

Kaiako perspectives on professional learning and development in structured literacy in Māori-medium settings: A case study

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ABSTRACT

This paper examines how kaiako (teachers) view professional learning and development training (PLD) in structured literacy (SL) in a Māori-medium immersion context. Through interviews with kaiako in a kura kaupapa Māori (Māori-medium educational setting) who teach students in Years 1-6, and images of the literacy environment to capture some of the literacy practices in classrooms, participants share their perspectives on their PLD training. The findings revealed some of the difficulties kaiako face, such as limited resources and working within a standardised curriculum, whilst attempting to implement changes based on their PLD training. The findings highlight the need for support from all stakeholders (including policy makers and the school leadership team) to successfully implement SL in Māori-medium settings. The need for further resources in Māori-medium settings and the challenge of making changes to a standardised curriculum also emerged from the study. Finally, the findings indicate some of the potential benefits of PLD in SL for Māori-medium educators and ākonga (students), such as an understanding of how the brain learns to read, some of the key elements of reading success, and instructional principles for effective literacy instruction.

KEYWORDS

Structured literacy, Māori-medium education, bilingual, professional learning and development

Introduction

The way children are taught literacy skills is an important consideration for educators. Until recently, literacy in New Zealand has predominantly been taught using the whole language (meaning focus) approach (Manuel, 2022; Tunmer et al., 2013), which is based on the premise that learning to read comes naturally, just as learning to speak does (Goodman & Goodman, 1979). This philosophy

purports that learning to read can be achieved through using a multiple cueing model (sometimes known as the “searchlights” model) (Tunmer et al., 2013). Semantic (meaning cues), syntactic (sentence structure cues), and graphophonic (graphic/visual cues) information is used to make predictions about words that come next in the text, with letter-sound information later used to confirm these predictions (Hempenstall, 2003; Tunmer et al., 2013). For children who are ‘at-risk’ of literacy failure, this method often leaves learners with an inability to decode unfamiliar words (Pressley, 2006; Tunmer & Hoover, 1993). This can be problematic in later primary years as students engage in reading a larger number of new and increasingly complex words (Hempenstall, 2003). Chapman et al. (2015) argue that this approach is flawed and they emphasise that educators need to shift their current literacy practices from the whole language approach to an evidence-based literacy approach. Further, research has identified that there is a disparity between ‘good readers’ and ‘poor readers’ in New Zealand (Chapman et al., 2015). It is reported that some students from Māori, Pacific and lower socio-economic (SES) backgrounds have disproportionately lower levels of literacy achievement compared to other demographics (Lock & Gibson, 2008). As Gaskins (2011) emphasises, if educators are to alter the trajectory of students who are ‘at-risk’ of literacy failure (such as students from Māori, Pacific and lower SES backgrounds), then evidence-based intervention is key.

Structured literacy (SL) is a term coined by the International Dyslexia Association (IDA, 2019). It comprises several evidence-based elements important for literacy instruction: phonology, sound-symbol, syllables, morphology, syntax, and semantics (Cowen, 2016). According to Lifting Literacy Aotearoa (2021), SL is showing positive effects in both English and te reo Māori. In support of Lifting Literacy Aotearoa’s report, one Māori-medium educator, who has taught using the SL approach, asserts that SL is the best way for children to gain literacy skills (Selby-Law, personal communication, Jan 21, 2022). SL is currently being introduced to an increasing number of classrooms in New Zealand, in both English- and Māori-medium settings. The Ministry of Education (MoE) is funding professional learning and development (PLD) in SL for English-medium schools and provides resources, such as decodable books for beginning readers, when schools participate in the PLD programme (Education Gazette editors, 2022). Decodable books allow children to practice the skill of grapheme-phoneme (letter to sound) correspondence. However, there is less certainty about the implementation of SL and associated PLD in Māori-immersion education. This study revealed that many Māori-medium kaiako do not know about SL. Based on findings from the comparatively scarce body of literature exploring SL in Māori-immersion settings, there are indications that the whole-language approach is the most common instructional style for literacy in kura kaupapa Māori (Manuel, 2022). However, given the abundance of research in support of SL, it is important to investigate evidence-based literacy approaches that may have the potential to better support students who are ‘at-risk’ of literacy failure (Manuel, 2022).

There is very little research about the literacy development of children who are exposed to both te reo Māori (the Māori language) and English language at school and in the home. Furthermore, little is known about PLD in SL in Māori-medium settings. The findings from this study could inform recommendations about changes that could be made in Māori-medium settings to help further kaiako knowledge of literacy instruction. The first section of this article provides background information pertinent to the research setting and objectives. A review of the current literature on the research topic is presented. Following this is the methodology of the study including the setting

of the research, participant information and the method of data analysis. Finally the findings are discussed, and conclusions and recommendations for further research are also detailed.

Literacy in Māori-medium contexts

This research was conducted in Māori-immersion classrooms in bilingual (English and te reo Māori) schools, therefore as an orientation to the study, consideration of SL in Māori-medium educational settings is pertinent. Māori-medium education was established from a desire to revitalise te reo Māori and to validate the importance of Māori culture and knowledge (Hill, 2017; G. Smith, 2017). Māori elders helped to establish the first immersion preschools in the 1980s. Kohanga reo (Māori immersion preschools) were opened initially, followed by kura kaupapa Māori (Māori immersion primary schools) in 1985 (Hill, 2017). There has been significant growth to Māori-medium education since 1985. Today, there are approximately 305 schools in New Zealand that have students enrolled in Māori immersion classrooms (Te Pae Roa, 2022).

Māori-medium instruction is an education setting where te reo Māori is used to teach the curriculum 51-100% of the time. Instruction at Level 1 (delivery at 81%-100%) has been shown to be the most effective approach when learning a new language (Hill, 2017). Learning at Level 2 (51%-80% of daily instruction) also has positive results for students' language acquisition (May, 2019). Levels 1 and 2 are considered Māori-medium, where students are expected to have high levels of conversation fluency after one to two years of instruction and classroom-based academic proficiency after six years of immersion (Hill, 2017). Levels 3-6 (0%-50% of daily instruction), however, are predominantly taught through the English language and students rarely develop high levels of proficiency in te reo Māori (Hill, 2017).

Literacy skills are fundamental for academic achievement in school. They are also a critical component of language and cultural regeneration (Hohepa, 2008). The Ministry of Education's Statement of Intent (2009-2014) reads that all children need support to gain literacy skills, and adds that Māori students should enjoy educational achievements as Māori (MoE, 2009). This statement implies that all children should be taught to read regardless of their ethnic background, and that their cultural needs and prior learning should be considered when determining appropriate instructional approaches. There is little information available regarding literacy pedagogical practices in Māori-medium settings (Hill, 2022). According to Berryman et al. (2001), there are also limited assessments available in te reo Māori for immersion educators to utilise.

In response to the limited resources available in kura kaupapa Māori, a framework for identifying the level of difficulty in books for reading instruction in te reo Māori was developed in 1996 (Berryman et al., 2001; R. Smith et al., 2020). Ngā Kete Kōrero (the language baskets) is intended to help kaiako in kura kaupapa Māori place students into instructional reading groups according to their literacy abilities (Berryman et al., 2001; R. Smith et al., 2020).

Additional attempts to raise children's academic outcomes in Māori-medium settings were made in 2007 with the introduction of Te Reo Matatini, a literacy strategy for Māori-immersion education

(New Zealand Government, 2007). The strategy aims to support students in Māori-medium education to become engaged in literacy experiences that will assist them to reach their academic potential (MoE, 2020). A review of Te Reo Matatini was conducted in 2020, during which the MoE sought feedback about the document from those involved in Māori-medium education (MoE, 2020). Feedback from the consultation reveals that several changes to Te Reo Matatini are needed to further develop the strategy. Suggestions from those involved in the consultation process include the following:

- a) More guidance is needed to understand how Te Reo Matatini can support students with diverse learning needs;
- b) PLD on the best practice approaches to teaching Te Reo Matatini should be provided;
- c) Further research about bilingualism and biliteracy should be undertaken (MoE, 2020).

Additional challenges in Māori-medium education generally were identified in the review, such as an absence of appropriate resources, inadequately trained kaiako, and lack of supportive leadership (MoE, 2020).

The Literacy Taskforce group was established in 1998 to advise the New Zealand government on how to close the gap between low and high achieving readers (MoE, 1999). Their recommendations, based on the latest research in literacy, were largely rejected by the New Zealand government (Tunmer et al., 2013). One of the Literacy Taskforce's unanimously agreed upon recommendations was that instruction in phonemic development should be emphasised in place of the whole language approach (Tunmer et al., 2013). In spite of these recommendations, the MoE continued to endorse and financially support the whole language approach to teaching literacy (Tunmer et al., 2013).

Unfortunately, possibly as a result of this decision, the MoE's desire to close the gap between children's literacy abilities was largely unmet. The 2011 PIRLS report showed no real change in literacy performance in New Zealand from the 2001 and 2006 reports (Mullis et al., 2012). Furthermore, the PIRLS 2016 and 2018 reports highlight the continuing gaps in literacy achievement between Māori and Pacific students and their Pākehā peers (Hood & Hughson, 2022). Tunmer et al. (2013) recommend that fundamental changes to New Zealand's literacy strategy need to be made to help reduce the large inequalities in literacy achievement. Similarly, Hood and Hughson (2022) state that to address the dire state of literacy in New Zealand, there will need to be a reform at all levels.

Participants were invited to contribute to this research project via the social media site, Facebook. An advertisement was sent to three closed Facebook groups dedicated to helping kaiako learn about SL and how to implement this approach in their classrooms. Kaiako who were recognised as making the shift to SL, whereby they are transitioning from the whole language-based approach in literacy instruction to the SL approach, were invited to participate in this study. The purpose was to gain their insights on PLD in SL and its effectiveness for supporting students who experience literacy difficulties, with the hope that the findings could potentially inform other kaiako wanting to try a new approach to literacy instruction in their immersion classrooms.

Literature review

The science of reading

The science of reading is the culmination of research conducted over the past 40 years to investigate how educators and reading specialists can effectively support the development of literacy skills and provide appropriate intervention for children who experience literacy difficulties (Gillon, 2018; Goswami, 2008; Gough & Tunmer, 1986; Lonigan et al., 2013; Moats et al., 2018; Nicholson & Dymock, 2015; Tunmer & Hoover, 2019). An analysis conducted by the National Reading Panel (NRP, 2000) of more than 100,000 studies identified five instructional components important for literacy acquisition: (1) phonemic awareness, (2) phonics, (3) fluency, (4) vocabulary, and (5) comprehension. Although each component plays a critical and often interdependent role in literacy development, the first two components are described by some researchers as particularly important for beginning readers (Ehri et al., 2001; Tunmer et al., 2013).

SL is a term coined by the International Dyslexia Association (IDA, 2019) and “is an evidence-based approach informed by the science of reading” (Manuel, 2022, p. 74). When instructing students to read, SL “is the most effective approach for students who experience unusual difficulty learning to read and spell” (IDA, 2020, p. 1). SL comprises several evidence-based elements important for literacy instruction: phonology, sound-symbol, syllables, morphology, syntax, and semantics (Cowen, 2016). Phonology is the study of sound patterns in spoken words (Cowen, 2016). Sound-symbol knowledge is the system for mapping out speech sounds to their visual symbols (orthography) (Goswami, 2005; Juel, 1994). Syllable awareness is the ability to divide words into smaller units (Blaklock, 1999). Morphology is an understanding of words and how they are formed (Devlin et al., 2004). Morphology is the study of how words are structured, including the different parts of words such as stems, root words, prefixes and suffixes. Morphology also helps us to identify how words in the same language relate to each other. Syntax refers to the way words are arranged in sentences and phrases to convey meaning (IDA, 2020), and semantic knowledge is the ability to comprehend and construct meaning from written text (Denton & Vaughn, 2010).

SL is an explicit, systematic and cumulative instructional teaching approach that helps children to read by decoding (Gough & Tunmer, 1986; Spear-Swerling, 2019). Explicit instruction means that foundational skills important for literacy success are taught in a clear and direct way by the kaiako (Archer & Hughes, 2011). The SL approach is systematic, which means that it follows a set plan and logical sequence of instruction (Denton & Vaughn, 2010). The order in which literacy skills and concepts are taught is cumulative, meaning they gradually build upon one another. Prerequisite skills are taught first, followed by more complex skills, to create a strong foundation for literacy acquisition (Moats, 2007). SL is diagnostic in nature, which means that educators use student responses to monitor and then adjust the pacing of the lessons based on students’ needs (IDA, 2020). Educator knowledge and understanding of SL is paramount because explicit, systematic, and cumulative literacy instruction can positively influence literacy achievement (Tunmer & Hoover, 2019).

Phonological awareness

Phonological awareness is also a crucial factor influencing literacy development, with some arguing it is the single most accurate predictor of literacy achievement (Gillon, 2018; Goswami, 2003; Nation, 2019). Phonological awareness skills are predictors of efficient decoding and text comprehension (Gillon et al., 2019). Research suggests that there is no one single answer for predicting literacy success (or failure) (Duke et al., 2013; Gaskins, 2011; Spear-Swerling & Sternberg, 1996). Rather, there are a variety of networking factors that contribute to literacy outcomes (Spear-Swerling & Sternberg, 1996). Nevertheless, the one skill most likely to aid a child's literacy development is phonological awareness (Gillon, 2018; Gough & Tunmer, 1986; Nation, 2019; Stanovich & Stanovich, 1995; Townend & Turner, 2000). Townend and Turner (2000) state that, "phonological awareness is more important than general ability [intelligence] in the development of literacy" (p. 7). Additionally, Nicholson and Dymock (2015) claim that phonological awareness is an essential skill for children to successfully decode words.

Oral language

Another factor influencing literacy development is oral language skills, which are related to reading comprehension (Marulis & Neuman, 2013). It is well evidenced that there is a positive correlation between oral language and text comprehension (Gillon et al., 2019; Nation, 2019; Townend & Turner, 2000; Vellutino et al., 2004). Paratore et al. (2010) report that early oral language skills can significantly predict reading comprehension ability by Grade 3 and 4 (Year 4 and 5 New Zealand schooling equivalent). Similarly, in a study conducted by Morgan et al. (2015), results indicate that the oral language skills of 24-month-old toddlers can significantly predict both literacy and mathematical achievement at school.

The linguistic landscape

The linguistic landscape refers to the prominence and visibility of a language within a defined area (Landry & Bourhis, 1997). Although this concept has mainly been applied to geographical regions and investigating the use of road signs and billboards (Huebner, 2006), Armand (2008) considered how linguistic landscapes could also apply in educational contexts. He states that there is a dynamic relationship between children, language and their territory (Armand, 2008). The linguistic landscape can provide children with a sense of the power and status (mana) given to a language (Armand, 2008; Landry & Bourhis, 1997). As children process visual information around them, it can influence their perception of language and how they use it (Cenoz & Gorter, 2006). Placement, size or colour of displays may increase the salience and importance of languages (Huebner, 2006). In a study exploring te reo Māori in classrooms, Harris (2016) reports that the linguistic landscape creates an authentic environment for children to use te reo Māori and contributes to a normalizing of the use of te reo Māori within the classroom. The linguistic landscape is relevant to Māori-immersion classrooms as the physical space given to te reo Māori can support the attitudes students hold towards learning te reo Māori.

Biliteracy learning

Learning to read and write in two languages can be time consuming and challenging, however there is evidence to suggest that once a student has mastered the processes for reading in one language, those skills can then be applied to learning almost any other language – a principle called language interdependence (Derby, 2022; May et al., 2006). Biliterate children (students learning to read and write in te reo Māori and English) usually learn te reo Māori as their second language. English is generally the first language they learn to speak, as English is the dominant language in New Zealand (Hill, 2010). This is referred to as an additive approach, where students are adding a second language instead of replacing one language with another (May et al., 2006).

Research shows that initially biliterate students experience a delay in learning academic subjects at school (May et al., 2006). This is due to students needing to develop fluency in te reo Māori before they can engage in academic subjects. However, they begin to catch up with their monolingual peers if they remain engaged in Māori-immersion education (May et al., 2006).

Te reo Māori is a transparent orthographic language (the alphabetic symbols are consistent with their sounds), whereas English is orthographically opaque (letters have more than one sound association) and has irregular spelling rules (Caravolas et al., 2005; Glynn et al., 2005). Te reo Māori also has a less complex syllable structure and minimal consonant clusters compared to the English language. In a study conducted by Aro (2006), it was found that children learning to read orthographically transparent languages (such as Finnish) progress more readily with their reading development compared to children learning to read English. Due to insufficient comparable studies in the New Zealand context (May et al., 2004), it is difficult to equate international results to the reading progress of biliterate children in New Zealand.

Professional learning and development for Māori-medium kaiako

To enable kaiako to better support students with their biliteracy learning, it is fundamental that educators have access to evidence-based PLD. Given the array of literacy difficulties that students may encounter when learning to read and write, there is a lack of appropriate PLD opportunities available to Māori-medium kaiako (Hill, 2010; Hood & Hughson, 2022; May et al., 2004). In a study conducted by Manuel (2022), it was found that there were gaps in kaiako knowledge and understanding of instructional principles for children's literacy success in Māori-medium schools. She reports that core literacy instruction remains whole language-based with some phonics instruction (Manuel, 2022). Selby-Law (personal communication, Jan 21, 2022) supports these findings by stating that most kaiako in Māori-immersion education are using the multiple cueing system, or whole language approach, during reading instruction. Moats (2007) asserts that kaiako who are well informed with current research are the best insurance against children's literacy failure. Kaiako who understand and implement evidence-based literacy approaches in Māori-medium settings may have the potential to better support students who are 'at-risk' of literacy failure (Manuel, 2022).

Educational neuroscience and literacy acquisition

Educational neuroscience is an understanding of the development of a child's brain and how it is shaped by environmental, parental and educational factors (Dehaene, 2011). Educational

neuroscientific knowledge is highly valuable for educators as it connects research in neuroscience and cognitive science with educational practices, to greater outcomes for students (Tandon & Singh, 2016). Educational neuroscientists utilise the technology of functional magnetic brain imaging (fMRI) to objectively track how the brain learns to read (Dehaene-Lambertz et al., 2018).

Stanislas Dehaene (2011) states that reading is a collective activity involving many areas of the brain. Learning to read is dependent upon the efficient interconnection between the visual areas and the language areas of the brain (Dehaene, 2009).

This research aimed to answer the following question: 'What are the views of kaiako in Māori-medium settings regarding PLD in SL?' The following sub questions were also addressed in the study:

1. What were the most effective types of PLD in literacy difficulties that kaiako had participated in?
2. How had PLD in SL supported kaiako to understand literacy difficulties in children?
3. How had PLD in SL helped kaiako to identify students who experience literacy difficulties?
4. How had PLD in SL supported kaiako to instruct students who experience literacy difficulties?
5. What are the perceived barriers to implementing SL in Māori-medium settings?

Methodology

A case study design was considered the most suitable approach for this project as it investigates contemporary experiences in its real-world settings, allowing for a detailed and intensive examination of each participant's thoughts, feelings, and context (Bryman, 2008; Cohen et al., 2011; Yin, 2018).

The data sets gathered for this study were in a real life setting and explored participants' responses to interview questions, whilst providing opportunities for further discussion. Case study research relies on multiple sources of evidence, such as interviews, documents, and physical artifacts (Yin, 2018). This study gathered data from three sources of evidence, interviews, school policy documents, and physical artifacts. Case studies commonly employ research methods such as interviews to assist with data collection (Yin, 2018). Unstructured interviews are particularly helpful as they allow for an in-depth and detailed examination of a case (Bryman, 2008). Unstructured interviews allow participants the autonomy to contribute their knowledge and experience to a study. Physical artifacts can be a useful component of a case study (Yin, 2018). Artifacts in this study provide the researcher with a broad perspective of the classroom literacy environment and resources within that environment.

Research setting

The research setting for this project is a primary school located in the North Island of New Zealand. To maintain anonymity, the case study school has been given the pseudonym of Waterford School. The school caters to students from Years 0-13 with an enrolment of almost 600 students. Of the students enrolled, 39% identify as Māori. Immersion classes are available for students in Years 0-9.

Currently there are only two immersion classrooms: one junior class (for students in Years 0-3) and one middle school class (Years 4-6). There are approximately 30 students enrolled across the immersion classrooms. Kaiako instruct students in te reo Māori 81-100% of the time, making them Level One immersion classrooms (Education Counts, 2022).

Participants

Two participants in full immersion education contributed their ideas, perspectives, and experiences to the study. Both kaiako have ten years of teaching experience and both are relatively new to Māori-immersion education. Both participants identify as Māori. To maintain anonymity, pseudonyms are used in the presentation of this study. Anahera teaches the junior class (Years 0-3) and Tia teaches the middle school class (Years 4-6). Both classrooms operate at Level 1 immersion (81-100% of daily instruction is in te reo Māori). Participation criteria for inclusion in this study are the following: a) kaiako who are in Māori immersion education; b) kaiako who had participated in PLD in SL. Both participants attended PLD training in SL in Term One of the school year. The training was presented by an external provider and tailored to Māori-medium kaiako with customised SL resources and assessments designed for supporting te reo Māori literacy development. Kaiako were introduced to a scope and sequence for teaching literacy in te reo Māori. There are Levels within the SL programme. Level 1 sounds are taught first ('m', 'ā', 'a', 'p', 't', 'e', 'ē', 'h', 'o', 'ō', and 'k'), followed by more challenging sounds in Levels 2 ('i', 'ng', 'ī', 'u', 'wh', 'w', 'n', 'ū', and 'r') and 3 ('ea', 'ei', 'oi', 'ou', 'ua', 'ae', 'eo', 'iu', 'io', 'ui', and 'ao'). Students do not move on to Levels 2 and 3 until they have mastered the sounds at Level 1. Interviews were conducted soon after in Terms Two and Three, so both kaiako are new to teaching SL in Māori-immersion classrooms. Anahera had also pursued her own self-directed learning of SL prior to attending the PLD training. Table 1 provides a summary of the participants and the classrooms they teach in.

Table 1. Participants' background information

Participant pseudonym	Years of teaching experience	Years of teaching in Māori-immersion	Non Māori/ Māori	Class year level	Level of immersion in associated classroom
Anahera	10	1	Māori	0-3	L1
Tia	10	2	Māori	4-6	L1

Data analysis

The data sets were analysed using thematic analysis (Braun & Clarke, 2006). This approach is flexible and allows for the identification of key themes across data sets (Clarke & Braun, 2017). Braun and Clarke (2006) provide a six-step framework for conducting a thematic analysis (see Figure 1).

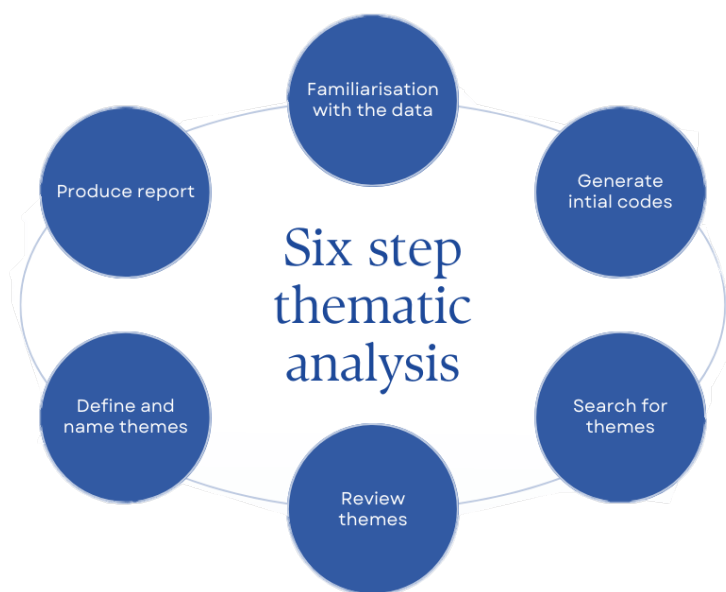


Figure 1. Six step thematic analysis

The data sets for this study were analysed in three stages: first, analysis of data from the semi-structured interviews, second, analysis of the images of artifacts with their corresponding audio recordings, and third, an analysis of the school policy documents. Thematic analysis of all data sets began with familiarisation of the data and generation of the initial codes or themes. Once some themes had been identified, an investigation of the data for similar themes took place. A review of those themes occurred next. Finally, the themes were refined with the addition of subthemes and the findings presented.

Findings and discussion

The following themes were identified following an analysis of the data sets: firstly, the importance of understanding how the brain learns to read; secondly, a knowledge of the key elements and instructional principles of SL for supporting students' literacy development; and lastly, some of the challenges of implementing the SL approach. These include limited resources, limited support from key stakeholders, and some difficulties of working within a standardised curriculum.

The themes are discussed below. The main research questions are addressed using findings from the data sets and evidence from relevant literature.

Neurodevelopment and literacy acquisition

A key theme that emerged from an analysis of the interviews was the importance of understanding how the brain learns to read. From the PLD training in SL, kaiako gained an understanding of how the

brain's structures and functions contribute to literacy development. Findings from the interviews indicate that an understanding of how the brain learns to read was significant to both participants, as it led to kaiako changing their teaching practice. This finding is consistent with the conclusions from the literature on this topic. A study by Dehaene (2011) emphasises that the aim of educational neuroscience is to connect research from brain imaging with classroom teaching practice, leading to enhanced instructional methods and better outcomes for students. Because of the understanding kaiako gained at the PLD in SL, both participants improved their teaching practices.

Specifically, knowledge of brain structures and functions increased Tia and Anahera's understanding of why some students found it challenging to acquire literacy skills. This helped Tia to recognise, through the SL approach, that she is helping students to develop parts of their brains that are needful for literacy success. Tandon and Singh (2016) claim that an understanding of brain mechanisms involved in literacy acquisition creates a science of learning that can be transformative for educational practices. An understanding of how the brain functions led Anahera to alter her teaching practice. She explained that her follow-up literacy activities, after group literacy instruction, are designed to help the neuropathways in students' brains "*connect up*" and "*solidify*", the knowledge they had just learned from their direct literacy instruction.

Key elements of literacy success

Results from the interviews and physical artifacts show that a knowledge of the key elements of literacy learning also enhanced participants' classroom teaching instruction and supported students' literacy achievement. According to Cowen (2016), there are six key elements for effective literacy instruction. These include: phonology, sound-symbol, syllables, morphology, syntax, and semantics (Cowen, 2016).

Sound-symbol awareness

During the interviews, kaiako often referred to some of the key elements of literacy learning and how they are incorporated in their instructional practices. There was also evidence of these elements in their classrooms, such as the wall displays, the teaching resources, and samples from students' work. One example of the literacy elements being used in the classroom is the sound wall (Figure 2).

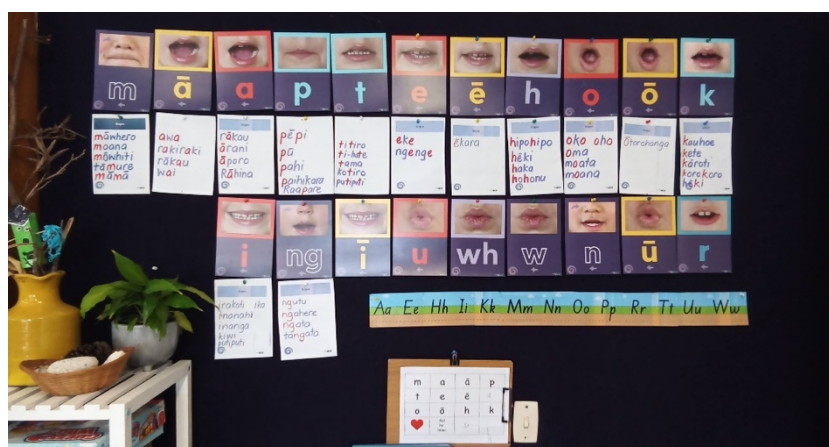


Figure 2. Sound wall display

Tia described how the SL approach helped students understand the sounds of and the symbols for the letters of the Māori alphabet. She stated that some students did not “*know what a[n] H look[ed] like...They didn’t know the sound it makes*”. However, using the SL approach, Tia emphasised that “*those [students] know those 11 letters now*”. The 11 sounds Tia referred to are from kaupae tahi (Level 1) of the SL programme that participants were introduced to during their PLD course. Kaupae tahi sounds are ‘m’, ‘ā’, ‘a’, ‘p’, ‘t’, ‘e’, ‘ē’, ‘h’, ‘o’, ‘ō’, and ‘k’. Findings from this data reveal that PLD in SL can enhance teaching practices and strengthen students’ knowledge of sound-symbol awareness, a necessary skill for literacy success. This finding is consistent with evidence from Lifting Literacy Aotearoa (2021) who assert that SL positively affects the literacy development of students who are learning te reo Māori.

Syllable awareness

Another key element of literacy success is syllable awareness. Cowen (2016) maintains that syllable awareness is one of the six key elements of literacy success. Evidence from physical artifacts in the classroom and teaching resources demonstrate that SL helps kaiako to support students with their syllable awareness. Tia explained that she used the syllable cards (Figure 3) during her literacy instruction to teach students syllable awareness skills.



Figure 3. Kūoro (syllable) cards

These cards contain all the consonant vowel combinations from kaupae tahi. Tia used the cards to help students quickly identify syllables in te reo Māori.

Syntactic awareness

The IDA (2020) defines syntactic knowledge as the way words are arranged in sentences and phrases to convey meaning. Data from the interviews demonstrate that kaiako used the SL approach to help students gain syntactic awareness. Tia used the sentences cards (Figure 4) to help students connect a subordinate clause to a main clause using conjunctions.



Figure 4. Rerenga kōrero (sentence) cards

Tia gave students a starter sentence such as, “*kei te haere a māmā ki te toa* (mum is going to the store)” and provided students with a conjunction to use such as, “*although*”. Students were then asked to write a subordinate clause which connects with the main clause to create a sentence in te reo Māori. Tia affirmed that her training in SL helped her to understand how to teach syntactic knowledge to students, whereas prior to the PLD she “*wasn’t always sure how to implement it*”. These results indicate that PLD in SL can support kaiako to effectively aid the development of syntactic awareness, a necessary skill for literacy success.

Gaps in kaiako knowledge of key elements of literacy success

The findings from an analysis of the data sets indicate that kaiako are successfully using and implementing three out of the six key elements of literacy success. Results from the data sets did not reveal that kaiako used the following elements in their teaching practice: phonology, morphology, or semantics. Given the overwhelming evidence in favour of phonological awareness being crucial for beginning readers (Ehri et al., 2001; Gillon, 2018; Goswami, 2003; Nation, 2019), it is surprising that there is no data indicating its use during classroom instruction. Tia implied that she recognised phonological awareness as an element of literacy acquisition when she described the SL programme, “[SL] progresses from sounds...”. However, there is no evidence to suggest that phonological awareness is being explicitly taught through direct instruction.

Instructional principles

Results from the interviews and physical artifacts indicate that a knowledge of the SL instructional principles can support kaiako to enhance their teaching practice and support students with their literacy development. There are three evidence-based teaching principles identified by Cowen (2016). These are: explicit instruction, systematic and cumulative teaching, and diagnostic reviews of students’ literacy learning.

Explicit teaching

Tia described how she uses direct instruction (clear presentation of knowledge) during her group writing lessons and how students will share with her the sentence they wish to write. Tia will help students count the number of words they need to write. Students then attempt to write the prescribed number of words and include the correct number of gaps with their sentence. This is an example of how kaiako are using the teaching principle of direct instruction during literacy learning. These findings indicate that PLD in SL can help kaiako to improve their teaching practice through applying principles such as clear and explicit literacy instruction.

During the interviews, kaiako often referenced the instructional principles of the SL approach. Evidence of explicit teaching could also be found in the classroom as part of their wall displays. One such example is the sound wall which illustrates the use of clear and explicit instruction. According to Spear-Swerling (2019), explicit instruction is an important teaching principle as it helps children gain literacy skills such as the ability to decode. Figure 2 is a picture of all the vowels and consonants in te reo Māori. There are corresponding images of how the articulators (teeth, tongue and lips) form these sounds. The images are clear and explicitly instruct students how to pronounce all the sounds of the Māori alphabet. The inclusion of orthographic symbols can help students learn the sound to symbol associations of the Māori alphabet.

Systematic and cumulative instruction

Another teaching principle that was reported in the interviews was systematic and cumulative instruction. Denton and Vaughn (2010) define systematic instruction as teaching that follows a set plan and logical sequence of instruction. Evidence from the interviews illustrates that this teaching principle is understood by the kaiako who participated in this study. Tia highlighted that “[SL] progressed from sounds ... to syllables, to sentences to books”. Moats (2007) described the cumulative nature of SL stating that skills and concepts are taught in order of difficulty. The foundational concepts are taught first followed by more complex skills. The kaiako explained that the cumulative progression of SL helped them to understand students’ needs more effectively. Tia noted that “It’s quite clear how they’re moving through”. Anahera supported this statement, “I can quickly see what they remember and what they forget”. These findings indicate that PLD in SL can increase kaiako understanding of the teaching principles for effective literacy instruction leading to an increased awareness of how students are achieving.

Diagnostic monitoring

The final teaching principle illustrated in the interviews was the focus on monitoring students’ progress. According to the IDA (2020), diagnostics is the method of monitoring students’ responses to SL instruction and adjusting the literacy lessons based on students’ needs. Findings from the interviews and samples of students’ work demonstrate that this teaching principle is being applied by kaiako. During the interviews Tia explained that she can promptly adjust her lesson plans when a student needs additional instruction. She provided the example of working with a small writing group, “[the students] practice right in front of you”. She continued by describing that when a child spells a word incorrectly, she can see the error and “jump on [it] straightaway”. Tia then explained that she will do an “off the cuff” spelling lesson to help the students spell the misspelt words

correctly. This finding demonstrates that PLD in SL aids kaiako in understanding and applying the teaching principle of using diagnostics to adjust their lesson plans to meet students' needs.

Tunmer and Hoover (2019) emphasise that the teaching principles of the SL approach can help kaiako to develop more effective literacy practices in their classrooms leading to positive influences on students' literacy achievement. Findings from the data sets are consistent with this research. Kaiako provided examples of how they apply all three teaching principles (explicit instruction, systematic and cumulative teaching, and diagnostic monitoring) in their practice, thus leading to more effective literacy instruction and promoting better outcomes for students.

Limited resources

Limited resources in Māori-medium settings was a key theme that emerged from the interviews. Participants reported that there were limited resources available in te reo Māori to support kaiako in their teaching practice. Anahera stated that *"there is nothing available in te reo Māori"* for professional development or teaching resources. This finding is consistent with the feedback received from other Māori-medium educators who advised the Ministry of Education in 2020 that there was an absence of appropriate resources available in te reo Māori (MoE, 2020). A possible reason for this is students enrolled in Māori immersion education account for only 3% of all students in New Zealand (Education Counts, 2022). This illustrates that students in Māori immersion are a minority compared with the students enrolled in English-medium settings. It is possible that, due to the comparatively small number of students in Māori-medium settings, there is less demand for resources in te reo Māori and therefore, fewer materials produced.

Limited support from key stakeholders

Kaiako highlighted the need for support from key stakeholders. A lack of support from others can hinder the implementation of change to classroom literacy instruction. In a review conducted by the MoE (2020), Māori-medium educators indicated that a lack of supportive leadership made it challenging for them to implement the literacy strategies found in Te Reo Matatini. Tia reported that implementing the SL approach was constrained when senior leadership did not *"place a lot of value on it"*. These findings indicate that support from key stakeholders is essential for successful implementation of the SL approach in classrooms.

Kaiako reported that they felt there was a lack of support from the wider Māori community. Anahera reported that there is a general *"hesitation"* from whanau and kaiako in Māori-medium settings to engage with PLD in SL. *"I wonder ... whether they think 'oh that's a pakeha way of teaching' ... I wonder that because it's not come from Māori research"*. She also explained that because *"te reo Māori was very oral based"* key stakeholders might question if SL went *"against 'how we teach te reo Māori'"*.

These results indicate that lack of support from people in the wider Māori community can hinder the successful implementation of the SL approach. Findings from Waterford School's policy documents state that changes to the Māori-immersion curriculum should be made in consultation with the Māori community. As neither participant discussed a consultation process prior to making changes to

their literacy programme, it is possible that this procedure has not yet been followed, which may contribute to Anahera's feelings of being unsupported.

Working within a standardised curriculum

Findings from the interviews indicate that kaiako found it difficult to make changes to their literacy programme because the SL approach is not yet part of the standardised curriculum in New Zealand. This made it hard for kaiako to report progress to senior leadership teams and to the MoE. Tia explained *"It can't be used to show achievement to the Ministry of Education ... so no one is going to see progress"*. One of the expectations for curriculum delivery at Waterford School is that the achievement of students needs to be monitored and reported. As the assessment tools in the SL programme are non-standardised (see Figures 5 and 6), kaiako face a conflict when trying to meet the expectations outlined in the school's curriculum policy. Figures 5 and 6 show the tracking records for all the Level 1 sounds (oro), syllables (kūoro), words (kupu), sight words (kupu mahara) and sentences (rerenga kōrero) in the SL programme.

(Tuhi)	
Rā	
Oro	
m	
a	
ā	
p	
t	
e	
ē	
h	

Kūoro	
Rā	
Kūoro	
te	
mā	
po	
ka	
hō	
ta	

Ingoa	
Rā	
Kupu	
pepa	
tama	
mako	
koha	
tamō	

Figure 5. Tracking record for kaupae tahi (Level 1) sounds, syllables and words

Hanganga Reo Matatini Aromatawai - Kaupae 1
(Tuhi)

Rā				
Kupu Mahara				
kei				
tēnei				
Total				

Rā	
Rerenga Kōrero	
He pepa tēnei.	
He tōmato tēnei.	
Ko Māma tēnei.	
Ko Hakopa tēnei.	
Kei te peke te fama.	
Kei te ako a Ata.	
Kei te hāmama a Tame.	
Kei te hoko kāmata a Ema.	
Total	

Ingoa: _____

Figure 6. Tracking record of sight words and sentences at kaupae tahi (Level 1)

These findings are consistent with research from Berryman et al. (2001) which indicates that further research is needed to develop more standardised assessments in Māori immersion education. The conclusions drawn from the literature and the results from the data sets suggest that it may be challenging for kaiako to implement the SL approach due to the expectation that they work within a standardised curriculum. Both kaiako reported that the SL programme does not align with Ngā Kete Kōrero (a common reading programme used in Māori-medium education). One possible reason for this challenge is that SL is relatively new in New Zealand and has only recently been introduced to Māori-medium educators. Additionally, Māori immersion education is still developing (Hill, 2017). These two factors may contribute to kaiako reporting that they found it challenging to implement SL within a standardised curriculum.

Conclusion and recommendations

Findings from this study indicated that SL is too new to Māori-medium education to draw a definitive conclusion about the overall effectiveness of this approach. However, results suggest that PLD in SL did help kaiako to understand how to support students who experience literacy difficulties. The PLD in SL did not assist kaiako to identify students who experience literacy difficulties. Nevertheless, it did provide kaiako with a range of literacy principles to apply in their teaching practice. Finally, the study suggests that there are several barriers to implementing SL in Māori-medium settings such as, lack of support from key stake holders, limited resources, and the challenge of trying to work within a standardised curriculum.

This study has highlighted the need for further research in understanding PLD opportunities in literacy for Māori-medium educators. The need for further investigation into the literacy practices and assessments used in Māori-medium education was also identified. Further research is needed to understand how SL can affect students' literacy achievement. A randomised control trial to compare the literacy achievement of students who receive SL intervention to students who are taught using a standard literacy approach is one recommendation for future study. Additionally, replicating this study on a larger scale to investigate if the findings align with the themes in this study would be beneficial. Finally, a longitudinal study could assess the long-term effects of the SL approach for biliterate learners.

Overall, the study suggests that PLD in SL may hold promise for kaiako who are teaching in Māori-medium settings and may positively impact students' literacy achievement.

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