A Systematic Review on Strategies for Leadership Development in the Early Childhood Sector – Applicability to the Singapore Context

by Joanna Shu Fen Liew

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Abstract

Background

Research evidence points to the significant impact of Early Childhood Leaders (ECL) on building quality Early Childhood Education and Care (ECEC), and emphasizes the need to develop effective leaders. While there is a strong policy emphasis on increasing the quantity and quality of ECEC services in Singapore, it seems that less is known about the strategies to develop effective ECL.

Purpose

This dissertation sets out to conduct a systematic review of existing international research on Early Childhood Leadership (ECLS) and identify useful strategies for leadership development to inform policy and practice in the Singapore context.

Methodology

A systematic review approach was adopted to use 'explicit, accountable and rigorous research methods' (Gough, Oliver and Thomas, 2017, p. 2) to identify relevant findings to inform policy and practice. The review was conducted in three stages, with the objective of increasing the breadth and depth of the findings within the limited resources available for this dissertation. Stage 1 involved a systematic search through different search channels to identify existing systematic reviews or literature reviews on ECLS, and synthesize key findings from the reviews to address the review questions. Stage 2 focused on updating the latest review by Dunlop (2008) identified in Stage 1, by identifying and describing primary studies relevant to ECLS published between 2007 and 2017. The last stage was an in-depth review of primary studies evaluating leadership development strategies, identifying specific strategies with positive outcomes across different studies. The findings were integrated with the contextual model of leadership by Nivala (2002) to develop a contextual model of leadership development which was used to discuss the applicability of the strategies to the Singapore context.

Findings

Stage 1 of this review identified two non-systematic reviews of key primary studies on ECLS, and both reviews highlighted a paucity of research on leadership development strategies. Stage 2 provided a systematic map of 33 primary studies conducted between 2007 and 2017 to update the latest review included in Stage 1 by Dunlop (2008). The map showed that most studies on ECL focused on self-

reported perceptions of leadership roles by Early Childhood Leaders. The findings from the in-depth review in Stage 3 focused on six included primary studies that evaluated leadership development programmes and identified four key strategies for leadership development: developing reflective learning, building peer support and learning networks, coaching and mentoring and providing theory-based tools for Early Childhood Leaders.

<u>Recommendation</u>

In the Singapore context, ECL are impacted by the increasing demand for ECEC services, high staff attrition rates and increasing marketisation of the ECEC sector, which pose pragmatic challenges for ECL to set aside time for leadership development. The review identified strategies that are applicable for sustainable leadership development that can equip leaders to continue learning while they are at work through reflective learning and building peer-support networks through various platforms. Furthermore, with the push to appoint more ECL to meet the growing demand for ECEC services, many ECL in Singapore may be unprepared for their roles. The findings suggest that investing resources in long-term coaching and mentoring and theory-based training can be considered to build confidence and improve leadership practices.

Table of Contents

1 List of Figures and Tables

1.1 List of Figures

1.2 List of Tables

2 Introduction

"A good start for every child" is the vision of the Early Childhood Development Agency in Singapore, and this aim to provide equal access to quality Early Childhood Education and Care (ECEC) has been the driving force behind policy reforms with significant investments to support ECEC development. Internationally, there has been an increasing emphasis on improving the quality of the ECEC sector, especially in countries such as the US, UK, Canada, Australia, New Zealand, Finland, Korea and Hong Kong where governments have also made ECEC a priority. Research evidence points to the significant impact of Early Childhood Leaders (ECL) on building quality ECEC, and emphasises the need to develop effective leaders (Bloom, 1992, Siraj-Blatchford and Manni, 2007, Hujala et al., 2013). Furthermore, as ECEC services and programmes develop rapidly, the responsibilities of ECL have expanded beyond the role of nurturing to include administration, supervision, training, advocacy and inter-agency liaison. This requires capable leaders who can lead inclusive and collaborative teams to provide effective and responsive services for young children and their families (Rodd, 2013). However, there seems to be a lack of leadership development for ECL to equip them to effectively impact the teachers, parents and children whom they work with (Siraj-Blatchford and Manni, 2007, Aubrey, 2011). This study aims to carry out a systematic review of existing international research on Early Childhood Leadership (ECLS) and identify useful strategies for leadership development to inform policy and practice in the Singapore context.

This topic stems from my personal and professional interests, as a civil servant in the Professional Partnerships team in the Early Childhood Development Agency (ECDA), which is the governing body for ECEC services in Singapore for young children aged 0 to 6 years. Our team focuses on developing and implementing programmes to support ECL, which refers to principals, managers and supervisors of kindergartens and childcare centres in the Singapore context. The purpose of this systematic review is to draw insights from existing international research on ECLS, especially from research studies evaluating leadership development programmes for ECL. A three-stage systematic review was carried out, first to identify existing reviews conducted on EC Leadership, then to map primary studies published since the latest review found in Stage 1, and finally an in-depth review on primary studies

evaluating leadership development strategies. The detailed process of this three-stage review and rationale behind the chosen methodology will be elaborated on in the methodology section, followed by the reporting of the mapping results and synthesis in the findings section. I proposed a contextual model for leadership development developed from the findings (adapted from Nivala, 2002) and apply it to the Singapore context. The review will conclude with a discussion on how this review contributes to the body of knowledge for ECL, strengths and limitations of this review and recommendations for policy and research.

2.1 Review Questions

2.1.1 A Reflexive Approach to Developing Review Questions

This systematic review was guided by Gough et al.'s (2017) key stages of the review process. The first stage involved clarifying the problem and formulating the review questions. This involved an effort to be reflexive in identifying and questioning my professional experiences and practices as an ECDA officer in Singapore (Finlay and Gough, 2003). A process of introspection provided insight into key areas of interest or concern and helped to shape the research questions (Moustakas, 1990). Furthermore, consideration was given on the importance of defining a clear scope for the review which could be completed within the given time and resources for the Masters dissertation. To develop the review questions, I began with a reflection process on my work in ECDA and recorded some of the key issues and questions that have emerged through engagement with key stakeholders such as my colleagues in the department, ECDA Fellows and other ECL within the 1.5 years that I have worked there. I identified a few key issues:

- Challenges faced by ECL in fulfilling multiple roles, with a need to constantly "fight fires" and respond to contingencies in the centre.
- Difficulty in articulating what makes a leader effective.
- Difficulty in evaluating the effectiveness of existing leadership development programmes.
- Need for a stronger evidence-based or theory-based rationale for implementing leadership development programmes.

Based on these concerns, the following review questions were formulated:

- What defines an effective ECL? What are some of the common characteristics and skillsets required?
- What are the key strategies recommended or implemented to develop ECL?
- What was the rationale for developing these leadership development strategies?
- How can these strategies be applied and transferred to the Singapore context?

2.2 Definitions

During the process of conducting the systematic review, it was evident that there were multiple definitions for the key terms involved. The definitions below helped to scope the boundaries of this review clearly.

2.2.1 Early Childhood Leadership (ECLS)

Leadership is a problematic term to define, with multiple definitions across different disciplines. As Stogdill (1974, p. 7) observed, "there are almost as many different definitions of leadership as there are persons who have attempted to defined the concept". It has been defined as the process of influencing or mobilising others (Cohen, 1990, Kouzes and Posner, 1995), direction setting (Conger, 1981, Jaques et al., 1994) and being an agent of change (Fullan, 2007). Similarly, in the early childhood sector there seems to be no overall agreement on how notions of how ECLS is defined (Nivala, 2002), as these are developed along with different theoretical perspectives and changing practices. The concept of leadership in the ECEC sector has also broadened, with increasing focus on the "non-hierarchical, flexible and responsive enabling leadership emerging at any level of the organisation"(McDowall and Murray, 2012, p. 12), which emphasises democratic or shared leadership with teachers taking on leadership roles.

In the research literature, ECLS could refer to the enactment of leadership by either preschool children or ECEC teachers. Within this review, ECLS will refer to the roles carried out by an ECL who has been assigned a formal position of headship in the centre (Cardno and Reynolds, 2009). The ECL would be an on-site administrator of an ECEC centre who may have different role titles such as director, manager and principal (Talan and Bloom, 2004, Arend, 2010). While this does not mean that the leadership development strategies are only applicable for formal leaders, this review focuses on the strategies to equip ECL who are formally accountable for the quality

of the ECEC services provided and responsible for supervising their teams (Cardno and Reynolds, 2009).

2.2.2 Early Childhood Education and Care (ECEC)

There are varying definitions of early childhood across different countries, with different age ranges applied across different contexts. For example, kindergartens for 3 to 6 year olds are often integrated with elementary schools in the US, universal childcare is provided mostly by municipal governments in Finland for children younger than 7 years, and in Victoria, Australia the ECEC framework covers children from 0 to 8 years (Brown et al., 2014, Hujala et al, 2016). The sector is very diverse and includes a range of ECEC services such as kindergartens, nurseries, full-day childcare centres and so on, and these may be managed by the government, commercial or voluntary organisations. The settings vary in terms of the management context, quality of facilities, teaching and programmes (Peeters et al., 2014). While the age range differs across international contexts, the use of the term ECEC in this paper will refer to education or child care services publicly or privately provided for young children within the age range of 0 to 6 years old. This is to facilitate comparison with the ECEC context in Singapore.

2.3 Literature Review

This literature review focuses on the research background supporting the criticality of leadership development for ECL as elaborated in three sections: the critical need for quality ECEC, the critical role of ECL, and the critical need for ECL leadership development. While much has been written on the impact of ECEC in closing inequality gaps in rural settings, the examples from research literature will be largely drawn from urban settings to provide background information that is more applicable to the Singapore context. This will be followed by a description of three contemporary ECLS theories: the contextual model for ECLS (Nivala, 2002) and interrelated theories of distributed and pedagogical leadership, focusing on their relevance in providing new paradigms to shape leadership development for ECL. The final section of the literature review will describe the ECEC policy context in Singapore to set the context for the application of the findings from the in-depth review in the findings chapter.

2.3.1 The Critical Need for Quality Early Childhood Education and Care

ECEC has been recognised as a significant aspect of social policy with long-term benefits in improving educational outcomes and preventing social ills. This has been affirmed through empirical research which has provided robust evidence for policy-makers to make significant investments in developing ECEC services, such as the longitudinal Effective Provision of Pre-school Education (EPPE) project in the UK which demonstrated how high quality ECEC has significant long-term benefits for children (Sylva et al., 2004, Heikka et al., 2012). Another key report was the High Scope Perry Preschool Study in the US which provided evidence of how investment in the physical and cognitive development in the early years translate to a high rate of return in terms of job performance and earnings (Heckman et al., 2009). The significant impact of ECEC has also been emphasised in the fields of developmental psychology and brain research, as analysed in special issues of The Lancet and Science (Engle et al., 2011, Alberts, 2011).

There is a broad consensus among international organisations that ECEC helps to equalise opportunities and level the playing field in both developed and developing countries (The World Bank, 2006, UNESCO, 2010). The first of UNESCO's key goals towards *Education For All* is to improve ECEC and expand the coverage for the most vulnerable and disadvantaged children. Their Global Monitoring Report emphasized the impact of strong foundations laid in the early years on emotional development and cognitive stimulation, with long-term benefits for future learning in school and higher educational attainment which contribute to social and economic gains (UNESCO, 2015). Although there is scepticism about whether it can truly level the playing field due to other political and socio-cultural factors, the research presented by international organisations provide evidence that ECEC can contribute to providing more equal opportunities for young children, especially those from disadvantaged backgrounds (Morabito et al 2013).

Socio-economic factors have also contributed the rising demand for ECEC services. With more dual income homes in urban cities, a larger proportion of mothers are choosing to return to work after giving birth (Penn, 2007). Globalisation, migration and rapid social changes have also resulted in greater diversity of young children growing up in different family structures with a range of specific needs (Aubrey, 2011). This has led to reforms such as the development of integrated ECEC centres

to provide a holistic approach to helping disadvantaged children and their families, involving social workers, healthcare workers and other professionals. There has been the development of new models of integrated children's centres, such as the Head Start centres in the US and Sure Start centres in the UK, which involve multi-agency and inter-disciplinary teams to address increasingly complex social needs (Rodd, 2013).

With governments placing a stronger emphasis on the critical need for ECEC development, a growing pool of evidence of systematic reviews have been conducted to study various aspects of ECEC related to effective programmes, professional development, working conditions and quality assessment to support policy-making. A systematic review on effective ECEC programmes by Chambers et al (2010) contributed strong evidence that comprehensive ECEC services focusing on cognitive development of children had positive long-term effects on social adjustment outcomes, with a positive impact on educational and employment outcomes and reducing delinquency, welfare dependency and teenage pregnancy. Another systematic review studying the impact of continuous professional development and working conditions of the ECEC workforce also suggested that increasing the quality of teaching practices may strengthen the cognitive and socialising capabilities of children (Peeters et al., 2014). These have provided further evidence of the significant impact of effective ECEC services on long-term outcomes for children.

2.3.2   The Critical Role of Early Childhood Leaders

With increasing evidence highlighting the positive impact of ECEC services, there has also been more attention on the critical role of the ECL to lead improvements and sustain quality ECEC services. In the quest for quality ECEC provision, there was an emerging body of literature in the 1990s that highlighted the critical role of the leader in impacting the quality of ECEC provision for young children. (Rodd, 1994, Rodd, 1996, Bloom, 1992). Rodd (1994) aimed to examine the attributes of the leaders and their perspectives on their roles and responsibilities, and contributed to building a typology of ECL. Empirical studies examining the factors impacting the quality of ECEC service provision also found strong correlations between classroom quality and the leadership skills and administrative practices of ECL (Bloom, 1992, Lower and Cassidy, 2007). Strong organisation and management helps to reinforce

other factors such as building a safe and healthy environment and providing learning opportunities for children (Myers, 2004).

On a macro-level, ECLS has been identified by international organisations as one of the vital factors for sustainable development of ECEC services, especially within changing contexts (UNESCO 2015). To meet increasingly complex needs of children and families, the role of ECLs is expanding as they helm integrated settings, such as in the US and the UK where they are required to collaborate closely with professionals from other sectors such as social workers and healthcare workers.

2.3.3 *The Critical Need for Leadership Development for ECL*

With changing policy reforms and an increasingly complex environment, new frameworks are required to support ECL in facilitating changes and making improvements in ECEC centres instead of simply reacting to external pressures (Fasoli et al., 2007). While the growing body of literature provides empirical evidence supporting the impact of EC leadership on the quality of ECEC services, there seems to be a paucity of research providing evaluations of leadership development programmes for ECL (Aubrey, 2011). This is of particular concern in ECEC settings where "accidental leaders" are often placed in management roles by virtue of being the highest qualified person employed, regardless of their leadership attributes, to meet existing needs (Ebbeck et al., 2003, Rodd, 2013).

Leaders in the Early Childhood sector are often operating in very diverse settings, ranging from public centres, commercial franchises, centres run by religious organisations or other NGOs, with different socio-economic environments and demographic profiles. They wear many hats in terms of areas of administration, curriculum, public relations, safety and nutrition (Bloom, 1992). This implies that there cannot be a one-size-fits-all approach to leadership development, but there are key skillsets which leaders can develop and adapt to different contexts and situations (Spillane et al., 2004). ECL have also highlighted the need for a systematic review of research studies that have been conducted for EC Leadership programmes, to inform and provide direction for continued development of such programmes (Aubrey, 2011). This provides the impetus for this systematic review, which seeks to construct a picture of the existing landscape for research on ECLS, review primary studies on leadership development strategies, and identify key recommendations and additional areas of research that would strengthen the body of knowledge in this

field. Given the strong evidence on the critical role of ECL in developing and sustaining quality ECEC services, there is a need for practical knowledge on effective strategies to equip and empower them to ensure that they can effectively lead the centres.

2.3.4 *Contemporary ECLS Theories and Implications for Leadership Development*

The importance of theoretical perspectives in conceptualising leadership in EC has been emphasised as there is a need to be aware of the paradigms that direct leadership actions (Nivala, 2002). Contemporary theories on ECLS have placed a stronger emphasis on distributed notions of leadership instead of more traditional notions of top-down, hierarchical leadership (Heikka et al., 2012, Kangas et al., 2016). A contextualised view of ECL has also been developed, which situates the ECL within the macro-system of socio-economic contexts and policy environments and micro-system of internal stakeholders, which includes the staff, children and families. This has implications on the changing needs for leadership development, providing new perspectives to view leadership development within a broader context, and focusing on empowering staff instead of instructing or managing staff.

2.3.4.1 The Contextual Model of Early Childhood Leadership

The contextuality of leadership is especially relevant to this review, which seeks to understand how leadership development strategies implemented in various international contexts can be applied in Singapore. A key conceptual framework which was useful in understanding ECL is Nivala's contextual model (2002) which was built on Brofenbrenner's (1979, 1989) ecological theory for child development. This contextual model of ECLS was "a theoretical model of leadership which defines the structural framework of the factors and actors related to leadership and leading" (Nivala, 2002, p. 15). The model provided the theoretical basis for an International Leadership Project which aimed to understand ECLS in its context (Hujala and Puroila, 1998). Nivala's model is reproduced below in Figure 1, and focuses on the operating environments of ECLS.

Figure 1: Contextual Model of Early Childhood Leadership (Nivala, 2002, p. 16)
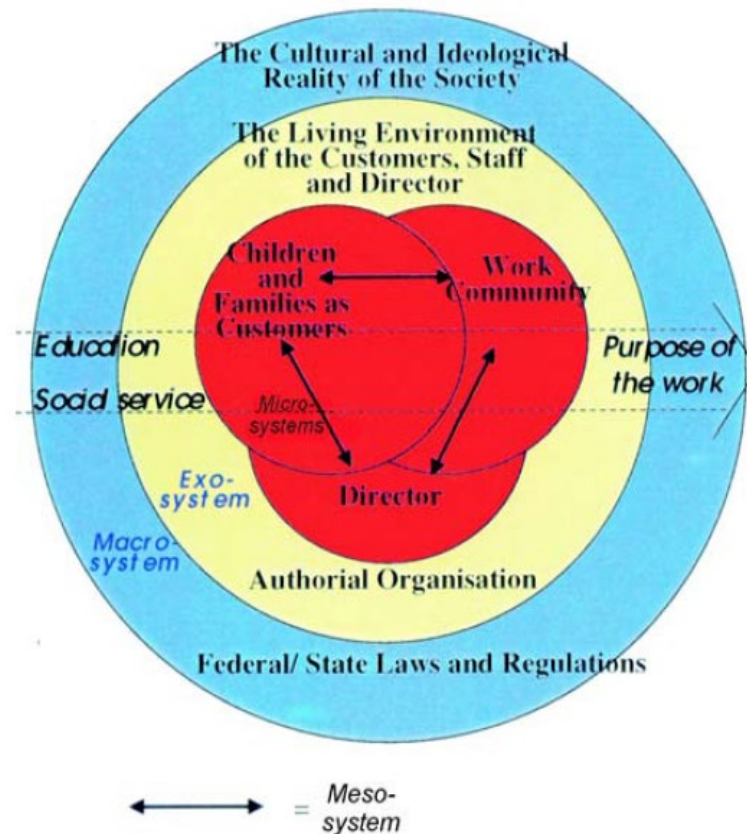
Closest to the ECL, there are the microsystems of the work community and children and families whom they interact with regularly as part of their work. The work community would include teachers, administrative staff and support staff. The meso-system comprises the interactions between the ECL and the other microsystems as represented by the double-headed arrows. The exo-system represents the living environments in which the ECL, staff, children and families are in, such as the communities around them, which indirectly impact leadership practices. The outermost circle represents the macro-system which represents the prevailing socio-cultural context, as well as government policies which will impact the ECEC settings and shape the role of the ECL. At the core of this model is the mission of ECEC to provide quality education and care for young children. The model shows how leadership involves a constant interaction of the ECL with different stakeholders and suggests that leadership practices are constantly being moulded through this interaction (Nivala, 2002). This model will be further built upon in the findings chapter, and integrated with the synthesis from the review to build a contextual model of leadership development for ECL.

2.3.4.2 Distributed and Pedagogical Leadership

Contemporary research on ECL has focused on developing the concepts of distributed leadership and pedagogical leadership, and have often linked the two concepts in a distributed-pedagogical approach. Broadly, there has been a shift from a top-down and hierarchical approach, focusing on building collaborative relationships between leaders and followers built on strong communication and trust (Hujala et al., 2013). Heikka et al (2012, p. 38) emphasised that distributed leadership "relies on building relationships through the validation of professional expertise and empowerment of people and diversity, and thereby creating a culture of learning". The growing interest in distributed leadership has been attributed to an increasing focus on team-thinking and the complexities of ECCE working environments which makes it challenging for ECLs to handle it alone (Kangas et al., 2016). A study by Kangas et al (2016) in Finland based on a two-year project on teachers and leaders found that ECL identified distributed leadership as a good approach to build development practices, and recognised the significant contributions of their staff to positive outcomes in their centres.

Pedagogical leadership in ECEC refers to the core responsibility of ensuring that there is a "shared understanding of the aims and methods of learning and teaching of young children" (Heikka and Waniganayake, 2011, p. 510). The practice of pedagogical leadership has been explored at different levels, including the role of teachers in guiding children academically, socially and spiritually (Sergiovanni, 1996). For ECLs who head the centres, there is the responsibility of ensuring that teachers are providing appropriate guidance for the children, and connecting with families and children to build stronger learning outcomes for the children (Heikka et al 2011).

Where pedagogical leadership refers to the key role that the ECL plays in guiding learning, distributed leadership provides an efficient way to carry out these roles within complex systems (Heikka, 2014). This is supported by Nivala's contextual model, where the ECL is constantly interacting with and influenced by different stakeholders and environmental factors. Heikka (2014) defines distributed pedagogical leadership as the interdependent relationship between leading at a macro and micro level to guide learning outcomes. The distributed pedagogical approach has also been identified as a best practice in ECEC in 2017 by

17

researchers in Norway (Bøe and Hognestad, 2016, 2017) through the qualitative shadowing ECEC professionals at different levels in the organisation. The studies suggested that ECL should focus on building a caring community and a positive atmosphere instead of leadership acts associated with the formal leadership position. ECL who enacted distributed pedagogical practices with positive outcomes were observed to have strong collaboration through face-to-face communication and non-hierarchical settings, such as informal meetings with staff and children seated in circles on the floor. This may imply that ECL need to be equipped in building collaborative relationships and facilitating distributed pedagogical leadership.

The contextual model of leadership and theory of distributed pedagogical leadership overlap in their emphasis on the interactions between ECL, their work community, families, children and other stakeholders. These concepts help to frame ECL within a broader view. However, there seems to be a lack of research on how these theories can shape the leadership development strategies for ECL. This review aims to apply these theoretical frameworks to inform the development and implementation of leadership development strategies for ECL in Singapore.

2.3.5 *The Early Childhood Policy Context in Singapore*

The contextual model of EC Leadership by Nivala (2002) highlights the importance of locating ECLS within the macro-system of society, as this influences leadership practice and roles. This section will provide the background on the ECEC policy context in Singapore, which has a significant impact on the ongoing development of ECLS.

Improving ECEC is one of the three key policy agendas for the Singapore government, as announced by the Prime Minister of Singapore during the National Day Rally on 20 August 2017. It was identified as a significant long-term issue to focus on, to build Singapore's future success and well-being. Between 2012 and 2017, the Singapore Government's annual spending on pre-schools doubled from S$360 million to S$840 million, with plans to double the spending again to S$1.7 billion in 2022. One of the key factors for this increase in spending is the rising demand for ECEC services as mothers return to the workforce (Channel NewsAsia, 2017). This funding has been largely administered by the Early Childhood Development Agency (ECDA) which was set up on 1 April 2013 to provide an integrated approach to ECEC in Singapore, focusing on increasing the quality, accessibility and affordability of ECEC services.

This is done through regulation and quality assessment, professional development of ECEC professionals, infrastructure and manpower planning, provision of subsidies and grants for parents, and public education (Ministry of Social and Family Development, 2013).

To meet increasing demand for quality ECEC services in Singapore, one of the key priorities for ECDA is to attract and retain more ECEC professionals, and strengthen their professional development and career pathways. In 2016, the Early Childhood Manpower Plan was launched, including a Skills Framework for ECEC to spell out the specific skills and competencies required for various job roles, and flexible training pathways. This was developed in collaboration with educators, employers and tertiary institutions (ECDA, 2016a). The aim of the framework was to provide a guide for ECEC centres to plan skills and competency-based career development for their staff. This is aligned with the strong emphasis placed on professional development, with a Professional Development Programme rolled out to provide a range of training opportunities for ECEC professionals, with flexible courses provided to help them to deepen their skills and customise their learning (ECDA, 2017a). The government also announced in 2017 that a new centralised training institute, the National Institute of Early Childhood Development, will be established to bring all the training providers under one roof to provide a more structured approach to building the capabilities of ECEC professionals (ECDA, 2017b).

There are also specific policies targeted at the professional development of ECL, in addition to the required qualification of an Advanced Diploma in Early Childhood Leadership provided by an external training provider. ECDA works with training institutes to provide courses for the continuous professional development of ECL, such as the Leadership Series which covers topics such as observation and feedback of teachers, building team relationships and cultivating a learning culture (ECDA, 2016b). Furthermore, the ECDA Fellows programme was implemented to provide opportunities for exemplary ECL to partner with ECDA to contribute to the capacity building of other ECL and share their expertise with the sector. 14 ECDA Fellows were appointed in 2015 for a 3-year term, and they were engaged in different roles such as developing resources, facilitating workshops and leading projects (ECDA, 2017c).

With significant investments in increasing the quality of ECEC professionals, there is a need for cost-effective professional development strategies which would have a

long-term impact on the daily practices of teachers and leaders. Policy initiatives supporting the leadership development of ECL are still being developed, and some of the new policies may lack a strong theory or evidence-base. To strengthen policy and practice in this area, it is important to understand what research has been done on ECL around the world which can provide useful information to guide decisions. This provides the impetus for this review, to provide an overview of the research evidence relevant to ECLS, and carry out an in-depth review of studies evaluating leadership development strategies, with the purpose of informing policies impacting ECL in Singapore.

3 Methodology

The systematic review methodology was adopted for this paper, guided by the key stages provided by the EPPI-Centre as elaborated by Gough et al (2017). This approach was adopted to use "explicit, accountable and rigorous research methods" (Gough et al, 2017, p. 2) to identify relevant findings to inform policy and practice. Systematic reviews have played an increasingly significant role in informing the decision-making process of policy-makers who seek to use research evidence to provide insights to address policy questions (Lavis, 2009). As the aim of the paper is to inform ECEC policy and practice in the aspect of leadership development, there is a need to understand what is known from existing research to provide an overview of key conceptualisations of effective ECEC leadership, and leadership development strategies that have been implemented by policy-makers around the world. This can be achieved through systematically gathering and synthesizing existing studies to construct the big picture, bringing together heterogeneous articles or studies to understand how ECEC leadership and leadership development is enacted in different contexts (Gough et al., 2017).

This review applied tools provide by the EPPI-Centre, and adapted frameworks used by reports produced by the EPPI-Centre. EPPI-reviewer version 4 (EPPI-R4) was used for data management, extraction and synthesis in this review. It was conducted in three stages with the objective of increasing the breadth and depth of the findings within the limited resources for this dissertation. Diagram 1 below provides the overall flow of the review:

Figure 2: Review Flowchart
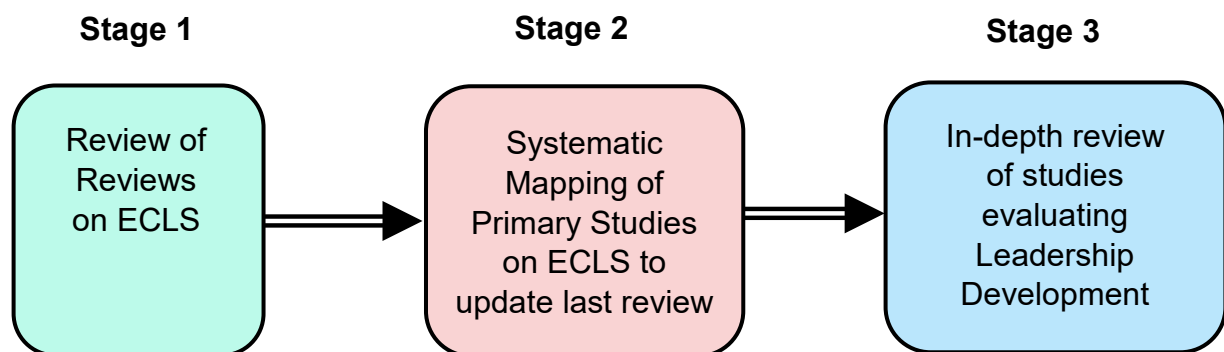
3.1 Ethical Issues

As the reviews and primary studies included in this systematic review are published online with public access or available on online databases, and the scope of the study is not confidential, there were no ethical issues related to protecting participants in research. Effort was made to avoid redundant research by identifying existing reviews in Stage 1 and providing an updated map in Stage 2, to prevent wastage of resources with overlapping research (Wager and Wiffen, 2011). By scoping the review according to key issues identified through my experience working in ECDA and interactions with colleagues and ECL, I aimed to contribute relevant information to policy and practice in Singapore. EPPI-centre tools and guidelines were adapted and used in a systematic way to limit bias at the different stages (Caird et al., 2010). Ethical approval was obtained from the ethics board on 5 April 2017 (Please refer to Appendix B).

3.2 Stage 1: Review of Reviews on ECL

3.2.1 Objective

In Stage 1 of the review, the aim was to identify existing systematic reviews or literature reviews which had been conducted on ECLS. Existing reviews would help to identify key primary studies which may be less accessible, especially if hand searching was conducted in previous reviews or professional networks were consulted. This enabled me to broaden the scope of the review in a resource-efficient way, and identify research evidence which may not have been found within the resource limitations of this review (Caird et al., 2010). With this approach, I could provide an updated map in Stage 2 to identify primary studies published after the latest review found in Stage 1 instead of searching for all relevant studies with no time restriction, thus preventing overlapping research.

3.2.2 Inclusion and Exclusion Criteria

The inclusion criteria of the review should provide clear boundaries to capture all relevant studies, and provide users with a full understanding of the types of studies included (Centre for Reviews and Dissemination, 2009). The criteria was adapted from a review of reviews produced by the EPPI-Centre (Caird et al., 2010). To identify relevant reviews for inclusion, the following criteria was developed:

- Review includes a clearly defined search strategy to identify primary studies.

- Review includes empirical evidence from primary studies relevant to ECLS.
- Report is written in the English language.

There were no date restrictions set as the intent was to understand the broader landscape of research that was available online.

Reviews which focused on studies involving other forms of ECLS beyond the scope of this review (as defined in section 2.2.1), such as the leadership of pre-school teachers or children or government administrators were excluded based on topic. Reviews which included a mix of studies focusing on different aspects of ECEC were also excluded based on topic, to ensure that there would be no overlaps in the study focus of primary studies.

3.2.3 Search Strategy

The development of the search terms and identification of relevant databases was carried out with reference to previous systematic reviews on ECEC (Chambers et al., 2010, Peeters et al., 2014). In addition to the search in the e-databases, a grey literature search was conducted as a preliminary search showed that there were some useful reviews which were commissioned as part of policy briefs and available online but not published. The Campbell Collaboration's specialist library for systematic reviews was also searched as it provides a repository of evidence-based reviews and research reports to inform policy and practice (Campbell Collaboration, 2017). The full list of search terms and search strings can be found in Appendix C, and the search strategy is summarised in Table 1.

Table 1: Search Strategy for Stage 1

Inclusion Criteria	**Stage 1** Systematic reviews or Literature Reviews including empirical research related to ECLS
Time Period	No restriction
Country	No restriction
Study Design	Literature Review or Systematic Review
Language	English

Sources searched between May – June 2017	
International Databases	ASSIA
	British Educational Index
	Child Development and Adolescent Studies
	ERIC
	IBSS (International Bibliography of the Social Sciences
	SCOPUS
	Sociological Abstracts
	SSCI/ Web of Knowledge
Grey Literature – Online Search Engines	Google
	Google Scholar
Specialist Library	Campbell Collaboration Online Library

Due to the constraints in resources to review the studies identified across the three stages of the review and the volume of potentially relevant studies found through the e-databases and grey literature, hand searching in individual journals was not carried out. However, the included reviews carried out hand searching which helped to identify studies which may not have been found through the search channels used in this review.

3.2.4   Screening Process

Using the pre-determined inclusion criteria, I reviewed the title and abstract of all the studies identified using the search strategy and shortlisted potentially relevant studies. The full texts of the shortlisted studies were downloaded. Next, my co-supervisor Hanan Hauari and I reviewed the full texts of all the shortlisted studies separately using EPPI-R4 and decided which reviews should be included based on the inclusion criteria. Independently reviewing the articles with a minimum of two researchers helps to reduce the risk or bias or human error due to subjective experiences, which increases the reliability of the screening process (Centre for

Reviews and Dissemination, 2009, Gough et al., 2017). Where there were differences in perspectives, we discussed and reached a consensus on the selection of reviews which were suitable for inclusion.

3.2.5 Quality Assessment

The quality assessment tool used by Elliot et al. (2001) and Caird et al. (2010) in a review for reviews was referenced for quality assessment of the reviews. The quality assessment tool included the following parameters:

- Comprehensive search strategy involving two or more appropriate electronic databases to ensure that reviews have taken reasonable steps to minimise bias.
- Explicit inclusion criteria to ensure that reviews are systematic rather than selective and lower the risk of bias in the selection of studies.
- Quality assessment of included studies through a description of formal quality assessment for the studies or use of quality inclusion criteria.
- Synthesis of findings from primary studies

Scores of 1 – 4 were assigned to the reviews according to whether they met the above criteria with one point assigned for each criteria.

3.2.6 Data Extraction and Synthesis

Data was extracted from the reviews using a coding tool adapted from EPPI-Centre's data coding tool for systematic reviews (2007) to address the review questions (Please refer to Appendix D). Coding was carried out based on the aim, methodology, scope and findings of the review. Information on primary studies included in the review and their key findings were extracted for inclusion in the synthesis of the reviews. Gough et al (2017, p. 47) states that "the purpose of the synthesis is to integrate the findings of different studies to answer the review question". The extracted data was structured to address the review questions, focusing on the roles of ECL, characteristics of effective ECL and the key strategies for leadership development. The synthesis of the reviews included an overall summary of the review and the key findings of primary studies organised according to headings aligned with the review questions.

3.3 Stage 2: Mapping Exercise to Update Review of ECL

3.3.1 Objective

Based on the findings of the existing reviews that were included, a mapping exercise was undertaken to identify and classify studies that occurred after the latest review identified, which was Dunlop's review in 2008. The aim was to update the latest review by searching for primary studies that were conducted within the period 2007 to 2017, and map out relevant research that had been conducted. The map would provide an overview of the research landscape on ECLS by describing the types of research studies that have been carried out. This is valuable information for policy-makers to identify trends in research and gaps in evidence to make informed decisions about future policy research (Gough et al., 2017).

3.3.2 Inclusion and Exclusion Criteria

In order to be included in the map, a study report had to meet the following pre-specified inclusion criteria:

- Study focus is related to ECLS and includes evidence provided by ECL, ECEC professionals or other stakeholders.
- Report is written in the English language.
- Publication date is within 2007 – 2017 to provide an updated review to build on the findings from the review of reviews in Stage 1.

The eligibility criteria specified that only primary empirical research would be included, with no restrictions on study design. This could include 'outcome evaluation' studies which measures the impact of leadership development studies on other variables, or 'views' studies which report perceptions of ECL or ECEC professionals.

Studies which focused on studies involving other forms of ECLS beyond the scope of this review (as defined in section 2.2.1), such as the leadership of preschool teachers or children or government administrators were excluded based on topic. Studies involving the leadership of principals of elementary or high schools which include ECEC services (e.g. Kindergarten to Grade 12 education in US schools) were also excluded based on topic, as the scope was not specifically applicable to ECL.

3.3.3 Search Strategy

The search was conducted via the same search channels as Stage 1 (excluding the Campbell Collaboration specialist library for systematic reviews) during the time period June to July 2017. I also carried out a search in the IOE library for books including research studies on ECL, which helped to identify a few hard copy publications that were not found through the online databases.

3.3.4 Data Extraction and Mapping of studies

Key information was extracted from the studies which met the eligibility criteria using a coding tool adapted from the EPPI-Centre's key-wording strategy (Please refer to Appendix E) to capture descriptive details such as the study focus, country context and study design of the studies. The mapping was carried out according to the study focus of the primary studies, and cross-tabulated with key details such as country context and study type to provide an overview of the research landscape on ECL.

3.4 Stage 3: In-depth review of primary studies on leadership development studies for ECL

3.4.1 Objective

The purpose of the in-depth review was to synthesize the findings of studies which evaluated leadership development strategies for ECL, which had been identified in the systematic map in Stage 2. This would increase the depth of the review by providing insights to the types of strategies which had positive outcomes, to inform policy and practice.

3.4.2 Inclusion and exclusion criteria

Based on the guidelines provided by Peersman et al (1997) on the process of descriptive mapping followed by an in-depth review, a set of narrower inclusion criteria was applied to the included papers. As the key question of this review is to find out the strategies for effective leadership development, studies which carried out an evaluation for leadership development programmes were included for the in-depth review. This was a sub-category of the studies described in the map in Stage 2. There was no restriction on the study design to provide policy-makers in Singapore with a broader understanding of the leadership development strategies for ECL that have been evaluated in different countries (Pawson et al., 2005). This includes studies using quantitative, qualitative or mixed methods to collect data, examining empirical evidence from 'outcome evaluation' studies which seek to

measure the effectiveness of interventions and 'views' studies which use qualitative and other types of methods to study perspectives and experiences of the actors involved (Peeters et al., 2014).

3.4.3 Data extraction and Quality Appraisal

In addition to the data extracted in Stage 2, details of the leadership development programme and findings were extracted from the studies included in the in-depth review using a data coding tool adapted from the review by Peeters et al (2014) (Please refer to Appendix F). In addition, to ensure the methodological rigour of the studies included, all the studies were assessed for quality using a quality assessment tool also adapted from the EPPI-Centre's systematic review by Peeters et al (2014). Studies were assigned quality scores of 0 – 5 based on the weight of evidence as assessed on pre-specified criteria (Please refer to Appendix G).

3.4.4 Data synthesis

3.4.4.1 Qualitative synthesis

The methods for thematic synthesis of qualitative research in the 'views' studies were built on those developed by Thomas and Harden (2008) and adapted by Peters et al (2014). Quotes provided by the study participants and descriptions provided by the author were extracted from the section describing the findings in the included studies. These were grouped according to broad themes to build a clearer meaning of the data, and themes were grouped to create different levels of higher-order and specific themes where possible (Thomas and Harden, 2008, Peeters et al., 2014). These were used to address review questions related to strategies on effective ECL.

3.4.4.2 Quantitative synthesis

Due to the limited duration of the dissertation and the small number of quantitative studies found with different interventions and outcome measures, a meta-analysis was not carried out. Instead, I provided a descriptive summary of the statistical findings from the two 'outcome evaluation' studies. Interpretations of the statistical findings provided by the authors were also extracted and grouped according to broad themes, and included in the combined thematic synthesis with the 'views' studies.

4 Findings

This chapter begins with an overview of the number of included studies at each stage of the review in Figure 3, followed by the elaboration on the findings in each stage of the review.

Figure 3: Overview of Literature Map

Stage 1	Stage 2	Stage 3
Review of Reviews on ECLS	Systematic Mapping of Primary Studies on ECLS to update last review	In-depth review of studies evaluating Leadership Development
2 non-systematic reviews included	33 primary studies included in systematic map	6 primary studies included in in-depth review, including 4 'views' studies and 2 'outcome evaluation' studies

4.1 Findings from Stage 1

In total, 1708 studies were identified using the search strategy and 16 duplicate studies were removed. The remaining 1692 studies were reviewed based on title and abstract, and 1679 studies were excluded based on the topic. The full texts of 13 potentially relevant reviews were independently reviewed by my co-supervisor Hanan Hauari and I, using the pre-determined inclusion criteria. Differences in our inclusion of reviews were discussed and a consensus was reached. 11 studies were excluded as they did not focus on the scope of ECL as defined in this review or did not contain empirical evidence or a search strategy. 2 non-systematic reviews were included in the final map. Figure 4 summarises the literature map for Stage 1.

Figure 4: Stage 1 Literature Map
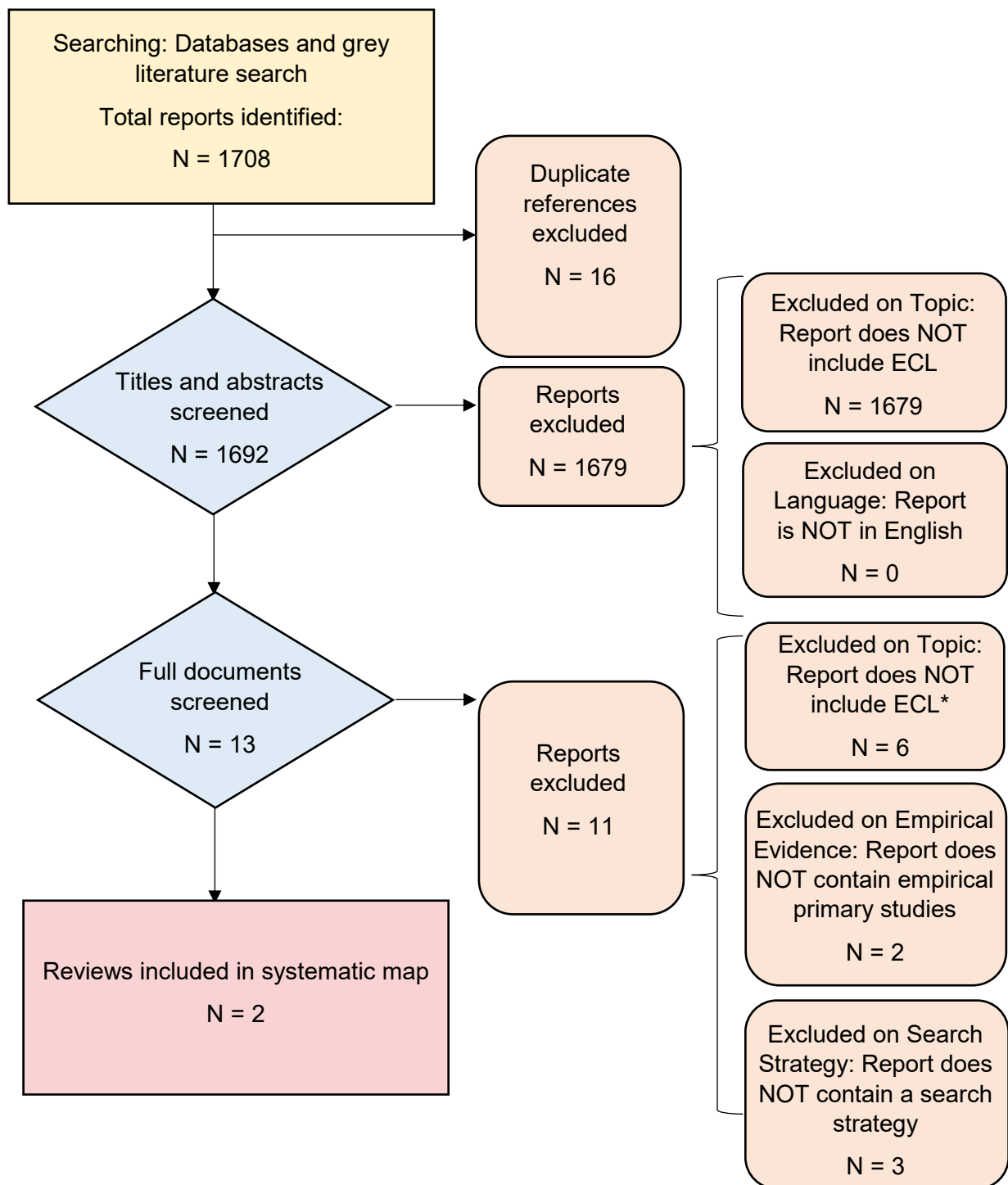
The findings showed that there was a paucity of reviews which had been conducted in the field of ECLS, with only 2 reviews meeting the pre-determined eligibility criteria. Both reviews were literature reviews which met the criteria for the map as they provided a clear search strategy to identify ECLS empirical research. The data reports are attached in Appendix H.

4.1.1 Overview of Reviews

Muijs et al.'s (2004) review aimed to interrogate international research evidence on ECLS. A comprehensive search was carried out using databases and hand searching, with the inclusion of research papers that had a clear focus on ECLS. Importantly, this review highlighted that there was a lack of studies which included a full description of the research methodology and empirical evidence. While the original intention of the authors was to only include studies with a clear evidence base, the inclusion criteria was broadened to include studies that may not have a clear evidence base due to a lack of studies that met the initial criteria. The overall findings from this review showed that there was a paucity of ECL research as compared to other levels of educational leadership. The review highlighted the need for further research on how effective ECLP can be carried out with measurable outcomes. It also found that although there was a growing number of ECL theories being conceptualised, many had not been empirically tested. Furthermore, one of the key findings from the review was that ECEC leaders often do not receive leadership training before becoming leaders, and lack preparation for their role.

Dunlop's (2008) review aimed to identify national and international research as well as documentary evidence related to ECL. A comprehensive search was carried out using various search channels including databases, search engines, websites of research associations and government sites and hand searching in printed and electronic journals on leadership and early years. Research literature was included if it clearly included management, leadership and the early years. There were also additional sources such as field experts, conference papers, books, professional journals and research reports. The review found that ECL had been largely neglected by governments internationally prior to 2008. A descriptive summary of 20 key references, including books and primary studies, was provided at the end of the review.

4.1.2 Methodological Quality of Reviews

Both reviews only met the first quality criteria of providing a comprehensive search strategy and provided a brief description of the inclusion criteria. Thus, it cannot be ascertained whether the reviews had taken reasonable steps to minimise bias and whether they were systematic rather than selective in the inclusion of studies (Gough et al., 2017). It was also not specified in either review if there was a quality assessment of the primary studies included. Dunlop's (2008) review provided more details of the primary studies and key references, with a descriptive summary of 20 publications included, while Muijs et al's (2004) review did not include a separate description of the studies. There was insufficient information to assess the quality of the primary studies included in the reviews.

4.1.3 Synthesis of key findings in included Reviews

The synthesis of key findings extracted from the studies included in the reviews using the coding tool (Please refer to Appendix D) is provided below, and categorised under headings which are aligned with the review questions.

4.1.3.1 The roles of ECL

Dunlop's (2008) review found that defining the roles of ECL was problematic, and included a study by Solly (2003 in Dunlop, 2008, p. 6) which found that there were different interpretations of ECLP across different ECEC settings. This was supported by Osgood's study (2004 in Dunlop, 2008, p. 6) which reported that private-sector providers would view ECLS in terms of business management while ECL in voluntary-sector settings would be more likely to take a collaborative and community-centric approach. Similarly, the review included a description of Hujala's study (2004 in Dunlop, 2008, p. 36) based on focus group discussions which found that the contextual factors such as language and culture also result in different role definitions, and concluded that ECL roles could not be clearly defined as there were multiple roles across different contexts. The complexity of ECL roles was also highlighted in Larkin's (1999 in Dunlop, 2008, p. 37) study of 16 pre-school directors, which found that there was tension in playing the role of a nurturer and authority figure at the same time.

Both reviews also included studies which aimed to define specific roles of ECL. Duncan's (2002 in Dunlop, 2008, p. 31) survey of childcare supervisors from New Zealand aimed to find out how ECL defined their roles, and found that "building

competent and confident learners" was one of the key roles identified. Scriven (2001 in Dunlop, 2008, p. 40) found that ECL play supportive, collaborative and professional roles, with many supervisors highlighting the importance of teamwork, collaboration with parents and advocacy for children, family and staff. Through a collation of leadership stories from ECL, Hatherley and Lee (2003 in Muijs et al., 2004, p. 161) defined ECLS as having a vision and articulating it in practice, building collaborative relationships between ECEC centres and the community, developing learning communities, advocacy and providing children with leadership. In terms of management roles, Muijs et al's (2004) review highlighted studies which found that ECL seemed to prefer to focus on their interactions with children and parents rather than their broader role of managing the centre (Bloom, 1992 and Rodd, 1996 in Muij's et al., p. 158-159. This was contrasted by a study on 79 ECLs by Rodd (1997 in Muijs et al., 2004, p. 161) which found that they identified management and administration roles as being most common in their work.

4.1.3.2 Characteristics of Effective ECL

Both reviews included a few studies which identified attributes of effective ECL. In Solly's study (2003 in Dunlop, 2008, p. 9), the results showed that some of the key strengths of ECL were the ability to inspire others, being passionate and enthusiastic, have positive attitudes toward lifelong learning and working well with a team. Osgood's study (2004 in Dunlop, 2008, p. 9) also emphasised the importance of being skilled in collaboration and managing emotions, which seemed to be especially essential in the nurturing and largely feminine working environment.

There were also research studies that focused on developing a comprehensive list of effective leadership attributes of practices for ECL. A project by Moyles (2006 in Dunlop, 2008, p. 14) produced a tool called 'The Effective Leadership and Management Scheme for the Early Years' to help ECL to evaluate their effectiveness, with the aim of improving ECEC quality outcomes. The tool includes key leadership and management skills, professional capabilities and personal characteristics and attitudes. Siraj-Blatchford and Manni (2006 in Dunlop, 2008, p. 14) also identified effective ECL practices by studying ECEC settings, which included the ability to communicate and reflect on their vision and goals, monitor and assess ECEC practice, build a learning culture, and collaborate well with community partners. It also stressed the importance of striking a balance between leadership

and management. Similarly, Bloom conducted two studies (1997 and 2000 in Mujis et al 2004, p. 163-164) which found that key characteristics of effective ECL included patience, warmth and kindness, being goal-oriented, visionary and confident, having a strong relationship with staff and communicating well with parents. A case study on effective settings in the Effective Provision of Preschool Education research project found that effective ECL should provide strong leadership in the aspects of "curriculum, planning, educational focus, adult-child interaction and the engagement of children in learning", and should have high level qualifications and a clear philosophy (Sylva et al 2002 in Dunlop 2008, p. 18-19).

Overall, Muijs et al (2004) found that research on ECLS seemed to focus more on theorising ECEC contexts and lacked specific research studies to examine the qualities of ECLS. The review highlighted that there appeared to be a lack of case studies of effective ECEC settings or quantitative analyses to measure the effectiveness ECL. Dunlop's (2008) review also highlighted that it was not clear in the research literature on who provides quality ECEC leadership, due to the limited literature in this aspect.

4.1.3.3 Key Strategies for Leadership Development for ECL

Both reviews emphasised the lack of leadership training for ECL, and highlighted it as a key issue for ECEC development. Bloom's (1997 in Muijs et al, 2004, p.164-165) survey of 257 directors showed that 70% of them felt unprepared for their leadership role. Similarly, Rodd's study (1997 in Muijs et al, 2004, p.165) found that ECL in the UK had very limited leadership development opportunities and encountered issues with different aspects of their leadership roles such as decision-making and professional development for staff. The same trend was seen in Australia where only 49% of surveyed directors had completed training on leadership and management (Hayden 1997 in Muijs et al, 2004, p.165).

The reviews identified studies which aimed to evaluate existing leadership development strategies. Bella and Bloom (2003 in Dunlop, 2008, p. 16) examined the impact of different forms of training on a sample of 182 participants, and found that participants felt a greater sense of empowerment and esteem which increased their confidence in their level of competence. The perspectives gained from the training also helped ECL to gain a broader strategic vision, strengthen their management skills, reflect on their leadership behaviour, and gain resources to help

their team. This study provided "compelling evidence of how leadership training can change the early childhood profession from the inside out and from the bottom up" (Bella and Bloom 2003, p. 2), and strongly advocated for structured and relevant leadership training to meet the needs of ECL. Muijs et al (2004) also identified a few studies which looked at how leadership development helped to improve leadership skills and organisational climate, build learning communities, develop an understanding of change management, improve teaching quality and perceptions of competence (Eisenberg and Rafanello, 1998, Michell and Serranen, 2000, Bloom and Sheerer, 1992, in Muijs et al., 2004, p.165-166).
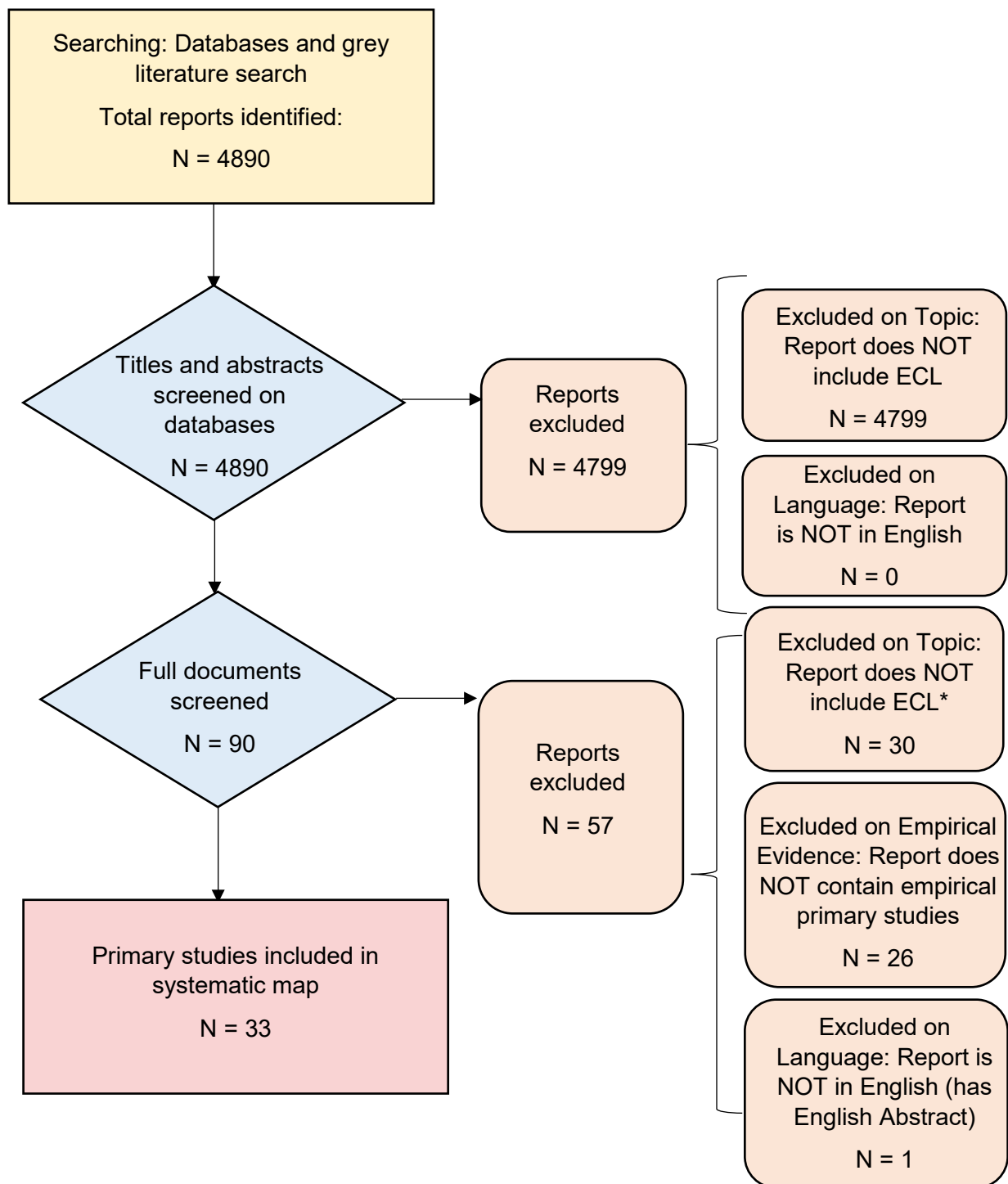
In terms of recommended strategies for leadership development, studies suggested that on-the-job training would be a more effective mode for leadership development (Rodd, 1997, Poster and Neugebauer, 1998, in Muijs et al., 2004, p. 165). Bloom (1997 in Muijs et al., 2004, p. 166) developed a three-stage model of career stages with beginning, competent and master directors, and suggested that more differentiated leadership development programmes would be required to meet the needs of different levels of ECL.

Overall, Muijs et al.'s review (2004) found that there was a serious lack of leadership training in the ECEC field, and highlighted that many leaders in the sector were not adequately prepared for the roles. Based on the different forms of leadership identified in the literature, they highlight that there would also be the need for different types of training to address a wide range of competencies required, including competencies in parent and community engagement on top of EC and management skills. Muijs et al. (2004) strongly advocate the need for substantial investment in leadership research and development in the ECEC sector, based on research findings that there is a key gap in knowledge which causes ECEC leaders to feel very unprepared for their role. Similarly, Dunlop (2008) found that most ECEC settings were led by practitioners who mostly lacked the opportunities to engage in leadership training although it was clear that it was crucial element to increase the quality of leadership. Dunlop argues that there is a need for stronger political commitment to train leaders, and highlighted that the importance of contextualised leadership development posed challenges in planning leadership development programmes.

4.2 Findings from Stage 2

The objective of Stage 2 was to update the last review included in Stage 1, which was Dunlop's review in 2008. Hence, the search was conducted to identify primary studies which were published between 2007 and 2017. 4890 studies were reviewed by me on the databases based on the title and abstract, and 4799 reports were excluded based on topic. The large number of search results on the databases was due to overlaps with other fields of study such as plant "nurseries" and elderly "day-care" centres. In total, 90 potentially relevant studies were imported into EPPI-R4 and reviewed based on full-text using the pre-determined inclusion criteria. 30 studies were excluded based on topic, if they were looking at the other forms of leadership for preschool children, teachers or government administrators in the ECEC sector, or if they focused on leaders of elementary schools which included kindergarten programmes. 26 studies were excluded as they did not include primary studies with empirical evidence on ECL, and 1 study was excluded as the full report was not in English although it had an English abstract. 33 primary studies were included in the final systematic map. The literature map for Stage 2 is provided in Figure 5.

Figure 5: Stage 2 Literature Map

Searching: Databases and grey literature search

Total reports identified:

N = 4890

↓

Titles and abstracts screened on databases

N = 4890

→

Reports excluded

N = 4799

Excluded on Topic: Report does NOT include ECL

N = 4799

Excluded on Language: Report is NOT in English

N = 0

↓

Full documents screened

N = 90

→

Reports excluded

N = 57

Excluded on Topic: Report does NOT include ECL*

N = 30

Excluded on Empirical Evidence: Report does NOT contain empirical primary studies

N = 26

Excluded on Language: Report is NOT in English (has English Abstract)

N = 1

↓

Primary studies included in systematic map

N = 33

*Note: Based on definition of ECL in this review as Early Childhood Principals / Directors / Supervisors / Managers who are in charge of an ECEC centre.

4.2.1 Mapping of studies

Key information was extracted from the included studies on the study focus, country context and study type using the key-wording strategy (Please refer to Appendix E). Additional information to group the studies according to their study focus was extracted through an iterative classification process (Please refer to data report in Appendix I). Based on the purpose of the studies, there were five key groups of studies identified as illustrated in Figure 6 below, with some of the studies being classified into more than one category if there were multiple objectives for the study. Each group of studies will be mapped out in greater detail using cross-tabulations with the study type and country context.

Studies were categorised into two key study types, 'views' studies which involved the collection of perceptions and experiences of the ECL, ECEC teachers or other stakeholders to answer the research question through qualitative interviews or questionnaires, or 'outcome evaluation' studies which yielded quantitative outcomes of specific interventions (Peeters et al., 2014).

Figure 6: Study Focus of Primary Studies for ECL (2007 – 2017)
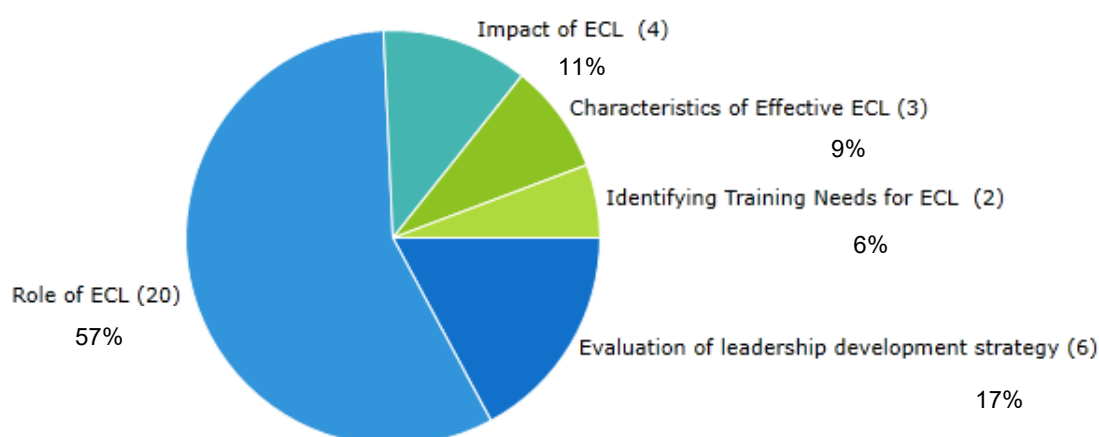
The map suggests that there has been a stronger focus on the studying the roles that ECL play (57%), but very few studies which specifically seek to identify or measure characteristics for effective leadership (9%). There also seem to be gaps in knowledge on how ECL impact teachers and children (4%), which would also be an important aspect of evaluating the effectiveness of ECL. In terms of leadership development, almost one-fifth (17%) of the studies carried out evaluations of leadership development strategies. This could be a significant development between 2007 and 2017 as Dunlop (2008) and Muijs et al (2004) had both highlighted the

severe lack of research on leadership development in their reviews. Another possible research gap identified is the examination of specific training needs for ECL (6%), which would be valuable in informing the planning of leadership development programmes.

4.2.1.1 Role of ECL

There were 20 'views' studies which studied the roles of ECL, with 18 studies including the perceptions of ECL, five studies including the perceptions of teachers and one study including the perceptions of parents. Four studies included the perceptions of more than one group. This may suggest that research on the roles of ECL has been largely based on self-reported leadership practices instead of taking into account the mesosystem of the leader (Nivala 2002). This could also highlight the need for more studies to be done to examine the perspectives of teachers and other stakeholders who collaborate closely with the ECL. Also, it is significant to note that although there is a strong emphasis on child-centric research in ECEC (Hyvönen et al., 2014), there was no research study found that sought to understand the perceptions of children on the roles of their ECL.

In terms of the study designs, various methods of data collection were used. The views of ECL, teachers and other stakeholders such as parents and government administrators were mostly obtained through qualitative interviews, focus group discussions and questionnaires. Five studies used a case study approach which included mixed methods or biographical research. This seemed to be a useful approach to gain a holistic perspective on the role of ECL, as it was used by Ho (2012), Halttunen (2013) and Colmer (2014) to collect views from different groups within the selected centres. Two studies used a mixed methods approach with interviews and questionnaires, and one study used an action research approach which collected data from multiple sources including questionnaires, development plans and narratives written by ECL. The action research approach involves the ECL in the process of reflecting on their practice and collaborating to implement change. Interest in this study design is growing in ECEC as practitioners find that they can be part of the process to investigate, implement and evaluate research carried out and aligned with their practice (Borgia and Schuler, 1996). This could be an important study approach to involve ECL in the research process with the purpose of effecting change, and to construct a more holistic picture of the role of the ECL.

The overview of the study designs used is presented in Table 2. There was no double coding of studies which only used one data collection method and those which had study designs involving multiple data collection methods to provide clarity on the study approach.

Table 2: Study Designs of Primary Studies Focusing on Role of ECL

Study Design	Perceptions of ECL on their roles	Perceptions of Teachers on role of ECL	Perceptions of Other Stakeholders on role of ECL
Questionnaire	5	1	0
Qualitative interviews/Focus Group Discussions	5	0	0
Case Study	5	3	1
Mixed Methods	2	0	0
Action Research	1	1	0

The studies were also from a range of country contexts, with more than half of the studies based in Australia, US or UK. 20% of the studies were conducted in Asian contexts: Singapore, Hong Kong, Taiwan and Japan. As the reviews in Stage 1 had not highlighted any studies from Asian countries, these may provide useful perspectives on the roles of ECL within different socio-cultural contexts which are part of the macro-system which influences them (Nivala, 2002). Table 3 provides a summary of the country contexts of the studies focusing on the roles of ECL.

Table 3: Country Contexts of Primary Studies Focusing on Role of ECL

Country	Perceptions of ECL on their roles	Perceptions of Teachers on role of ECL	Perceptions of Other Stakeholders on role of ECL
Australia	4	1	0
UK	4	0	0
USA	4	0	0
Finland	2	2	0
Norway	2	0	0
Singapore	2	0	0
Hong Kong / Taiwan	1	2	1
Japan	1	0	0

4.2.1.2 Impact of ECL

There were three 'views' studies which aimed to measure the impact of ECL practices on the teachers in their team. Chen et al's study (2012) focused on the correlation between leadership behaviour and job performance of kindergarten teachers in Taiwan by conducting a questionnaire measuring perceptions of ECL leadership behaviour and the job performance of teachers. Deutsch's study (2011) aimed to study the correlations between measures for mentoring by child care directors in the US and the educational outcomes for teachers. Okoroafor (2015) focused on measuring the impact of ECL leadership behaviour on the job satisfaction of nursery school teachers in Nigeria. The three studies focused on how the leadership practices of ECL impact the teachers working them, but did not include studies on the impact of other aspects of ECL.

4.2.1.3 Characteristics of effective ECL

There were three 'views' studies which identified characteristics of effective ECL. One of the aims of Aubrey et al.'s (2012) study was to find out the personal characteristics of effective ECL through a questionnaire for ECL. Choi (2011) carried out a case study on quality early childhood centres in Hong Kong which had been given an 'excellent' quality assessment rating, to identify effective leadership attributes which contributed to building strong quality in the preschools. Lin et al (2013) developed a list of indicators based on a two-stage questionnaire for ECL and a Delphi panel involving 15 experts and practitioners for effective curriculum leadership to provide practical guidance for ECL.

4.2.1.4 Identification of Training Needs for ECL

There were two 'views' studies which aimed to identify training needs of ECL. Hsue's (2013) study proposed a set of training requirements for beginning directors of ECEC by conducting questionnaires and focus group interviews with a range of stakeholders in Taiwan's ECEC sector. These included centre directors, government administrators and teacher educators. The other study by Ryan (2011) carried out interviews with directors of ECEC centres in the US to find out the type of professional development which would help them to perform their roles well.

4.2.1.5 Evaluation of ECL Leadership Development Strategies

Of the six studies which aimed to evaluate strategies for leadership development for ECL, four were 'views' studies based on data collected from interviews or

questionnaires with ECL to find out their perceived impact after going through a specific leadership development programme. Two studies by Doherty et al. (2015) and Talan et al. (2014) provided outcome evaluations by analysing external data sets which measure effectiveness of administrative practice and quality in the ECEC centres such as the Programme Administration Scale and the Early Childhood Work Environment Survey. These evaluations were carried out on ECL qualifications, workshops or pilot programmes in New Zealand, UK, USA and Canada. This group of studies were of interest for in-depth review as they included evaluations of specific leadership development strategies applied in different contexts and would provide useful insights to inform policy and practice in Singapore. Hence, this study focus was selected as the inclusion criteria for in-depth review in Stage 3.

4.3 Findings from Stage 3

Based on the descriptive data collected during the mapping exercise, the category of studies which focused on evaluating leadership development strategies for ECL was selected for the in-depth review. The rationale for selecting this as the inclusion criteria was that the studies would address the overarching review question on the strategies for effective leadership development, and provide findings which could provide guidance for leadership development in the ECEC sector in Singapore. A total of 27 studies were excluded because they did not focus on strategies for leadership development.

4.3.1 Quality Assessment of studies

The six studies which met the inclusion criteria were further assessed on quality to ensure that they met at least two of the quality criteria before they were included in the in-depth review. Three of the studies were given a 'high' rating and three studies were given a 'medium' rating for the quality score (Please refer to the quality appraisal scoresheet in Appendix J). All the six studies met the criteria for providing sufficient background information on the leadership development strategy implemented, having a clearly explained methodology to evaluate the strategy, and findings that were supported by the data collected. There were no studies excluded from the in-depth review based on the quality assessment.

The overview of the studies and the type of leadership development strategy studied is included in Table 4.

Table 4: Overview of Included Studies for In-depth Review

Author	Title	Leadership Development Programme being evaluated	Country Context	Study Design
'Views' Studies				
Ang (2012)	Leading and Managing in the Early Years: A Study of the Impact of a NCSL Programme on Children's Centre Leaders Perceptions of Leadership and Practice	National Professional Qualification in Integrated Centre Leadership (NPQICL) was introduced by the National College for Leadership of Schools and Children's Services in 2005 to support the professional needs of children's centre leaders.	UK	Questionnaires and phone interviews with leaders
Cardno and Reynolds (2009)	Resolving leadership dilemmas in New Zealand kindergartens	Dilemma resolution training based on dilemma resolution theories.	New Zealand	Action Research with ECL.
Curtis (2014)	Perceptions Childcare Directors have regarding the effectiveness of transformational leadership skills: A Case Study	Strengths-based coaching was created for ECL to build transformational leadership skills by teaching leaders how to provide supportive feedback to employees and empower staff to become more reflective.	US	Interviews with childcare directors and focus group discussions with teachers and Professional Development Specialists who coached the directors.
Ord et al. (2013)	Developing Pedagogical Leadership in Early Childhood Education	Trial Coaching and Mentoring methodology based on pedagogical leadership theories.	New Zealand	Action research with ECL.
Outcome Evaluations				
Doherty (2015)	Enhancing Child Care Quality by Director Training and Collegial Mentoring	Mentoring Pairs for Child Care (MPCC) was a director administrative training programme that combined a formal curriculum to increase director administrative knowledge and skills with a mentoring component emphasizing peer support and collegial learning, delivered in a way that enabled	Canada	Analysing quality scores for Programme Administration Scale (PAS) and Early Childhood Environment Rating Scale – Revised (ECERS-R)

		participants to continue working full time.		
Talan et al (2014)	Building the Leadership Capacity of Early Childhood Directors: An Evaluation of a Leadership Development Model	Taking Charge of Change (TCC) is a leadership development programme that focuses on the nature of individual, organisational and systemic change.	US	Analysing secondary data obtained from Training Needs Assessment Survey, PAS and Early Childhood Work Environment Survey. Online survey of TCC alumni

4.3.2 Descriptive summary of 'Views' Studies

There were four 'views' studies carried out which evaluated the leadership development strategies based on self-reported perceptions of the ECL. Overall, the four studies yielded positive outcomes in terms of self-reported increases in personal and professional growth, and provided specific examples of improvements in leadership practices by the ECLs who participated.

Two of the 'views' studies aimed to find out the impact of established programmes which have been implemented in the UK and US. Ang (2012) carried out a national evaluation of the impact of the NPQICL training on the leadership practice of ECL. The NPQICL was developed to provide ECL with a clear understanding of the roles that they play in strengthening ECEC outcomes and equip them to provide quality services. The setting of this study was in the UK, where integrated ECEC centres have been established with multi-disciplinary settings led by ECL. An email questionnaire and telephone interviews were conducted with ECL who had completed the NPQICL programme. The other study by Curtis (2014) examined the impact of strength-based coaching which has been implemented in the US, which focuses on developing coaching skills for directors to guide their staff. Interviews and focus group discussions were conducted with the ECL, teachers and professional development specialists who coached the ECL during the training.

The other two 'views' studies tested new leadership development strategies by testing theoretically-based strategies with a group of ECLs. Cardno and Reynold's (2009) study was carried out in the New Zealand context and used action research

methods to evaluate the impact of an intervention which provided ECL with dilemma resolution theories and skillsets. A pre-learning questionnaire was conducted, followed by a two-day professional development programme, a feedback form and post-learning questionnaire. Ord's (2013) study also tested a coaching and mentoring methodology developed to build pedagogical leadership in ECL. Data was collected through audiotaped recordings from the coaching and mentoring sessions with the participants.

4.3.3 Descriptive summary of Outcome Evaluation Studies

As there were only two 'outcome evaluation' studies identified, it was not possible to carry out a meta-analysis of the statistical outcomes. Instead, the key statistical outcomes were described along with the authors' interpretations, which were extracted from the findings section of the studies.

Doherty et al.'s (2015) study measured the impact of the Mentoring Pairs for Child Care (MPCC) training on Administrative Practices using the Programme Administration Scale (PAS) on seven of its subscales. The effect size reported was d = 0.57, p < .001. Based on Cohen's (1988) suggested interpretation, Doherty et al. (2015) indicates that MPCC had a moderate impact on administration quality, and suggests that this is a good level of impact as the data had to be collected within two months after MPCC was completed due to funding requirement. This meant that the ECL only had a short time to apply what they had learnt. Out of the different sub-scales measured, the ECL made the most significant changes in aspects which they had the most control over: human resource development, use of technology and marketing and public relations. For aspects which require approvals or funding such as child assessment, salaries and staff benefits, the change was not significant.

The other outcome measure was the Early Childhood Environment Rating Scale – Revised (ECERS-R) Scale to measure global classroom quality. The completion of MPCC was significantly correlated to the increase in classroom quality on the total ECERS-R scale (t = 3.32, p < .01) and four of its subscales. The MPCC had a moderate impact on classroom quality, with an effect size for the total ECERS-R of d=0.44, p <.01. Doherty et al. (2015) explains that this lower effect size for ECERS-R compared to PAS is expected as the link between the training and classroom quality is more indirect and occurs as a result of the impact on the ECL's skills and administrative practices. The quality can only improve as the ECL influences

administrative practices and teachers. In terms of specific aspects of classroom quality, the most significant changes were found in the way space and furnishings were used, personal are routines, provision of activities to support child development and provisions for meeting staff needs.

Talan et al.'s (2014) study used multiple outcome measures to assess the effectiveness of the Taking Charge of Change (TCC) programme. There were self-reports by ECL based on surveys, as well as the analysis of secondary data. Pre- and post-PAS scores were used to measure the changes in administrative practices. The results showed that there were statistically significant improvements in the aspects of staff orientation, staff development and family communications. A comparison of PAS scores for TCC participants against the national average also showed that their mean score was lower than the national average when the training started, but went above the national average for 4 out of 5 items when the training ended.

Quality ratings provided the key evaluation criteria for TCC as the programme was designed to support ECL to achieve centre accreditations and a strong quality rating. The percentage of participants' programmes that were accredited increased from 27% to 39% from the start to the end of the training cycle, and 42% of TCC alumni reported in the online survey that their programmes were accredited. Furthermore, more than three times the percentage of TCC alumni (58%) participated in the Quality Rating System as compared to the state-wide participation rate (17%).

There were three other surveys which were conducted to collect data for the evaluation of the TCC programme. There was a Training Needs Assessment Survey to assess participants' perceived sense of competence in 18 knowledge and skill areas, which was carried out at the start and end of the training cycle. A pre-test/post-test analysis was done using cohort level data. The results showed that there were statistically significant increases in perceived knowledge and skill in all 18 areas assessed. There was a measurable impact on participants, as the total pre-test mean for the 20 cohorts was 52.60, and the post-test mean was 72.10 for an increase of 19.50 points ($p < .001$). Furthermore, TCC alumni reported that the programme helped them to contribute to their ECEC centres by carrying out change management, self-reflection and perspective taking, shared decision-making and staff development. This in turn had a positive impact on their self-confidence and

perceived level of competency. 61% of the alumni reported that they perceive themselves as 'master directors' after completing the training as compared to 5% prior to the training.

The *Early Childhood Work Environment Survey* was completed by teaching, support and administrative staff working in the ECEC programmes led by the participants. This was to gather the perceptions of staff of the ECL in aspects such as decision-making, supervisor support and collegiality. This survey was also conducted at the beginning and end of the training cycle for each cohort. The results show that there were statistically significant changes in overall organisational climate, especially in decision-making, goal consensus and innovativeness.

The third survey was the online *Job Status Survey*, which was sent to TCC alumni to gather information on their career development, such as their professional achievements and job status. The survey found that around 50% of the alumni continued to lead an ECEC programme after completing the TCC training. In total, 64% of the alumni went on to complete college courses and 93% continued to work in the ECEC field. Furthermore, 65% of the alumni had mentored other ECL, with some of them becoming professional development advisors or consultants.

4.3.4 *Thematic synthesis of Leadership Development Strategies for ECL*

Through the coding of the findings from the 6 studies and grouping them under emerging themes (Gough et al., 2017), 4 key strategies were identified which yielded positive outcomes in the capacity-building of ECL.

4.3.4.1 Developing Reflective Learning in ECL

The use of reflective learning approaches for leadership development had positive outcomes in four of the studies included in the in-depth review. Ang's (2012) study found that the reflective learning process in the NPQICL became an important contributor to building effective ECLS. One of the key aspects of the training for the NPQICL was the personal reflective journal which provided the platform for participants to "reflect upon and locate their own models of practice and perspectives of leadership" (Ang, 2012, p. 292). The study found that 6 of 15 participants highlighted that the reflective activities helped to increase their confidence as leaders, and played an important role in applying their learning to their daily work.

Other participants shared that reflective practice helped them to learn more about themselves during the course too, and led to a sense of personal empowerment.

The dilemma resolution programme in Cardno and Reynolds's (2009) study also had positive outcomes in enabling ECL to recognise and articulate the type of dilemmas that they were facing, through guiding them to reflect on complex leadership issues that they encountered. The participants indicated an increase in self-awareness, such as a tendency to avoid confronting issues to protect relationships, and defensive tendencies in responding to difficult situations. Participants also reported that they were able to exercise "reflection-in-action" which was introduced during the training, which taught them to slow down and correct actions while they are occurring (Cardno and Reynolds, 2009, p.220).

Similarly, the Strengths-based Coaching programme evaluated by Curtis (2014) included sessions that involved activities to reflect on their practices. For example, ECL were asked to record all the activities that they did in the centre, and reflect on whether they were able to balance the time spent on managing administrative tasks and resolving daily crises with their time spent on building relationships with staff and coaching them. The study found that ECL and the professional development specialists who were coaching them agreed that the ECL needed to continue to reflect on their leadership practice and "become a model of self-reflection for their teachers" (Curtis, 2014, p.101).

The MPCC training evaluated in Doherty et al.'s study required ECL to maintain a reflective journal and discuss their reflective journals with their mentoring partner. They were also required to carry out self-assessments to evaluate their leadership practices. This may have contributed to the significant improvement in PAS scores and enhancement in global classroom quality in their centres for the ECL who completed the programme.

4.3.4.2 Building peer learning and support networks

The two outcome evaluations of the leadership development programmes provided strong support for the building of peer support networks for ECL. The MPCC programme included regular study group meetings between ECL, with each group comprising 6 to 22 ECL working within the same geographical area and meeting for monthly three-hour meeting over a period of 11 months. The participants were

required to make preparations prior to the meetings and discuss assigned materials. External facilitators were provided to guide the participants in talking about what they learnt from the materials, and to encourage them to share how they would apply the insights to their leadership practice. Participants also worked together on group projects and contributed to community presentations focusing on how they had developed new approaches to inform their practice. Networks were built through site visits to the centres of different group members, and group sharing on specific topics such as pedagogical guidelines. This shared learning approach to leadership development may also have led to the enhancement of the administrative practices and childcare centre quality scores. In addition, a survey was sent to graduates 18 months after the programme to find out if they were still in contact with their study groups. Most of them were still in contact, and reported that they had continued to assist one another and participated in other joint projects such as training other ECL or using the PAS to evaluate their practices. Furthermore, there were efforts to reach out to other ECL to invite them to join the support networks, and a list of ECL who were available to provide informal support was circulated within their geographical areas.

The TCC programme evaluated by Talan et al. (2014) was also designed to build professional learning communities, which aimed to provide a safe space for ECL to share their achievements, struggles and failures with one another, build knowledge and reflect on their leadership values and principles. There was approximately 80 hours of small and large group instruction carried out over 10 months. The training format included small-group experiences and role playing. This may have contributed to the positive outcomes in personal empowerment and confidence in their level of competency, significant growth in knowledge and skills and organisational improvements.

4.3.4.3 Coaching and mentoring for ECL

4 of the studies provided evidence that coaching and mentoring were important elements in developing ECL capabilities. In Curtis's study on Strengths-based coaching, the ECL were coached by Professional Development Specialists to help them to develop skills in supporting their teachers. The study found that the reflective questioning process that was modelled during the coaching sessions was applied by ECL as they coached teachers after completing the training. Furthermore, most of

the directors requested for additional practice with their coach to help them to continue to change the way they relate to their staff (Curtis, 2014, p.97).

In the Mentoring Pairs in Child Care programme, ECL with less than 5 years of experience were paired with more experienced ECL who were leading ECEC centres within their geographical area. Prior to the training, there was a matching process which took into account the previous training that ECL had received, self-identified areas of competencies and area for development, mentor's teaching styles and mentee's learning styles. A collegial mentoring approach was taken instead of providing external mentors. The training involved mentoring discussions, assignments carried out in the mentoring pairs, site visits to mentors' centres, and sharing of their reflection journals. This strategy may also have contributed to the overall positive outcomes of the programme on administrative practices and classroom quality.

Both the training programmes in Ord's (2013) study and Talan's (2014) study included coaching and mentoring as follow-up sessions after workshops were carried out. Ord et al. (2013) carried out the trial of the coaching and mentoring methodology including group coaching and individual mentoring to support ECL and help them to understand that they were part of an integrated system and not a group of individuals. During the coaching and mentoring sessions, ECLs were encouraged to revisit and reconstruct the concepts and tools learnt during the workshops and discuss situations where they had applied them in their centres. The participants had many opportunities to dialogue about situations where they had applied the tools and openly discuss their experiences and responses with the coaches and mentors, and recap what they had learnt during earlier workshops. Coaches also helped them to map the situation to understand tensions, and depersonalise issues to prevent the situation from becoming emotional. This empowered most of the participants to productively address difficult situations in the workplace, and to learn that tensions and conflicts could be opportunities for growth and change (Ord et al., 2013).

In Talan's study on the TCC programme, the participants were paired with mentors and met periodically during the convening six-day residential institute, three-day connecting residential institute and one-day culminating institute. The mentors provided ongoing support for the participants' programme improvements through on-site visits, regional group mentee meetings and technical assistance provided via

phone calls and email. Mentors also responded to the written reflections from their mentees. This mentoring process may also have led to the positive impact of the training in terms of personal growth for the ECL and quality improvements in their centres.

4.3.4.4 Providing theory-based tools for leadership practice

Three studies also found that ECL found it very useful to have theory-based tools to shape their practices. The Strengths-based coaching was anchored in a transformational leadership theory, which focuses on how ECL can empower their staff to bring about quality improvements in their centre (Brownlee, Nailon and Tickle, 2010 in Curtis, 2014). The ECL were taught coaching techniques to develop the strengths and knowledge of their staff. The study found that 100% of the participants interviewed perceived that the transformational leadership skills helped to strengthen their communication with their team as they purposefully applied the skills they learnt in their centres.

Cardno and Reynolds's study also found that the dilemma resolution theories provided the participants with tools to handle complex situations in the centre. The curriculum for dilemma management had been successfully used for school leaders at other levels and this study aimed to test if the curriculum would be appropriate for ECL as well. Participants were introduced to the theory of productive reasoning and taught to apply it in productive dialogue in resolving dilemmas. The participants reported that they felt more confident to confront and resolve dilemmas instead of avoiding them as they did previously, as the theory provided tools to clarify and tackle the situation (Cardno and Reynolds, 2009, p.220). Cardno (2001 in Cardno and Reynolds, 2009) refers to this as a form of "praxis" where theory is put into practice, and participants use theories to inform their actions.

Similarly, Ord et al. (2013) also trialled the coaching and mentoring programme which was based on a third-generation activity theory which was developed by Ord et al by applying Englestrom's (1987, 2001) expansive learning theory to pedagogical leadership. The third-generation activity theory conceptualised the dynamics of change within different systems and looked at how each ECEC centre was a system with shared goals. Participants were introduced to the theory in the workshops and developed their understanding of how to apply the theory through sharing their experiences at the coaching and mentoring sessions. The study found

that many of the participants reported a shift in their perspectives from an individual to a collective approach to leading pedagogical outcomes, and used this theory as a tool to lead change. Some of the participants also reported that applying the theory helped them to view things in the "big picture" in terms of how different systems work together, and this enabled them to become more effective and efficient in the way they worked with their team (Ord et al, 2013, p.87). Furthermore, participants also shared that learning the new framework helped to "take pressure away from the individual" and "focus on working toward a shared agreement with how the centre will work as a system through utilising the model" (Ord et al, 2013, p71).

4.4   Contextual Model for Leadership Development for ECL

Based on the findings of the review, there are emerging leadership development strategies which integrate ECLP theories in their curriculum and methodology (Ord et al. 2014, Cardno and Reynolds, 2009). However, there seems to be a lack of a theoretical framework which conceptualises leadership development for ECL. This section aims to integrate the key findings from the in-depth review in Stage 3 with Nivala's (2002) contextual model for ECL to build a contextual model for leadership development for ECL. The proposed contextual model for leadership development is illustrated in Figure 7. This model illustrates how the planning and implementation of leadership strategies exist within a contextual environment, and can be facilitated through the interactions of ECL with both internal and external stakeholders.

The core of the model is the continuous striving toward a mission to build effective ECLS practices as represented by the large arrow in Figure 7b, which in turn would contribute to quality ECEC services (Doherty et al, 2015, Talan et al, 2014). The findings suggest that a long-term approach should be taken towards leadership development. Ang (2012) found that the NPQICL helped to cultivate a commitment to ongoing reflective learning through the use of the reflective journal during the course. In Curtis's study (2014), all 12 directors requested for ongoing training and coaching sessions, which could be split into shorter sessions as there was a lot of information to absorb. Similarly, in Ord et al.'s study (2013), some participants asked for further support to help them to apply the new theoretical model that was introduced during the training. This suggests that leadership development should not be short-term and ad-hoc, but part of a sustained programme to have a greater
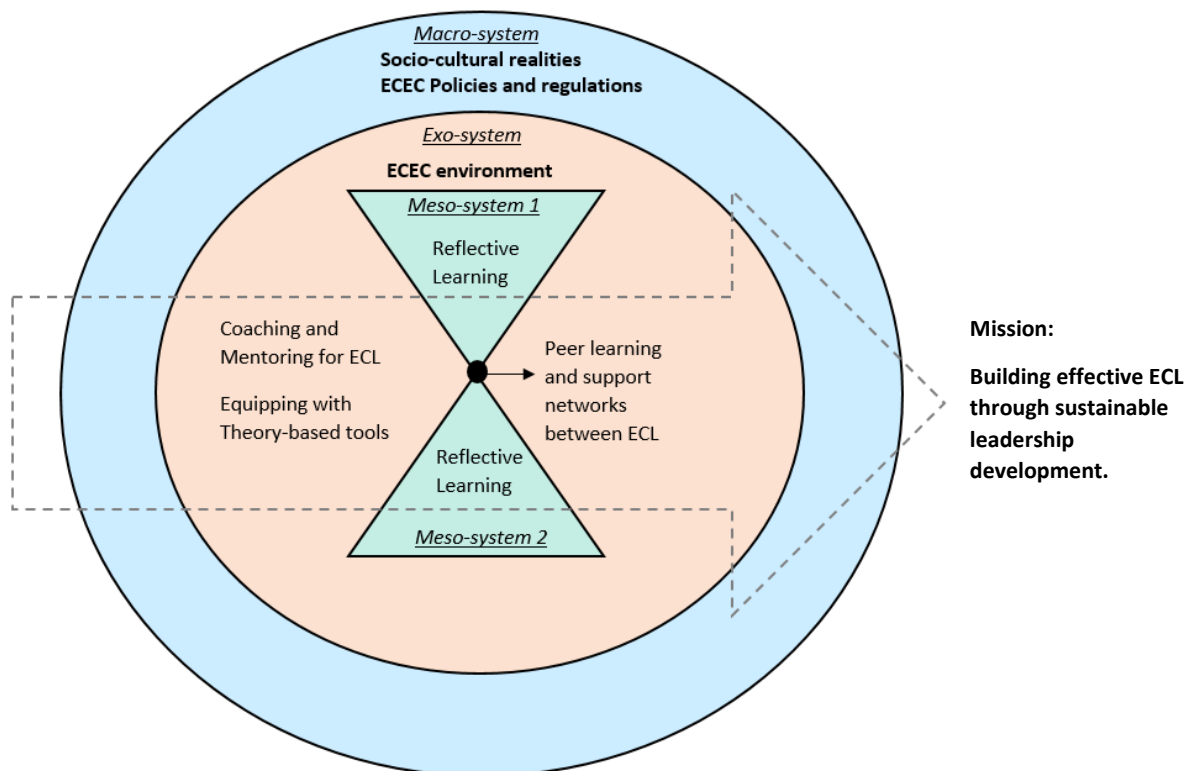
impact, with knowledge being developed and shared across different levels in increase capabilities.

Figure 7: Contextual Model for Leadership Development for ECL (adapted from the Contextual Model of Leadership by Nivala (2002))

Figure 7a:
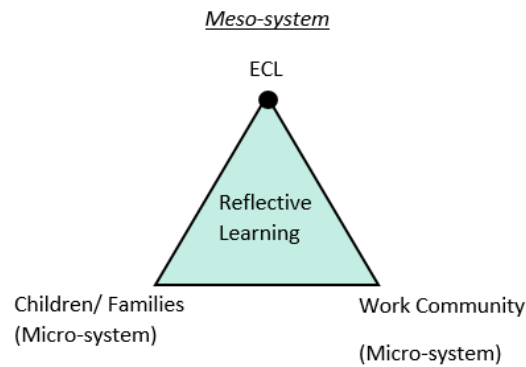
Figure 7b:

The meso-system as described in Nivala's model involves interactions between different micro-systems involving the ECL, their work community, and the children and families. This is represented by the triangle in Figure 7a, with reflective learning as the central strategy. Based on the findings from the in-depth review, one of the key strategies for ECL to build strong leadership practices and develop a learning culture is to engage in ongoing reflective learning in their daily interactions with their staff, children and families. The emphasis on developing reflective learning in the ECEC is supported by other research on the professional development of ECEC practioners. The systematic review on the impact of continuous professional development in ECEC settings by Peeters et al (2014) concluded that professional development interventions integrated into the daily practices with a focus on reflection lead to positive changes in their practice. Robbins and Callan (2006 in Ang, 2012) highlight that ECEC settings should introduce a system of reflection to constantly review the way of working, values and actions, to build strong and effective teams. The studies identified in Stage 3 (Ang, 2012, Cardno and Reynolds, 2009, Curtis, 2014, Doherty et al., 2015) provided evidence that leadership development for ECL should provide the platforms for them to reflect on their leadership practices, and give them the tools to carry out "reflection-in-action" to correct actions as they occur (Cardno and Reynolds, 2009, p. 210). This is aligned with the distributed-pedagogical leadership approach which emphasises the need for ECL to be reflective practitioners to facilitate collaboration and interaction in work communities (Heikka, 2014).

In Figure 7b, meso-systems 1 and 2 represent different ECEC settings, and the nexus between the triangles depicts how leaders from different settings can come together to form peer support networks and share knowledge that has been developed through reflective learning within their own centres. While there were only two studies which reported the positive outcomes of the peer support groups, the sustained impact of this leadership development strategy was strongly supported in Doherty et al.'s (2015) study which provided evidence of the continued growth of the support networks 18 months after the formal study groups had ended. Building peer networks may also contribute to building distributed leadership practices by focusing on team-thinking to handle complex issues (Kangas et al., 2016).

In Nivala's model, the exo-system falls between the micro and macro levels and has an indirect effect on leadership (Nivala, 2002). However, in the contextual model for leadership development, I have adapted the exo-system to represent the ECEC environment which represents external factors within the ECEC sector which directly impacts on leadership development, such as external training programmes. Within this exo-system, leadership development strategies which seem to have positive outcomes in providing external expertise to guide ECL include coaching and mentoring, as well as theory-based training. This is especially important as the review of reviews in Stage 1 found that there many ECL seemed to be unprepared for their leadership roles (Bloom 1997 in Muijs et al, 2004, p.164-165) and would require more guidance and consultation.

The macro-system refers to the social cultural realities and ECEC policies in place which may facilitate or hinder the leadership development process for ECL. For example, Ang's (2012) study found that although the NPQICL helped ECL to develop their professional needs, there were other important factors such as their relatively low pay, status and professional standing which was not enhanced after the completion of the qualification. The leadership development occurs based on the interactions across different environmental systems, and the ECL interacts with stakeholders at different levels to build their leadership practices. This also ties in with the distributed pedagogical approach, where leaders need to collaborate and tap on different areas of expertise to develop strong learning outcomes (Heikka 2014).

4.4.1 Application of the Contextual Model of Early Childhood Leadership Development to the Singapore Context

Within the ECEC sector in Singapore, the macro-system involves policy initiatives which have been rolled out (as described in section 2.3.5), which focus on strengthening the quality, accessibility and affordability of ECEC services (Tan, 2017). These policies impact the ECEC environment, which comprises around 501 infant care centres, 1,382 childcare centres and 480 kindergartens with diverse settings and management structures (ECDA, 2017d, Tan, 2017). With increasing public pressure to increase the number of ECEC centres, there is a constant growth in the number of centres. This has also increased the number of ECL that are required to manage the centres. At the same time, the ECEC sector in Singapore is

facing a manpower shortage due to high attrition rates of ECEC practitioners and the government is embarking on a three-year campaign to attract more people to join the sector (ECDA, 2017b). This may have led to the appointment of more ECL who are unprepared for the role, or are "accidental leaders" as highlighted in the review findings (Ebbeck et al., 2003, Rodd, 2013). These new ECL may face increasing pressure to lead their centres, especially with strong government efforts to increase the quality standards of ECEC services in Singapore. At the same time, the prioritisation of developing quality standards in ECEC also supports the development of ECL as there are more efforts to develop specialised training programmes.

The exo-system or the ECEC environment in Singapore is mainly comprised of privately owned centres which are run by commercial operators or voluntary welfare organisations, with only 15 centres managed by the Ministry of Education (Ministry of Education, 2017). This has a significant impact on the type of leadership development that can be provided for ECL, as large commercial operators often have their own professional development structures and may prefer not to participate in leadership development initiatives rolled out by the government due to concerns about the protection of intellectual property. Furthermore, with the marketisation of preschools, there may be a stronger emphasis on catering to the needs of parents as the "customers" to be financially profitable and competitive in a free market rather than on the professional development of ECL (Lim, 2017). ECL may also be required to carry out marketing roles to attract more students to the centres, instead of focusing on building a collaborative team to meet pedagogical outcomes.

To build strong leadership development in Singapore, findings from Stage 3 suggest that leadership development programmes within the exo-system should focus on developing platforms for coaching and mentoring, as well as providing theory-based training. There may be a need to convince some commercial operators on the long-term impact of these initiatives on the quality of ECEC services. There have been efforts by ECDA to introduce mentoring programmes which are carried out by senior principals or curriculum leaders in the field, who have been appointed as ECDA Fellows (ECDA, 2017c). Both mentors and mentees are encouraged to fill in reflection journals before and after their sessions. Using the contextual framework, it would be important to strengthen the focus on developing individual reflective

learning for ECL to encourage ongoing development through interactions with their work communities, children and families.

In Singapore, there has also been some efforts to increase interaction between meso-systems through peer support and learning networks. A community of ECL was set up in Singapore in 2016 to help to build ECL networks and provide opportunities for them to learn from ECDA Fellows and other ECL (ECDA, 2016c). There are quarterly engagement sessions which include talks by experts and opportunities to network and share ideas. However, participation of ECL in these events are often once-off and ad-hoc rather than sustained over the long term. Based on feedback from participants, the key challenge that ECLs face in participating in these activities is the lack of time and the need to respond to contingencies in the centre. Anecdotally, they share that they are constantly "firefighting" and are too bogged down by the numerous tasks that they manage. Time constraints was also one of the most common challenges faced in applying leadership development strategies identified in the studies due to the multiple roles that ECL play, and the daily contingencies that they deal with. Cardno and Reynolds (2009) found that three-quarters of the participants in the evaluation of the dilemma resolution workshop highlighted that they needed more time and opportunities to practice things learnt during the class, and this was extremely challenging. In Curtis's (2014) study, findings also suggested that the lack of time and manpower constraints were significant barriers to ECL applying the transformational leadership skills which they learnt during the Strengths-Based Coaching training. Yet, the findings suggest that there is a need to continue to provide sustainable and flexible platforms to build up peer support and learning networks for ECL, in order to facilitate ongoing professional development through the sharing of expertise (Doherty et al 2015, Talan et al 2014).

Within the meso-system, time and manpower constraints may make it very challenging for ECL to carry out "reflection in action" based on interactions with their work community, children and families (Cardno and Reynolds, 2009). Furthermore, increasing competition between commercial ECEC operators may have created a service-provider mindset for ECL who need to please the parents as customers, and are often overwhelmed with requests or complaints from parents. On the other hand, there are centres who have also established strong parent engagement efforts, with

strong collaborative relationships within the meso-system. The findings from the review suggest that policy initiatives for leadership development can focus on equipping ECL to facilitate reflective learning through positive engagement with their work community and parents. This may lead to positive outcomes in developing a distributed pedagogical approach, where there are strong collaborative relationships and co-creation of ideas to improve the quality of pedagogical outcomes (Heikka, 2014).

5 Discussion

In this review, I set out to examine what was known about the roles and characteristics of effective ECL, and the strategies for leadership development for ECL. This chapter first summarises the findings of the whole review, followed by an elaboration on the contributions, strengths and limitations of this review, and recommendations for policy and research.

5.1 Summary of findings

The findings from Stage 1 of this review included two non-systematic reviews which identified key primary studies carried out prior to 2008 which provided insights to the role of ECL and characteristics of effective ECL, and highlighted that there was a paucity of research on leadership development strategies. The findings from Stage 2 included a systematic map of 33 primary studies carried out between 2007 and 2017 to update the latest review included in Stage 1 by Dunlop (2008). The map showed that the majority of the studies on ECL focused on self-reported perceptions of leadership roles by ECL, and identified gaps in research in studying the characteristics of effective leaders and training needs. The findings from Stage 3 focused on the 6 included primary studies which evaluated leadership development programmes and identified 4 key strategies for leadership development: developing reflective learning, building peer support and learning networks, coaching and mentoring and providing theory-based tools for ECL. The synthesis of the findings was developed through integrating the findings with the contextual model of ECLS (Nivala 2002) and building a contextual model of early childhood leadership development.

5.2 Contributions of the Review

While the last review by Dunlop highlighted a paucity of research as of 2008, this review found that there has been a significant body of primary studies on ECL carried out within the period of 2007 - 2017. Through the mapping of primary studies, the review provides an overview of the types of studies produced, highlighting areas which have been actively researched and others which are lacking. It helped to identify studies which help to plug the gap in evaluating leadership development strategies, while also helping to further specify gaps in research. The synthesis of primary studies helped to identify key strategies which have been implemented and

evaluated across different country contexts with positive outcomes. Furthermore, the discussion on the application of the contextual model of leadership development to the Singapore context is supplemented by my perspective as a civil servant implementing programmes for ECL in Singapore based on my work experience in ECDA.

5.3 Strengths and Limitations of the Review

The methodology for this 3-stage review aimed to provide breadth and depth to the review within the resource constraints for this dissertation. The key strength of the systematic review methodology was to provide a structured approach to identifying studies, in line with systematic review guidelines to ensure that it was "transparent, replicable and updateable" with "explicit reporting of methods and storage of extracted data online" (Caird et al., 2010, p. 38). There was also an effort to reduce selection bias through having two reviewers to independently decide on the inclusion of reviews using a pre-determined inclusion criteria, and a process for making decisions to reach a consensus where there were differences (Gough et al., 2017).

Due to limitations in resources, hand searching was not conducted. However, this was mitigated through the inclusion of reviews that had conducted hand searching to identify primary studies that were less accessible. This review also did not include studies on leadership development for other levels of management, such as Teacher Leaders, which was covered in a number of primary studies excluded for this review. Some of the studies looked at distributed leadership as a whole, involving leadership at all levels, but these were excluded from the scope of this study. Conducting a review of reviews in Stage 1 enabled me to cover a broader scope within the limited time-frame, however there may have been studies which were not included in the two literature reviews which were missed out (Caird et al., 2010).

Another limitation is the representativeness of the studies included in the synthesis. Due to the lack of information, the studies could not be checked for reliability and validity. However, they passed the quality criteria that was set for Stage 3. The sample characteristics of the group are not always clearly provided as evaluated in the quality appraisal or have very low representativeness. For example, Ang (2012) highlighted that there was a very low rate of return of 8% of surveys sent out via email.

5.4 Recommendations for policy and research

The systematic map in Stage 2 identified possible gaps in research on the characteristics of effective ECL, impact of ECL on different stakeholders, and identifying training needs for ECL. Further research in these areas would provide valuable insights for policy and practice to develop ECLP. In the discussion on the application of key findings to the Singapore context, challenges in implementing leadership development strategies have been identified, such as time constraints and commercial interests focusing on marketisation over pedagogical outcomes for ECEC services. There is a need for more research on the obstacles faced in applying leadership development strategies, in order to develop strategies that can better support ECLs who face different leadership challenges in diverse settings. It may also be useful to provide platforms to share about the long-term impact of ECL leadership development with ECEC operators, to persuade them to provide stronger support for leadership development of ECL.

Based on the findings from the evaluations of leadership strategies conducted in other countries, this review recommends that policy initiatives focusing on developing ECL in Singapore should take a long-term approach instead of being carried out on an ad-hoc basis. Strategies to build sustainable leadership development for ECL which seem to have positive outcomes on their personal, professional and organisational growth include: equipping them in reflective learning, building peer support and learning networks, providing coaching and mentoring by external experts or senior ECL, and providing theory-based tools to build their capabilities in handling difficult situations. While some of these strategies have been introduced in Singapore, pragmatic issues such as the availability of ECL and daily contingencies in the centre continue to pose challenges to implementation. There is a need for further research to understand the perspectives of ECL in Singapore on the strategies that would be most helpful and sustainable for them within their settings. Action research approaches involving the participation of ECL may be useful to build knowledge in this area.

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7 Appendices

<u>Appendix A</u>: Research Proposal

Omitted

<u>Appendix B</u>: Confirmation of ethical approval

Date decision was made	05/04/2017

Appendix C: Search Strategy

1. Full List of Search Terms with reference to search strategy in Peeters et al, 2014.

Concept one:	Concept two:	Methodology
Early Childhood Education and Care Provision (ECEC)	**Leadership**	
"Early childhood care and education"	Lead*	Review*
"Early childhood cent*"	Manag*	
"Early childhood education and care"	Supervis*	
"Early childhood education"	Principal	
"Early childhood program*"	Mentor*	
"Early childhood provision*"		
"Early education"		
"Early years provision*"		
"Child care"		
"Child-care"		
Childcare		
Creche*		
Day-care		
"Day-care"		
Daycare		
Kindergar*		
Nursery		
Pre-primary		
Pre-school*		

2. Search Strings

Concept 1 (C1): ECEC Provision

(ti("early childhood education care and education" OR "early childhood cent*" OR "early childhood education and care" OR "early childhood education" OR "early childhood program*" OR "early childhood provision*" OR "early education" OR "early years provision*" OR "child care" OR "child-care" OR childcare OR creche* OR day-care OR "day-care" OR daycare OR "kindergar*" OR nursery OR pre-primary OR pre-school*)) OR (ab("early childhood education care and education" OR "early childhood cent*" OR "early childhood education and care" OR "early childhood education" OR "early childhood program*" OR "early childhood provision*" OR "early education" OR "early years provision*" OR "child care" OR "child-care" OR childcare

OR creche* OR day-care OR "day-care" OR daycare OR "kindergar*" OR nursery OR pre-primary OR pre-school*))

Concept 2 (C2): Leadership

(ti(lead* OR manag* OR supervis* OR principal OR mentor*) OR ab(lead* OR manag* OR supervis* OR principal OR mentor*))

Methodology (M)

(ti("review*") OR ab("review*"))

Stage 1 Search String: C1 AND C2 AND M (Combined)

((ti("early childhood education care and education" OR "early childhood cent*" OR "early childhood education and care" OR "early childhood education" OR "early childhood program*" OR "early childhood provision*" OR "early education" OR "early years provision*" OR "child care" OR "child-care" OR childcare OR creche* OR day-care OR "day-care" OR daycare OR "kindergar*" OR nursery OR pre-primary OR pre-school*)) OR (ab("early childhood education care and education" OR "early childhood cent*" OR "early childhood education and care" OR "early childhood education" OR "early childhood program*" OR "early childhood provision*" OR "early education" OR "early years provision*" OR "child care" OR "child-care" OR childcare OR creche* OR day-care OR "day-care" OR daycare OR "kindergar*" OR nursery OR pre-primary OR pre-school*))) AND (ti(lead* OR manag* OR supervis* OR principal OR mentor*) OR ab(lead* OR manag* OR supervis* OR principal OR mentor*)) AND (ti("review*") OR ab("review*"))

Stage 2 Search String: C1 AND C2 (Combined)

((ti("early childhood education care and education" OR "early childhood cent*" OR "early childhood education and care" OR "early childhood education" OR "early childhood program*" OR "early childhood provision*" OR "early education" OR "early years provision*" OR "child care" OR "child-care" OR childcare OR creche* OR day-care OR "day-care" OR daycare OR "kindergar*" OR nursery OR pre-primary OR pre-school*)) OR (ab("early childhood education care and education" OR "early childhood cent*" OR "early childhood education and care" OR "early childhood education" OR "early childhood program*" OR "early childhood provision*" OR "early education" OR "early years provision*" OR "child care" OR "child-care" OR childcare OR creche* OR day-care OR "day-care" OR daycare OR "kindergar*" OR nursery OR pre-primary OR pre-school*))) AND (ti(lead* OR manag* OR supervis* OR principal OR mentor*) OR ab(lead* OR manag* OR supervis* OR principal OR mentor*))

Appendix D: Data Coding Tool for Stage 1 Review of Reviews

1. Aim

    - What was the purpose of the review?

2. Review Methodology

    - What was the search strategy for the review?

    - What sources were searched to identify primary studies?

    - What was the inclusion criteria for the studies?

3. Review Scope

    - Was there a description of the type of primary studies included?

        o If Yes

            ▪ Qualitative Studies included in review

            ▪ Quantitative Studies included in review

        o No

4. Review findings

    - What were the findings of the review? (please specify the findings from the primary studies included in the review)

        o Role of ECL

        o Characteristics of effective ECL

        o Impact of effective ECL

        o Strategies for Leadership Development

5. Quality Appraisal

    - Was there a comprehensive search strategy?

        o Yes

        o No

    - Was there an explicit inclusion criteria?

        o Yes

        o No

    - Was there a quality assessment of the included studies?

        o Yes

        o No

    - Was there a synthesis of the findings from the primary studies?

        o Yes

        o No

Appendix E: Data Coding Tool for Stage 2 Map of Primary Studies on ECLP

1. What is the country context of the study? (Select from list of countries)

2. What is the study type?

    - 'Views' Study (Please use this keyword if the study collected data on the perceptions of actors involved)

    - 'Outcome evaluation' study (Please use this keyword if the studies provided statistical outcomes to measure the effectiveness of an intervention)

3. What is the study focus?

    - Evaluation of leadership development strategy

    - Role of ECL

        o Perceptions of ECL on their roles

        o Perceptions of Teachers on role of ECL

        o Perceptions of Other Stakeholders on role of ECL

    - Impact of ECL

        o Impact on teachers' job performance

        o Impact on teachers' professional development

        o Impact on teachers' job satisfaction

    - Characteristics of Effective ECL

    - Identifying Training Needs for ECL

4. What is the data collection method?

    - Questionnaire

    - Qualitative Interviews / Focus Groups

    - Analysing Secondary Data

    - Case Study

    - Mixed Methods

    - Action Research

    - Delphi panel

5. What are the sample characteristics?

    - EC leaders

    - EC teachers

    - Other stakeholders

Appendix F: Data coding tool for Stage 3 In-depth Review

1. Data Extraction for Views Studies
    - What are the settings like?
    - What are the details of the Leadership Development Strategy studied?
    - What are the findings? (emergent themes)
        o Barriers to applying strategies
        o Long-term training
        o External pressures
        o Peer support networks for ECL
        o Collaboration and Relationship-building
        o Coaching and Mentoring
        o Personal empowerment
        o Reflective Learning
        o Resolving dilemmas
        o Theory-based tools

2. Data Extraction for Outcome Evaluations
    - What are the settings like?
    - What are the details of the Leadership Development Strategy studied?
    - What are the outcomes measured?
        o Administrative Practices
        o Classroom quality
        o Perceived level of knowledge and skill
        o Staff turnover
        o Organisational climate and commitment to the center
    - What are the other findings in the study? (emergent themes)
        o Peer support Networks for ECL
        o Personal empowerment
        o Collaboration and Relationship-building
        o Organisational change
        o Continuing professional development
        o Commitment to the field

Appendix G: Quality Appraisal for Stage 3 In-depth review

Weight of evidence (adapted from quality appraisal instrument used by Peeters et al 2014)

1. Was the leadership development strategy for ECL clearly described?
   (Consider whether sufficient background information was provided on the leadership strategy such as the training methods)
   - o Yes (please specify)
   - o No (please specify)

2. Was the sample population of ECL who participated in the leadership development programme clearly described?
   (Consider whether the sample characteristics were described clearly, e.g the type of settings they are from).
   - o Yes (please specify)
   - o No (please specify)

3. Were the research methods clearly described?
   (Consider whether sufficient information was provided on the methodology).
   - o Yes (please specify)
   - o No (please specify)

4. Were steps taken to increase the rigour of the data collection methods?
   (Consider whether the data collection was comprehensive, flexible or sensitive enough to provide a complete and/or vivid picture and rich description of the experiences of the ECL, e.g. efforts were made to increase the rate of return for the questionnaires).
   - o Yes (please specify)
   - o No (please specify)

5. Were the findings of the study sufficiently supported by the data?
   (Consider whether enough data was presented to show how the authors arrived at their findings, and whether the data presented illustrate the findings and fit the interpretation of the authors.)
   - o Yes (please specify)
   - o No (please specify)

Weight of Evidence quality score for Stage 3 in-depth review (1 point assigned for each 'Yes' selected)

5: High

4: Medium

3: Low

0 - 2: Very Low (Exclude from in-depth review)

Appendix H: Data Extraction Report for Stage 1 Review of Reviews

Title	Purpose of Review	Review Methodology	Review Findings
A Literature Review of Leadership in the Early Years (Dunlop, 2008)	**• What was the aim of the review?** (Dunlop 2008, p3) *This literature review aimed to locate the national and international research and documentary evidence relating to leadership in the early years sector.*	**• What sources were searched to identify primary studies?** (Dunlop 2008, p3) - *Electronic databases and search engines such as ERIC, Google Scholar* - *A range of websites including research associations and government sites* - *Handsearching in printed and electronic journals on leadership and early years.* - *Approached particular authors known to have published in this area to enquire after further source.* - *Conference papers, books, professional journals and research reports* **• What was the inclusion criteria for the studies?** (Dunlop 2008, p3) *The choice of material to include was*	**• What were the overall findings of the review?** (Dunlop 2008, p4) *This literature review reveals that before the new Scottish initiative to address the curriculum 3–18, leadership in the early years sector has been virtually ignored at governmental level – this is an international rather than a purely Scottish phenomenon, and is reflected most strongly in the growing literature on leadership in early childhood emerging from New Zealand (McLeod, 2003; Meade, 2003; Scrivens, 2003, 2004; Thornton, 2005).* (Dunlop 2008, p16) *What comes through most sources is that there is a high potential for leadership activity in the field of early childhood. What is less clear in the literature is who provides quality leadership, and agreement about who might do so in early childhood services in the future is still more elusive and under-researched. The paucity of research into early childhood leadership in the UK is beginning to be addressed through studies led by Janet Moyles (2004) and Carol Aubrey (2007).* **• What are the roles of ECL?** (Dunlop 2008, p8) *Role definition is reported in the literature to be problematic in terms of leadership in the early years.* (Dunlop 2008, p12) *A clear definition of an early education leader does not exist although leadership conventionally has been equated with management. A need for a broader definition has arisen as responsibilities of early leaders have expanded. Professionals in the early years have viewed themselves first and foremost as educators and child developers. They have held a narrow view of their role, mainly as practitioners, and do not fully recognise that their roles have expanded to include financial and leadership responsibilities (Muijs et al, 2004; Rodd, 1998; Rodd, 2001; Scrivens in Nivala and Hujala, 2002; Morgan in Kagan and Bowman, 1997).*

| | | *based on clear management, leadership and early years criteria. (no further elaboration)* | **• What are the characteristics of effective ECL?** (Dunlop 2008, p10) *The majority of practitioners in Osgood's studies thought that businesslike approaches to management were inappropriate in childcare. The importance of collaboration and mutual support was stressed and this is more in concert with new theories on leadership: in the voluntary sector this extended to managers of voluntary sector provision working within their own settings and with other provision to develop collaborative practices (Osgood, 2004). In these studies women saw the importance of 'emotional' management skills – essential in the nurturing environments which are children's right. Many women in early childhood education thus feel that most 'masculinised' leadership models are inappropriate to early childhood education as they do not recognise and respect the collaborative aspect crucial to this phase (Scrivens in Nivala and Hujala, 2002).*

(Dunlop 2008, p15) Janet Moyles's publication Effective Leadership and Management in the Early Years is a research-based text which draws from the project 'The Effective Leadership and Management Scheme for the Early Years'. The project produced ELMS – a tool for those who are in leadership and management roles in early years settings so that they may evaluate their effectiveness. It is claimed that the purpose of evaluation of leadership and management is to ensure the best possible experiences for children and early educators; in other words, effective leadership and management are central to the quality agenda. Moyles highlights leadership qualities, management skills, professional skills and attributes, and personal characteristics and attitudes. She endorses Ebbeck and Waninganayake's (2002) view that 'there are few publicly acknowledged leaders and no set of common expectations for leaders in early childhood'. In their Effective Leadership in the Early Years Study (ELEYS), Siraj-Blatchford and Manni (2006) highlight the effective leadership practices identified in the settings that took part in the study: • Identifying and articulating a collective vision • Ensuring shared understandings, meanings and goals • Effective communication • Encouraging reflection • Commitment to ongoing, professional development • Monitoring and assessing practice • Distributed leadership • Building a |

			learning community and team culture • Encouraging and facilitating parent and community partnerships **• What are the strategies for Leadership Development?** (Dunlop 2008, p17) *Bella and Bloom (2003)'s study Zoom: The Impact of Early Childhood Leadership Training on Role Perceptions, Job Performance, and Career Decisions was conducted with a sample of 182 participants who took part in two different models of leadership training up until 2003. The study set out to look at the impact of the forms of training on role perceptions, job performance and career decisions in the sample group. Participants reported the link between their sense of empowerment following training, their consequent raised sense of self-esteem and the impact of both on their leadership role. This new confidence had been sustained and continued to allow participants to take on new challenges.* (Dunlop 2008, p20) *The strong relationship between the childcare/education qualifications of the leader/manager and the effectiveness of the EPPE settings revealed in Sylva et al's work supports a view that those who manage and lead early years services should have high level qualifications…Despite the lack of reward and limited training opportunities available for the leadership role, many early childhood professionals want to heighten their levels of professionalism and aspire to becoming a leader in their field (Osgood, 2004; Rodd, 2005). Specific training programmes are now being developed; however, they are small-scale (Muijs et al, 2004). Where training is provided, effects appear positive (Muijs et al, 2004; Jorde-Bloom and Sheerer, 1992).*
How do they manage? A review of the research on leadership in early	**• What was the aim of the review?** (Muijs et al 2004, p1) *This article presents the findings from a review of literature*	**• What sources were searched to identify primary studies?** (Muijs et al 2004, p2)	**• What were the overall findings of the review?** (Muijs et al 2004, p1) *It identifies a paucity of research, despite a high potential for leadership activity in the early childhood field. It concludes that there is a clear need to identify what effective leadership practice is in terms of processes and outcomes within this field. It also concludes that theoretically based studies that allow different models and characteristics to be empirically tested are long overdue. The serious lack of leadership*

childhood (Mujis 2004)	*on leadership in early childhood (EC).*	- *Electronic databases such as ERIC, BEI and Psyclit.* - *Handsearching key journals on leadership and early years* - *Books, professional journals and research reports* **• What was the inclusion criteria for the studies?** (Muijs et al 2004, p2) *Material was selected only if there was a clear focus on leadership and management in an early years setting. Initially, we decided to select only those studies that provided a full overview of research methodology used and clear evidence of an empirical base for any claims made. However, we had to broaden our search to include studies that did not conform to these criteria due to a lack of studies fulfilling them. We did not limit the material reviewed to studies using any particular research methodology, as we follow a pragmatic approach to methodology, believing in the*	*training is also highlighted by the literature review, which means that many early childhood managers could be significantly under-prepared for their role.* (Muijs et al 2004, p10) *In terms of the research that does exist, it clearly points to the importance of leadership in EC, the complexity of the role, and the need for more specific training and professional development.* **• What are the roles of ECL?** (Muijs et al 2004, p3) *Studies in Victoria (Australia) similarly found that EC leaders had a narrow view of their role, focusing mainly on direct interaction with children, and were uncomfortable with their management role (Rodd, 1996). As increasingly the traditional roles of early childhood providers, which previously focused on direct care and education, have expanded to include management and leadership responsibilities, this would seem to be a rather anachronistic viewpoint. Rodd,* (Muijs et al 2004, p5) *It is clear that leaders in EC have a multiplicity of roles which are context specific (Bloom, 2000).* **• What are the characteristics of effective ECL?** (Muijs et al 2004, p6) *Some research has been carried out into the characteristics of effective leaders in EC, although more typically work in this area consists of purely normative prescriptions that do not refer to empirical studies. There appear to be few case studies of effective EC settings, or quantitative analyses of characteristics set against effectiveness measures… According to Bloom (2000) EC leaders need to be competent in three key areas: knowledge, including group dynamics, organisational theory, child development, and teaching strategies; skills, including technical, human and conceptual skills (e.g. budgeting); and attitudes, including moral purpose.* (Muijs et al 2004, p8) *Rodd (1996) reported that the views of EC professionals had moved towards more mainstream views of leadership*

| | | *worth of different (and mixed) methodologies that allow us to explore both breadth and depth (Tashakkori and Teddlie, 1998). Therefore material from both a qualitative and quantita- tive perspective is included.* | *compared to earlier studies. However, they did not appear to see roles like research, marketing or communicating with policymakers as part of their role, and did not have any conception of risk taking, change management or the creation of professional networks (Rodd, 1996).*

• What are the strategies for Leadership Development?
(Muijs et al 2004, p8): *The lack of leadership development programmes is clearly a key issue in EC. In contrast to their counterparts in primary and secondary schools, directors have had plenty of opportunity in their training to become familiar with issues of child development, assessment, classroom management and curriculum design, but not with management or leadership. In one US study, for example, most of the 257 surveyed directors said they had received no prior training on leadership and management before taking on directorships, and 70 per cent felt ill prepared for the challenges that awaited them (Bloom, 1997). Other US studies have also reported a lack of training (Caruso, 1991). Similarly, many EC leaders in the UK have received very little management training, usually limited to short courses, and in one study described themselves as feeling uncomfortable with the professional development aspects of their role (Rodd, 1997). Directors claimed that they thought training was best delivered once they were already working in the job, and were positive on the benefits of training, seen as not only improving skills but also keeping them excited and challenged. Peer support was seen as crucial to promoting growth and maintaining motivation (Poster and Neugebauer, 1998). Increasingly this lack of training has been acknowledged as specific training programmes for EC leaders are currently being developed. However, at present, most are small scale and localized and unlike the schools sector there are no national training programmes. Where training is provided, effects appear positive.* |

Appendix I: Data Extraction Report Stage 2 Map of Primary Studies on ECL (2007 - 2017)

Author, Date, Title	Context and Aim	Methodology	Population studied
Ang (2011) Leading and Managing in the Early Years: A Study of the Impact of a NCSL Programme on Childrens' Centre Leaders' Perceptions of Leadership and Practice	**Country Context** • UK **Study Focus** • Evaluation of leadership development strategy • Role of ECL	**Study Type** • 'Views' Study **Data Collection method** • Mixed Methods	**Sample Characteristics** • EC leaders
Arend (2010) The Current State of Early Childhood Education Programs: How Early Childhood Center Directors Manage their Human Resources	**Country Context** • USA **Study Focus** • Role of ECL	**Study Type** • 'Views' Study **Data Collection method** • Questionnaire	**Sample Characteristics** • EC leaders
Aubrey (2012) How Do They Manage? An Investigation of Early Childhood Leadership	**Country Context** • UK **Study Focus** • Role of ECL • Characteristics of Effective ECL	**Study Type** • 'Views' Study **Data Collection method** • Mixed Methods	**Sample Characteristics** • EC leaders
Barb (2014)\ Handing off the Torch: Leadership Transitions among the Boomer generation in Early Childhood Education	**Country Context** • USA **Study Focus** • Role of ECL	**Study Type** • 'Views' Study **Data Collection method** • Qualitative Interviews / Focus Groups	**Sample Characteristics** • EC leaders

Børhaug (2013) Democratic Early Childhood Education and Care Management? The Norwegian Case	**Country Context** • Norway **Study Focus** • Role of ECL	**Study Type** • 'Views' Study **Data Collection method** • Questionnaire	**Sample Characteristics** • EC leaders
Brownlee (2010) Constructing leadership in childcare	**Country Context** • Australia **Study Focus** • Role of ECL	**Study Type** • 'Views' Study **Data Collection method** • Qualitative Interviews / Focus Groups	**Sample Characteristics** • EC leaders.
Cardno (2009) Resolving leadership dilemmas in New Zealand kindergartens: an action research study	**Country Context** • New Zealand **Study Focus** • Evaluation of leadership development strategy	**Study Type** • 'Views' Study **Data Collection method** • Action Research	**Sample Characteristics** • EC leaders
Carter (2017) What school leaders are doing to support a culture of character: An Exploratory Study with preschools in Singapore	**Country Context** • Singapore **Study Focus** • Role of ECL	**Study Type** • 'Views' Study **Data Collection method** • Qualitative Interviews / Focus Groups	**Sample Characteristics** • EC leaders
Chen (2012) Leadership behavior and job performance of teachers in public and private kindergartens: the perspectives of institutionalisation, reason and feeling	**Country Context** • Hong Kong / Taiwan **Study Focus** • Impact of ECL	**Study Type** • 'Views' Study **Data Collection method** • Questionnaire	**Sample Characteristics** • EC teachers

Cheng (2013) The effect of kindergarten principals' leadership behaviours on teacher work performance	**Country Context** • Hong Kong / Taiwan **Study Focus** • Impact of ECL	**Study Type** • 'Views' Study **Data Collection method** • Questionnaire	**Sample Characteristics** • EC teachers
Chi (2014) The leadership styles of Hong Kong kindergarten principals in a context of managerial change	**Country Context** • Hong Kong / Taiwan **Study Focus** • Role of EC	**Study Type** • 'Views' Study **Data Collection method** • Questionnaire	**Sample Characteristics** • EC teachers
Choi (2011) Identifying leadership roles for quality in early childhood education programmes	**Country Context** • Hong Kong / Taiwan **Study Focus** • Characteristics of Effective ECL	**Study Type** • 'Views' Study **Data Collection method** • Case Study	**Sample Characteristics** • EC leaders
Colmer (2014) Leading professional learning in early childhood centres: Who are the educational leaders?	**Country Context** • Australia **Study Focus** • Role of ECL	**Study Type** • 'Views' Study **Data Collection method** • Case Study	**Sample Characteristics** • EC leaders
Colmer (2015) Implementing Curriculum Reform: Insights into How Australian Early Childhood Directors View Professional Development and Learning	**Country Context** • Australia **Study Focus** • Role of ECL	**Study Type** • 'Views' Study **Data Collection method** • Case Study	**Sample Characteristics** • EC leaders

Curtis (2009) Naïve change agent or canny political collaborator? The change in leadership role from nursery school to Children's Centre	**Country Context** • UK **Study Focus** • Role of ECL	**Study Type** • 'Views' Study **Data Collection method** • Case Study	**Sample Characteristics** • EC leaders
Curtis (2014) Perceptions Childcare Directors have Regarding the Effectiveness of Transformational Leadership Skills: A Case Study	**Country Context** • USA **Study Focus** • Evaluation of leadership development strategy	**Study Type** • 'Views' Study **Data Collection method** • Qualitative Interviews / Focus Groups	**Sample Characteristics** • EC leaders
Deutsch (2011) Work-to-School Mentoring: Childcare Center Directors and Teachers' Return to School	**Country Context** • USA **Study Focus** • Impact of ECL	**Study Type** • 'Views' Study **Data Collection method** • Qualitative Interviews / Focus Groups	**Sample Characteristics** • EC leaders
Doherty et al. (2015) Enhancing Child Care Quality by Director Training and Collegial Mentoring	**Country Context** • Canada **Study Focus** • Evaluation of leadership development strategy	**Study Type** • Outcome evaluation **Data Collection method** • Mixed Methods	**Sample Characteristics** • EC leaders
Fonsén (2013) Dimensions of Pedagogical Leadership in Early Childhood Education and Care	**Country Context** • Finland **Study Focus** • Role of ECL	**Data Collection method** • Action Research	**Sample Characteristics** • EC leaders • EC teachers

Halttunen (2013) Determination of Leadership in a Day Care Organisation	**Country Context** • Finland **Study Focus** • Role of ECL	**Study Type** • 'Views' Study **Data Collection method** • Case Study	**Sample Characteristics** • EC leaders • EC teachers
Ho (2012) The Paradox of Power in Leadership in Early Childhood Education	**Country Context** • Hong Kong / Taiwan **Study Focus** • Role of ECL	**Study Type** • 'Views' Study **Data Collection method** • Case Study	**Sample Characteristics** • EC leaders • EC teachers • Other stakeholders
Hsue (2013) Professional Training for Beginning Directors of Early Childhood Education Programs in Taiwan	**Country Context** • Hong Kong / Taiwan **Study Focus** • Identifying Training Needs for ECL	**Study Type** • 'Views' Study **Data Collection method** • Questionnaire • Qualitative Interviews / Focus Groups	**Sample Characteristics** • EC leaders • EC teachers • Other stakeholders
Hujala (2016) Leadership Tasks in Early Childhood Education in Finland, Japan and Singapore	**Country Context** • Finland • Japan • Singapore **Study Focus** • Role of ECL	**Study Type** • 'Views' Study **Data Collection method** • Questionnaire	**Sample Characteristics** • EC leaders

Lin (2013) Preschool principal's curriculum leadership indicators: a Taiwan perspective	**Country Context** • Hong Kong / Taiwan **Study Focus** • Characteristics of Effective ECL	**Study Type** • 'Views' Study **Data Collection method** • Questionnaire • Qualitative Interviews / Focus Groups • Delphi panel	**Sample Characteristics** • EC leaders • EC teachers • Other stakeholders
Myers (2017) Impact of campus child care director leadership and activities on the integral success and integration of the campus center	**Country Context** • USA **Study Focus** • Role of ECL	**Study Type** • 'Views' Study **Data Collection method** • Questionnaire	**Sample Characteristics** • EC leaders
Okoroafor (2016) Nursery School Headteacher Leadership Behaviour Correlates of Nursery School Teachers Job Satisfaction in Akoko North, Ondo State, Nigeria	**Country Context** • Nigeria **Study Focus** • Impact of ECL	**Study Type** • 'Views' Study **Data Collection method** • Questionnaire	**Sample Characteristics** • EC teachers
Ord (2013) Developing Pedagogical Leadership in Early Childhood Education	**Country Context** • New Zealand **Study Focus** • Evaluation of leadership development strategy	**Study Type** • 'Views' Study **Data Collection method** • Action Research	**Sample Characteristics** • EC leaders
Preston (2013) Being a manager in the English early years sector	**Country Context** • UK **Study Focus** • Role of ECL	**Study Type** • 'Views' Study **Data Collection method** • Case Study	**Sample Characteristics** • EC leaders

Ryan (2011) Professional Development Needs of Directors Leading in a Mixed Service Delivery Preschool System	**Country Context** • USA **Study Focus** • Identifying Training Needs for ECL	**Study Type** • 'Views' Study **Data Collection method** • Qualitative Interviews / Focus Groups	**Sample Characteristics** • EC leaders .
Sims (2015) Conceptions of early childhood leadership: driving new professionalism?	**Country Context** • Australia **Study Focus** • Role of ECL	**Study Type** • 'Views' Study **Data Collection method** • Questionnaire	**Sample Characteristics** • EC leaders
Talan (2014) Building the Leadership Capacity of Early Childhood Directors: An Evaluation of a Leadership Development Model	**Country Context** • USA **Study Focus** • Evaluation of leadership development strategy	**Study Type** • Outcome evaluation **Data Collection method** • Questionnaire	**Sample Characteristics** • EC leaders
Vannebo (2017) The concept of strategy in the early childhood education and care sector	**Country Context** • Norway **Study Focus** • Role of ECL	**Study Type** • 'Views' Study **Data Collection method** • Qualitative Interviews / Focus Groups • Analysing Secondary Data	**Sample Characteristics** • EC leaders
Zinsser (2014) Early childhood directors as socializers of emotional climate	**Country Context** • USA **Study Focus** • Role of ECL	**Study Type** • 'Views' Study **Data Collection method** • Qualitative Interviews / Focus Groups	**Sample Characteristics** • EC leader

Appendix J: Quality Appraisal Scoresheet for Stage 3 In-depth Review

(Based on criteria listed in Appendix G)

Study	Criteria 1	Criteria 2	Criteria 3	Criteria 4	Criteria 5	Weight of Evidence Score
Ang (2012)	Yes. Sufficient background info on NPQICL.	Yes. Including representation from geographical locations, and the type of setting they were from, which were integrated children centres.	Yes. Details provided on sampling and data collection methods.	No. Online questionnaire was sent out to an email database requesting voluntary participation. Rate of return was relatively low at 8 percent and there was no further attempts to increase the response rate.	Yes. Quotes by different participants were provided to support the key themes that were identified by the authors.	4: Medium
Cardno and Reynolds (2009)	Yes. Sufficient elaboration on Cardno's curriculum for dilemma management	No. Participants were invited to participate by the Auckland Kindergarten Association. No further details provided on the sample characteristics.	Yes. Details provided on action research process.	Yes. There were different stages of data collection and efforts to increase the response rate which added to the comprehensiveness and rigour of the data collection process.	Yes. Quotes by the participants were provided to support the key findings of the evaluation.	4: Medium
Curtis (2014)	Yes. Sufficient background info describing	Yes. Details was provided on the background	Yes. Details provided on selection of participants	Yes. A pilot study was conducted test the	Yes. Data collected was used to support the key	5: High

Study						
	Strengths-based Coaching.	qualifications and criteria for purposeful selection of participants. The sample characteristics were specified.	and qualitative interpretative methods	interview questions. Multiple attempts were made to contact participants. Additional data was collected from focus groups with teachers who worked with the directors for triangulation.	themes to address the research questions.	
Doherty et al (2015)	Yes. The program design of the Mentoring Pairs for Child Care was clearly specified.	No. The sample characteristics were not specified.	Yes. Details provided on selection of participants, intervention, evaluation instruments and pre- and post-program data collection.	Yes. Pre- and post-program observations were conducted and data was collected by trained data collectors.	Yes. Statistical outcomes were included to support the findings.	4: Medium
Ord et al (2013)	Yes. Coaching and Mentoring methodology was clearly explained.	Yes. Details on sample selection and sample characteristics were specified.	Yes. Details provided on data collection through audiotaping of coaching and mentoring sessions, and observations.	Yes. Data was generated through audio-taped coaching and mentoring sessions. Audiotapes were transcribed and returned to the project facilitators for clarification of missing information or misinterpretations. The transcriptions were analysed individually by 2 researchers before sharing their analyses.	Yes. Quotes from the transcriptions were used to support the themes that were identified.	5: High

| Talan et al (2014) | Yes. The training methods for the Taking Charge of Change leadership development model were described. | Yes. Sample characteristics were specified. | Yes. Details provided on instrumentation and data collection procedures. | Yes. There were multiple forms of data collection, including surveys and quality assessment by external assessors. For the Job Status survey, emails were re-sent to increase the rate of response. | Yes. The quotes from the surveys and statistical outcomes from the evaluation data were compiled to support the findings. | 5: High |

Appendix K: Stage 3 Data Extraction - Leadership Development Strategies for ECL

Name of programme	Rationale / Purpose	Type of strategies used	Length of training
Coaching and mentoring (Ord et al 2013)	Providing ECL with the experience of expansive learning methodology and supporting them to apply the methodology and build ongoing professional learning in curriculum and pedagogy in their centres.	Monthly cluster workshops interspersed with individual centre-based consultations	7-month programme with 6 workshops One hour follow up coaching and mentoring meetings in participants' centres after each workshop session.
Dilemma-resolution (Cardno and Reynolds, 2009)	Developing the capacity of ECL to understand, manage and resolve dilemmas.	Targeted professional development in dilemma resolution. Training based on dilemma resolution theories provided by researchers. Large-group intervention.	2-day professional development programme provided by researchers.

Mentoring Pairs for Child Care (Doherty et al, 2015)	Director administrative training programme based on an approved administrative curriculum. Built on the McCormick Center Director Training Model and Partners in Practice Mentoring Model	Mentor-mentee pairing of participants with less than five years of director experience with more experienced directors from the same geographic areas. Study groups (6 – 22 participants) Reflection Journals Assignments (e.g. projects, site visits) Self-assessments Development of a professional development plan	1 year 21 hours of preparation across 3 days at the start of the program including an orientation to MPCC, introduction to key concepts and review of training methods and tools. Study groups held monthly 3-hour meetings from Feb to Dec.
National Professional Qualification in Integrated Centre Leadership (Ang, 2012)	Developed to support the professional needs of children's centre leaders, especially in the role they play in meeting the Every Child Matters (2003) outcomes for all young children. The main aims of the programme are to enable early years leaders to share practice, and receive support for delivering their objectives around key leadership responsibilities such as performance and financial management, and delivering the ECM outcomes.	Face to face and online learning support The four core modules built into the NPQICL programme include: building the learning community; developing leadership in a research community; developing as a reflective leader; and developing integrated centre leadership. A distinctive aspect of the training is a personal reflective journal which allows participants to reflect upon and locate their own models of practice and perspectives of leadership.	Not indicated in study

	The programme addresses specifically the professional development needs of those working in an integrated, multi-agency early years environment, and who are at the forefront of leading and managing local Sure Start and children's centre programmes.		
Strengths-based Coaching: A Journey into Coaching (Curtis, 2014)	Building transformational leadership skills by teaching leaders how to provide supportive, positive feedback to employees, and empowering staff to become more self-reflective. A practical approach to working with adults that fundamentally changes the way in which a director supports and sustains quality improvements in their centre.	Training in building relationships with staff and providing quality feedback. Practicing coaching techniques. Training based on transformational leadership theory.	Details on training format not provided.

| Taking Charge of Change Leadership Development Model (Talan et al 2014) | Developing ECL as a change agent in bringing about individual, organisational and systemic change in the ECEC centre. | Formal presentations

Large-group discussions

Small-group experiences

Role playing

Providing a forum where directors participate in a professional learning community, a safe environment of critical inquiry where they share their successes and struggles with one another, co-construct knowledge, and reflect on their assumptions and beliefs about their role as program administrators. | 10-month programme beginning with 6-day residential institute in summer, followed by 3 day connecting residential institute in fall and 1-day culminating institute held in late spring in conjunction with Leadership Connections, a national conference for early childhood leaders.

This includes 80 hours of small and large group instruction, 20 hours of individual feedback and conference time with their instructors and mentors |