children the following tests: onset and rime tests; recognition and spelling of own name; knowledge of letters; vocabulary knowledge; phoneme awareness; and a word reading test.

Justice and Pullen (2003) also recommend two other principles for emergent literacy interventions. The first is that activities 'should address both written language awareness and phonological awareness'; the second is that the 'intervention activities should include naturalistic, embedded opportunities for knowledge attainment as well as explicit exposure to key concepts' (Justice & Pullen, 2003, pp. 100-101). The first principle addresses the need to incorporate literacy as a whole and incorporates the knowledge of letters as well as phonological awareness. The effective combination of alphabet knowledge with phonological awareness has a large body of evidence supporting it (e.g., National Reading Panel, 2000). Such interventions can be included in naturalistic environments as phonological awareness activities can be conducted in game-like ways, and often include the use of puppets and words children are familiar with, such as their own names.

Finally, the literature on research with children cautions us about the difficulties of testing within the early childhood setting. We are well aware that the pre- and post-testing of children will need to be done in ways that are sensitive to children. We anticipate spending considerable time in centres, managing activities that can be used for assessing children's phonological and alphabetic awareness and making sure that children voluntarily participate in these activities at their own time and pace and have the opportunity to express their opinions about their experiences of literacy in the curriculum (see Brooker, 2001 for a discussion of the role of children in research). Of particular importance will be the need to use child friendly props, prompts and stimuli to engage children's interest and foster thought during the pre- and post-testing of children's knowledge and skills (Brooker, 2001).

## **CONCLUSION**

The research is clear that children need to acquire both knowledge of the alphabet and phonological awareness if they are going to develop literacy. Recent research has indicated that many children gain these abilities as part of their interactions within their homes and early childhood settings. Nicholson (2005) argues that as many as 75% of children develop these abilities

without difficulty, but the other 25% will need extra support to ensure that they become literate. There are identified groups of children who can be identified as 'at risk' (Justice & Pullen, 2003) and teachers need to know which groups of children need extra attention in both early childhood and primary school settings to help them overcome their various difficulties. Research also indicates that many teachers lack sufficient knowledge of both how literacy develops and what sorts of activities and encouragement they should be offering children in terms of literacy, particularly those who are 'at risk'. Cullen (2006) has argued that early childhood teachers in New Zealand have not traditionally seen promoting literacy as being a major part of their role, as a result of political decision making and gaps in traditional teacher education programmes.

The intervention that we propose to undertake is aimed at increasing teachers' understandings of the alphabet principle and phonological awareness and their importance in predicting literacy achievement. We also hope to heighten teachers' understanding of the opportunities that they can create within a holistic curriculum and within the context of children's play to promote alphabetic and phonological awareness. Our intervention will necessarily start with a small group of local centres but we hope to use this study as a pilot for larger and more comprehensive studies of how literacy can be promoted within early childhood settings in New Zealand.

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