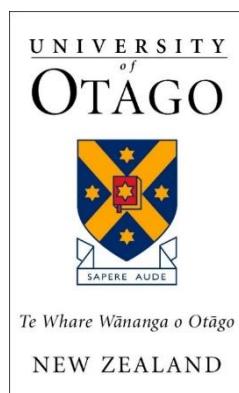


Running Head: TWO APPROACHES FOR FOSTERING SELF-REGULATORY
COMPETENCIES IN HOME-BASED EARLY CHILDHOOD EDUCATION AND CARE

**TWO APPROACHES FOR FOSTERING SELF-REGULATORY COMPETENCIES IN
HOME-BASED EARLY CHILDHOOD EDUCATION AND CARE: EXPLORING
BENEFITS FOR CHILDREN'S DEVELOPING SELF-REGULATORY AND SOCIO-
EMOTIONAL COMPETENCIES THROUGH THE TRANSITION TO SCHOOL**



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"Ahakoa he iti, he pounamu"- although it is small it is of great treasure

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ABSTRACT

Home-based early childhood education and care (ECEC) is a unique early childhood environment in which learning can take place to foster skills important for early school adjustment. The present studies examined the impact of the implementation of professional learning modules within a home-based ECEC setting that were developed to help educators promote the scaffolding of self-regulatory, socio-emotional and cognitive-linguistic competencies predicted to help early school adjustment. This thesis is a part of a larger project that aimed to look at the impact over time of providing participating home-based educators with professional development modules designed to foster the development of a range of key competencies in children aged 3 ½ to 4 ½. Each module was originally designed and found to show promise with parents of pre-school children but adapted for use in home-based ECEC. In the present project, these learning modules were developed to support teaching and learning in home-based ECEC.

The impact of these modules was measured over time, both post-implementation of the module (post-test) and one year after school entry. It was hypothesised that participation in a play/activity-based module, Enhancing Neurobehavioral Gains with the Aid of Games and Exercise (ENGAGE) and a shared reading/oral language-based module, Rich Reading and Reminiscing (RRR) would be associated with benefits to children's developing competencies from pre-test to post-test. Specifically, it was expected that children who participated in ENGAGE would display improved scores in self-regulatory measures relative to those who participated in RRR. However, children who participated in RRR were expected to display improved scores in the socio-emotional measures relative to those who participated in ENGAGE. In addition, this thesis followed a subset of children to explore benefits for children's related school-adjustment one year after school entry. It was hypothesised that participation in both areas

of professional learning would be associated with children's developing competencies in their first year of school.

At post-test, results of mixed between-within subjects' analyses of variance (ANOVA's) and nonparametric Wilcoxon signed ranks test suggested growth on measures of developing self-regulatory competencies over time. Although groups did not differ on measures of self-regulation at post-test, educators rated perceived benefits for self-regulation learning to be higher for ENGAGE relative to RRR. In contrast, there were two group X time interactions suggesting specific benefits of participation for children in RRR. Educators rated children in RRR to show higher levels of oral language competencies at post-test. Moreover, children in RRR also received higher composite scores for their responses to the Challenging Situations task, involving responses to responses to hypothetical scenarios involving peer provocation. At follow-up, repeated measures ANCOVAs and non-parametric Friedman-tests results demonstrated continued growth over time; however, there were limited differences between ENGAGE and RRR after school entry.

Overall, even though the hypotheses were only partially supported, it did appear that there was a benefit in providing resources to home-based early childhood educators to promote the development of competencies for preschool children in their education and care settings and children's early school adjustment.

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**EXPLORING BENEFITS FOR CHILDREN'S DEVELOPING SELF REGULATORY
AND SOCIO-EMOTIONAL COMPETENCIES THROUGH THE TRANSITION TO
SCHOOL.**

The experiences and education a child receives in their early years sets the stage for their future development across a variety of domains (Poulton, Gluckman, Potter, McNaughton, & Lambie, 2018). In New Zealand, and internationally, many young children spend time in the education and care of other adults (Education Counts, 2019; National Survey of Early Care and Education Project Team, 2016). Given this, early childhood education and care (ECEC) is a potentially significant point of influence for the development of children (Education Counts, 2019; McCoy et al., 2017) and the wellbeing of society (Heckman, 2011; National Academies of Sciences, Engineering, and Medicine [NASEM], 2019). ECEC refers to early childhood education and care across multiple forms of delivery. The most common are centre-based ECEC (for example, kindergartens). The current thesis focus will be on home-based ECEC, which is defined as ECEC within a home setting. Home-based ECEC is growing as a popular choice in New Zealand (Davis et al., 2012); however, the research behind home-based ECEC is lacking comparatively to centre-based ECEC research (Smith, 2015). This is important as the research within ECEC settings needs to be representative of all forms of ECEC delivery in New Zealand.

Many children receive ECEC in a home-based setting, whether in their own home or the home of a provider. In some countries, home-based ECEC forms part of the formal ECEC sector, with regulations and an expectation of quality provision (Davis et al., 2012). Australia, New Zealand, and the United Kingdom all regulate home-based ECEC and expect family day care educators to provide ECEC that is comparable to the rest of the sector (Davis et al., 2012). Within New Zealand, ECEC policy is the responsibility of the Ministry of Education (MoE). The MoE covers all formally organised group-care arrangements for 0-5-year-olds, including licensed

home-based services or family day-care services. Parents may choose from seven main types of licensed ECEC services. These services can either be teacher-led, whānau led, or parent-led- with all services required to be certified by the Ministry of Education. School is compulsory from the age of six; however, most children begin school when they turn five (Davis et al., 2012).

Participation rates in licensed ECEC services are high, with 95% of all new school entrants having participated in ECEC education before school entrance (Ministry of Social Development, 2008). Internationally, many children attend home-based ECEC (National Survey of Early Care and Education Project Team, 2016), with the provision of home-based ECEC growing in New Zealand (Education Counts, 2019). Despite this, research into supportive teaching and learning in home based ECEC is lacking in comparison to centre-based ECEC (Kōrero Mātauranga, 2018b; Tonyan et al., 2017).

WHAT IS HOME-BASED EARLY CHILDHOOD EDUCATION AND CARE?

Home-based ECEC is a service that provides education or care, for gain or reward, to children who are under the age of five, or who are five but not enrolled in school, in either the child's own home or the home of the person providing the education or care (Ministry of Education, 2009). This model fits between the teacher-led and whānau/ parent-led where the child is taught and cared for within a home-based setting rather than an early childhood centre. The home-based environment will also have a smaller ratio of children and educators present than centre based ECE (Blaxland & Adamson, 2017; Layland & Smith, 2015). Changes to the ECEC service funding in the 1980's due to the Meade report have resulted in increased funding within the home based education sector as well as the provision of a quality assurance system (Smith, 2015). This change established home-based education as an integral part of the 'professional' early childhood sector, and likely contributed to home-based ECEC showing the highest growth across all ECEC services

between 2002 and 2007 (19.5%), and the second-largest growing rate of enrolments (15.5%) after ECEC centres (which had 16.2%) (Ministry of Social Development, 2008). The Ministry of Education subsidises the cost of ECEC and provides funding to licensed home-based ECEC services. Many home-based educators will operate within a service provider, who will establish quality by providing contracts with visiting teachers to support the educators (Smith, 2015).

WHY HOME-BASED EARLY CHILDHOOD EDUCATION AND CARE?

Home-based ECEC includes several features that hold promise for fostering high-quality early learning experiences. Home-based ECEC consists of a uniquely accessible service for children and their families, allowing flexibility and close relationships between educators, children and families. The adult-child ratio, for example, in which one adult serves no more than four children under five years of age, has the potential to allow for high-quality learning experiences that benefit young children's learning (Bowne, Magnuson, Schindler, Duncan, & Yoshikawa, 2017). Whānau (family) can also select a home-based ECEC setting that fits with their home culture, language, and values (Wirth et al., 2019; Tonyan, Paulsell et al., 2017). The importance of this choice and shared values is that it may promote meaningful connections between parents and educators and continuities in learning for young children (Biddulph, & Biddulph, 2003; McWayne, 2015, Mundt, Gregory, Melzi, & McWayne, 2015). Relationships between the educator and families often lead to the establishment of a whānau-like network for adults and children. These relationships can often build upon an “additional whānau” for the child in this extended social network (Smith, 2015).

However, home-based ECEC also presents challenges for supporting teaching and learning, given its unique setting—typically, one adult, working alone—and diverse workforce,

with varied educational backgrounds, experiences, and resources (Bromer & Korfmacher, 2017; Davis et al., 2012; Smith, 2015).

A GAP IN RESEARCH ON THE IMPLEMENTATION OF PROFESSIONAL RESOURCES WITHIN HOME-BASED ECEC

Research on home-based ECEC is limited due to most of the published research focusing on centre-based services. Research is often generalised from centre-based settings to home-based ECEC; however, it is also essential to see whether generalisations about quality as well as professional development also apply to home-based services.

The lack of research on home-based ECEC in New Zealand is a particular limitation on efforts to provide quality professional resources and development. Smith (2015) highlighted the need for further research, (both qualitative and quantitative) to inform policy in a New Zealand context. This research should aim to understand the nature of the current service and establish short term intensive professional resources for the home-based ECEC setting (Smith (2015). This should lead to informed better policy that best fit the needs of the home-based educators. Focus on this professional development will increase the status of the service and give recognition to the vital work and essential provision that occurs within educators' homes throughout the country. Such initiatives are believed to benefit and have a lifelong effect on children's engagement in later education (Education Regulations 2008, reg 204).

RESEARCH ON HOME-BASED EARLY CHILDHOOD EDUCATION AND CARE

Recognising the unique context of home-based ECEC, the Ministry of Education conducted a specific review of home-based ECEC in 2018. This has resulted in proposals for professional education for educators and supporting professional learning and development by strengthening

the role of supervising teachers (Kōrero Mātauranga, n.d.). The primary focus of the review was supporting the quality of ECEC.

It is common to divide aspects of quality into structural and process quality. Structural quality includes factors such as adult-child ratio, group size, staff training and education, wages, working conditions, and stability of staffing. In contrast, process quality consists of the general environment, social relationships and interactions directly experienced by children and families (Smith, 2015). There is a great deal of evidence that structural conditions in early childhood settings like group size, ratio and training influence quality because they influence the sensitivity and responsiveness of educators and teachers towards children (Dalli, 2010; Lindell, 1988; Mitchell et al., 2008). A teacher-child ratio that is too big can impact the teachers' ability to get to know the children, develop warm relationships with them, engage in collaborative learning activities, and mediate peer conflicts and difficulties (Koc & Celik, 2015).

It is well established in the literature that higher levels structural quality in ECEC are associated with higher process quality and better developmental outcomes. Professional learning and development (PLD) for kaiako (teachers and adults) who work with infants and children is just as or more important for infants and toddlers as it is for older children (Campbell & Von Stauffenberg, 2009; Carroll-Lind & Angus, 2011; Dalli, 2010; Mitchell et al., 2008; NICHD Early Child Care Research Network., 2004). Children in high-quality ECEC settings with favourable ratios, small group sizes and qualified staff, make more significant cognitive gains in mathematics, literacy and school performance (Koc & Celik, 2015). Participation in ECEC settings where children are encouraged to think and explore, and where they can share attention with responsive adults with whom they have warm relationships, in cognitively challenging and responsive contexts, is associated with better outcomes (Campbell & Von Stauffenberg, 2009). Conversely,

the impact of participation in low quality or mediocre quality early childhood settings is harmful, particularly for children from low-income backgrounds.

While continued PLD of staff is well established as a significant contribution to quality in centre-based ECEC, the extent to which this extends to home-based ECEC was considered within the NICHD study of home-based ECEC within nine US states (Clarke-Stewart et al., 2002). Findings showed that recent PLD was necessary so that when educators had received professional development in the last year, they provided more sensitive and high-quality care. These findings highlight the importance and effectiveness of regular and ongoing professional development (Clarke-Stewart et al., 2002).

Overall the research suggests that the above stated structural features are generally associated with quality learning experiences. However, they are not the same thing: structural features may make it more likely that quality learning experiences happen, but the actual interactions between *kaiako* (educator) and children are the real heart of learning experiences in ECEC (Pianta et al., 2016; Slot et al., 2018). Indeed, discussions of quality in home-based ECEC specifically focus on the quality educator-child interactions: High quality learning experiences in home-based ECEC is defined by the Education Review Office (2020) as an environment where educators are interested in children and the interactions between educator and child creates opportunities for meaningful conversations that provoke and extend children's thinking. The educators are also able to notice, recognise and respond to children's emerging interests and strengths and the children can participate in a safe and inclusive environment where they feel included and listened to (Education Review Office, 2020). Therefore, when thinking about supporting teaching and learning in ECEC, it is essential to also think about how to support these teaching and learning interactions.

In New Zealand, visiting teachers (co-ordinators) oversee home-based ECEC, providing professional leadership and support to educators and supervising the ECEC services provided to children (Kōrero Mātauranga, 2018b). Individualised, in-home supports are thought to be vital to supporting home-based ECEC (Bromer & Korfmacher, 2017). The Education Regulations (2008) in New Zealand require that the “person responsible” in an ECEC service has a recognised qualification and does not specify any training requirements for home-based educators (Satyanand & Excellency, 2011). The Education Review Office independently reviews and reports on the quality of education in all early childhood services (including home-based). These visiting teachers can be a point of continuity for understanding the curriculum and specific details of interactions that occur within individual homes (Education Regulations 2008, reg 204).

Therefore, New Zealand’s organisational structure in which all educators in licensed home-based services have the support of a qualified registered early childhood teacher (the visiting teacher) is a strength of home-based ECEC here. In contrast, for example, only about a third of regulated home-based providers in the US receive some form of coaching (Bromer & Korfmacher, 2017). However, despite this, a gap in research exists to investigate how to best support teachers and educators within these settings (Schaughency et al., 2019; Smith, 2015).

THE EARLY YEARS SPANS EARLY CHILDHOOD THROUGH TO AGE EIGHT

Over the past three decades, research has emphasised the paramount importance of preschool years in the development and consolidation of children’s cognitive, emotional, social and behavioural competencies (Shonkiff & Phillips, 2000). According to Shonkiff and Phillips (2000), early childhood is a time of rapid development, in which children’s early life experiences play an enduring role in their learning and set the stage for current and future functioning. During these early years of life, children begin to develop not only their capacities but also a set of

expectations about how the world works, which affects how new experiences are selected and processed (Shonkoff & Phillips, 2000). When children enter school, they are faced with increased demands of academic learning, compliance with rules, and developing positive interpersonal relationships with their peers and teachers (Bierman et al., 2008). To successfully cope with the demands and expectations associated with this significant life transition children are often required to possess a variety of self-regulatory, cognitive-linguistic and social skills before school entry (Campbell & Von Stauffenberg, 2009; Clarke-Stewart et al., 2002; NICHD Early Child Care Research Network., 2004). Therefore, understanding of the development of these competencies is essential in understanding the child's initial adjustment to school and social development.

To further highlight the significance of children's developing self-regulatory and socio-emotional competencies, a study looked at the relationship between teacher ratings of prosocial skills and later outcomes. Jones et al. (2015) looked at ratings of competencies in the first year of school in the US (aged five to six years), and various future outcomes at the age of 25. They found that children's early social competence positively predicted completion of high school, obtaining a university degree and having stable full-time employment (Jones et al., 2015). Furthermore, teachers' prosocial skill ratings negatively predicted receiving government-funded assistance, being on the waitlist for public housing, involvement with the police, and being arrested for criminal offences (Jones et al., 2015).

The ability to alter these developmental trajectories has been demonstrated across numerous programmes (Morrison et al., 2010; Schindler et al., 2015). For example, Head Start REDI is a preventive intervention that was designed to primarily focus on social-emotional skill enrichment for children living in poverty in Pennsylvania, America (Nix et al, 2016). This preventive intervention featured an integrated language-emergent literacy and social-emotional skills curriculum and enhanced support for positive teaching practices (Nix et al., 2016). Twenty-

Five Head Start centres with 44 classrooms were randomly assigned to deliver Head Start REDI. Children who had been in the Head Start REDI intervention were more likely to exhibit optimal developmental trajectories (student-teacher closeness, learning engagement, social competence, less peer rejection and aggressive-oppositional behaviour) than the control. These findings suggested that enriching Head Start with evidence-based curriculum components and teaching practices can have long-lasting benefits for children's social-emotional functioning (Nix et al., 2016).

CHILDREN'S SOCIAL DEVELOPMENT

Peer relationships are unique in that both parties involved in the relationship are typical of equal status. These peer relationships are often the primary context in which children learn skills essential to their social functioning. These skills have lifelong relevance and include abilities such as cooperation, negotiation and conflict resolution (Rubin et al., 2007). Friendships are not only crucial for social development but can also serve a protective function when confronted with difficulties (Nangle et al., 2003). Mutual friendships can buffer the adverse effects of dysfunctional family relationships and interactions (Gauze et al., 1996). These friendships also provide significant protection against the harmful effects of peer victimisation (Bukowski, 1999; Hodges et al., 1999). Problematic and a lack of peer relationships as a child predict a wide variety of later adverse outcomes including delinquency, lower levels of education attained, substance abuse, academic difficulties and psychological maladjustment (Hoza, 2007). Current research seems to validate the importance of positive peer relationships. Therefore, promoting social development through supporting requisite and prerequisite competencies is of utmost importance.

One of the most important predictors of social functioning is social skills. Han and Kemple (2006) define social skills as the specific behaviours people use when interacting with others.

Situations such as having a conversation, expressing feelings, or obtaining something from another person all require the use of social skills (Han & Kemple, 2006). Social skills include two key components, both what is said and how it is said. This oral language and meaning components of conversation are essential. When communicating with another person, the verbal content of the message, that is, the person's choice of words or phrases is essential. However, how that message is communicated can be just as important. For example, appropriate facial expressions, body language, eye contact, and tone all work to convey the message. Inadequate social skills are related to low social functioning and consequent adverse outcomes (Han & Kemple, 2006). For example, a child may struggle to start a conversation or understand the appropriate emotional response required within a conversation—which over time results in difficulties to make friends and obtain personal goals. Improving a child's social skills can enhance social functioning and in turn, result in positive outcomes associated with social functioning such as improved self-confidence and increased well-being (Lippman et al., 2015).

Social functioning is made up of many skills and can be predicted by more than solely social skills. Other predictors of social functioning need to be examined to understand it. As there is no current succinct definition for the components of social functioning, based on available research, it appears clear that emotion knowledge, communication skills and self-regulation are vital components (Smith, 2015).

EMOTION KNOWLEDGE

Children's developing social and emotional skills during the preschool years have been implicated in their early school and interpersonal success, and future outcomes (Denham et al., 2015; Denham & Brown, 2010; Jones et al., 2015). During the preschool years, children develop competencies in emotion management and navigating social interactions. These skills positively

predict school adjustment (Maguire et al., 2016), academic achievement (Nix et al., 2013) and later education, employment and social attainment (Jones et al., 2015). Collectively, children's socio-emotional competencies upon school entry are thought to be key indicators of children's 'readiness to learn' and 'teachability' within classroom settings (Rimm-Kaufman et al., 2000). Indeed, the New Zealand Ministry of Education has recognised the importance of all preschool children developing socio-emotional competencies and promotes the holistic development of young children through their early childhood curriculum (New Zealand Ministry of Education, 2017). The national early childhood education curriculum document emphasises the role of responsive and reciprocal adult-child interactions in fostering children's learning and development.

One crucial aspect of socio-emotional development is understanding and expressing one's emotions (Denham, 1998). Expressing and understanding feelings is important because as children are attempting to understand their own and others behaviour—emotions are used as a guide to understand and convey crucial interpersonal information that can guide the interaction. These emotional transactions are central to social interaction, and relationships are essential in supporting children's engagement in learning. Due to this importance, children ages 3-4 years old emotion knowledge is increasingly identified as a significant predictor for social and academic functioning as it helps them navigate its development. An inability to interpret emotions can make classrooms and playgrounds a confusing and overwhelming place (Raver et al., 2007). Therefore, the acquisition of emotion knowledge has important applied implications.

Research on social competence indicates that children ages 3-4 years old who apply emotion knowledge in emotionally charged situations have an advantage in peer interactions: they are rated as more prosocial, rated as more socially skilled by teachers, and identified as more likeable by their peers, even longitudinally (Ensor et al., 2011; Izard et al., 2016; Poulou et al., 2018). When young children can identify their own and others' negative feelings and negatively

valenced situations, they may enact more empathic actions; also when they can accurately perceive positive emotion expressions and situations, they may join in the fun in the classroom more readily (Denham et al., 2012). Young children who cannot understand others' emotions may misinterpret peers' actions, and plan actions based on this erroneous information; they may also misread their feelings, with subsequent missteps with peers.

Similarly, links between young children's emotion knowledge and both early classroom adjustment (e.g. abilities to persist, get along with others, motivation to learn) and academic success are also being supported. Specifically, Head Start children (aged 3-4 years) emotion knowledge predicted later classroom adjustment, even with age, verbal ability, and emotion regulation partially (Shields et al., 2001). Emotion knowledge is also related to academic achievement (Garner & Waajid, 2008; Leerkes et al., 2008). Emotion knowledge in 3-4-year-old children has been correlated with increased attention to academic tasks (Izard et al., 2008). This appeared to extend to academic achievement at age five and nine, with greater emotion knowledge correlating with higher ratings of social and academic competence in a US context (Izard et al., 2016; Izard et al., 2008). Overall it appears that children's ability to understand emotions in the early years plays a vital role in concurrent and later school success.

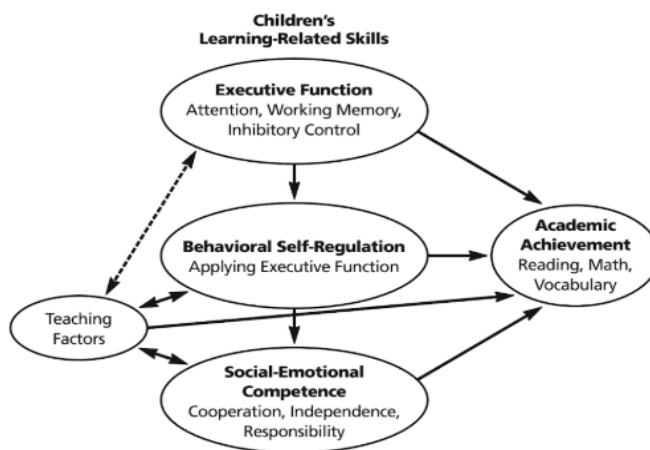
Both theory and empirical studies of concurrent relations seem to justify the hypotheses than an early index of emotion knowledge will serve as a long-term predictive of social behaviour and academic competence.

SELF-REGULATION

Self-regulation is a multi-component construct (Blair & Raver, 2012; McClelland, Schunk & Zimmerman, 1997; Vohs & Baumeister, 2011) that operates across several levels of functioning (social-emotional, motor, cognitive, behavioural and motivational), which in its

broadest sense represents the ability to plan volitionally and, as necessary, modulate one’s behaviour to an adaptive end (Barkley, 2011; Gross & Thompson, 200; Montroy et al., 2016). One approach to the complexity of self-regulation has been to view self-regulation as hierarchically organized and, eventually, reciprocally integrated (Blair & Raver, 2012; Calkins, 2007). Ultimately self-regulation depends on the coordination of many processes across levels of function, with children’s ability to draw on, integrate, and manage these multiple processes increasing across developmental time (McClelland & Cameron, 2012).

Figure 1. Conceptual model of how teaching factors relate to self-regulatory and socio-emotional competencies and later academic achievement in children.



The above model was informed by the description of self-regulation as a components of child functioning and later life success in the studies by Blair (2002) and Calkins (2007). In these studies it is suggested that the development of early childhood self-regulation is considered a vital component of a child's functioning as well as a predictor for later life success (Blair, 2002; Calkins, 2007). Research has indicated that as a child progresses from age three to seven, then there is a fundamental shift in the method of self-regulation that occurs from a primarily reactive to a cognitive-behavioural form of self-regulation, that requires the development and integration of many executive functioning and language skills (Diamond & Lee, 2011; Diamond & Ling, 2016).

Barley (2012) defines self-regulation as an overarching concept that operates across several levels of functioning (motor, physiological, social-emotional, cognitive, behavioural and motivational). This umbrella term can be understood as the skills required for an individual to modulate one's behaviour for an adaptive end (Barkley, 2012). Ultimately self-regulation is determined by the integration of multiple processes that increase at varying rates as the child develops (McClelland & Cameron, 2019).

A child's ability to self-regulate has been linked to early school adjustment and social functioning (Blair, 2002; McClelland & Cameron, 2012). Therefore, interventions designed to scaffold the development of self-regulation skills have been developed. Of note, the Training Executive, Attention and Memory Skills (TEAMS) programme, targeted executive function, attention, and memory skills (Halperin et al., 2013). TEAMS involved parents and children playing a wide range of prescribed games together for half an hour a day, over either five or eight weeks. Improvements in both parent- and teacher-rated inattention and hyperactivity skills were found post-intervention and at three-month follow-up. These results suggest that these skills can be fostered through the development of resources that reinforce scaffolding methods parents use with children. However, due to a lack of longer-term follow-up and control group, it was unclear if improvements were maintained beyond three-month follow up, and if improvements were reflecting maturation or altering existing trajectories.

Language is another child attribute that affects developing self-regulation and may be an essential factor for understanding potential self-regulation trajectory differences across children. Language can give children the ability to help organize and modify their thoughts and behaviours (Vygotsky, 1934/1986). During early childhood, expressive language is particularly important as it enhances the ability of the child to both articulate their current emotional state and manipulate that state concerning a specific context (Cole et al., 2010). It also seemingly enhances children's

ability to hold task requirements in mind (Karbach, Eber, & Kray, 2008). Trajectories of self-regulation appear to vary between children dependent on practical expressive vocabulary skills (Vallotton & Ayoub, 2011). Likewise, early expressive language skills are also associated with higher levels of early self-regulation, with more significant language gains across the preschool and the transition to kindergarten associated with more substantial self-regulation gains (Bohlmann, Maier, & Palacios, 2015; Skibbe et al., 2019). This relationship is demonstrated in a study of US children from the Midwest by Skibbe et al. (2019) where the findings of their longitudinal study support the enduring and interconnected nature of self-regulation and children's language and literacy development.

Therefore, it appears evident that self-regulation entails multiple components required for early school adjustment, including behavioural, cognitive, language, and emotional regulation—and these components are important for a child's social functioning and school readiness. Specific interventions that aim to foster multiple components of neurocognitive functioning and support longer-term development of self-regulation and corresponding positive socio-emotional competencies include Enhancing Neurobehavioral Gains with the Aid of Games and Exercise (ENGAGE) (Healey & Halperin, 2015). Building on TEAMS, ENGAGE aims to foster self-regulation in pre-schoolers by adult scaffolding of children's behavioural, emotional, and neurocognitive competencies. As initially trialled, ENGAGE involved a wide range of games that the parent and children with behavioural levels suggestive of ADHD played daily across five-weeks, which emphasised self-regulatory skills (Healey & Halperin, 2015). The games included those targeting behavioural regulation (e.g., musical statues), cognitive regulation (e.g., games involving focused attention such as puzzles), emotional regulation (e.g., relaxation and deep-breathing exercises), and motor skills and exercise (e.g., ball games, skipping) (Healey & Halperin, 2015). This focus on the development of internal skills of self-regulation through active and

interpersonal interactions was shown to lead to significant improvements in preschool-aged children's parent-rated behavioural control, in particular, hyperactivity and aggression. Notably, the parent-rated behavioural gains were maintained over 12 months, indicating that the program had lasting effects on parent-perceived behavioural functioning (Healey & Halperin, 2015). These results suggest that trajectories can be shifted through the development of resources that reinforce learning through play.

EMOTION-REGULATION AND SELF-REGULATION ARE LINKED

A final area related to self-regulation and executive functions is emotion regulation. Numerous studies have shown that neurocognitive and socio-emotional development are intertwined (Blair, 2002) and that lower emotional regulation is associated with lower executive functions (Healey et al., 2010, 2011; Rothbart et al., 2003; Wolfe & Bell, 2007).

This research suggests that children's developing socio-emotional understanding and self-regulation are inherently interrelated (Denham et al., 2015; Ferrier et al., 2014; McClelland & Cameron, 2019; McKown et al., 2009). Behavioural regulation allows children to be competent in a socio-emotional context. Paying attention, cognitive flexibility and inhibitory control guide children's thoughts and behaviour, and they can demonstrate cooperation with peers, management of emotions and social problem solving (McClelland & Cameron, 2019). However, the definition of what emotion regulation is within the research is less clear. For this thesis, the definition of emotion regulation informing our definition of social functioning is as follows.

Emotions are brief experiences that unfold over seconds or minutes and are elicited by specific events. For example, a child who drops their ice cream is likely to experience sadness and anger. This emotion can elicit multiple behavioural responses depending on the child's ability to regulate this emotional experience. Emotion regulation involves initiating, inhibiting, or

maintaining one's feelings (subjective experience), thoughts (cognitive responses) physiological responses (e.g. tension in muscles) and behaviour (expressions or bodily actions) in response to emotion (Ford & Gross, 2018). Heightened emotional arousal triggers emotion regulation processes to manage that arousal (Eisenberg & Spinrad, 2004). Emotion regulation influences which emotions people have, when they have them, how they have them and how they experience and express them. It is the process through which individuals manage emotions to direct their behaviour towards a goal (Ford & Gross, 2018). Children with strong emotion regulation abilities respond to the demands of a situation with a range of socially acceptable and flexible emotional responses such as resisting overly emotional reactions to upsetting stimuli or handling frustration without an outburst (Cole et al., 1994). This reaction does not mean that the emotion is not experienced; instead, if the child drops their ice cream, they are less likely to have a tantrum and hit their parent. Emotion regulation is a crucial process for robust mental health and healthy interpersonal and intrapersonal functioning (Salsman & Linehan, 2012; Southam-Gerow & Kendall, 2002).

Exploring theories proposed to underlie the mechanisms of emotion dysregulation requires conceptualising the theories behind emotion regulation. There are two schools of thought surrounding the conceptualisation of emotion regulation. One conceptualisation is that emotion regulation is one process made of critical components, the other is emotion regulation consists of many emotion-related constructs that develop, intertwine, and build on each other as we grow (Southam-Gerow & Kendall, 2002). Constructs of emotion development are suggested to include: emotion awareness (knowing about one's own and others' emotional experience including physiological changes, intensity and duration), emotion understanding (knowledge of emotion processes; knowing and recognising how people express emotions, causes and cues, knowledge about feelings as communication and about coping with emotions). It also includes empathy

(“feeling with” another, the ability to offer support) and emotion regulation (intrinsic and extrinsic (interpersonal) processes, evaluating and modifying emotional reactions to achieve goals (Bloch et al., 2010; Saarni, 2011). The above are posited to be taught by emotion socialisation. That is, the modelling and scaffolding of emotion awareness and regulation (e.g. responding to emotions, emotion validation, conversations about emotions, modelling responses or regulation strategies) to children by people (most often parents/caregivers) (Southam-Gerow & Kendall, 2002).

Alternatively, emotion regulation has been conceptualised as an umbrella term encompassing all emotion-related constructs and focuses on emotion-regulation abilities instead of strategy use. Emotion-regulation capabilities emphasise acceptance, willingness, and tolerance of emotions. The ability to regulate emotions involves the awareness and understanding of emotions, the acceptance of emotions, the ability to control impulsive behaviour when upset, to behave in line with goals when experiencing negative emotions and the ability to apply regulation strategies to modulate emotions to meet personal goals. Emotion regulation also relies on access to the flexible use of emotions to meet the demands of a situation and personal goals that an individual can understand, monitor, evaluate and differentiate between emotional states and can control behaviours (e.g. control impulsive behaviours and maintain goal-directed behaviour) (Gratz & Roemer, 2004). Emotion dysregulation can occur when an individual has not learned or is struggling with any one of these abilities (Gratz & Roemer, 2004).

EFFORTS TO FOSTER THE DEVELOPMENT OF EMOTIONAL KNOWLEDGE AND HOW TO REGULATE THEM

Current resources designed to foster socio-emotional competencies through scaffolding understanding of different emotions and how to understand and regulate them are typically empirically evaluated in the home or a centre-based environment rather than a home-based

setting. An example of this is the ENGAGE intervention introduced earlier which aims to provide children with intentional play-based learning experiences through which adults' help scaffold important competencies related to thinking, emotions and behaviour.

This intervention was developed due to the importance of play in the development of self-regulation (Shaheen, 2014). For example, in structured games children need to wait their turn, plan their next move, focus on the ball, and manage frustration when things don't go their way. As originally developed, ENGAGE encouraged parents to play a range of common games with their children in a structured way for half an hour a day (e.g., puzzles, ball games, musical statues, blocks, skip rope).

Following a successful initial open trial (Healey & Halperin, 2015), ENGAGE was compared to an existing behavioural management programme (Triple P) (Healey & Healey, 2019). When compared to Triple P, preschool children with elevated parent rated hyperactivity in New Zealand within the ENGAGE condition demonstrated comparable improvements in behavioural self-regulation over time (Healey & Healey, 2019). This shows that this intervention is likely beneficial for the development of self-regulatory competencies, and therefore, it is important to see if these resources are empirically-supported for home-based ECEC.

For children to develop emotion regulation, it is posited that children first need to make the connection between what they are feeling and physiological sensations (Shields & Cicchetti, 1997). One potential approach for fostering this connection may be relaxation exercises to ENGAGE (Healey and Healey, 2019). It has also been theorised that children need to be aware of emotions, have the language to name emotions and be able to understand how emotions affect them and how to express them (Lindquist et al., 2015). Approaches for fostering this include fostering extra-textual conversations during shared reading (Alvarenga et al., 2020) and conversations about past experiences (Salmon et al., 2016). Research suggests that supporting

children with becoming aware of emotions, recognising them and naming feelings may be an important first step so that they can then understand how emotions affect them or understand how to appropriately express their emotions (McLean & Foa, 2017). Once this connection is achieved, children can start to practice strategies for emotion and behavioural regulation (Sala et al., 2014; Yule, 2011).

FOSTERING EMOTION KNOWLEDGE THROUGH REMINISCING

A potentially effective way young children's cognitive and emotional development can be fostered is through adult-child conversations focusing on past events, in particular past emotional reactions to these events. For example, remember when we went to the park and you were excited to feed the ducks. These conversations play a unique and vital role in children's growing ability to remember and talk about their personal experiences (Fivush et al., 2006). Rich reading and reminiscing (RRR) is a theoretically-informed preventative intervention designed to support children's developing language, behavioural regulation, and socio-emotional competencies through extra-textual discussions during shared reading and conversations focused on past experiences with children (Schaughency et al., 2019). This approach has been utilised with parents (Schaughency et al., 2014) and was adapted for use with home-based early childhood educators (Schaughency et al., 2019).

A significant advantage of reminiscing emotional experience is the possibility of reflection and re-evaluation when the emotional heat has subsided. The research evidence concurs. It is talking about the child's past emotional experiences rather than general emotion talk that is linked concurrently and overtime to young children's socioemotional skills (Lagattuta & Weller, 2013; Reese et al., 2007). Parents' elaborations during reminiscing are a consistent predictor of children's socioemotional development, in particular, emotional understanding and regulation (Fivush et al., 2006; Salmon & Reese, 2016; Taumoepeau & Reese, 2013; Wareham & Salmon, 2006). An

elaborative reminiscing style is characterised by the use of requests, statements and evaluative feedback that elaborate upon the information provided by children in conversations about the past. Children whose parents reminisce in a more elaborative and emotional way, particularly about negative emotions, are more likely to demonstrate a stable self-concept and show more significant insight into their own and others' feelings (Reese et al., 2007). For example, if a child was scared when they saw a dog the parent may later elaborate on this emotional experience with the child as they retell the story. Through reminiscing the parent and child are able to discuss the context surrounding this fear and how the child reacted. This gives the child more understanding surrounding their fear reaction and overall is likely to reduce their fear upon meeting a dog again in the future.

Experimental studies provide evidence of causal relationships, strengthening the correlational findings. When parents were taught to reminisce in an elaborative and emotion-rich way, their young children's elaborative and emotion talk and understanding of emotions increased over the next six months. In contrast, there was no such growth for children in a control condition (Van Bergen et al., 2009). This research with parents suggests that RRR is a potentially useful approach for supporting the development of emotion knowledge, which is a key component of emotion regulation and child's socio-emotional development. However, we do not know that what is found within parent and child literature will necessarily translate within a home-based setting.

Preliminary evaluations of RRR in home-based ECEC looked at uptake and experience of participation for home-based educators and children (Schaughency et al., 2019). Observational studies to date have analysed educator-child interactions during shared reading (Timperley et al., 2019) and reminiscing in conversations (Clifford, 2020). Compared to educators and children who participated in ENGAGE, Timperley et al. (2019) found that educators and children who participated in RRR talked more, with richer conversations and more references to children's

experiences in extra-textual discussions during shared book reading. In conversations outside of book reading, Clifford (2020) found children, but not educators, who participated in RRR to display more elaborative reminiscing at post-test than children who participated in ENGAGE, with educators tending to show increases in cognitive talk over time. It was also found that adult-child talk during reminiscing was associated with aspects of children's developing self-regulation and emotional competencies.

THE WIDER PROJECT

The current thesis is a part of a broader study that was designed to support teaching and learning in home-based early childhood education. Three research-informed professional learning modules were designed to support educator practice and enhance children's learning. Each module focused on one aspect of developing competencies related to success in beginning schooling (RRR and ENGAGE). The larger study was a collaboration of researchers, visiting teachers, and three networks of home-based educators. The project context was within a non-profit, non-government organisation that provides both centre-based and home-based ECEC. Within this organisation, there is a home-based visiting team that consists of four visiting teachers who oversee three networks of home-based educators, mentor new educators into the organisation and profession, and support their professional development efforts.

Collaborative project planning provided the opportunity for *whakawhanaungatanga* between visiting teachers and university researchers, setting the stage for a developing research partnership. Some of the university researchers had engaged with the broader early childhood organisation in previous research. However, the current project was their first research experience in home-based ECEC, and this was the first collaborative venture for the combined team.

Planning for this project began in 2016, in response to requests from the early childhood organisation to consider developing our previous work for parents of preschool-age children into professional development for home-based ECEC (Schaughency, Riordan, Das, Carroll, & Reese, 2016). The two-year Teaching and Learning Research Initiative (TLRI) project took place during 2017–2018 (Schaughency et al., 2019). To evaluate benefits for children’s early school adjustment, children were followed up one year after school-entry from 2018-2020.

THE CURRENT THESIS

This current thesis is part of the larger study mentioned above, and its focus is to further evaluate benefits for children’s developing self-regulatory and socio-emotional competencies, by incorporating data from two project phases (post-intervention and one year after school entry). First, following Timperley et al. (2019) and Clifford (2020), it compares children whose educators initially participated in one of two specific modules (ENGAGE and RRR), but focuses primarily on measures theoretically-related to key components (self-regulatory, cognitive-linguistic and socio-emotional) of adjustment in early years. The specific initial research question examined was whether participation in these professional modules was associated with children’s developing competencies in these areas at post-test. It was hypothesised that participation in ENGAGE and RRR would be associated with benefits to children’s developing competencies from pre-test to post-test. Specifically, it was expected that children who participated in ENGAGE would display improved scores in self-regulatory measures relative to those who participated in RRR. However, children who participated in RRR were expected to display improved scores in the socio-emotional measures relative to those who participated in ENGAGE.

In addition, this thesis followed a subset of children to explore benefits for children’s related school-adjustment one year after school entry. It was hypothesised that participation in

both areas of professional learning would be associated with children's developing competencies in their first year of school.

GENERAL METHOD

The study was approved by the University of Otago Human Ethics Committee (approval number 13/151) and with appropriate consultation with the Ngāi Tahu Research Consultation Committee in keeping with the University of Otago Policy for Research Consultation with Māori (Otago, 2020).

PROJECT OVERVIEW

This thesis is a part of a larger project that aimed to look at the impact over time of providing participating home-based educators with three learning modules designed to foster the development of a range of key competencies in children aged 3 ½ to 4 ½. Modules focused on specific areas of learning identified as important for developing competencies in the preschool years (Ministry of Education, 2017; National Research Council, 2015). Each module was designed and found to show promise with parents of pre-school children but adapted for use in home-based ECEC. These learning modules were developed to support teaching and learning in home-based ECEC.

The educators were recruited through a non-profit home-based early childhood service within a small city of New Zealand, as part of a larger, ongoing professional development study (Schaughency et al., 2019). The organisational structure of this service is consistent with home-based service delivery in New Zealand. It is divided into networks of home-based educators with a range of education and experience (Ministry of Education, 2018). Within each network, a qualified teacher would visit the educators and provide supervision and mentoring in the implementation of the *Te Whariki* (the early childhood curriculum) and children's learning and

development. The learning experiences that the visiting teacher helps to set are guided by *Te Whāriki* core principles and individualised to the child, following their personal learning goals and development, with a focus on learning experiences that include both indoor and outdoor play, imaginative play, reading, mathematical games, and physical activity.

The educators could participate in all three of these modules over time if they were serving children in the target age range with parental consent for participation. In this project, educators were provided with the opportunity to participate in all three learning modules for three reasons. First, each area of learning has a unique developmental pathway and previous experience providing parent education to foster learning experiences in these domains suggested each module potentially provided separate, but complementary, benefits for children's learning and development (National Research Council, 2015). Second, providing children with the opportunity to participate in multiple modules may afford synergistic benefits. Lastly, sustained involvement in professional learning is associated with enhanced learning experiences for children (Markussen-Brown et al., 2017).

Although modules focused on different areas of learning, they were delivered using a standard format and based on the educational principles of sensitively encouraging and scaffolding children's active participation as learners in positive learning experiences. For each module, the sequence of project activities included a professional development session, followed by a six-week implementation phase. Visiting teachers attended professional development sessions with educators. The professional development session provided a rationale for the module's focus—that is, an introduction to, and importance of, the learning area and links to the strands of *Te Whāriki* and key competencies in the New Zealand curriculum (Te Kete Ipurangi, 2014)—and strategies for scaffolding learning experiences in the learning area and materials to use with children. Educators were encouraged to use materials in ways that were responsive to

their children, and that fit with their practice. The session closed with a plan for initiating the implementation phase.

During the implementation phase, research partners met briefly with educators to provide educators with weekly materials to support implementation in learning experiences with children. Building on the shared experience of the professional development session, visiting teachers could then incorporate observations of, and discussions about, educators’ use of project learning experiences and children’s learning in regular mentoring and supervision with participating educators. Each network of home-based educators engaged as a learning community with each professional learning module. Educators participated with visiting teachers and other educators (referred to here as streams). As illustrated in figure one, educators who began participation with the pilot study in 2016 were provided with the opportunity to participate in all the modules but participated in different orders. Educators who joined the project in 2017 joined one of the above streams and were provided with the opportunity to join in remaining modules in 2018. Different levels of module exposure allowed educators to experience as many modules as they would like, as well as allowing researches to directly compare the modules between children due to the difference in time when the modules were offered.

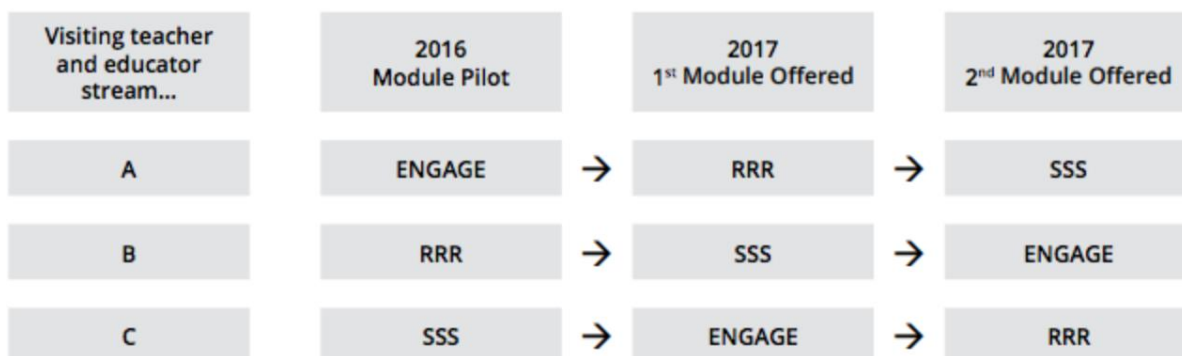


Figure 2. Evaluation Design and when the modules were offered to educators.

ENHANCING NEUROBEHAVIORAL GAINS THROUGH THE AID OF GAMES AND EXERCISE (ENGAGE; Healey & Halperin, 2015)

Based on Healey and Halperin's (2015) work with parents, this module focused on developing competencies connected to thinking (focusing attention; holding onto information), emotions (handling feelings), and behaviour (containing impulses; doing things carefully). In ENGAGE, adults provide intentional play-based learning experiences as opportunities for children to practise and adults to scaffold these important skills responsively.

In this adaptation of ENGAGE, each week for five weeks, educators were given five cards suggesting 25 activities to choose from. These cards had suggestions for activities that provided learning experiences in one or more of the areas mentioned above. Examples of these activities include hopscotch, object copying using blocks, deep breathing and leapfrog. The learning experiences were everyday early childhood activities that involved both active (e.g., hopscotch) and quiet (e.g., making things with blocks) play that targeted learning competencies connected to thinking and behaviour. Activities typically required few, if any, materials and necessary materials were those often found in the home or early childhood settings; however, educators were also provided with some new resources each week (e.g., sidewalk chalk the week hopscotch was included; soft blocks the week block activities were introduced). Educators were asked to present suggested activities each week, preferably providing opportunities to do them daily. Activities could be done at any time of day or place, and, depending on children's developing skills could be made easier or more difficult depending on developmental level.

FOSTERING ORAL LANGUAGE SKILLS THROUGH LANGUAGE-RICH INTERACTIONS (Schaughency et al., 2014).

These modules aim to foster oral language skills which are essential for early learning (Education Review Office, 2017; National Research Council, 2015; Zauche, Thul, Mahoney, & Stapel-Wax, 2016). Children's oral language development, like their learning-related skills, is multifaceted, as mentioned above (Schaughency & Reese, 2010). Oral language development includes understanding and expressing ideas (meaning related skills) and the ability to understand and utilise the sounds of spoken language (sound-related skills). To support adults in fostering children's language development in these contexts, Schaughency et al. (2014) developed two modules—one focused on meaning-related skills (RRR) and the other on sound-related skills (SSS) that used a similar format to incorporate oral language interactions during and outside of shared reading. In the current thesis, children who initially participated in SSS were not included in the comparisons from pre-test to post-test due to the small number of children who initially participated in SSS.

RRR focused on learning experiences that fostered children's language skills involved in understanding and expressing ideas. These meaning-related skills include, but are not limited to, vocabulary; that is, knowing words and their meanings (Reese, Suggate, Long, & Schaughency, 2010; Schaughency, Suggate, & Reese, 2017). To foster meaning-related skills during shared reading, each book contained prompts for conversational comments during story reading. To scaffold more developmentally sophisticated conversations across readings, comments progressed from those likely to be more familiar to educators and children (talking about story content and pictures), to relatively more questions to encourage children's involvement as active conversational partners, and more sophisticated questions, to extend children's learning, in later readings (Reese & Cox, 1999). Engaging children in conversations about their personal

experiences can be an effective strategy for fostering children's language development (Reese, Leyva et al., 2010). To promote meaning-related language skills outside of reading, at the end of the story, prompts were included for each reading that suggested types of conversations educators could have with children linking children's experiences to story content. Prompts told conversations about experiencing a similar emotion or challenge as the story character and how they resolved it. Although educators and children may more readily discuss positive experiences than negative ones, talking about negative experiences as well as positive ones may contribute to children's developing socio-emotional learning and wellbeing (Salmon & Reese, 2016).

The professional development sessions for these modules introduced strategies for encouraging children's active involvement in these interactions and scaffolding their participation and learning. During the implementation phase, both modules lent educators two books per week to read with their children each week for six weeks. Books all contained a story consisting of characters with a problem to be solved and were lent to educators with resources needed to support project-related learning experiences. Because children often like to hear the same story again, and re-reading affords opportunities to deepen their learning (Aram, Fine, & Ziv, 2013; Flack, Field, & Horst, 2018), educators were asked to try to read each book three times over the week. Also, educators were provided with suggestions for expanding learning experiences to interactions outside of reading for each reading of the story, an approach that can increase benefits from shared reading (Toub et al., 2018). As with ENGAGE, educators were urged to do the shared reading and other oral language experiences at times and in ways that were responsive to their children, and that fit their settings. For example, although oral language activities that built on learning experiences during shared reading were suggested, educators were told these interactions could happen anywhere and at any time (e.g., in the car, or on a walk), not necessarily in the same sitting as the story.

PARTICIPANT RECRUITMENT

EDUCATORS

Educators were recruited through a non-profit home-based early childhood service within a small city of New Zealand, as part of the larger, ongoing professional development study (Schaughency et al., 2019). Educators with children in the target age range were identified by the organisation and included if both educators and parents of children in the target age provided consent to participate.

CHILDREN

Letters of invitation, along with information and consent materials, were provided to parents of 3.5 to 4.5-year-old children, served by participating educators. Children slightly outside this age range were also invited to participate where educators thought it would be appropriate. Demographic information for child participants was gathered via a parent questionnaire.

PROCEDURE

Data were collected before (pre-test) and after each module was implemented (post-test) and one year following school entry. Educators were thanked with a \$20 book voucher (gift certificate for local bookshops) for their assistance at each wave of data collection and provided with professional development and materials for their practice as part of the larger study.

Data at each time point were collected by postgraduate students who were trained in administering and scoring study measures, including practice administration to appropriately-aged children before independent data collection. All data collectors were blind to the modules that children had participated in with their educators.

MEASURES

The measures below were included within both study one and two.

SELF-REGULATION MEASURES

A DEVELOPMENTAL NEUROPSYCHOLOGICAL ASSESSMENT (NEPSY-II)

VISUOMOTOR PRECISION (Korkman et al., 1998)

DESCRIPTION. The NEPSY-II includes a series of developmental tasks that are used in various combinations to assess neuropsychological development in children ages 3–16 years. Visuomotor Precision is a task from the sensorimotor domain (Healey & Halperin, 2015). This timed subtest is designed to assess graphomotor speed and accuracy. The child uses his or her preferred hand to draw lines inside of tracks as quickly as possible. Visuomotor Precision requires the child to draw lines quickly inside tracks that progress from wide to narrow and from straight to convoluted. The child is instructed not to turn the paper, not to lift their pencil and to move from point A to point B as quickly as possible while staying in the line. The scores of this subtest included a scaled score for total completion time and a total visuomotor precision score which combined total errors and total pencil lifts.

EVALUATION. Within this subtest errors were found to be negatively correlated with age in six to ten-year-old children (Mous et al., 2017). Further, Reliability coefficients for the NEPSY- II as a whole for children ages 3-5 is approximately 0.82, (Korkman et al., 2007).

HEAD- KNEES- TOES- SHOULDERS TASK (HKTS; (Ponitz et al., 2009)

DESCRIPTION. HKTS is an activity-based game designed for children aged four to eight years old to incorporate three aspects of executive functioning, specifically: cognitive flexibility, working memory, and inhibitory control (Megan M. McClelland et al., 2014; Megan

M. McClelland & Cameron, 2012). This integrated perspective is thought to be fundamental in understanding the development of self-regulation (Megan, McClelland & Cameron, 2012; Ponitz et al., 2009; Wanless et al., 2011). The HTKS has been adapted from two prior versions: The Head-To-Toes (HTT) task and a short form of the HTKS task (HTKS-Short Form) (Cameron Ponitz et al., 2008; Ponitz et al., 2009). The HTKS task was selected for the current longitudinal evaluation to reduce potential ceiling effects at one-year follow-up due to the added complexity of the last task.

HTKS is made up of three sections with each section progressing in complexity through the addition or alteration of a behavioural rule. There are four rules: ‘touch your head’, ‘touch your toes’, ‘touch your knees’, and ‘touch your shoulders’. In stages one to two, these are paired as follows: head and toes; shoulders and knees. Children were initially presented with a prompt to “touch your head” and “touch your toes.” This was to ensure that the child could follow the task instruction. Following the prompt, the child was introduced to two of the above rules (touch your head and touch your toes) and was instructed to do the ‘opposite’ (e.g., touch your toes when told to touch your head and vice versa—also known as the HTT task—(Cameron Ponitz et al., 2008). If the child responded correctly, they moved to the next section where all four behavioural rules were introduced (head is paired with toes, and knees are paired with shoulders—also known as the short form of the HTKS task (Ponitz et al., 2009). Finally, the third section involved switching the behavioural rule pairings (heads with knees and shoulders with toes (McClelland et al., 2014).

The HTKS task consisted of 30 items across the three sections. Children were given a score of zero for an incorrect response, one for a self-corrected reaction, and two for an initially correct response. Following standard discontinuation rules, if children could get a score of four or more on section one, they proceed to section two. If they achieved a score of four or more in

section two, they proceed to section three. If scores were under four, then they were discontinued and finished the task at that section. The child could also achieve between one to three levels, and this was scored to highlight their potential improvement in the task over time (Das, 2018).

EVALUATION. As a behavioural self-regulation measure, the HTKS has been supported in terms of both reliability and validity in children aged 3-5. (McClelland et al., 2014) found that amongst preschool-aged children the HTKS demonstrated high internal consistency (0.92-0.94), moderate correlations across test-retest reliability, between the beginning of the year (fall) and middle of the year (spring) ($r = .60, p < .01$).

McClelland et al. (2014) found moderate correlations between the HTKS task and other established measures of executive functioning, suggesting good concurrent construct validity. Further, the HTKS was related to cognitive flexibility, working memory, and inhibitory control in prekindergarten and kindergarten (McClelland et al., 2014). Further, Wanless et al., (2011) reported good concurrent validity evidence with teacher ratings of behavioural regulation and interpersonal skills on the Child Behaviour Rating Scale (Bronson et al., 1990) and parent ratings of attention and inhibitory control on the Child Behaviour Questionnaire (Rothbart et al., 2003). The HTKS measure has also been associated with learning-related skills (McClelland et al., 2000) and social skills (Montroy et al., 2014). Overall, the HKTS appears to be valid amongst preschool children, reliable and significantly predicts academic outcomes in diverse samples (McClelland et al., 2007; McClelland & Cameron, 2012; Wanless et al., 2011). Healey and Healey (2019) found that within an NZ sample of 3-4-year-olds, the HKTS was sensitive to change over time.

SOCIAL-EMOTIONAL COMPETENCIES

CHALLENGING SITUATIONS (CS; Denham, Bouril, & Belouad, 1994).

DESCRIPTION. The Challenging Situations task assess children's reports of their behaviour in two negative emotion eliciting hypothetical situations. First, they are presented with a picture and brief description of a scenario and asked what they would do. Once a child responds, they are asked what else they would do if they were in that situation. The two scenarios used in the current study were if a peer hit them, and if a peer refused to play with them. Based on Bierman and colleagues' (2008) variation of the task, responses are coded as competent, aggressive, passive, emotional expression, adult intervention, incompetent or do not know (for the full scheme see Bierman et al., 2008).

Competent responses were defined as active, non-aggressive attempts at problem-solving or conflict resolution (e.g., verbal assertion, negotiation, or finding an alternative activity). Aggressive responses included hostile behaviours, either physical or verbal attempts to coerce compliance or angry put-downs (e.g., hitting, Steal, or destructive retaliation). Passive responses included any behaviour that passively ignores the problem or avoids it by walking away (e.g. Cry, feel rejected or comply). Adult intervention involves requesting help from an adult. Emotional Expression included responses in which children label their feelings, such as saying "I would be mad" or "I would be sad," but they do not state what they do to address the social problem. Incompetent responses included responses that did not fit any other category and answers that indicate a misunderstanding of the story (e.g. out of context, apologize, or deny). The "Do not know" category is used when the child is unable to produce a response. Inter-rater reliability was calculated by two independent coders across 25% of the sample ($\kappa = 0.94$) before the remaining responses were coded. In this thesis, a combined score of competent plus adult intervention responses were included in the analyses. This combination was based on the impression that young children are often encouraged to seek help from a teacher or parent in response to a challenging situation within a New Zealand context (McLay, 2003).

EVALUATION. Previous research has found a moderate internal consistency ($\alpha = 0.68-0.77$) of behavioural responses, with almost perfect inter-rater reliability ($\kappa = 0.94$) between two trained research assistants (Bierman et al., 2008). This task has shown modest concurrent validity with emotion understanding (e.g., assessment of Children's Emotion Skills, see Schultz, Izard, & Bear, 2004). It has also correlated moderately with parent and teacher ratings of social behaviour across various studies (Coy, Speltz, DeKlyen, & Jones, 2001; Denham et al., 1994), and early school adjustment (Denham, Way, Kalb, Warren-Khot, & Bassett, 2013).

Findings showed a modest concurrent association between competent scores on the CS task and teacher perceptions of children's social and behavioural competence (SCBE-30, see LaFreniere & Dumas, 1996), learning behaviours (PLBS, see McDermott, Leigh, & Perry, 2002) and their overall adjustment within the classroom (Ladd, Kochenderfer, & Coleman, 1997). Also, scores on the CS task have been found weakly concurrently related to language skills such as vocabulary ($r = .18, p < .05$) in preschool-aged children (Bierman et al., 2008). Importantly, socially competent responses at age four were found to be predictive of teacher ratings of school adjustment a year later (Denham et al., 2013).

DATA ANALYSIS

Data were scored by a team of four students including the current author and then double entered by two researchers including the current author using EXCEL and analysed in SPSS version 25. Before analysis, data were examined to ensure that they met assumptions for the use of parametric statistics. Preliminary analyses explored whether children differed on study variables at pre-test across preventive intervention conditions, and bivariate relations were analysed to assess associations between study variables and theoretically-relevant demographic variables. Correlations were used to explore relations between continuous variables and possible gender differences were explored using independent samples t-tests.

STUDY 1: AFTER INITIAL PARTICIPATION IN RRR OR ENGAGE

Study One's primary focus was to compare children's self-regulatory and socio-emotional competencies who participated in RRR or ENGAGE from pre-test to post-test as a function of time and condition.

METHOD

PARTICIPANTS

EDUCATORS. Participants in Study One included 18 children who participated in RRR and 15 who participated in ENGAGE with 19 educators for their initial module. Demographic information was obtained through questionnaires. Their educators identified as female. Twenty-two identified as New Zealand European, one as New Zealand European and Māori, and one person chose other. All spoke English, with one educator also speaking Māori. Educators' ages ranged from the early 30s to 60+. Most (16) educators had been an educator for 10+ years; however, the rest ranged from three to nine years. Education included some level of high school, some training in ECEC, Polytechnic qualifications and a University degree.

CHILDREN. At baseline, 33 participating children were aged between 34.00-57.00 months ($M=44.70$), with one to three participating children per educator. Children spent between five to forty-five hours per week at home-based ECE ($M=25.6$). Parents identified 33 children as NZ European, with eight of these children also identified as Māori, two as Samoan, one as Tongan and one as Indian. All parents listed English as their child's primary language. Children's mothers' education ranged from some high school to postgraduate study, with half having a university degree or higher. There were 18 participants in the RRR condition and 15 in the ENGAGE condition.

MEASURES

Measures specific to Study One are described below. Measures common to both studies were described in the General Method, above.

STATUES (Korkman an et al., 1998)

DESCRIPTION. The Statue task (Korkman an et al., 1998, 2007; Healey & Halperin, 2015) is included within the inhibition domain. This subtest was only used at study one due to possible ceiling effects at one-year; however, due to statues being a subtest of the NEPSY-II, it is presented with the other NEPSY-II subtest. This is a subtest for children aged three to six and is designed to assess motor persistence and inhibition. The child is asked to close their eyes, remain in a specified body position, and refrain from speaking or laughing for 75 seconds' and inhibit the impulse to respond to sound distractors (e.g., examiner dropping a pencil). This task was used for pre-and post-test but due to potential ceiling effects was not used at one year follow up. Instead, other tasks measuring executive functioning at one year follow up were using in alongside the statue task at the earlier time points. This task had a possible total of 30 points with the child getting between 0-2 points at each time point. A point was taken off in the child made specific movements (for example, moving their arm). If more than one movement was made, then the child was given 0 points. The total was tallied out of a possible 30 points.

EVALUATION. Statues were found to be a highly sensitive measure of self-regulation and behaviour in pre-schoolers (aged 3-5) (Mahone & Schneider, 2012). Preschoolers (aged 3-5) with ADHD were observed to have lower statue scores than controls (Mahone et al., 2005), while children aged 3-4 years with lower teacher ratings of behaviour had lower Statue performance than those without behaviour problems (Youngwirth et al., 2007). In the NEPSY-II, the reliability coefficient for children ages 3–4 years on the Statue subtest is 0.82 (Korkman et al., 2007). Healey and Healey (2019) found that those children who performed more poorly at baseline showed more significant change over time ($r = .66$; Healey & Halperin, 2015).

TEACHER RATING OF ORAL LANGUAGE AND LITERACY (TROLL), (Dickinson, 2001).

DESCRIPTION. This rating system measures skills thought to be critical to listening and speaking skills in the early years. It consists of 25 questions which examine reading, oral language and writing with a total score of 98 possible. The TROLL has been suggested for use in tracking children's progress in language and literacy development, informing curriculum, and stimulating focused communication between parents and teachers (Dickinson, 2001).

EVALUATION. Responses on the TROLL for 534 preschool children in the US found strong indications that TROLL meets standards expected of research tools. Specifically, Cronbach's alpha estimates of internal consistency for language was 0.86 indicating strong internal consistency (Dickinson, McGabe & Sprague, 2003). In this sample, the TROLL language subscale demonstrated acceptable internal consistency ($\alpha = .81$).

BENEFITS OF LEARNING QUESTIONNAIRE

DESCRIPTION. This questionnaire was developed and incorporated within the educator questionnaires administered at post-test. This questionnaire was designed to allow the educators to give their feedback on the three modules as well as their perceived effectiveness across key competencies. One aspect of this questionnaire was the benefits of learning items, which consisted of 11 questions aimed to evaluate the perceived benefits of learning from each professional development module. The questions included eight items tapping into language skills, self-regulation and socio-emotional competencies. Within the current thesis, these questions were used to create three indices: Oral Language, Emotional Development and Social/Self-regulation were used. The Language index including three questions that included the educators' ratings of the extent participation helped the child to develop better language skills,

learn new words, and develop conversation skills (inter-item correlations: r 's = .52 - .79; α = .81). The Emotional Development index included educator ratings of the extent participation helped the children understand and express their feelings (r = .74, α = .85). The Social/Self-regulation index included educators' ratings of the extent participation helped the child to follow directions, persist with challenging activities and get along with others (inter-item correlations: r 's = .59 - .77, α = .86).

Table 1.

Three indices used from the Benefits of Learning Questionnaire

Indice	Questions
Social/Self-Regulation Index	Persist when activities become challenging Follow directions better Get along with others better
Emotional Development Index	Understand feelings Know how to express their feelings
Oral Language Index	Develop better language skills Develop better conversation skills Know, understand and use new words

DATA ANALYSIS

At post-test, a series of mixed between (RRR vs ENGAGE) within (pre-vs. post) ANOVAs were used to compare children's performance on continuous variables as a function of condition and time. Non-parametric approaches were used in analyses with the ordinal HKTS variable. The Wilcoxon signed ranks test was used to examine change over time within groups, and the Mann-Whitney U to test differences between groups. Independent samples t-tests with bootstrapping for 1000 samples and bias-corrected and accelerated confidence intervals (BCaCI) were used for teacher ratings of benefits for learning at post-test. Given constraints of small sample size on power to detect between-group differences, both p values and confidence

intervals were conducted in the interpretation of results. When p values were $< .10$ or confidence intervals did not include zero, effect sizes were reported using partial eta squared for parametric approaches, where $0.01 = \text{small}$, $0.06 = \text{medium}$, $0.13 = \text{large}$, and by calculating an approximate r for non-parametric approaches, where $.10 = \text{small}$, $.30 = \text{medium}$, and $.50 = \text{large}$ (Pallant, 2016).

When preliminary analyses identified relations between demographic variables and children's performance on pre-test measures, additional analyses were conducted to explore the influence of these variables on obtained findings.

RESULTS: AFTER INITIAL PARTICIPATION IN RRR OR ENGAGE

PRELIMINARY ANALYSES

The skewness and kurtosis for continuous variables' distributions suggested that variables were normally distributed, supporting the use of parametric statistics. When comparing group means at pre-test, there were no statistically significant differences across study variables, nor were there any gender differences. Descriptive statistics for self-regulatory and socio-emotional measures at pre-test and post-test are shown by group (RRR and ENGAGE) in Table 2 below.

Table 2

Descriptive Statistics at Pre-and Post-Test across group conditions (RRR and ENGAGE).

	RRR n = 18	ENGAGE n = 15
MEASURE	M (SD)	M (SD)
PRE-TEST MEASURE		
Visuomotor Precision, average	23.39, (14.02)	23.89, (19.95)
Statues- total	20.58, (5.57)	20.57, (8.23)
Challenging Situations total competent plus adult responses	0.94, (1.30)	1.13, (1.13)
HKTS- highest level	0.27, (0.46)	0.71, (0.99)

TROLL-language	3.23, (0.49)	3.54, (0.33)
POST-TEST MEASURE		
Visuomotor precision average	20.11, (12.14)	15.44, (3.10)
Statues- total	20.06, (8.65)	19.79, (9.83)
Challenging Situations total competent plus adult responses	1.39, (1.38)	0.60, (0.83)
HKTS- highest level	0.61, (0.85)	1.21, (1.12)
TROLL-language	3.36, (0.49)	3.39, (0.56)
Benefits of Learning (language)	3.69, (0.11)	3.83, (0.01)
Benefits of Learning (emotion)	3.42, (0.01)	3.54, (0.01)
Benefits of Learning (self-regulation)	3.00, (0.00)	3.78, (0.00)

CHILD MEASURES. A series of mixed between-within subjects analyses of variance were conducted to examine the impact of two different interventions (RRR and ENGAGE) on children's developing self-regulation and socio-emotional competencies from pre-test to post-test. There were few differences overall, although children's performance on some measures improved over time. Specifically, at post-test children tended to perform better on both Statues, Wilks' Lambda = .89, $F(1, 31) = 3.88$, $p = .06$, $\eta_p^2 = .11$, and Visuomotor Precision, Wilks' Lambda = .89, $F(1, 31) = 3.88$, $p = .06$, $\eta_p^2 = .11$. Moreover, children's level of performance on HKTS tended to improve over time, RRR: $z = -1.90$, $p = .06$, approximate $r = .45$, ENGAGE: $z = -1.93$, $p = 0.05$, approximate $r = .52$, with no differences between the groups at post-test ($U = 87$, $z = -1.59$, $p = ns$). Finally, there was a specific large group by time interaction found for the Challenging Situations composite, Wilks' Lambda = .87, $F(1, 31) = 4.65$, $p = .04$, $\eta_p^2 = .13$, such that children in RRR obtained higher scores on the composite at post-test.

EDUCATOR RATINGS.

Educators' perceptions of benefits for learning were initially compared using independent samples t-tests. Educators' ratings of benefits for self-regulation were higher for ENGAGE compared to RRR, $t = -3.28$, $p < .01$, BCa95%CI -1.24, -0.32. Given the correlation between

children’s age at pre-test and educators’ benefits for self-regulation ratings ($r = .31, p < .05$), a univariate ANCOVA was conducted. As expected, there was a statistically significant effect of age, $F = 8.83, p = .006, \eta_p^2 = .25$, but the significant large effect for group remained when controlling for age, $F = 5.05, p = .03, \text{BCa}95\% \text{CI } -1.11, -0.33, \eta_p^2 = 0.35$.

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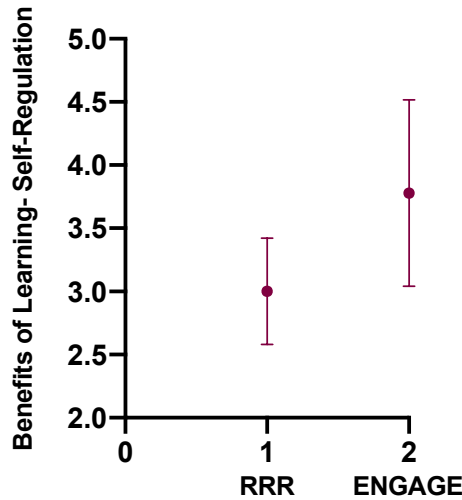


Figure 2.

Educator ratings on the Benefits of Learning (Self-Regulation) at post-test.

A mixed between-within analysis of variance was conducted to explore the impact of time and group on educators’ ratings of oral language, as measured by the TROLL. There was no statistically significant main effect of time or group. However, the time by group interaction approached significance (Wilks Lambda= .86, $F(1, 26) = 4.03, p < .06, f = 3.51, p < 0.06, \eta_p^2 = .13$). A further mixed within-between ANCOVA was conducted controlling for age. These analyses replicated the pattern of findings found in earlier analyses. As depicted in the Figure, although educators’ ratings were of children’s language were generally high across time for both groups, there was a statistically significant interaction between time and group, such that educators of children in RRR rated children’s language to improve from pre-test to post-test (Wilks Lambda = .84, $F(1, 25) = 4.61, p < .05, \eta_p^2 = .16$).

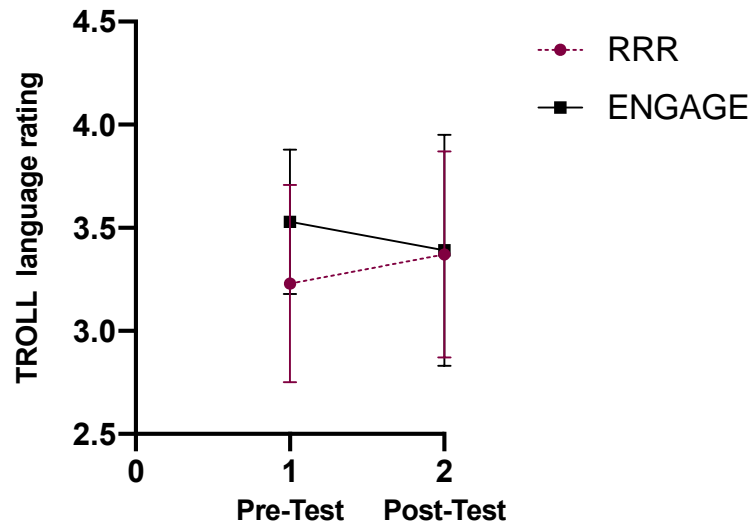


Figure 3.

Educator ratings on the TROLL at post-test, comparison between ENGAGE and RRR with age at pre-test as a covariate.

SUMMARY OF FINDINGS.

Overall these findings suggest that across the child measures, there were few differences overall, although children's performance on some measures improved over time (Statues, Visuomotor Precision, HKTS). A specific large group by time interaction was found for the Challenging Situations composite where children in RRR obtained higher scores on the composite at post-test. Educator-rated variables at post-test, Benefits for Learning and TROLL, suggested differential perceived benefits of participation. Specifically, educators who participated in ENGAGE rated perceived benefits for self-regulation to be higher than educators who participated in RRR. On the TROLL, there was a significant group by time interaction, such that educators who participated in RRR rated children as displaying higher oral language scores over time. Results of Study One are promising and suggest that participation in ENGAGE and RRR may be associated

with benefits for self-regulation, oral language, and/or social-emotional competencies, respectively. Study Two examines whether these effects are maintained over time when the children have been at primary school over time.

STUDY TWO ONE YEAR FOLLOW-UP

Study Two's primary focus was to compare children's self-regulatory and socio-emotional competencies who participated in RRR or ENGAGE one year following school entry to examine the benefits of participation following the transition to school. Participants had a combination of exposure to modules, including 1) RRR alone or followed by SSS, and 2) ENGAGE. There were two masters student researchers including the current author collecting school data, and schools were divided based on prior contact with schools and parents so that at each school, there would be consistent contact with one researcher. Once the child had been at school for approximately 12 months, their parents were contacted by one of the masters students and asked if they still wanted to continue with the project, receiving further information about this stage of the study and giving school information as well as consent to contact the school if not provided prior. The school coordinator would contact the school principal to inform them of the study and ask for permission to conduct the follow-up study at the school. Following this, contact with the child's teacher would be achieved from the researcher conducting the follow up at the school. The parents were informed about when the follow up would be conducted and were given a family questionnaire to fill out discussing their experience with the study, their views on their child's transition into school as well as their development of key competencies. The parent was given a \$10 book voucher as a thank you gift for their time involved in completing this questionnaire.

The follow up at school was conducted across two sessions, each lasting 30 – 40 minutes. Sessions were conducted approximately one week apart, and a teacher questionnaire was given to the child’s primary teacher/teachers at session A and then returned at Session B. A \$10 voucher was given to the teacher as a thank you gift for their time involved in completing this questionnaire. After completion of session B, the child was given a thank you gift consisting of a selection of stationery and stickers for their work throughout the sessions. The child was also given a stamp chart after each session that they completed throughout the session with animal stamps to track their progress throughout the tasks, and the child received a small stationery gift (e.g. animal erasers, coloured pencils, scented pens, stickers), to acknowledge their participation.

METHOD

PARTICIPANTS

Letters of invitation to participate in follow up, along with information and consent materials, were provided to parents of children who had been involved in the study and had now been at school for one year. At one year follow-up, participants consisted of 23 children who had participated with 16 educators in one or more modules, with participant numbers varying across conditions. Nine participants participated in RRR followed by SSS group and eight participants who participated in ENGAGE. Within the RRR condition, four children were exposed to solely RRR, whereas five had exposure to both RRR and SSS.

At follow-up, participating children were aged between 68-80 months ($M=74.21$), with between 24-60 ($M= 44.13$) weeks of school exposure. Part of the variability in weeks of exposure to school was due to the school closures during COVID-19 lockdown. Parents identified 23 children as NZ European, with five of these children also identified as Māori, and one also Indian. All parents listed English as their child’s primary language. Children’s mothers’

education ranged from some high school to postgraduate study, with half having a university degree or higher.

MEASURES

Measures used specifically within Study Two are described below.

DESIRE AND BELIEF TASK (Pons & Harris, 2002).

DESCRIPTION. Emotional understanding in childhood can be understood under multiple domains, with increased emotional understanding thought to contribute to increasing ability across these domains (Pons & Harris, 2002). Pons, Harris and de Rosnay (2004) outline the Test of Emotion Comprehension (TEC), which is designed to assess nine different components of children's developing emotion understanding. Two of these components were assessed in the current study - 'Desire' and 'Belief'. It is believed that children aged between three and five years old begin to comprehend that people's emotional reactions depend on their desires (Pons et al., 2004). By extension, they can, therefore, recognize that two people may feel a different emotion about the same situation based on their different desires (Harris et al., 1989). In a similar vein, children aged between four and six year's old start to understand that a person's beliefs (whether true or not), will determine their emotional reaction to a situation (Bradmetz & Schneider, 1999). As such, children's ability to correctly identify people's emotions as they relate to their underlying desires and beliefs is thought to be indicative of their overall emotional understanding (Pons et al., 2004.)

To assess understanding of the relationship between desires and emotions, children were required to acknowledge the opposing perspectives of two characters (Tom and Peter) who held opposite desires. After a short scenario was read to children, they were asked "how is [Tom/Peter] feeling? Is he happy, sad, just all right or scared? A pictorial diagram with cartoon

facial expressions of each emotional expression was presented, and children provided their emotion attribution by pointing to the facial expression they deemed to be the most appropriate of the four possible emotional outcomes.

Pons et al. (2004) found that children were more likely to make mistakes on the desire task compared to the belief task, likely due to the possible responses being similar and thus there was more than one plausible emotional reaction the character may have had. Further, as the Pons et al. (2014) study was undertaken within an American sample, differing cultural expectations within New Zealand about how the child is supposed to react to a negative stimulus may alter the reaction chosen. To remediate this issue, the current study expanded the coding scheme in line with the adaptation made by Rocha et al. (2013) so that children who indicated an emotional response of the appropriate valence (e.g., both sad and scared are negatively valenced; happy and okay are positively valenced) would be correct. The use of this alteration of scoring was further used within a New Zealand sample.

To assess understanding of the relationship between beliefs and emotions, children were required to make an emotion attribution to a character who held a false belief. Children were read a short scenario that portrayed a rabbit happily eating carrots, but unaware that a dangerous fox was nearby. Children were then required to identify how the rabbit would be feeling in that moment, by again pointing to what they judged to be the most appropriate pictorial representation out of happy, just all right, angry, or scared emotions. Both the desire and belief situations were described in an emotionally neutral style with a deliberate attempt to remove verbal and non-verbal emotional cues. Children scored one point for each component that a child responded to correctly. To check for reliability, two coders blind to the children's conditions

coded 25% of the desire and belief independently. Reliability was checked using per cent agreement. At one-year follow-up, per cent agreement was 95.6%.

EVALUATION. Research has typically evaluated the nine total components of the TEC, rather than evaluating the desire and belief task specifically. As such, research on the reliability and validity of these two measures specifically is sparse. The available evidence suggests that the TEC displays reasonable technical adequacy across a range of cultures and samples (Pons & Harris, 2005; Rocha et al., 2013; Ornaghi & Grazzani, 2012; Roazzi and colleagues, 2009). Several studies have found a main effect of age on TEC subtest performance, which provides further evidence that emotion understanding becomes more complex across childhood, and highlights the TEC's appropriateness for assessing age-related emotional comprehension (Pons & Harris, 2005; Pons, Harris & Rosnay, 2004; Pons, Lawson, Harris & Rosnay, 2003; Ornaghi & Grazzani, 2012).

Pons et al. (2004) report a high degree of consistency in children's responses across the nine components. The authors note that performance on the desire task was related to their performance on the belief task. Therefore, if they are aligned, it could be worth looking at the total across the two items. Additionally, they found that by the age of five years old 55% of Norwegian kindergarten children responded correctly on the desire task, indicating that most five-year-old children understand that two characters in the same situation can feel different emotions because of their different desires. Comparatively, only 40% of children at this age demonstrated an understanding of relationships between beliefs and emotions on the belief task.

Rocha et al. (2013) investigated the TEC within a sample of Portuguese children. Regarding reliability, test-retest results across three months yielded adequate results ($r = .75$,

$p < .05$). Similar correlations were found by Pons and colleagues (2002), over a three-month interval ($r = .83, p < .05$), and by Pons and Harris (2005) over a 13-month interval ($r = .68, p < .05$) when the effects of age and gender were controlled. Results showed that the TEC overall was positively correlated to the Socially in Action-Peers (SAP) measure ($r = .281; p < .05$) (Rocha et al., 2013). The belief task was one of three TEC components found to positively correlate to an overall social competence composite score ($r = .246; p < .05$) (Rocha et al., 2013). The authors explain that success on the belief task requires the comprehension of false beliefs, which is considered a good indicator of perspective-taking, useful in social competence.

TEACHER QUESTIONNAIRE, FIVE KEY COMPETENCIES (NZ Curriculum, 2014).

DESCRIPTION. The Teacher Questionnaire was given to the teacher at one year follow up and included questions that asked the teacher to rate where the child is relative to others their age across the five key competencies identified within the New Zealand Curriculum. The key competencies analysed in this thesis included relating to others, using language symbols and texts, managing self and participating and contributing (NZ Curriculum, 2014).

These were rated by the teachers on a five-point scale from far less developed to very well developed and scored on a scale from -2 to +2.

DATA ANALYSES

Preliminary analyses explored correlations between exposure to schooling and study variables and possible gender differences on study variables using independent samples t-tests. The original aim was to compare the separate and combined effects of participation in RRR, ENGAGE, or RRR + ENGAGE. However, due to delays in follow-up from COVID-19 lockdown and parents discontinuing, there were not enough participants in all three groups to make these comparisons. Given the small number of participants in the combined group ($n = 6$),

between-group comparisons were limited to comparisons between those who had participated in RRR or ENGAGE, as in Study One. Within the RRR condition, five children had also been exposed to SSS. Groups were initially compared at follow-up using independent samples t-tests, followed by ANCOVA, controlling for weeks in school when exposure to schooling was a statistically significant correlate of the target outcome.

RESULTS

DESCRIPTIVE RESULTS AT YEAR ONE FOR THE TOTAL SAMPLE

At one-year follow-up, total weeks exposed to school was not statistically related to study variables, except for responses to challenging situations ($r = .45, p < .04$). Gender differences were found between teacher-rated variables; however, these differences were not found in measured or parent-rated variables. Descriptive statistics for the total sample and by gender are presented in Table 5.

Table 5

Descriptive statistics for study measures after one year of school by gender and total sample

Measure	Total Sample n = 22	Boys n = 14	Girls n = 8	Statistic
HKTS, highest level	M (SD) 2.48 (1.12)	M (SD) 2.21 (1.12)	M (SD) 2.75 (0.71)	U = 183 Z = .914
				t
Visuomotor Precision	10.36 (17.39)	8.54 (13.02)	11.94 (9.96)	-0.64 -14.53, 7.73
Desire and belief	1.00 (0.86)	1.00 (0.78)	1.00 (0.92)	0.00 -0.77-0.77
Key Competency: Managing self	-0.68 (-0.11)	0.07 (0.62)	0.75 (0.89)	-2.12*
Key Competency: Using language	-1.11 (-0.48)	0.14 (0.66)	1.25 (0.71)	-1.35, -0.11 -3.70* -1.73, -0.48

Key Competency: Participating and contributing	-0.98 (-0.38)	0.14 (0.66)	1.13 (0.64)	-3.38* -1.59, -0.38
Key Competency: Relating to others	0.29 (.78)	0.00 (.68)	0.75 (0.71)	-2.46* -1.32, -0.16

* $p < .05$, continuous variables were compared using independent samples t-tests, HKTS was compared using nonparametric Mann Whitney U.

CHILD MEASURES

Table 6

Descriptive statistics for study measures after one year of school for RRR and ENGAGE

Measure	RRR n=10 M (SD)	Confidence Interval	ENGAGE n=9 M (SD)	Confidence Interval
HKTS, highest level	2.56 (1.01)		2.0 (1.15)	
Challenging Situations	3.11 (0.93)	[BCa95%CI] 2.60, 3.67	2.75 (2.92)	[BCa95%CI] 0.99, 1.17
Visuomotor Precision	12.75 (13.39)	-10.53, 5.73	8.72 (18.39)	-16.53, 7.73
Desire and belief	1.22 (0.97)	0.67, 1.79	0.63 (0.74)	0.20, 1.01
Key Competency: Managing self	0.44 (0.52)	0.14, 0.75	0.28 (0.76)	-0.25, 0.78
Key Competency: Participating and contributing	0.78 (-0.10)	0.40, 1.14	0.43 (0.53)	-0.00, 0.19
Key Competency: Relating to others	0.44 (0.52)	0.14, 0.79	0.29 (0.76)	-0.25, 0.78

Continuous variables were compared using independent samples t-tests, HKTS was compared using nonparametric Mann Whitney U and there were no differences across groups for any of the above variables.

There were no statistically significant differences between the groups at one year in the child measures including HKTS, Challenging Situations composite and Desire and Belief Task as seen in Table Six. However, change over time was observed within the HKTS: Using the Friedman test it was found that children’s performance increased across the three time points (pre-test to

post-test to one year) across the entire sample, Chi-square (2, $n = 16$) = 16.69, $p < .001$.

Comparisons from post-test to one-year using nonparametric Wilcoxon Signed Rank tests found that performance of the sample as a whole improved over time, $Z = -2.44$, $p = .02$, $r = .61$.

However, when each group was compared separately, the comparison for RRR was statistically significant, $Z = -2.40$, $p = .02$, $r = .80$, whereas the comparison for ENGAGE was not, $Z = -1.06$, $p = .29$, $r = .40$.

To compare children's performance over time on the challenging situations task, a two (RRR, ENGAGE) X 3 (pretest, post-test, follow-up) repeated measures of analysis of variance (ANOVA) was conducted. Because Mauchly's Test of Sphericity was statistically significant, with epsilon's in Greenhouse-Geisser smaller than .75, Greenhouse-Geisser were used in interpreting results (Field, 2013). There was a statistically significant effect of time, Greenhouse-Geisser = 31.28, $F(2, 23) = 8.15$, $p = .01$, $\eta_p^2 = .35$. However, there was no statistically significant differences between the groups, $F(1, 15) = 0.94$, $p = .35$, $\eta_p^2 = .06$, nor was there a statistically significant time by group interaction, Greenhouse-Geisser = 5.87, $F(2, 4) = 1.52$, $p = .23$, $\eta_p^2 = .01$. These results suggest that the sample as a whole increased over time with no statistically significant differences between groups on the Challenging Situations composite. Finally, given the statistically significant correlation between weeks-in-school and performance on Challenging Situations composite at follow-up, a mixed between-within repeated measures analyses of covariance (ANCOVA), controlling for exposure to schooling, was explored. However, a statistically significant interaction between time and weeks-in-school indicated a violation of the assumption of homogeneity of regression slopes, which would raise questions about interpretability of results of ANCOVA (Field, 2013).

TEACHER MEASURES

Teachers' ratings on the key competencies after one year of school were inter-related. For example, teachers' ratings of using language to communicate and participating and contributing were highly correlated $r = 0.89, p < 0.01$. Moderate to strong correlations were present between all teacher key competency ratings (r 's = .65 - .89, p 's < .01). A series of independent samples t-test were conducted to see if there were differences in teacher rated competencies of between early childhood participation groups (RRR and ENGAGE). There were no statistically significant differences between groups present across teacher-rated competencies. Unfortunately, there were too few girls per group to explore the potential influence of gender on obtained findings.

SUMMARY OF RESULTS.

Comparisons at one year follow up suggest that there were no statistical differences between groups. However, there longitudinal analyses suggested statistically differences in development of self-regulation and socio-emotional competencies over time.

DISCUSSION

In this thesis, I compared children's performance on measures of self-regulatory skills to understand better how these competencies developed following the introduction of professional learning modules (ENGAGE and RRR) at home-based ECEC. Two studies were conducted, Study One immediately following participation and Study Two one year after school entry. It was hypothesised that participation in ENGAGE and RRR would be associated with benefits to children's developing competencies from pre-test to post-test as reflected in improved scores in self-regulatory measures for children who participated in ENGAGE relative to those who participated in RRR; however, it was expected that children who participated in RRR then they would have improved scores in the socio-emotional measures relative to those who participated in ENGAGE.

In addition, this thesis followed a subset of children to explore benefits for children's related school-adjustment one year after school entry. It was hypothesised that participation in both areas of professional learning would be associated with children's developing competencies in their first year of school. It was also considered that other factors would also influence these developing competencies, for example the child's exposure to a new entrant teacher and exiting social-emotional learning programmes within schools.

The hypotheses were partially supported, and there did appear to be some benefits in providing resources to home-based educators to promote the development of competencies for the children they were teaching and early school adjustment present over time.

STUDY ONE: FINDINGS IMMEDIATELY FOLLOWING PARTICIPATION

Overall in Study One, there were limited statistical significant differences found between groups. However, there was a statistically significant time by group interaction found for

children's performance on the Challenging Situations composite, such that children in the RRR group obtained higher scores at post-test. There were also differences found on the educator rated variables at post-test (Benefits for Learning and TROLL). Specifically, educators who participated in ENGAGE rated benefits of participation for fostering self-regulation more highly than did educators who participated in RRR. In the TROLL, there was a significant time by group interaction, where educators rated children in the RRR as displaying better oral language scores at post-test. These results are promising and indicate that ENGAGE and RRR may be associated with benefits for fostering self-regulatory, oral language, and socio-emotional competencies, respectively. These findings extend earlier findings with parents by Healey and Halperin (2015) and Reese et al (2007), specifically that participating in ENGAGE would promote developing self-regulatory skills and that participating in RRR would provide benefits for developing oral language skills. This was further supported by Timperley's (2019) study where book reading results also suggested benefits for oral language within the RRR condition. This pattern of results suggests that individually these modules were targeting the specific competencies they were developed to target and, given the important and potentially complementary nature of both skillsets, supports the rationale behind providing educators the opportunities to participate in more than one module.

Although statistical differences between groups were not present on the other child measures included here, other factors such as our small sample size and individual child factors may have contributed to the obtained pattern of results. The small sample size decreased the statistical power to detect differences between groups. Moreover, individual child factors may have contributed higher variability within the groups, again constraining sensitivity to between group differences (Oakes, 2017). The problem with this is that this reduced power can also reduce ability to evaluate the utility of the above interventions. Whereas meaningful differences

may be present, however, these may not reach statistical significance due to the impact of reduced power and individual differences in a small sample. Another consideration is the developmental change present over time. Specifically, children who participated in either condition (RRR or ENGAGE) tended to do better on Statues, Visuomotor Precision, and level of performance on HKTS from pre-test to post-test. This could be due to maturation (irrespective of condition) or both conditions potentially contribute to children's developing self-regulatory skills (equifinality).

STUDY TWO: FINDINGS AFTER ONE YEAR OF PRIMARY SCHOOL

In Study Two, the focus was on children's competencies after the transition to school to examine whether children's participation in early childhood was associated with success once they were at school. The one-year follow-up results suggest that there were limited statistical differences between treatment groups at one-year follow-up. However, differences over time were found in level of performance on HKTS and children's scores on the Challenging Situations composite. These results could be expected due to age differences; however, this change over time and limited differences between groups in Study Two may also suggest that there may be an aspect of equifinality present where children in both groups are improving over time. This may suggest that these modules targeted overlapping - or inter-related - skills resulting in equifinality for both conditions (Feiring & Lewis, 1987). This explanation is likely evident when considering self-regulation, as mentioned above, has a multifaceted nature.

It should be noted that within the RRR condition at one year there was also different levels of exposure to SSS (five children had exposure to SSS and four children did not), suggesting that some children in the RRR condition had a larger oral language component. The main distinction between children who had solely RRR compared to some exposure to SSS being that within the SSS condition meaning-related socio-emotional discussions were no longer

prompted. Oral language, as shown in past research, has been linked to self-regulation (Bohlmann, Maier, & Palacios, 2015; Skibbe et al., 2019). Therefore, it is likely that RRR, which was developed to target oral language and socio-emotional competencies may have also fostered self-regulatory competencies. Further, it is possible as demonstrated by the continued increase in HKTS level for RRR from post-test to one-year follow up that either sleeper effects of RRR were presented or the continued attention to oral language and socio-emotional themes from shared book reading in SSS have had a positive impact. Our current findings may also be consistent with other research that suggests that the relationship between language and self-regulation is bidirectional (Blair & Raver, 2012; McClelland, Schunk & Zimmerman, 1997; Vohs & Baumeister, 2011). Specifically that RRR was associated with similarly developed skills in managing self at one year as ENGAGE. Further, ENGAGE was also associated with similarly developed skills in using language to communicate as RRR.

An aspect of our findings that were not directly examined was the potential gender differences present in teacher ratings at one year. This finding was interesting as these potential differences were not present at the post-test time point and were also not observed in the other child measures. Unfortunately, small sample size with uneven gender distribution precluded analyses to explore whether benefits of participation might differ for boys and girls; therefore, future work should directly examine whether outcomes may be moderated by gender. This result is consistent with research by Gibb et al. (2008) who within New Zealand looked at gender differences in educational achievement of 1265 individuals studied from birth to age 25. They found a small but pervasive tendency for females to score better than males on standardised tests and teacher ratings. Therefore, this finding supports examining these potential differences in future research with a larger sample size.

A further finding were the high correlations present between the teacher competencies at one year. These strong correlations between competencies may suggest that there is an overlap between these competencies, or that there is a halo effect, where positive ratings for one child on one competency extend across other competencies. Analyses to control for the inter-related nature of these competencies such as multivariate analyses of variance were not conducted due to the sample size (Field, 2013). Therefore, there is scope for future research to examine this relationship further.

LIMITATIONS

This thesis does have some limitations. For example, measures included to tap complex competencies potentially missed important components of these skillsets. For example, the TROLL was chosen because language is a crucial component of effective communication which is an early school adjustment (Campbell et al., 2016). However, it is possible that other language measures, assessing vocabulary or listening comprehension, may have stronger correlations with children's self-regulatory, social and emotional competencies. Likewise, the Challenging Situations, and Emotion-Desire and Belief tasks used in the present study were chosen given their previous use in research with children in the age groups of the sample (Pons et al., 2004); however, emotional competence is a complex construct, and several other measures exist relating to emotion (see Humphrey et al., 2011, for a review). Social competencies were measured indirectly through teacher ratings; sociometric measures, such as those developed by Coie, Dodge, and Coppotelli (1982), or more naturalistic observational measures, may provide socially valid or more direct measurement of children's social skills and peer networks.

Data analyses uncovered effects which were approaching but did not reach, conventional levels of statistical significance. A limitation at one year was the small sample size that did not allow for some analyses to be completed. This was impacted by COVID-19 when testing was

delayed due to primary schools being closed. Increasing the sample size within the one-year time point may also increase statistical power and thus provide more substantial evidence for relationships between the variables. Further, increasing sample size would have allowed for a third comparison group to examine whether the combination of all three modules help additional value to the current two modules used.

A related weakness of the current study is the limited number of participating educators and children from diverse cultural backgrounds. Most study participants were NZ European, with English as their first language. Involving participants from a range of cultural backgrounds is advantageous as it allows for better representation of New Zealand and generalisation of the findings to wider populations. Different cultural backgrounds may be a key within-culture factor that influences children and educators' engagement, enjoyment and interactions with the above modules. Therefore, future research using a large sample with greater diversity of cultural backgrounds would be warranted.

Lastly, another potential limitation of the present study was the range of experimenters collecting data from the children across time points. The experimenters conducting the data collection changed between early childhood and follow-up time points. Although a standardised testing schedule and procedures were used, the order of the measures was adapted between Study One and Study Two when new measures were added and some measures removed. These differences could introduce potential order effects if a task was administered earlier in Study One and compared against a task administered later in Study Two resulted in unintended effects on children's performance such as the child's tiredness and engagement shifting throughout assessment) For example, the Visuomotor Precision task was moved to be earlier in the session (task two compared to the fourth task) from study one to study two. Further, personal style may have impacted the rapport built between child and experimenter and the level of engagement

within the tasks. Future studies should aim to use fewer experimenters and a more standardised schedule of administration.

FUTURE RESEARCH

CONTROL GROUP.

To more clearly examine common or differential effects of participation, future research should include a comparison group that did not have exposure to either RRR or ENGAGE modules could help to assess the additional benefit of the interventions being added relative to the control. It was originally intended that educators and children who initially participated in SSS would serve as a third comparison group for Study One; however, small numbers of participants initially participating in SSS precluded inclusion in analyses in Study One. Similarly, in Study Two, children who participated in RRR had differing levels of exposure to SSS, and it would have been preferable if there were sufficient numbers of children who had only been exposed to one module, or both, so that they could be directly compared.

EXTENSION INTO THE SCHOOL YEARS

A possible extension of the findings from this study would be to continue to longitudinally investigate self-regulatory, oral language and socio-emotional competencies throughout primary schooling. The theoretical importance of promoting children's developing behavioural regulation and socio-emotional skills for early school success and long-term outcomes has been extensively highlighted in the literature (Cameron-Ponitz, McClelland, Matthews, & Morrison, 2009; Denham, 2006; Denham & Brown, 2010; Jones, Greenberg, & Crowley, 2015; McClelland et al., 2014; Moffitt et al., 2011). Investigation of whether

participation in and implementation of the RRR and ENGAGE programme will continue to be associated with benefits for children—amid the context of an increasingly demanding school environment, would bolster the empirical support for preventive intervention research in home-based ECEC.

GENERALISABILITY OF FINDINGS TO PRIMARY SCHOOL EDUCATION

Another possible extension of the findings would be to conduct a similar longitudinal study with primary school teachers from ages five to eight with adapted ENGAGE and RRR interventions that target similar competencies. This age range is important as when children enter school, they are faced with increased demands of academic learning, compliance with rules, and developing positive interpersonal relationships with their peers and teachers (Bierman et al., 2008; Shonkiff & Phillips, 2000). Although the home-based ECEC and school settings independently influence children's learning in different ways, continuity in learning across the transition from home-based ECEC to primary schooling may facilitate greater developing competencies (El Nokali et al., 2010; Institute of Medicine and National Research Council, 2015).

IMPLICATIONS

The increases shown from pre-test to post-test to one year in level of performance on the HKTS and Challenging Situations composites suggests that although there were limited statistical differences between groups, resources from both modules may be useful for homebased education. Further, educators qualitatively reported that they liked the resources (Schaughency et al., 2019) and the benefits of learning questionnaire and TROLL results suggest they perceive positive benefits of participation. Educators' perspectives are essential as they

influence the likelihood of implementation and the likelihood that they will continue to utilise resources following the study's cessation.

APPLICATIONS

SOCIAL EQUALITY AND PROFESSIONAL DEVELOPMENT

ECEC is often seen as a vehicle to give children from socially disadvantaged backgrounds a “head start” when commencing compulsory education. Home-based ECEC educators come across increasingly complex social environments and encounter a multiplicity of family backgrounds and experiences. These factors create imperatives to adopt new pedagogies and organisational practices to accommodate this pluralism (Elliott, 2006; Eurodyce, 2009). To help facilitate this, the development of quality interventions that can help facilitate this learning is essential. An application of this thesis is that providing resources to support learning and the development of self-regulatory and socio-emotional competencies in home-based learning is likely to be beneficial. It is likely to be even more beneficial if educators enjoy these interventions and perceive them to be effective.

FOCUS ON SELF REGULATION AND SOCIO-EMOTIONAL SKILLS AS IMPORTANT COMPETENCIES IN CHILDREN'S LEARNING AND EARLY DEVELOPMENT

Further, focusing on self-regulation and socio-emotional competencies in early childhood may have a positive impact on many other areas of children's lives. It is now abundantly clear that a child's initial five years of life are critical for the establishment of early cognitive, social-emotional, and regulatory competencies that serve as precursors for lifelong adaptation and functioning as self-regulation is not unique to childhood (Shonkoff & Phillips, 2000). The settings in which young children grow and develop, and the interactions and experiences they

encounter in these highly formative years, set the stage for later learning. The first five years are filled with antecedent events, experiences, and relationships that either support or diminish children's abilities to benefit from new and ongoing opportunities and acquire basic and complex social-emotional and cognitive skills. Thus, the degree to which children are poised for learning upon entering the formal school environment is predicated on what transpires well before they enter the school door. Failure to provide opportunities for developing these skillsets can leave gaps for other competencies that will be needed when the child is at school. This thesis suggests that professional development that targets the predictors of social functioning (self-regulatory and related oral language and socioemotional competencies) in ECEC may be beneficial for children's developing competencies.

CONCLUSION

The current research adds to the existing literature by examining a range of predictors towards early school adjustment, including developing self-regulatory, cognitive-linguistic and socio-emotional competencies, over time and as a function of participating in one of two professional development modules with their home-based ECEC educators. This is important as examining the predictors of school readiness can enable the development of effective approaches to help support teaching and learning in home-based ECEC, a growing and under-studied segment of early childhood services.

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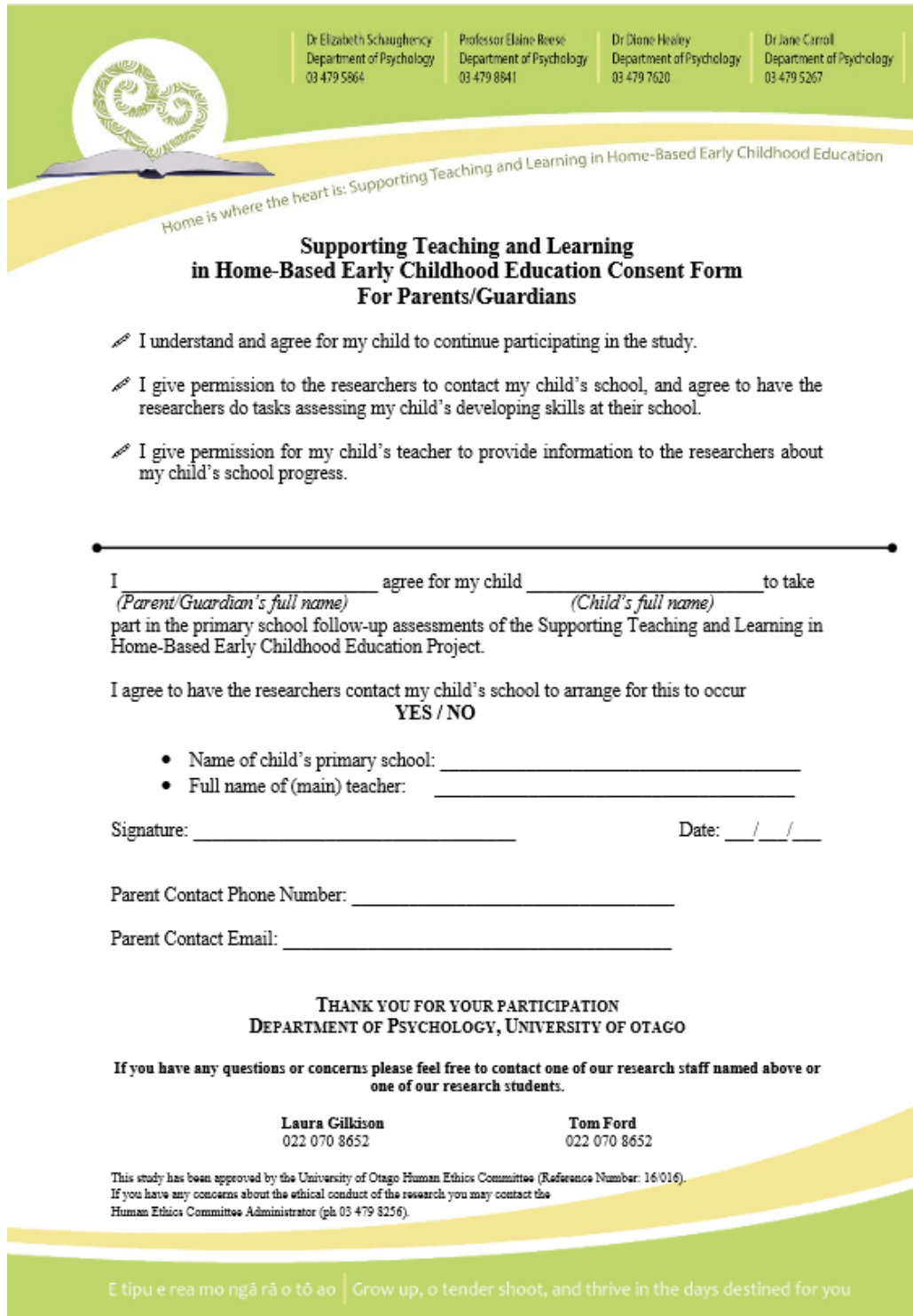
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APPENDICES

APPENDIX A

Consent Form for One Year Follow up.



Dr Elizabeth Schaughency
 Department of Psychology
 03 479 5864

Professor Elaine Reese
 Department of Psychology
 03 479 8841

Dr Dione Healey
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 03 479 7620

Dr Jane Carroll
 Department of Psychology
 03 479 5267

Home is where the heart is: Supporting Teaching and Learning in Home-Based Early Childhood Education

**Supporting Teaching and Learning
 in Home-Based Early Childhood Education Consent Form
 For Parents/Guardians**

I understand and agree for my child to continue participating in the study.

I give permission to the researchers to contact my child's school, and agree to have the researchers do tasks assessing my child's developing skills at their school.

I give permission for my child's teacher to provide information to the researchers about my child's school progress.

I _____ agree for my child _____ to take
(Parent/Guardian's full name) *(Child's full name)*
 part in the primary school follow-up assessments of the Supporting Teaching and Learning in Home-Based Early Childhood Education Project.

I agree to have the researchers contact my child's school to arrange for this to occur
YES / NO

- Name of child's primary school: _____
- Full name of (main) teacher: _____

Signature: _____ Date: ___/___/___

Parent Contact Phone Number: _____

Parent Contact Email: _____

THANK YOU FOR YOUR PARTICIPATION
DEPARTMENT OF PSYCHOLOGY, UNIVERSITY OF OTAGO

If you have any questions or concerns please feel free to contact one of our research staff named above or one of our research students.

Laura Gilkison
 022 070 8652

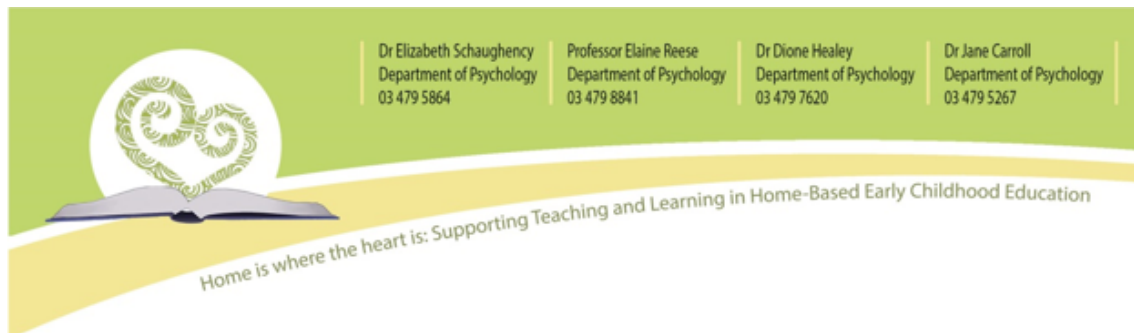
Tom Ford
 022 070 8652

This study has been approved by the University of Otago Human Ethics Committee (Reference Number: 16/016).
 If you have any concerns about the ethical conduct of the research you may contact the
 Human Ethics Committee Administrator (ph 03 479 8256).

E tipu e rea mo ngā rā o tō ao | Grow up, o tender shoot, and thrive in the days destined for you

APPENDIX B

Consent Letter provided to parents for One Year Follow up.



Dear Parent

Thank you again for allowing your child to participate in the Supporting Teaching and Learning in Home-Based Early Childhood Education programme. As part of our evaluation, we would like to know the long-lasting benefits for children after the programme has ended and they have started primary school.

To answer this question, with your permission, we would like to approach your child's teacher for their views about your child's progress in school and about any relevant programmes taking place in the classroom, after your child has been in school for approximately 12 months. At that time, we would also like to invite you to complete a final questionnaire and arrange to conduct a final assessment with your child's. This can be with your child at school, and you do not need to attend that session.

We would be very grateful for your child's participation in this final set of activities. We are including a copy of the consent form for these follow-up activities, which you may return along with your questionnaire, if you would like your child to participate in this final phase.

Thank you again for allowing your child to participate in our project and considering possible continued participation after their start to school.

Kind Regards,

The Tender Shoots Team

Laura Gilkison and Tom Ford

This study has been approved by the University of Otago Human Ethics Committee (Reference Number: 16/016). If you have any concerns about the ethical conduct of the research you may contact the Committee through the Human Ethics Committee Administrator (ph: +643 479 8256 or email gary.witte@otago.ac.nz). Any issues you raise will be treated in confidence and investigated and you will be informed of the outcome.

APPENDIX C

Information Letter Provided for Schools at One Year Follow up.

Home is where the heart is

Supporting Teaching and Learning in Home-based Early Childhood Education

Hello, Kia Ora, Talofa, Mālō e Iele!



Dear principal and members of the school community

One or more of your students participated with their early childhood educator in a collaborative project of University of Otago researchers and Pioneers Home Visiting Teachers. The aim of our project is to develop user-friendly professional development resources for home-based educators who provide early childhood education to 3 ½ to 4 ½ -year olds.

Beginning this year, we will be starting final evaluations with children who participated in our project and have been at school for one year. The purpose of these final evaluations is to help us understand the benefits of participation for children's success in beginning schooling. This final evaluation includes parent and, with parent/guardian consent, teacher questionnaires to gain their perceptions about children's progress at school as well as individual assessments with children conducted by research students. If agreeable to parents and school personnel, assessments with children may be completed at school. If assessments are conducted at school, research students will make arrangements for a suitable time to complete assessments with appropriate school personnel. Teachers will be provided with a small thank you gift (book voucher) to acknowledge their assistance with the evaluation of our project.

Team members who will be participating in final evaluation activities include research students Tom Ford and Laura Gilkison. Tom or Laura will be making contact to make arrangements for school follow up for participating children at your school.

Attached is a copy of the background to the study and where we are now. Thank you for considering assisting us with our evaluation of benefits of this work for children's learning in beginning schooling. If you have any questions or would like further information, please don't hesitate to contact us.

Introducing the Tender Shoots Team




Pioneers Home Director, Visiting Teachers, and Educator, Angel Gosling, along with university researchers, Libby, Elaine, Dione, and Jane, and research students, Amanda and Sarah, at the 2016 Early Childhood Research Hui.
<http://www.tri.org.nz/tri-research/research-progress/ee-sector/supporting-teaching-and-learning-home-based-early-0>

Above Right
Tom Ford and Laura Gilkison

Ngā mihi,
The Tender Shoots Team

This study has been approved by the University of Otago Human Ethics Committee (Reference Number: 16/016). If you have any concerns about the ethical conduct of the research you may contact the Committee through the Human Ethics Committee Administrator (ph +643 479 8256 or email gary.witte@otago.ac.nz). Any issues you raise will be treated in confidence and investigated and you will be informed of the outcome.

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**TEACHING & LEARNING
RESEARCH INITIATIVE**

MAIHI WHAKATU TE Kōwhiri, Hei Tangiō Te Kōwhiri