What would it take…

…for every child in Canada to be learning foundational literacy skills by the age of five?

Full Report

Prepared for the Canadian Children's Literacy Foundation

April 7, 2025

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EXECUTIVE SUMMARY

The ***What Would it Take*** report provides a comprehensive assessment of what is needed to ensure that all children in Canada can develop the pre-literacy skills they need to learn foundational literacy skills by the age of five. Guided by scientific evidence, the report describes the structures, resources, and stakeholders that will need to be engaged, and examines how governments can enhance the quality and capacity of Canada's Early Childhood Education and Care (ECEC) system to meet this goal.

Our report's findings are clear. Effective pre-literacy programs must offer young children systematic instruction, provide universal access to ECEC, be guided by high-quality and evidenced-based curricula, and employ teaching approaches that abide by the principles of structured literacy. To learn the foundational literacy skills by the age of five, children's social, emotional, physical, and economic well-being must be nurtured.

Implementing such a system across the country will require the engagement of all levels of governments to generate Canadian evidence of effective teaching strategies, to translate new evidence into practice, to increase the ECEC system's capacity to deliver, and to revise provincial policies to ensure the provision of high-quality programming in the early years.

PRE-LITERACY SKILLS IN THE EARLY YEARS

Pre-literacy skills are the set of basic skills that enable young children to understand and express themselves through language. From 0 to 5 years of age, young children are learning how language works: how letters can represent sounds, how the sounds they hear can be linked

	(pre) **Reading**	*(pre)* **Writing**	**Oral Language**
Pre-literacy Skills *(Wright et al., 2022)*	Print navigation	Emergent writing	Oral language
	Letter-sound linking & alphabetics		Listening & Comprehension
Foundational Literacy Skills *(National Reading Panel, 2000; Hudspith Heppner, 2017; Kim et al., 2012)*	Phonics	Handwriting	Phonemic awareness
	Fluency	Spelling	Vocabulary
	Reading Comprehension		

together to make words, how the words they learn can be used to express their needs, and how marks and images they draw can impart meaning. These early experiences with the use of language can be classified as pre-reading, pre-writing, or oral language skills.

As visualized above, pre-literacy skills are part of a continuum of literacy knowledge and skills. Although we can delineate distinct skills, pre-literacy—and literacy skills more broadly—are interconnected. Each skill builds and enhances the other: oral language will help children understand sounds and how they connect to letters; pre-reading and print navigation can help children understand how print works as they develop their emergent writing skills. Improvements in one skill enhance a child's other literacy skills.

TEACHING LITERACY

Over the first five years of their life, it is essential that children be immersed in an environment that enables and encourages them to practise their pre-literacy skills and that provides meaningful oral language experiences. Doing so will ensure that children are able to learn the foundational literacy skills taught in school.

There are different approaches toward literacy instruction, with varying degree of scientific evidence in support of their use. Our report contrasts balanced literacy and structured literacy. Canadian jurisdictions are increasingly moving away from balanced literacy toward structured literacy as a teaching approach in their K-12 curriculum, consistent with scientific evidence demonstrating that a "majority of students learn to read better with structured teaching of basic language skills" (International Dyslexia Association, 2020, p. 1).

Balanced literacy

Belief that children develop oral language and reading develops naturally when they are immersed in an environment that promotes language and literacy (Patzelt, 1995).

Approaches include learning through discovery and acquiring meaning through context and experience, such as the three-cueing method.

Proponents believe that children learn language by using language, and meaning is more important than grammar (Patzelt, 1995).

Structured literacy

SL holds that children learn best when they are taught literacy skills through structured instruction (International Dyslexia Association [IDA], 2020).

SL advocates for the integration of four teaching principles in literacy pedagogy (IDA, 2020):

- Literacy instruction that is explicit, guided, and routine
- Language concepts are taught systematically and in sequence (from easy to difficult)
- Interactive and multimodal learning is encouraged
- Instruction is adjusted based on student responses and progress is monitored.

THE BENEFITS OF EARLY CHILDHOOD EDUCATION

Evidence is unambiguous that high quality early education benefits all children and is capable of changing life outcomes (McCuaig, 2012). Attendance in ECEC is associated with enhanced literacy skills, with the greatest impact on vulnerable children—children with learning disabilities or living in challenging home environments—and those living in poverty (Akbari, 2020; Philpott, 2019).

Investments in early childhood education provide long-term economic benefits for individuals and for society. The Atkinson Centre estimates that investments in Canada's ECEC sector have one of the highest returns to society, equivalent to between $2 to $7 for every dollar spent (Atkinson Centre, 2021, p. 9).

All children stand to benefit from a learning environment that offers high-quality programming, systematic instruction, positive interpersonal relationships with trusted adults, and an integrative learning environment that brings together educators, specialists, and children and their family (McCuaig, 2012).

KEY CHALLENGES IN THE CANADIAN ECEC SECTOR

Developing a child's pre-literacy skills is crucial for their capacity to learn foundational literacy skills. But providing all children with equitable access to child care spaces, effective pedagogical resources, and required supports for learning remains a challenge in Canada. The report outlines several challenges that must be addressed to ensure all children in Canada will be learning the five foundational literacy skills by the age of five.

Not enough spaces in existing ECEC programs to meet demand

Nearly half of children in Canada not yet attending kindergarten live in a "child care desert," a community in which there are more than three children for each licensed child care space (Macdonald & Friendly, 2023).

Recent legislation and budgetary provisions brought forward by the federal government have sought to increase access to high-quality child care, while reducing child care fees. The initiatives have contributed to an increased demand for regulated child care spaces, which may have further exacerbated the lack of child care spaces (Friendly et al., 2024).

Financial and systemic barriers prevent access to ECEC programs

Child care use in Canada is significantly associated with income (Findlay et al., 2021). In effect, low-income households are 12 per cent less likely to use child care than other households (Findlay et al., 2021). According to the OECD (2017), the prohibitive cost of ECEC is a key challenge for families in several provinces and territories and is particularly acute in rural and remote communities where the availability of ECEC programs is comparatively lower than in urban centres (Friendly et al., 2023).

Improving the conditions and the quality of ECEC programs without addressing the economic and structural barriers that prevent families from affording ECEC would risk leaving behind roughly half of the children in Canada.

Affordability of ECEC programs

The availability of spaces in ECEC centres and the affordability of the ECEC system are two sides of a scalability problem. On the one hand, out-of-pocket cost of attending ECEC programs must be low enough to allow universal participation, but high enough to cover its operating costs.

By lowering the cost of attending ECEC, governments are hoping to induce demand for services by making them more affordable. However, more demand for spaces has the downside of increasing the costs of the system: expanding demand for workers increases wages; larger spaces to occupy children increases the cost of rents; more supplies, toys, and resources increases operating budgets.

Increasing spaces without compromising quality calls not only for expansion of adequate physical spaces and equipment, but for greater investment to ensure centres can scale up their operations.

Recruitment and retention of qualified ECEs

Increasing demand for ECEC has highlighted the shortage of early childhood educators (ECEs) across the country. Recruitment and retention efforts have been compromised by structural factors such as low wages, patchy and often limited provision of employment benefits, limited opportunities for career advancement, and unfavourable working conditions.

Despite ongoing efforts at various levels of government to improve recruitment and retention of qualified ECEs, including significant investments aimed at increasing training opportunities and reducing the cost of training, the sector is struggling to retain qualified ECEs (Macdonald & Friendly, 2023; ESDC, 2019).

Inconsistent ECEC policies across the country

ECEC policy in Canada is a responsibility of the provinces, territories, and Indigenous communities. While the federal government has set broad targets for the expansion of accessible and affordable child care, the regulations, design, content, and delivery of ECEC programs remain at the subnational level (ESDC, 2017).

The result is a national patchwork of requirements that are similar but far from identical across jurisdictions (ESDC, 2019). Thus, setting common goals, including those set out by the *What Will it Take…* report, can be difficult to meet.

Lack of a high-quality early years' curriculum for pre-literacy skills

Canada lacks a high-quality, evidence-based pre-literacy curriculum for the early years. While Canada's federated structure can explain the absence of a common national curriculum, there are opportunities for Canada to adopt science-informed, developmentally appropriate principles and guidelines for literacy instruction, starting in the early years.

Subnational jurisdictions should coordinate and share evidence for new early learning frameworks that support effective literacy and pre-literacy instruction, and that provide clear learning objectives along a pathway from the early years to kindergarten.

RECOMMENDATIONS

Many changes are needed to ensure that every child in Canada has acquired the pre-literacy skills they need to learn before they can start learning how to read. We propose several interconnected recommendations that aim to enhance and transform Canada's ECEC system.

Underlying these recommendations are some common threads: changes to the ECEC system should be evidence-based, adapted to a Canadian context, and comprehensive in scope. Selective or piecemeal implementation of proposed recommendations will fail to achieve the desired transformation.

Recommendation 1: Develop and Disseminate Canadian Evidence

Canada needs to invest in growing a national, representative body of evidence on effective pre-literacy strategies for young children from 0 to 5 years of age. To meet this aim, the federal government should consider the establishment of a dedicated Early Skills Centre to oversee, coordinate, and disseminate findings of early years' research projects. The establishment of such

a centre would create the mechanism for issuing funding for research projects covering a broad range of early learning topics, extending beyond pre-literacy.

Research should aim to develop and test curricula that are applicable to a Canadian context, with diverse researchers and developers. The inclusion of a clearinghouse of effective evidence within the Early Skills Centre will ensure that knowledge generated is accessible to stakeholders across the country.

Recommendation 2: Mobilize New Knowledge and Insights Into Action

Knowledge translation—from research to practise—takes time. *Access to* and *availability of* rigorous evidence is not sufficient to bring about the necessary transformations at the local level, at least not in the absence of intentional efforts. The mobilization and transformation of knowledge into practice are part of a long-term endeavour that includes relationship building, organizational capacity building, and leadership development.

In the short term, governments and ECEC organizations should start planning how knowledge can be mobilized, which includes the creation of a Plan of Action, a national information campaign, and a network of early literacy champions who can bring about bottom-up pressure on policy-makers to make necessary changes in early literacy.

The information campaign should never lose sight of its aim: to persuade caregivers, educators, and policy-makers that focusing on pre-literacy skills is essential to ensure a foundation of learning for all children.

Recommendation 3: Revise Subnational Early Learning Policy

Early Learning Frameworks are often used to inform, guide, and develop policies that support the ECEC system. Provinces, territories (PTs) and Indigenous communities should commit to making the necessary changes to their respective organizational and occupational policies governing their early learning systems.

Revision of ELFs need to incorporate more specific references to the instruction of pre-literacy skills and the expected learning outcomes at every developmental stage. In doing so, jurisdictions can clearly prioritize the skills children must acquire to be learning foundational literacy skills by the age of five.

PTs need a plan to address systemic recruitment, training, and retention challenges of ECE professionals currently affecting ECEC systems across Canada to ensure the successful expansion of the system.

Recommendation 4: Expand Early Learning to Reach all Children

Access to ECEC programs—from infancy to school age—should be recognized as a right for all children, one that can justifiably be supported by public policy and, to the extent necessary, receive public financing.

To make it easier for policy-makers and the public to recognize ECEC as a right, ECEC should be integrated within the primary school system and considered an integral step within the broader education system. Where full integration is not possible, the connections between ECEC and prekindergarten or kindergarten programs could be strengthened, especially with a view toward facilitating children's transitions into the school system.

Policy-makers also need to support evidence-informed educational programming in all environments where children learn, which includes in the home with their caregiver or family members, in an ECEC centre, or in a facilitated caregiver-led drop-in program (e.g., Strong Start).

When it comes to needed reforms to early childhood systems, the policy priority list is long. All levels of government will need to commit to increase their investments in ECEC. An Early Skills Centre would be well positioned to provide a jurisdictional analysis of the economic and social benefits that society could expect to see following the transformational change proposed by this report.

INTRODUCTION

What would it take for every young child in Canada to be actively learning the pre-literacy skills they need to be able to learn foundational literacy skills by the age of five? This is the central question guiding the report, ***What Would it Take?***

In their early years, even before the start of school, children are growing, developing, and learning new skills that allow them to make sense of the world, to communicate with the people around them, and to develop the skills they need to interpret the sounds they hear and written text they see. Developing a child's pre-literacy skills is crucial for their development. But providing all children with access to adequate and equitable resources, supports, and educators remains a challenge in Canada.

This report attempts to assess the scope of this challenge. What changes would be needed from existing government policies or curricula? What do we know about the pedagogical approaches required to ensure the success of a national pre-literacy strategy? Can access to pre-reading materials be improved? And how should a national pre-literacy strategy be adapted to meet the needs of Canada's diverse communities?

Given the crucial role of early literacy in children's development, having a clear understanding of the factors that can support their development is necessary to inform a robust national early literacy strategy. This report documents what is currently known about the pre-literacy skills that need to be learned by young children in their early years (0–5 years of age) and the structures, resources, and stakeholders that will need to be engaged to put all young children in Canada on the path to a strong foundation for learning literacy skills.

UNDERSTANDING THE CONTINUUM OF LITERACY SKILLS

Literacy is the set of skills that enable individuals to identify, understand, interpret, create, communicate, and compute information using printed and written materials in a variety of contexts (UNESCO, 2004). Specifically, literacy skills consist of an individual's ability to read, write, and comprehend language. In a broader sense, they are the foundational skills that allow individuals to achieve their goals, to develop their knowledge and potential, and to participate fully in their community and wider society (Montoya, 2018).

Mastering literacy skills can have far-reaching impacts on a person's life, even predicting their success across a range of individual, societal, and economic outcomes (Bakken et al., 2017,

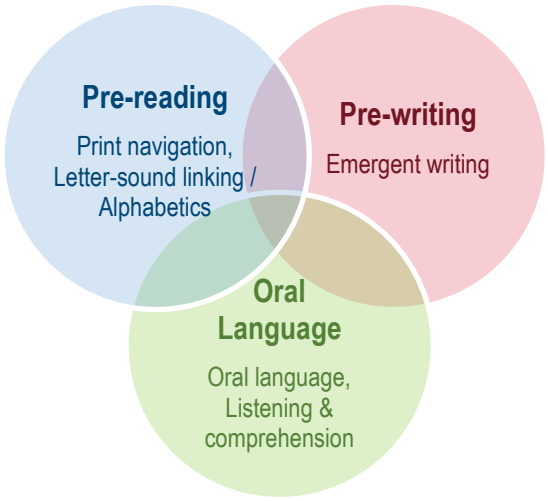
p. 255; Monaghan, 2023; Deloitte, 2020, p. i; Shuey & Kankaraš, 2018; OECD, 2015; National Early Literacy Panel, 2008).

Literacy skills are correlated with higher educational attainment, fewer grade retentions, reduced incidences of juvenile delinquency, improved physical and mental health outcomes, and increased employment and earnings potential (Strickland & Riley-Ayers, 2006). Strong literacy skills provide opportunities for individuals by equipping them with the foundational skills they need to explore interests, develop capabilities, and do so with few limitations (Shuey & Kankaraš, 2018).

PRE-LITERACY BEHAVIOURS AND SKILLS

Pre-literacy skills are part of a continuum of literacy skills that start at birth and continue to develop over a person's lifetime (Wright et al., 2022). From 0 to 5 years of age, young children are learning how language works: how the sounds they hear can be linked together to make words; how the words they learn can be used to communicate their needs; how letters can represent sounds; and how images or marks they draw can impart meaning. These early experiences with the use of language can be classified as pre-reading, pre-writing, or oral language skills.

Figure 1 Pre-literacy Skills



Source: Wright et al., 2022.

Although we can distinguish distinct skills within pre-literacy, all literacy skills are interconnected. Each skill builds and enhances the other: oral language will help children understand sounds and how they connect to letters; pre-reading and print navigation can help children understand how print works as they develop their emergent writing skills. Improvements in one skill often lead to improvements in a child's other language skills (Dicataldo & Roch, 2022).

Early learning activities are crucial for creating the long-term success that caregivers, policy-makers, and educators supporting early child development seek to provide for the children in their care. In fact, recent economic data suggest that investments in early literacy could be more efficient in increasing longer-term academic success than interventions in adolescence.

> "[Literacy] begins in infancy with the development of necessary skills (e.g., pointing and referencing, book engagement, holding books, and flipping through pages), extends through preschool (e.g., awareness that books tell stories, personally connecting to stories, telling their own stories), and continues into elementary school (e.g., text and illustrations conveying meaning, beginning of reading)."
>
> *Bailey et al., 2023, p. 387*

Deloitte Canada's Children's Literacy in Canada report (Deloitte, 2020) estimates a greater return on investment per dollar spent on education for children aged four than per dollar invested in school or post-school interventions. In fact, the Atkinson Centre estimates that investments in Canada's early care and learning sector have one of the highest returns to society, equivalent to between $2 to $7 for every dollar spent (Atkinson Centre, 2021, p. 9). Conversely, a lack of investment in early literacy can be costly. Illiteracy costs the global economy more than $1 trillion (U.S. dollars) annually in direct costs alone (World Literacy Foundation, 2015).

Clearly, the evidence demonstrates that interventions and programs that can support early literacy development in young children will have long-term benefits to both individuals and to society. Relatively simple activities that allow young children to learn new sounds, to practise pre-reading skills, and to imitate adults' behaviours, matter (Wright et al., 2022). As the next section demonstrates, creating the conditions in the early years that place young children on a continuum of learning will ensure that they are learning foundational literacy skills by the age of five.

FOUNDATIONAL LITERACY SKILLS

Foundational literacy skills—also known as the key pillars of literacy—are a set of skills that are necessary for reading. They include phonemic awareness, letter-sound correspondence (phonics), fluency, vocabulary development, and reading comprehension (Snow, 2021). These foundational literacy skills are the key skills that must be learned to read, write, and communicate effectively. Pre-literacy skills, as previously discussed, are therefore crucial precursor skills to ensure children are learning these foundational skills by the age of five.

The identification of these skills is the culmination of a thorough analysis of reading practice in the United States. The National Reading Panel (NRP) was established by the United States'

Congress in the late 1990s to understand how reading works and what approaches used by educators were most effective in teaching children how to read. The NRP conducted a review of existing research on reading instruction in elementary and secondary schools and led hundreds of consultations with educators in public forums. The evidence collected throughout this process provided the highest degree of certainty regarding its conclusions.

> "Increasing spelling skill may improve written expression because children's spelling becomes recognizable by others, leading to increased motivation to communicate using written language"
>
> *Berninger et al., 2002, p. 291.*

Absent from this framework are foundational writing skills, one of the pillars of literacy, though of the three "Rs," writing is "clearly the most neglected" (National Commission on Writing in America, 2003, p. 3). Indeed, many of the underlying skills that enable effective writing are already included in the NRP's foundational skills for reading, such as the ability to differentiate between letters, developed through phonics and the sound-symbol relationship (Hudspith Heppner, 2017).

Yet, there are specific skills related to handwriting and spelling that influence the child's capacity to express themselves and communicate with others through writing. Developing these skills starting in kindergarten can have positive effects on children's writing fluency in later grades (Kim et al., 2011).

The foundational literacy skills framework presented in Figure 2 below is therefore more comprehensive than the NRP framework, in that it considers writing skills in addition to reading and oral language skills.

Figure 2 Foundational Literacy Skills

HOW LITERACY DEVELOPS

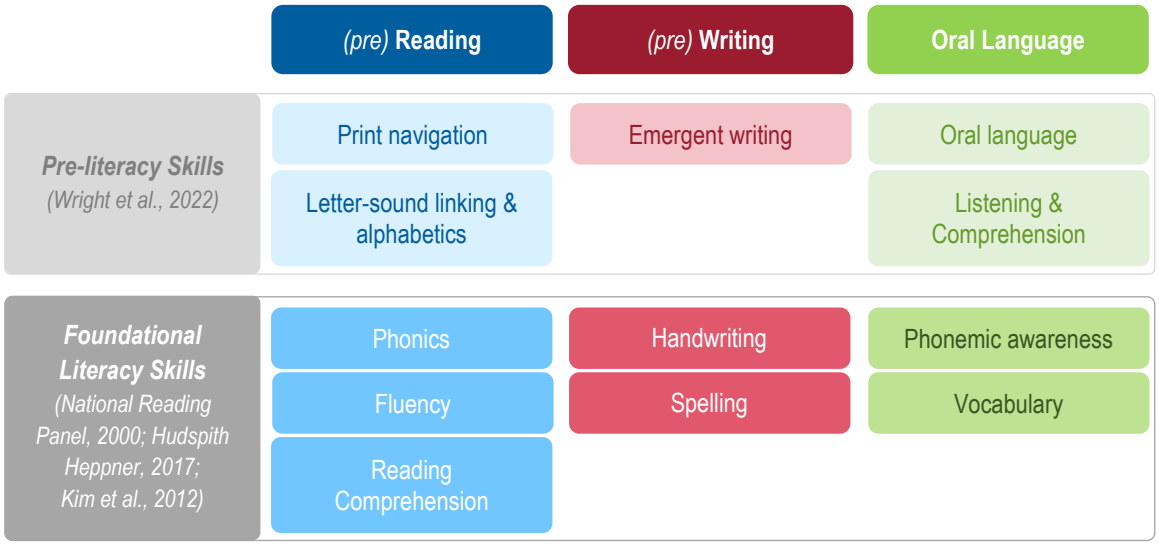
Pre-literacy is very much a part of a broader continuum of learning that begins at birth and continues over a person's life. To adequately support young children during the early years, it is important to understand how literacy evolves, develops, and emerges into more complex reading, writing, and oral communication skills. The following section provides a brief overview of the scientific evidence regarding literacy and reading development.

Literacy as a continuum of learning

The pre-literacy framework provided by the National Association for the Education of Young Children and the Foundational Literacy Skills framework, proposed by the National Reading Panel (and complemented by other peer-reviewed sources), do not have a one-to-one match. Indeed, the skills and knowledge that a child from 0 to 5 years is anticipated to learn are developmentally different from those learned starting at the age of 5.

However, both frameworks exist along a continuum of learning that starts in the early years and extends into the first years of school. Pre-literacy skills enable children to learn the foundational literacy skills introduced in kindergarten. Figure 3 is a visual representation of how the complexity of acquired skills and the depth of knowledge enable children to enhance their literacy skills.

Figure 3 Continuum of literacy skills: from pre-literacy to foundational literacy skills



Oral Language Development

The development of oral language represents one of the building blocks for reading ability (Shanahan & Lonigan, 2013). During the early years, young children's oral language develops as they interact with and learn from their caregivers, and other individuals in the world around them (Gunn et al., 2004). The time children spend in early childhood education and child care (ECEC) centres also influences language development. In effect, early childhood educators (ECEs) play an important role in supporting a child's oral language knowledge by fostering play-based activities that provide opportunities for talking, singing, and reading with very young children (Shaw, 2021; Snow, 2021).

These early child-caregiver interactions can be understood metaphorically as a game of *serve and return*, in that child *serves* by signalling a desire for interaction—with eye contact, facial expressions, gestures, babbling, or touch—and the caregiver *returns* by speaking or singing back, through playful actions or touch (Shaw, 2021). The child mimics these responses, adopting them as part of their own form of communication.

> "When children begin to learn to read, they usually already have relatively sophisticated spoken-language skills, including knowledge of the meanings of many spoken words.
>
> The challenge of reading is to learn to associate arbitrary visual symbols—patterns of lines, curves, and dots—with those meanings."
>
> *Castles et al., 2018, p. 8.*

The benefits of a serve and return as approach to learning demonstrate the importance of exposing children to a language's sounds in early childhood. In fact, research suggests that the more words a child is exposed to, the greater their vocabulary will be, which in turns directly influences their reading and writing abilities later on (Castles et al., 2018).

The Science of Reading

The Science of Reading (SoR) is a body of scientific research from the fields of education, neuroscience, linguistics, communication science and psychology that provides evidence on how the human brain has developed and evolved to allow humans to read and interpret written text as language (Petscher, 2020).

SoR research is informed by a neuroscientific understanding of the brain's functioning and the various pathways that enable humans to read and write. Studies using neurological imaging techniques, such as functional magnetic resonance imaging (fMRI), have revealed that the human brain undergoes changes in its neural systems when a person learns to read (Church et al., 2023), essentially rewriting how it organizes information (Dehaene, 2009).

Researchers have identified two specific pathways in the brain that enable skilled reading: a pathway focused on sounds or "phonologically mediated reading," and a pathway focused on recognizing and interpreting printed letters (Hanover Research, 2022). In both cases, the brain must be trained through teaching, practice, and the development of the phonological pathways.

"The 'science of reading' is a phrase representing the accumulated knowledge about reading, reading development, and best practices for reading instruction obtained by the use of the scientific method.

"We recognize that the accrual of scientific knowledge related to reading is ever evolving, at times circuitous, and not without controversy."

Petscher et al., 2020, p. S268.

Although there continue to be disagreements on the details, the vast amount of scientific evidence that has been amassed through research and experimentation about how learning to read affects the human brain has led to some degree of certainty. According to Seidenberg, "there is remarkable consensus about the basic theory of how reading works and the causes of reading successes and failures" (2013, p. 333).

Still, SoR continues to grow and evolve, and provides a greater understanding about how humans learn to read (Petscher, 2020). As a body of research, SoR does not promote nor advocate for any single teaching approach. Rather, SoR provides the scientific evidence upon which effective teaching approaches can be developed.

The Simple View of Reading (SVR)

In 1986, Philip Gough and William Tunmer published their paper, *Decoding, Reading, and Reading Disability* in the Journal Remedial and Special Education (RASE), in which they propose the simple view of reading.

"To clarify the role of decoding in reading and reading disability, a simple model of reading is proposed, which holds that reading equals the product of decoding and comprehension."

"It follows that there must be three types of reading disability, resulting from an inability to decode, an inability to comprehend, or both."

Gough & Tunmer, 1986, p. 6.

The paper challenges the argument that the ability to decode or recognize words is "tantamount to learning to read" (Gough & Tunmer, 1986, p. 6). They argue that reading is in effect the product of ***two*** variables—decoding and comprehension—that have separate contributions to reading ability.

By evaluating this expression, the authors argue that without comprehension (C = 0), reading is not taking place (thus, R = 0); and conversely, without the ability to decode words (D = 0), then

there is no reading (R = 0), even if the individual has a non-null level of oral language comprehension (C ≠ 0) (Figure 4).

Figure 4 The Simple View of Reading Formula

Source: Gough & Tunmer, 1986.

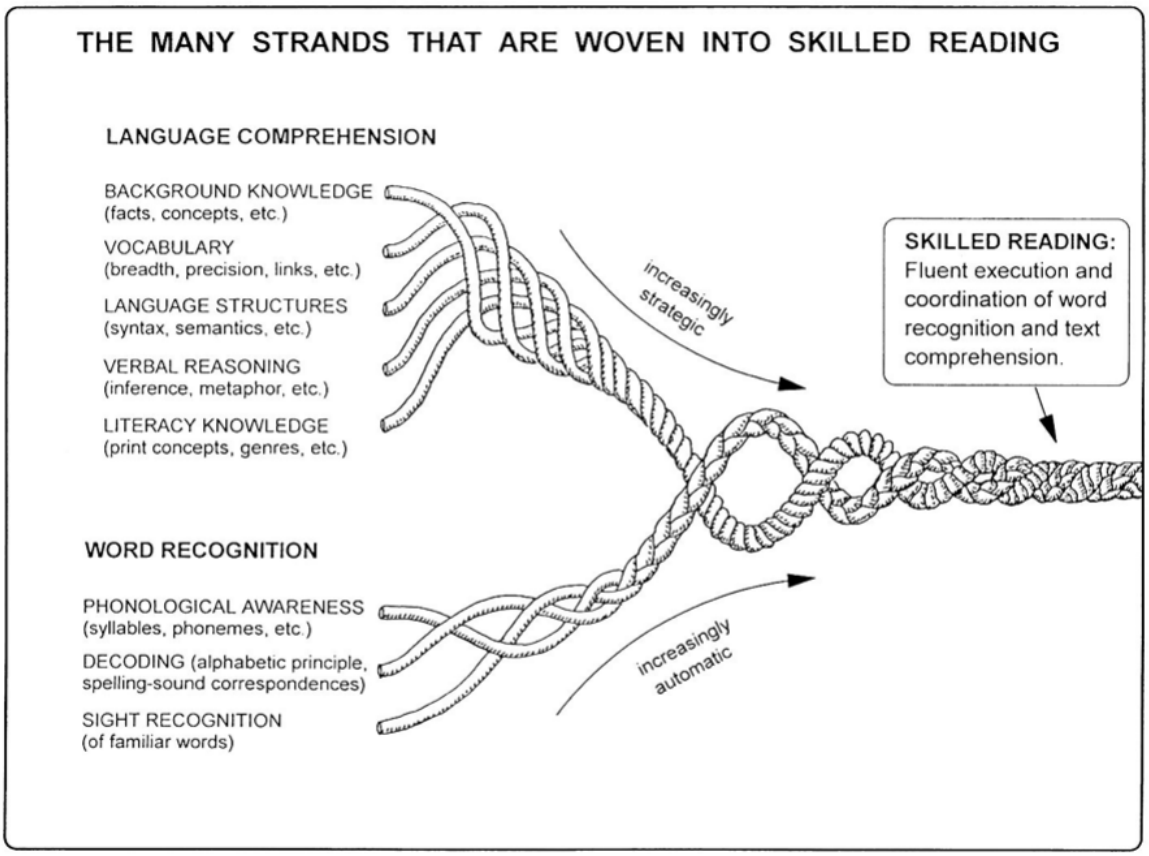
Scarborough's Reading Rope

Scarborough's Reading Rope model (see Figure 5) builds upon Gough & Tunmer's simple view of reading, by visualizing how the underlying skills (or strands) that enable word recognition and language comprehension are at once independent and interconnected (Scarborough, 2001). In other words, each skill that contributes to reading comprehension must be taught and developed, and in doing so, will also reinforce the acquisition of other more complex skills.

Developed in the early 1990s by Dr. Hollis Scarborough, a researcher of early language development and literacy, Scarborough's Reading Rope was designed to help caregivers understand how reading develops in children.

The model proposes two sets of skills in line with the Simple View of Reading (SVR): the lower strands (word recognition) and the upper strands (language comprehension), with each underlying skill corresponding to a strand in the rope. As the lower strands become increasingly automatic and as the upper strands become increasingly strategic, the strands intertwine, demonstrating improvements in reading skill, accuracy, fluency, and comprehension (Scarborough, 2001).

Figure 5 Scarborough's Reading Rope



Source: Scarborough, 2001. Reproduced with permission from Guilford Publications, Inc.

TEACHING LITERACY

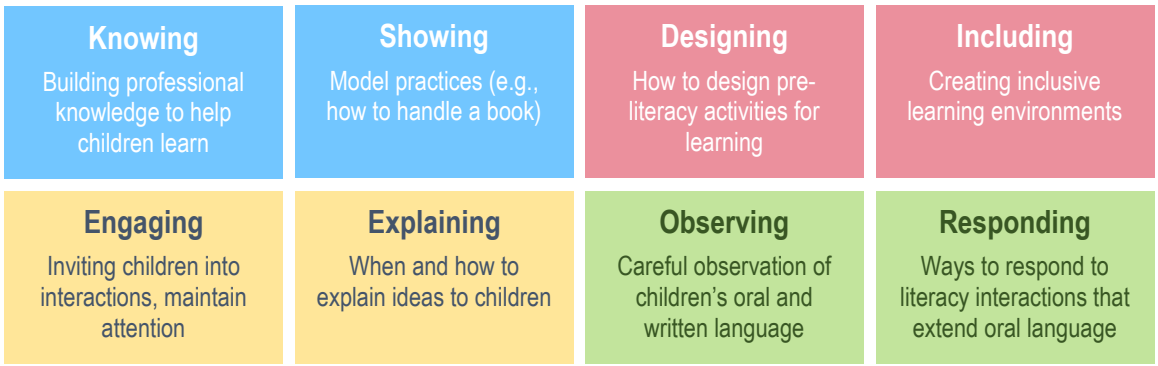
To ensure that all children in Canada are learning foundational literacy skills by the age of five, the report seeks to understand how pre-literacy skills in a child's early years might be taught in a way that is grounded in scientific evidence and provides a basis for continuity once a child starts school. In the present section, we provide an overview of current teaching practices to arrive at an understanding about how young children could be best taught in the early years.

SUPPORTING PRE-LITERACY DEVELOPMENT IN THE EARLY YEARS

As previously discussed, young children need to be immersed in environments that encourage and foster their early literacy skills. However, exposure alone is not enough. Pre-literacy—and literacy more broadly—consist of skills and behaviours that must be taught, learned, and practised. ECEs are well positioned to create these environments and to provide the learning experiences that will help foster and develop pre-literacy skills.

A recent publication by the National Association for the Education of Young Children (NAEYC) in Washington, DC, provides an important guide for ECEs in the United States of America seeking to create learning opportunities for young children. The guide focuses on five critical domains of focus when developing a child's early literacy skills (see Figure 1 Pre-literacy Skills). Exactly how ECEs can provide supporting learning experiences for young children is through eight often interrelated practices.

Figure 6 The eight practices for supporting children's early literacy development



Source: NAEYC (Wright et al., 2022).

APPROACHES FOR LITERACY INSTRUCTION

Understanding how children learn to read—and how adults can support literacy development, especially during the early years—has been extensively researched (Shanahan, 2020; Shuey & Kankaraš, 2018; Snow & Juel, 2005; National Reading Panel [NRP], 2000). However, academics, researchers, and literacy educators continue to debate their preferred approaches for teaching children to read. Reaching back almost 200 years, these debates have become known as the "reading wars" (Petscher et al., 2020; Shanahan, 2020; Soler, 2016).

> "Knowledge about the cognitive processes that are required in word reading development does not translate directly to knowledge about how to teach those processes."
>
> *Kim & Snow, 2021, p. 5*

Often contentious, these academic and public disagreements over which approach is best have frustrated scholars who perceive these discourses as distracting, confusing, and unhelpful (Petscher et al., 2020, p. S267). Below, we describe two popular, yet competing approaches toward reading: **Balanced Literacy** and **Structured Literacy**.

Balanced literacy

Balanced literacy is a "philosophical orientation that assumes that reading and writing achievement are developed through instruction and support in multiple environments using various approaches that differ by level of teacher support and child control" (Fountas & Pinnell, 1996).

By its very nature to be open to a variety of approaches that meet students' needs and foster a love of books and reading, balanced literacy is difficult to define in practice. Frequently used approaches of this practice include teacher-directed independent learning, learning through discovery, and meaning acquired through context and experience. Early promoters of balanced literacy encouraged using workshops to teach students to read, often with minimal direct instruction, so that students can learn through socializing as they would in the real world (Patzelt, 1995).

One of the approaches aligned with balanced literacy is the ***whole language*** approach. This views language acquisition as something that should be taught as a whole rather than in distinct parts—reading, writing, speaking, and listening should be learned together (Patzelt, 1995). The underlying idea is that reading develops naturally in children—as does oral language—if they are immersed in an environment that promotes language and literacy. Stated differently: children learn language by using language, and meaning is more important than grammar (Patzelt, 1995).

The three-cueing method is one of the teaching methods used within the context of balanced literacy. Proposed in 1967 by Kenneth Goodman in his paper, Reading: A Psycholinguistic Guessing Game, the author posits that reading "isn't recognizing words, it's making sense of print" (Petscher et al., 2021; Goodman, 1967, p. 7).

The strategy encourages emergent readers to derive meaning from print using syntactical cues (e.g., use knowledge of grammatical rules to reduce the range of possibilities of what the word could be), semantic cues (e.g., predict which word would make sense considering the meaning and the context of what's already been encountered), and graphophonic cues (e.g., what word could it be based on the letters) (Hempenstall, 2003). With this approach, learners are encouraged to reflect on the context in which a word is used or the pictures on the page: Does the word make sense? Does it sound right? Does it look right? The cues are in "decreasing order of importance," with phonics as the last step and even labelled as "least helpful—even potentially disruptive when relied upon by readers" (Hempenstall, 2003). Stated by its principal author, "what you think you see is more important than what your eyes pick up" (Goodman, 1967, p. 37).

Balanced literacy and its approaches have been challenged and criticized due to their lack of systematic instruction of the fundamentals of reading. Yet, proponents often reject or minimize the scientific evidence of how the brain learns to read, or that skilled reading requires the "consolidation of orthographic and phonological word forms" (Petscher et al., 2021, p. S268). In an interview given in 2019, Goodman defended the observational research that informed the three-cueing method as "a different kind of evidence" from what scientists collect through experimental control trials in a lab (Petscher et al., 2021, p. S269)

> "If a struggling reader can't pronounce most of the words on a page, there is no useful context to interpret. […] What advice should a teacher give to a student when word identification problems arise prior to any context being established?"
>
> *Hempenstall, 2003, p. 18.*

In addition, neuroscientific studies have revealed that the human brain did not evolve to read but rather must be trained to decode the sounds of written text (Petscher et al., 2021). These studies endorse the idea that all children would need to develop reading skills through systematic instruction, rather than exclusively through discovery.

Finally, the cueing method perpetuates an inaccurate assertion that contextual cues are beneficial in identifying words. Conversely, cueing often leads to miscues (essentially reading errors and word substitution), which may or may not affect the *meaning* of the text and can even be considered "positive signs of a reader prepared to take risks," but does not encourage readers to focus on the letters of the words to improve their decoding skills (Hempenstall, 2003, p. 21).

Select Example

First Nations School Board: Structured Literacy (Yukon)

The First Nation School Board (FNSB) in the Yukon has implemented a new literacy strategy that aligns their literacy instruction practices with the five pillars of Structured Literacy.

In 2023/24, FNSB implemented the literacy plan across all 11 schools, making it a requirement for all primary educators to teach structured literacy.

The literacy plan includes **standardized literacy assessments** (Core Phonics Survey) administered twice a year to all students in grades 1 through 3. Literacy coaches help analyze these assessments, which provide caregivers, families, and school administrators with a detailed understanding of their students' learning needs.

According to the FNSB (2024), its literacy plan increased reading scores after just one year. Students' standardized test results increased an average of between 10 and 14 standard scores across four schools. In another three FNSB schools, the increase was on average between 4 and 10 scores.

The results are consistent with systematic and direct instruction being important components in the teaching of literacy skills to children.

Structured Literacy

Structured Literacy (SL) is an umbrella term coined by the International Dyslexia Association (IDA) that refers to "evidence-based instructional approaches that incorporate all aspects of spoken language in the teaching of reading, spelling, and writing" (Fallon & Katz, 2020, p. 336). As a method, SL aligns with deepening knowledge of how the brain learns to read and provides teaching instruction to support the development of foundational literacy skills, such as phonemic awareness, letter-sound correspondences, syllables, morphology, syntax, and semantics (Ray, 2020).

According to the IDA, popular classroom approaches for teaching oral and written skills are not always explicit nor systematic (International Dyslexia Association, 2020). The IDA is particularly interested in understanding which pedagogical approaches can best support children with learning disabilities and whether they can also be effective for all children. They point to existing evidence demonstrating that "the majority of students learn to read better with structured

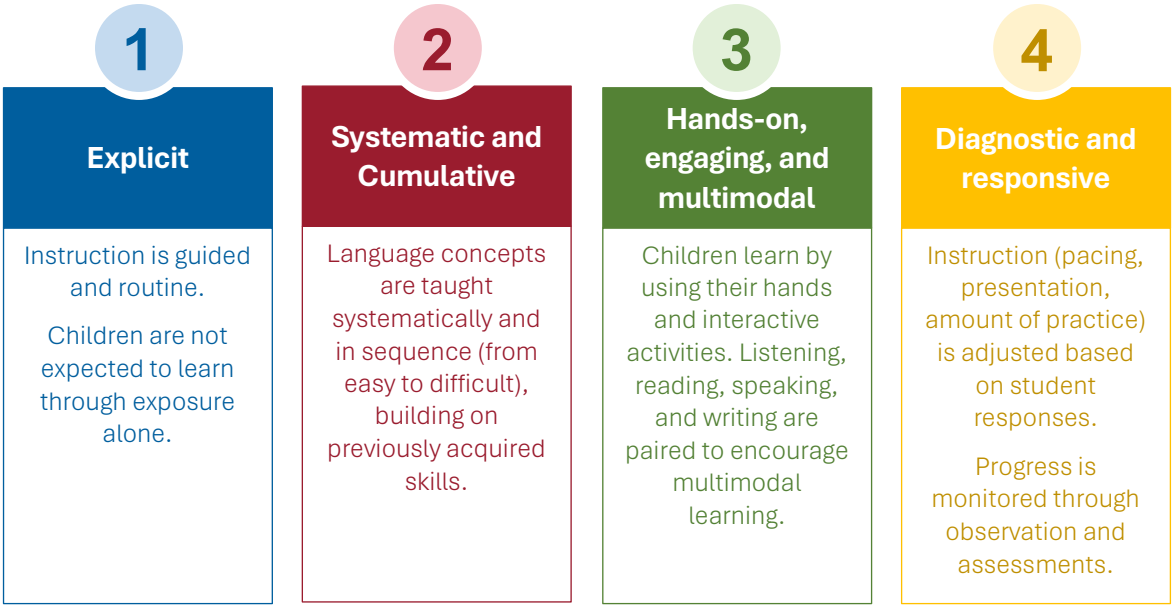
teaching of basic language skills, and that the components and methods of Structured Literacy are critical for students with reading disabilities including dyslexia" (International Dyslexia Association, 2020, p. 1).

Support for structured literacy is growing in Canada as more governments utilize this evidence to guide their recommendations for teaching approaches. The First Nations School Board in Yukon, as well as the governments of Ontario and New Brunswick are implementing curricula aligned with SoR in their schools, while the Governments of Nova Scotia and Alberta have started to promote structured literacy approaches in their schools.

Recent experimental studies suggest that structured literacy instruction has significant effects on foundational literacy skills among children aged 5 to 7 years (Gath et al., 2025). The Better Start Literacy Approach (BSLA) is an evidence-based classroom literacy approach implemented in New Zealand that provides professional development for teachers to improve children's foundational reading, writing, and oral language skills (Gath et al., 2025). Researchers assessed the literacy skills of the 4,796 children who participated in the BSLA program at baseline (when they started school), and then again at 10 and 30 weeks after the program. Results indicate that students who were received BSLA teaching have a "significantly greater probability of success in reading and spelling, compared to standard teaching" (Gath et al., 2025).

Consistent with BSLA, SL is primarily concerned with the way in which the foundational literacy skills are *taught*, and advocates for teaching approaches that follow four key principles, described in Figure 7 below.

Figure 7 Teaching Principles of Structured Literacy



Source: International Dyslexia Association, 2020.

CURRICULA DEVELOPMENT

SRDC undertook a thorough review of existing literature to document what is known about curricula development for children in their early years. A key source for our consideration was the recent National Academies of Sciences, Engineering and Medicine Consensus Study Report, *A New Vision for High-Quality Preschool Curriculum* (The National Academies, 2024). Key excerpts from this report are reproduced in the report appendices (C, D, E & F).

The right curriculum at the right age

Curricula need to vary according to the capabilities and the age of the child. Because ECEC concerns a range of developmental stages, this raises important questions about how best to customize curricula that will support pre-literacy across the early years.

For children under the age of 3, the adoption of play-based learning is relatively uncontentious (ESDC, 2019). Studies have shown that in the earliest years, children learn most rapidly through play and can even lead children to become enthusiastic learners later in life (Størksen et al., 2023; Taylor & Boyer, 2020). Play-based learning approaches allow children to understand new experiences by building the connections between factual knowledge and their real-world experiences (International Literacy Association, 2018). Play has been shown to support healthy child development (Vygotsky, 1978) and, according to more recent research from neuroscientists, encourages brain development during the early years (Liu et al., 2017).

> "Existing evidence […] can provide insights into components of effective curricula and the supports needed for implementation, but rarely focuses explicitly on the needs of children from marginalized populations. Currently there is no clear consensus on what constitutes curriculum quality and for whom."
>
> *The National Academies, 2024, p. 19.*

However, for children aged 4 and 5 years, experts differ on whether to encourage play-based learning or adopt practices that prepare children for schools. The latter case, referred to as the school-readiness approach, advocates for more directed instruction from educators with structured activities that teach children literacy skills to better prepare them for kindergarten. Critics of the school-readiness approach are concerned that a focus on literacy skills may neglect other areas of development including Social Emotional Learning (SEL) (Strickland & Riley-Ayres, 2006, p. 5). The debate may be short-sighted, as a combination of approaches that

best meet the needs of the child—including both play-based and structured practices—should be encouraged.

Key considerations for developing high-quality curricula

Taking into consideration the developmental stages of children is one important aspect of curriculum development. It is also useful to establish the guiding principles and to define the key considerations that should inform curricula development for children in their early years.

> "Curriculum in and of itself will not solve the deep, intractable challenges faced in early education from inadequate funding, inadequate wages, uneven workforce preparation and supports, and growing issues with staff recruitment and retention, to larger social and economic inequities."
>
> *The National Academies, 2024, p. 20.*

To complete this work, SRDC undertook a systematic review of studies documenting the outcomes and implementation of new curricula and teaching practices that support children's pre-literacy development. Our methodology (see Appendix A) replicated a similar exercise in the United States, with a Canadian focus. A summary of our literature review is included in Appendix G.

The results of our review yielded insufficient credible and reliable evidence in Canada. Of the research publications reviewed, many applied low scientific standards, with few using randomized control trials. The overall number of relevant studies were too small to provide conclusions that would be applicable across Canada and its diverse populations. The result is an incomplete portrait of what works to support the development of early literacy among Canadian children.

SRDC instead relied heavily on the recent National Academies New Vision for High-Quality Preschool Curriculum report, and its articulation of the guiding principles and key considerations for the development of curricula. While the report represents a decidedly U.S.-based perspective, there are important lessons and recommendations that could be translated to Canada, albeit with some adjustments. Jurisdictional and demographic differences between the two countries could affect the direct applicability, relevance, and transferability of approaches and curricula. Nevertheless, the roadmap for the design and development of early years curricula provided by the National Academies' report provides an important and up-to-date starting point.

Below, we present the key findings, separated by their respective sections as presented in the report.

Table 1 Summary of findings from The National Academies Report on high-quality curricula

Evidence on the Effectiveness Early Years Curricula	
There is a need to increase the quality of evidence	The evidence on the effectiveness of programs in diverse specific contexts, the outcomes observed, student and educator characteristics, and broader conditions is lacking.
Inequities in who has access to high quality curricula persist	Even within programs, children from marginalized communities often experience markedly lower-quality ECEC compared to their white, higher income, and native English-speaking peers, perpetuating inequities.

The Science of Early Learning and Brain Development	
Effects of trauma and care	Early caregiving environments, exposure to trauma and stress, and access to resources all affect learning as well as longer-term development.
Active learning interventions positively impact language	Active learning interventions implemented by early childhood educators and targeted to children with learning disabilities or from multi-linguistic environments have positive impacts on language skills.
Across domain benefits	There is evidence suggesting transfer of knowledge gains across domains (for instance, improvements in literacy can be attributed to mathematical interventions).
Approaches that enhance children's assets	Approaches to learning should be strength-based and incorporate cultural and diverse experiences of children.

Developing High-Quality, Equitable Early Years Curricula	
Team composition and expertise	Curriculum development is complex and is best done by a team with diverse expertise.
Long-term sustainability	Benefits of early years curriculum can often dissipate if high quality curriculum is not maintained through later grades
Key features of high-quality curricula	Any curriculum should include a focus on instructional content; detailed prompts/suggestions for lessons to be adapted by educators; time for planning; use of real-time data; and early childhood training for administrators.
Equity and agency need special consideration	Curricula should ensure equity and agency in children, while providing support both to children and educators.
Benefits of technology	Unlike entertainment media, education technology has potential for positive effects on early childhood development.

Optimizing the Learning Environment for Effective and Equitable Curriculum Delivery	
Fostering educator-child relationships	Need to consider the deployment of warmth, responsiveness of the child, and an awareness of how underlying biases can affect the quality of relationships.
Managing peer-related stress among children	Educators are important sources of proactive social scaffolding that help children navigate conflict. Approaches to classroom management should promote safety and security. This can be achieved through consistent routines, and predictable expectations of behaviour.
Considering the well-being of ECEC professionals is crucial for high quality programming	The well-being of ECEC professionals is a precondition for high-quality early education. Poor compensation and challenging working conditions (e.g., long work hours, physically and mentally taxing work), depression, and high levels of stress impact the ability of ECEC professionals to provide care and instruction.
Planning should emphasize assets and recognize biases	ECEC planning should employ asset-based approaches, drawing on children's culture, language, ability and experience. Educators also need to recognize and address their personal biases. The Assessing Classroom Sociocultural Equity Scale ACSES, may be helpful (Curenton et al., 2020).

Specialized and Targeted Curricula and Practices to Support Children with Disabilities	
Educators need to be aware of systemic barriers	Educators and policy-makers must be aware of systemic barriers that children with disabilities face, including being less likely to be enrolled in early education settings; being more likely to be victimized; an increased need for socio-emotional support; factors affecting disadvantage that may intersect with disability (e.g., racial and linguistic diversity).
Children with disabilities need individualized supports	Research supports the integration and inclusion of children living with disabilities into ECEC settings. However, educators need to recognize the need for individualized supports, beyond what many children may require.
Educators need access to specialized training	Teaching children with disabilities generally, and specifically, children with autism spectrum disorder, requires specialized training. Educators should be given access to these trainings to ensure they can properly support children in their care.

High Quality Early Childhood Curriculum for Multilingual Learners	
Practices need to evolve with evidence	ECEC practices have not adapted to the expansion of knowledge and evidence regarding multilingual learners (MLs). In particular, the appraisal of multilingualism needs to shift away from a deficit-based toward an asset-based approach.
Changes to assess the needs of ML children	Changes are needed to better identify and quantify MLs. ECEC centres need to utilize validated measures; they need to access multilinguistic curriculum; and they should weigh more highly the value of bilingualism (as an asset, rather than as a deficit).
Dual-language models can lead to language gains	Exposure to English in an early learning setting can lead ML children to develop a preference for English over the language spoken in their home. Language instruction models that encourage dual languages in the ECEC program (with home support), shows promise.
State- and Program-Level Curriculum Decision-Making and Selection	
Program fidelity should be measured	Higher fidelity to a curriculum is associated with greater gains. Yet, most systems do not measure fidelity, focusing instead on outcomes.
Coordination and alignment are needed between standards and curricula	Different levels of government set curriculum and standards in the United States, which contributes to a lack of alignment between curriculum and standards. Coordination is needed to ensure that delivery and standards align.
Educators need to know how to use child assessment data	There is a lack of professional development training educators on how to collect and use child assessment data. Although experts recommend their integration into curricula, more needs to be done to familiarize educators with their use.
Examining Variation in Curriculum Effects	
Methodological considerations for testing and comparing curricula	Factors such as context, settings, and population almost certainly impact the presence and magnitude of the effect size. Programmatic considerations and study design characteristics (randomized control vs. observational studies, statistical power) will also influence the effectiveness of the comparison.
Limitations of existing experimental and comparative research designs	Understanding the interactions between contextual factors remains a challenge, often due to study design. Within study comparisons are often limited due to sample size, while cross-study comparisons (e.g., through meta-analysis) can include biases due to selection effects that make it difficult to pinpoint causal relationships.
Considerations for future research	New evidence should strive for measures that reflect all children's skill and knowledge (embracing sub-effects for marginalized groups); use curriculum implementation in real-world settings; and assess moderating effects of programmatic factors.

Source: The National Academies, 2024.

CANADA'S EARLY CHILDHOOD POLICY CONTEXT

To understand how change in early learning policy can be affected, we first need to understand the current policy and regulatory context, the governing bodies involved in setting policy, and the learning frameworks that are used to define programming across the country.

The present section provides an overview of the complex and interconnected nature of Canada's early learning policy context in an effort to illustrate the complexity involved in arriving at a coordinated set of policy changes, and the opportunities that are already available for effecting change.

THE FEDERAL GOVERNMENT: FUNDING AND COORDINATION

The federal government plays no formal role in the delivery of early learning. Nevertheless, it plays a critical role in ensuring the coordination of policies through its bilateral agreements with provincial and territorial (PT) and First Nations, Métis and Inuit (FNMI) governments, and has sought through expansion of funding to increase the reach, accessibility, affordability, and quality of ECEC and other early learning supports across Canada.

While PT and FNMI governments have the authority to change the nature of ECEC programming in their respective jurisdictions, the resources to fund such changes—especially on the scale proposed in this report—are rarely available from sources other than the federal government.

Multilateral ECEC agreements

The April 2021 federal budget brought significant changes to ECEC care provision across Canada and prompted bilateral agreements with each province and territory, detailed action plans, targets, and timelines for moving toward the goal of universal child care (Friendly et al., 2024). These budgetary provisions led to the implementation of federal child care legislation, Bill C-35, *An Act Respecting Early Learning and Child Care*, which aimed to expand access to affordable, quality child care across Canada (Friendly et al., 2024). One key aim of the legislation was reducing child care fees for regulated daycares, with the goal to achieve $10 per day child care fees by 2026 for 0- to 5-year-old children (Friendly et al., 2024). The legislation associated with Bill C-35 aligned with earlier multilateral agreements and action plans outlined in the 2017 Canada-Wide Early Learning and Child Care Initiative (CWELCC) plan and the 2018 Indigenous Early Learning and Child Care (ELCC) Framework, which are discussed in more detail below.

Post-2021 budget agreements and individual action plans were determined with each PT government between 2021 and 2022. These outlined each jurisdiction's strategies to reduce child

care fees, expand the number of available regulated daycare spots, and increase and retain the child care workforce (Childcare Resource and Research Unit, 2023). Only the province of Quebec does not have a multilateral agreement with the federal government, but rather an "asymmetrical" agreement that is based on its own action plan created in 2021 and titled "*Grand chantier pour les familles*" (Childcare Resource and Research Unit, 2023).

The multilateral CWELCC framework

The 2017 multilateral CWELCC framework articulated a shared long-term vision for ECEC between the Federal, Provincial and Territorial Governments. The implementation of Bill C-35 required that PT governments review and align their policies and ELFs to better align with the principles outlined in the CWELCC Framework (Atkinson Centre, 2020).

This framework identified a set of three principles and long-term goals for ECEC in Canada ESDC, 2017, p. 2):

- **High quality**—ECEC should provide rich learning experiences and environments that recognize the potential of children as capable learners; the relationships in ECEC should be responsive and respectful and that support learning. To achieve quality, the framework highlighted the importance of qualified ECEC staff.
- **Accessible, affordable and flexible**—ECEC should meet the diverse needs of children while at the same time supporting caregivers to participate in employment by providing affordable ECEC.
- **Inclusive**—ECEC should value diversity and meet the needs of families including those who are vulnerable and those children with varying abilities.

PROVINCES AND TERRITORIES (PTS): REGULATION, ORGANIZATION, AND DELIVERY

The responsibility for the regulation, organization, and provision of ECEC across Canada lies with its 10 provinces and three territories. Increasing the pre-literacy skills of Canadian children cannot, therefore, happen without the collaboration of PT governments and the agencies tasked with overseeing, managing, and delivering their ECEC programs.

Organizational structures

In some PTs, the responsibility for early learning lies solely with their Department of Education, while in others it is shared responsibility across various departments, including health, family services, and early education (Table 2).

In 2021 and 2022, two provinces and one territory (British Columbia, Manitoba, and Yukon Territory) shifted early learning away from their ministries concerned with families and child development to ministries of education (Friendly et al., 2024).

Table 2 Provincial and territorial governmental responsibility for ECEC policy

Province or Territory	Department(s) responsible for ECEC
Alberta	Ministry of Jobs, Economy and Trades
British Columbia	Ministry of Education and Child Care
Manitoba	Manitoba Education and Early Childhood Learning
New Brunswick	Department of Education and Early Childhood Development
Newfoundland and Labrador	Department of Education
Northwest Territories	Department of Education, Culture and Employment
Nova Scotia	Department of Education and Early Childhood Development
Nunavut	Department of Education
Ontario	Ministry of Education
Prince Edward Island	Department of Education and Lifelong Learning
Quebec	Ministère de l'Éducation et de l'Enseignement Supérieur / Ministère de la Famille
Saskatchewan	Ministry of Education
Yukon	Department of Education

Source: Friendly et al., 2024.

ECEC regulations

While the federal government has set broad targets for the expansion of accessible and affordable child care, PTs retain full autonomy to design and deliver their ECEC, resulting in considerable variation Canada-wide in ECEC provision (ESDC, 2017). The regulations that support these programs, though similar, can vary across jurisdictions (ESDC, 2019). Below are the key areas of focus when considering PT regulations of ECEC.

Delivery settings and providers

ECEC services are provided through a mix of public, private-for-profit and private-not-for-profit models. Delivery settings include centre-based or home-based and can have operations that are regulated or unregulated. The size, operating hours, and staff compensation of professionals working in ECEC centres are determined by individual providers.

Taken collectively, these factors make up the ECEC provider's working conditions which have an important effect on its structural quality. The working conditions of ECEC centres are not tracked systematically across Canada. However, SRDC has been tracking several aspects of ECEC professionals' working conditions in British Columbia on an annual basis between 2019 and 2023, and did not note many marked improvements (SRDC, 2023).

Group composition

The ratio of staff to children in ECEC is mandated and regulated by PT governments and agencies. For example, if an ECEC program does not have enough staff to maintain the mandated ratio, they may have to bring in or reallocate staff to remain in compliance and if necessary, they may have to apply for a variance or exemption in their licensing agreement to allow them to operate while not in compliance (SRDC, 2023).

Staff-to-child ratios have long been considered a key factor in determining the quality of programming in ECEC. While there is evidence that a higher staff-to-child ratio contributes to early child development outcomes across a range of measures (ESDC, 2019), others have argued that the evidence is mixed or inconclusive, and that more research is needed to better understand the interaction between ratios and outcomes (Perlman et al., 2017).

Physical space

Licensing regulations specify the space and physical environment of ECEC programs. They outline how rooms in an ECEC centre must be organized and the resources and supports to be

provided. Provision is usually inspected via a checklist by licensing officers to ensure they are safe and meeting PT standards.

While studies suggest that the space and the physical environment—both inside and outside—of ECEC programs is important and should be age-appropriate, ESDC (2019) found the evidence between the space and child achievement and other outcomes to be inconclusive.

Staff qualifications

The Canada Free Trade Agreement requires jurisdictions *to recognize and to qualify for a professional certificate* anyone who holds a current, valid, certificate from another Canadian province or territory (ESDC, 2019). Still, there are variations across PTs in both the qualifications required to work in the ECEC sector and the requirements to complete a certification.

Currently, early childhood educator (ECE) certification is required in nine jurisdictions in Canada, with the level of certification depending on the type of ECE postsecondary credential earned and PT regulatory requirements. Ontario is the only jurisdiction with a legislated non-governmental body—the College of Early Childhood Educators—that reviews and approves ECE applications for registration (ESDC, 2019).

ECE professionals are also required to participate in professional development to retain their licensing designation. There are jurisdictional variations in ECE professional development requirements, which tend to focus on the number of hours required rather than on the relevance of the content.

Early learning frameworks (ELFs)

Early Learning Frameworks (ELFs) are jurisdiction-specific statements of intent that provide a vision for that jurisdiction's ECEC system. They usually include a high-level overview of the early childhood pedagogy adopted by the jurisdiction, articulate the principles underpinning the approach, identify core practices to be included and children's learning outcomes expected (Employment and Social Development Canada [ESDC], 2017 & 2018; Australian Government Department of Education [AGDE], 2022).

ELFs are generally directed to and applied by ECEC professionals within the context of structured care settings, although most ELFs include reference to families and the broader community. Nevertheless, ECEC is the main setting in which ELFs are applied.

SRDC consulted child development researchers and practitioners (see Appendix A: Methodology) and conducted a review of Canadian and selected international ELFs for this report (see

Select Example

Power of Literacy (New Brunswick)

The *Power of Literacy: Moving Toward New Brunswick's Comprehensive Literacy Strategy* outlines a strategic plan to foster a lifetime of literacy learning, from early childhood to adult learning.

In March 2015, the government of New Brunswick established the provincial Literacy Secretariat to engage stakeholders, individuals, employers, and policy-makers for the development of the strategy.

The literacy strategy was implemented in 2017, and sought to:

- Provide a single point of access for caregivers to maximize their child's or children's development
- Provide individual-based programs and services as well as interventions for children
- Discover learning opportunities beyond the traditional school day
- Work with employers to address literacy needs for the labour market
- Support for adult learners to support their personal and employment goals

The government committed $2 million toward hiring more than 35 literacy leads to support educators and an additional $7 million per year for other child and adult literacy services (Previl & Cromwell, 2017).

Appendix B: Early Learning Frameworks Typology). The following provides an overview of our understanding of the current state of ELFs in Canada.

Jurisdictional comparisons of ELFs

In general, ELFs reviewed by SRDC were similar in intention and purpose, though there were noticeable differences in their level of specificity. Canada's national Indigenous ELF, for instance, is quite broad, focusing on policies that support the development of FNMI early learning and child care systems in Canada. Some provincial and territorial ELFs are more specific, identifying learning outcomes, pedagogical principles, values, and considerations for practice.

Many ELFs in Canada were inspired by Australia's *Belonging, Being and Becoming: The Early Years Learning Framework*. These ELFs believe that children learn through their interactions with their environment and with those around them. Literacy is viewed as a component of communication, while effective communication is one of five learning outcomes that "are designed to capture the integrated and complex learning and development of all children across the birth to 5 age range" (p. 29).

This interpretation has been embraced by the Council of Ministers of Education, Canada (CMEC). In 2020, CMEC released a statement interpreting school readiness as "children being ready for the complex challenges of a future full of new and unpredictable social, economic, and ecological situations and NOT just ready for school" (CMEC, 2020; emphasis in original). The statement concluded with a section entitled *Play is the Way*, which built on the conclusions of earlier publications from CMEC

endorsing play-based learning as integral to developing attributes such as creativity, problem-solving, communication, and positive attitudes toward learning (CMEC, 2012).

Pedagogical approaches

Pedagogy refers to an educators' approach to teaching and learning, including their professional practice and curriculum decision-making (Australian Government Department of Education [AGDE], 2022). In many jurisdictions, educators' pedagogy is guided by ELFs.

A key pedagogical strategy encouraged across ELFs is the scaffolding of learning activities to promote and support individual learning. Scaffolding requires ECEs to implement learning activities that build on children's existing knowledge and skills to support their continued learning (Australian Government Department of Education [AGDE], 2022).

Most jurisdictions provide holistic pedagogical approaches and recognize the diversity of experiences that children attending ECEC bring. As such, ELFs encourage ECEC staff to use integrated approaches to learning and adapt their activities to reflect the capabilities, diversity and culture of each child. Rather than implementing age-specific activities or developmental expectations, ECEs are encouraged to be intentional with their activities, recognize the diverse learning needs of the children in their care, and to support every child's individual development (ESDC, 2019).

Ultimately, as early childhood educators plan, implement and reflect on their practice, their key task is to establish respectful, responsive, and caring relationships with the children in their care.

Pre-literacy skills

ELFs define early literacy mainly as a function of oral communication: the ability of young children to express themselves and to have meaningful interactions with others in their environment. Child development researchers consulted for this research project noted that this was a departure from previous definitions, which described the primary outcomes of early literacy being school ready.

Across ELFs, literacy activities and skills are not distinct from other learning activities. Instead, they are incorporated within a holistic pedagogical approach that aims to encourage children's overall development. The interdependence of children's cognitive, self-regulation, and SEL skills provides the rationale for a holistic approach (Parker et al. 2022, p. 2). ECEC professionals are expected to use their training to deliver programming that provides integrated learning opportunities from within a play-based approach.

Measuring learning outcomes

ELFs tend not to specify standardized measurements of skills or developmental milestones. Instead, they call on ECEC professionals to document children's progress through pedagogical documentation as part of reflective practice. In New Brunswick, this is termed *learning stories*, while in British Columbia, it is referred to as *pedagogical narration*. Educators can then use the documentation to support conversations with caregivers and families about the experiences and development of their child.

ECEC program quality

Evidence is unambiguous that high quality early education benefits all children and is capable of changing life outcomes (McCuaig, 2012). All children stand to benefit from a learning environment that offers high-quality programming, systematic instruction, positive interpersonal relationships with trusted adults, and an integrative learning environment that brings together educators, specialists, and children and their family (McCuaig, 2012).

This recognition of the importance of high-quality ECEC programs is persuasive and commonly held. The challenge remains to understand precisely what quality programs comprise and how best to enable these factors to be included in ECEC programming and accessible to all children who need them.

ESDC, in its report titled *Defining and Measuring the quality of Early Learning and Child Care* (2019), noted that there was no universal definition of program quality in ECEC. Quality was multifaceted and should be assessed along at least two different dimensions: process and structural (Shuey & Kankaraš, 2018; Burchinal, 2018).

Structural quality refers to the way in which a program is organized and implemented (Edwards, 2021). Its implementation is highly influenced by jurisdictional policies and regulations, staff to child ratios, group sizes, organizational structures, and staff qualifications. Process quality refers to the interactions and experiences of children in ECEC settings (Edwards, 2021). This includes the physical and emotional care received, the quality of the program and activities provided and supported. One important dimension of process quality is how well ECEC programming reflect the cultural experiences of children.

ECE EDUCATION AND TRAINING SYSTEM

A well trained and experienced workforce of early childhood educators is crucial for ensuring the delivery of high-quality early education. Many PTs have recognized that their existing supply of ECEs is insufficient, and an expansion of the existing education and training system for prospective ECEs is needed. Already, efforts have been implemented to increase the number of ECEs receiving their initial certifications and for qualified professionals to receive needed professional development. The following documents how PTs are modifying their training plans to ensure that all children can access the early years education they need to be learning foundational literacy skills by the age of five.

Expansion of the postsecondary ECE training system

To accommodate the increased demand for child care and expansion in the number of child care spaces, Canadian jurisdictions have committed to expanding both the capacity for postsecondary institutions to train new ECEs and have explored new delivery models.

> "The negative consequences of low—quality programs are multifaceted, affecting not only children but also their family, and these consequences can persist in the long term. Therefore, as discussions on ECEC expansion continue, it is essential to emphasize the quality of these programs rather than simply increasing accessibility or lowing costs."
>
> *Dhuey, 2024.*

Eight Canadian jurisdictions have confirmed their intention to increase the number of ECE postsecondary programs. Some PTs are also expanding their capacity to train students in introductory-level programs. Alberta increased its free Child Care Orientation course from 4,000 to 10,000 participants per year. Yukon offers the *Understanding the Early Years* introductory course free of charge. The course will run six times per year and participants will obtain a Level 1 ECE certification.

Accelerated ECE programs and apprenticeship programs have been introduced across many provinces to expand access to training for those already working in child care. We are also seeing the introduction of new delivery models, such as online and hybrid programs, to expand access to training (Child Care Now, 2024). Some provinces have also introduced introductory programs that allow high school students to start their ECE training online or to complete dual credit programs. These initiatives are part of concerted effort among PTs to increase the number of graduates with ECE certifications.

Improving support for practicums

A missing piece of the process may be the support for required for ECE practicums. Practicums are logistically difficult to manage, requiring ECEC providers to take on novice educators, and are often costly for students to pursue. These factors can constrain the successful transition of postsecondary graduates into the ECEC labour force (SRDC, 2023) and policy innovations to support more practicums may be needed if the recent investments in postsecondary education (PSE) spaces result in increases in the size of the ECEC workforce.

ECE postsecondary curriculum content

In concert with the expansion of the ECE education system, considerations should be paid to the content of the curriculum informing their education and training. As this report suggests, changes are needed in the ways ECEs support the development of pre-literacy skills. Any changes should therefore inform what ECEs are taught.

Postsecondary institutions generally retain autonomy over their education and training curricula. However, they are also required to align their curricula to provincial authorities' competencies and standards and to ensure that the certificates issued to ECE graduates meet provincial regulations for staff qualifications.

Considering this structure, proposed changes to the ECE training curricula that encourage the development of pre-literacy skills could be made in either a bottom-up or top-down approach. In a bottom-up approach, postsecondary institutions and their ECE program developers could be approached individually, but systemic changes would be slow to achieve. A more efficient approach would be the top-down approach, by focusing on changing the professional standards and competencies of ECEs set by governments or their appointed agencies.

Still, this process for updating competencies is neither rapid nor frequent. For instance, British Columbia's ECE Standards of Practice and Occupational Competencies were developed in the late 1990s and were last updated in 2004. New competencies have been under development since 2018 but as of 2025, they have yet to be released.

Professional development

Professional development (PD) is a training mechanism that allows certified ECE professionals to receive additional training that supports their practice, informs them of new approaches, and ultimately ensures they maintain their ability to provide high-quality care and early learning to all children in their care. In some provinces (British Columbia, Ontario, Nova Scotia, Prince

Edward Island, and Newfoundland and Labrador) participating in professional development is a requirement to maintain an ECE certification.

Ongoing professional development and training are recognized as important for ensuring quality in ECEC. However, barriers to participation (e.g., time, cost, employer approval) often deter ECEC professionals from completing their PD requirements. Indeed, the five-year evaluation of British Columbia's recruitment and retention strategy for professionals in early care and learning found that ECEs often face barriers that impede their ability to access high quality and consistent training (SRDC, 2023).

The relevance and quality of PD courses can also diminish their impact on program quality. The expansion of online courses has encouraged greater access to training while minimizing costs, though concerns have been expressed about the quality of online training given their rapid expansion since the pandemic. More typical PD programs are offered as standalone workshops or courses that may have little relationship to ECEs' actual training needs.

Research documenting the quality of PD for ECEs has noted that they are "dominated by short, fragmented one shot workshops on a variety of topics delivered by experts who offer strategies and techniques outside the context of the daily teaching and learning with children" (Curtis et al., 2013, p. 13). Referred to as "drive-through professional learning," Curtis and her colleagues call for an approach to professional development and training that is grounded in practice.

There are some positive trends, however, in that ECE associations in most PTs have taken on a leadership role in developing PD opportunities. Working in close collaboration with these associations could help ensure that PD opportunities provide training on approaches and behaviours that support pre-literacy development in young children.

INDIGENOUS ECEC POLICIES AND FRAMEWORKS

ECEC for Indigenous children in Canada is within the jurisdiction of many First Nations, Métis, and Inuit (FNMI) governments and organizations under four main agreements.

In 2018, the Assembly of First Nations, Inuit Tapiriit Kanatami, the Métis National Council and the Government of Canada released the Indigenous Early Learning and Child Care Framework to ensure all Indigenous children had access to high-quality and culturally appropriate ECEC. Currently, ECEC is delivered through four initiatives that are led by the federal government through different ministries and departments (Atkinson Centre, 2020):

- First Nations Inuit Child Care Initiative (FNICCI) (ESDC)

- Aboriginal Head Start Urban and Northern Communities (AHSUNC) (Public Health Agency of Canada)
- Aboriginal Head Start on Reserve (AHSOR) (Indigenous Services Canada)
- Federally funded daycare centres in some PTs (Crown Indigenous Relations and Northern Affairs Canada)

The approach to this ECEC programming and legislation at the federal level in Canada has been rooted in the Truth and Reconciliation Commission (TRC) calls to action and the UN Declaration on the Rights of Indigenous Peoples (UNDRIP) Act, which recognizes and affirms the distinct rights, cultures and circumstances of FNMI communities (Friendly et al., 2023).

The distinctions-based approach of the Indigenous ELCC Framework safeguards the right to self-determination of Indigenous communities for ECEC, ensuring an Indigenous-led approach rooted in Indigenous knowledge, languages and cultures (Friendly et al., 2023). In addition to federal funding and programs, Indigenous ECEC is also supported and funded by provincial and territorial programs (Friendly et al., 2023).

THE EARLY CHILDHOOD ECOSYSTEM

The ECEC system in Canada is diverse and involves multiple stakeholders, beyond those in government. Making the necessary changes to improve pre-literacy programs in Canada's ECEC system will require intentional engagement with individuals involved in supporting children's development. Stakeholders are important vectors through which changes in early education can be encouraged, and can also ensure that changes are reflective of their own needs and expectations.

The table below provides an overview of the key stakeholders involved in providing care to children in their early years, and in supporting children's early learning and development.

Table 3 The early childhood ecosystem

Caregivers and legal guardians	Caregivers play a very important role in the early education of the children they are responsible for, both in terms of their direct interactions with their children and through the decisions they make about their children's early child care.
Immediate and extended family	Twelve per cent of families in 2023 engaged a relative other than a parent to care for their child between the ages of zero and five years (Statistics Canada, 2023b). These family members also become early educators and will have diverse experiences, backgrounds and competencies.
Community, society, and culture	The community in which a child lives has important implications for their care and education. This includes the quality of the environment, the degree of safety, access to learning opportunities, political stability, and protections of fundamental freedoms. Community-based early literacy programs in Canada are an important complement to learning in the home and in ECEC settings, including public libraries, which provide free literacy programs for children in Canada (Mardhani-Bayne & Shamchuk, 2022).
Early childhood educators and child care centres	Early childhood educators and related staff who work in ECEC centres and other settings are central to early learning. Challenges regarding the capacity of the system, the affordability of the system, compensation and benefits to professionals, and the supply of workers, affect the ability of the system to deliver quality programming.

Professionals working with parents and families in the community	Community professionals support parents through the promotion of health, education, and supports to families, and may also directly support education. Considerations should be made to ensure their inclusion in efforts to introduce new curricula or to adjust existing practices that better support the development of pre-literacy skills. Small nudges, such as Ontario's *5-in-1 newborn bundle* that allows parents to register for public child benefits and an education saving plan at the same time they register their child's birth, can increase caregiver participation in beneficial services and could be a strong model for the promotion of early childhood education supports.
The role of school systems	Schools can support alignment and foster transitions by engaging with local ECEC providers to better understand the early learning needs, achievements, and challenges of incoming cohorts of Kindergarten students.

Select Example

Strong Start (Ontario)

Strong Start is an Ontario charity that offers three different literacy programs to children 6 months to 9 years of age.

- **Baby Connections,** a free community program that helps families develop literacy and language skills with their babies. Caregivers receive coaching and literacy resources to support brain development and lay the groundwork for language and literacy development.
- **Get Ready for School** is offered to children during the six-month period before entering Junior Kindergarten, to help build vocabulary, learn letter sounds, and practise classroom behaviours. The program is particularly beneficial for children who are ESL learners or are from a low to middle socioeconomic background.
- **Letters, Sounds and Words** is available to children in Senior Kindergarten and Grade 1 who need extra support. Trained volunteers work one-on-one with children to help children learn the names of the letters, the sounds they make, how to blend sounds together to build words, and how to decode and read words.

CREATING THE CONDITIONS FOR EARLY LEARNING

Providing children with a strong start in their early years is important for future well-being, academic success, future happiness and a productive life (Shuey & Kankaraš, 2018; Bakken et al., 2017; Strickland & Riley-Ayres, 2006). The conditions for early learning must consider ways in which the child's setting can encourage their development. This includes a household that can provide for a child's basic needs, a home that can nurture their development and can provide the safety needed to foster their social and emotional well-being, and a robust and accessible ECEC system that offers evidence-based pre-literacy programming.

HOLISTIC APPROACHES TO SUPPORT CHILD DEVELOPMENT

Children's acquisition of early literacy behaviours and skills do not take place in isolation. A child's capacity for social and emotional learning (SEL), including their ability to self-regulate their behaviours, emotions, and cognition, can also exert an influence on a range of academic outcomes (Melo et al., 2022).

Studies have shown that children who were involved in pedagogical interventions that considered and fostered SEL from K-12 experienced significantly higher academic achievement, improved skills and relationships, and overall higher school functioning compared to children in control conditions (Cipriano, 2023).

Recent evaluations of SEL interventions, such as the evaluation of *RULER,* which incorporates five aspects of SEL (recognizing, understanding, labelling, expressing and regulating emotions) found that they can increase early literacy skills among preschool children (Bailey et al., 2023). The *RULER* program provides critical understanding about child development; early literacy skills should be understood as one component of a child's overall holistic development (Shuey & Kankaraš, 2018; Meltzoff & Kuhl, 2016; Rohde, 2015).

BUILDING CULTURALLY RESPONSIVE ECEC ENVIRONMENTS

Canada's demographic diversity should be reflected in the educational programs and teaching approaches used in ECEC environments. Racialized groups, Indigenous persons, and newcomer families often face barriers when accessing child care and can also experience negative effects of internalized biases by ECEC providers (Friendly et al., 2023). As previously discussed, high quality early childhood education requires that the child's unique cultural experiences be reflected in the curricula, and that educators need to recognize their own personal biases (The National Academies, 2024).

The Canada-wide Early Learning and Child Care agreements include targets and actions related to increasing the inclusivity of ECEC in Canada, with particular objectives related to children with disabilities, Indigenous children, racialized children and official language minority families (Friendly et al., 2023).

Some jurisdictions offer professional development and training for ECEC staff on equity and inclusion and are expected to develop plans to increase access to child care for vulnerable and marginalized population groups (Friendly et al., 2023).

PROVIDING SUPPORTS FOR LINGUISTIC MINORITIES

The relationship between the home and ECEC settings is of particular importance for children from non-official language households (Norheim et al., 2022). These relationships have the potential to bridge cultural and linguistic differences between children as they learn to navigate between these different worlds.

Considering the ECEC needs of Canada's linguistic minorities is not trivial. Largely driven by an increase in immigration, 23 per cent of Canadians have a mother tongue other than English or French (Statistics Canada, 2025).

In 2021, almost a third of children in Canada had at least one foreign-born caregiver. The number of children aged 0 to 14 who were born outside of Canada or who have at least one caregiver born outside of Canada is expected to increase to between 39 and 49 per cent by 2036 (Battams, 2018).

Select Example

A Culturally Responsive Yukon Literacy Strategy (Yukon)

Yukon Education established working groups to make evidence-based and culturally responsive recommendations to improve teaching methods for literacy and numeracy for its K-12 system.

The result was the creation of two guiding documents: **A Culturally Responsive Yukon Literacy Strategy**; and **A Culturally Responsive Yukon Numeracy Strategy**. Both strategies are mandatory for all Yukon Education schools.

The plan takes a multifaceted, holistic, and student-centred approach to literacy learning, recognizing the need to match the diversity within classrooms.

The 13 recommendations aim to support and build educators' capacity as they develop their knowledge, including:

- Increasing learning opportunities for educators and implementing literacy support teachers in schools, guided by a literacy consultant;
- Ensuring culturally inclusive materials and approaches to support structured literacy;
- Using up to date, evidence-based practices; meaningful consultations with partners; and frequent reviews and quality assurance processes to measure success and provide iterations of support, where necessary.

French-language minority communities also face challenges accessing child care in French. Many child care services are primarily available in English settings or bilingual, but rarely in French only (Office of the Commissioner of Official Languages, 2016).

Additionally, the preservation of Indigenous peoples' traditional languages is vital to the transmission and maintenance of cultural identity, skills and knowledge. Yet few Indigenous children have access to care in which they can use and learn their own languages (Halseth & Greenwood, 2019). Issues of access to child care are particularly acute in First Nations communities, with only approximately 29 per cent of First Nations children aged 0–4 attending ECEC (First Nations Information Governance Centre, 2018). Indeed, the first recommendation in a 2010 early literacy strategy for Indigenous children in Canada was to improve access to regular, quality early learning programs (Ball, 2010).

SUPPORTING FAMILIES' ECONOMIC WELL-BEING

The experience of poverty has an important impact on a child's physical, emotional, cognitive development, and negatively influences the child's capacity to learn language (Parker et al., 2023; Strickland & Riley-Ayres, 2006). The critical observation is that "poor children arrive at school at a cognitive and behavioural disadvantage" (Ferguson et al., 2007, p. 701).

While the experiences of children living in poverty are heterogenous, studies find that children from lower-income households are less likely to have access to books or public libraries or to have early literacy experiences (Tichnor-Wagner et al., 2015). Research also finds strong correlations, especially for children aged 0 to 5 years, between the number of years they live in high-poverty areas and negative and prolonged effects on their development including early literacy skills (Chetty et al., 2016).

Heavy demands on caregivers in lower-income families may result in them having limited resources to support their child's early literacy development (Terrell & Watson, 2018). In addition, studies demonstrate that financial hardship can increase the level of stress experienced by caregivers, which in some situations can also impact the healthy development of their children (Shuey & Kankaraš, 2018, p. 43; National Early Literacy Panel [NELP], 2008).

For children living in poverty or exposed to trauma, "the higher-order functions, such as emotional management go off-line" (Anderson et al., 2023, p. 5). Children need to have their basic needs met—including feeling safe, having enough to eat, and having a positive emotional engagement with their caregiver—before they can learn and develop, especially their language and early literacy skills (Anderson et al., 2023). Effective early learning education must therefore be accompanied by policies that address socioeconomic inequities and the experience of poverty.

A recent report from British Columbia found that precarious work negatively impacted caregivers' ability to be fully engaged with their children's school and extracurricular activities (Ivanova & Strauss, 2023).[1] Those in precarious employment were more likely to report that work interfered with their home and family life compared to those in secure employment. Furthermore, as noted in the 2020 Early Childhood Education Report, current child care schedules and subsidies are often tied to caregiver workforce attachment. In this way, precarious employment can further penalize the most vulnerable children to the extent that their caregivers find themselves ineligible for child care subsidies due to their employment situation, resulting in denied enrolment or irregular attendance at ECEC programs (Akbari, 2020).

CREATING A SAFE AND SUPPORTIVE HOME ENVIRONMENT

Caregivers play an important role in creating a safe and supportive home environment where young children in their care can grow and develop early literacy skills (Shuey & Kankaraš, 2018; Bertram & Pascal, 2016; Strickland & Riley-Ayres, 2006; National Early Literacy Panel [NELP], 2008).

> "A parent is a child's first and most important teacher. Parents are responsible for the health and well-being of their child. They nurture the balanced development of the child's mind, body and spirit. […]
>
> By working in partnership, families and educators can learn together and gain a deeper understanding of each child and ways to promote his/her learning and development."
>
> *CMEC, 2014, p. 9.*

Home-based learning environments include formal and informal activities between caregivers and children, such as joint book reading, engaging with print materials, teaching of letter names and sounds, singing, and playing word games (Snow, 2021). These activities promote early language development and pre-literacy skills.

In Canada, where 44 per of children do not attend ECEC programs, the home is the primary place where learning occurs (Statistics Canada, 2023b). Yet, regardless of whether young children participate in ECEC programs, caregiver engagement in their child's learning should be encouraged (Kottelenberg & Lehrer, 2016). In fact, new policies are needed to support caregivers in creating learning environments at home.

[1] Precarious work was defined according to an index of 10 measures of employment security, including income variability, type of employment relationship, scheduling uncertainty, and access to benefits.

SYSTEMIC CHALLENGES TO CANADA'S ECEC SECTOR

> "Reducing academic gaps and the resulting long-term social inequities are dependent on improving the competencies of children before they start school. […]
>
> "The strongest outside-the-home influencers are early education and the quality of early school. Quality early education has been found to amplify benefits for all children and can help to mitigate the detrimental effects of adverse home environments on school readiness."
>
> *Margaret McCain in Trenholme Counsell & Roy, 2016, p. 5*

Governments are increasingly recognizing the importance of ECEC programs to achieve a variety of overlapping and complementary policy objectives. For instance, early childhood programs support the development and early learning of young children in their early years and enable primary caregivers—most often women—to participate in the labour market (Shuey & Kankaraš, 2018).

The recent federal child care legislation and multilateral agreements are important examples of government commitments toward maintaining and transforming the ECEC system. To be clear, these are historic achievements for Canada, with unprecedented levels of funding transferred to jurisdictions for implementation. These announcements have been praised by child care advocates.

However, building the early learning system Canada needs is logistically and legislatively complex, and requires balancing often competing priorities (e.g., increasing quality and expanding the system versus ensuring fees remain low to encourage participation).

What is clear is that much work needs to be done to address the affordability and accessibility crisis in the sector, to increase the number of professionals being trained to work in the sector, to retain experienced workers, and to increase the quality of care.

INSUFFICIENT ACCESS TO ECEC PROGRAMS

Data on participation in and access to early childhood education across Canada indicates that there is a clear lack of access to ECEC programming to meet demand. Across Canada, nearly half of children not yet attending kindergarten live in a "child care desert"—a community in which there are more than three children for each licensed child care space (Macdonald & Friendly,

2023). These deserts tend to affect families in rural and remote communities as the availability of ECEC is lower than in urban centres (Friendly et al., 2023).

Indeed, rates of regular attendance in ECEC among 2- to 4-year-olds ranges from 34 to 73 per cent depending on the jurisdiction (OECD, 2017). These rates are approximately half the participation rates of children in kindergarten—a program that is not mandatory but does receive public funding.

Statistics Canada (2023b) estimate that 12,466 child care centres provide full-time care to 717,000 children aged 0 to 5 years (565,000 full-time and 152,000 part-time). These data imply that just over half of children aged 0 to 5 years in Canada (56 per cent) attended a child care centre, with approximately half of these centres being either not-for-profit or operated by PT governments or their agencies (Statistics Canada, 2023b). For the 44 per cent of children aged between 0 and 5 years not participating in ECEC, caregivers and families are the primary sources of care and support for learning (Statistics Canada, 2023b).

With little more than half 0 to 5-year-old children attending, and the uneven distribution of ECEC in Canada, improving conditions *within* ECEC without improving access *to* ECEC disadvantages families that cannot afford or otherwise access care. It keeps those taking responsibility for the family care of young children (predominantly women) out of the labour market and places large proportions of children out of reach of early learning programs.

UNAFFORDABILITY OF ECEC PROGRAMS

According to the OECD, the prohibitive cost of ECEC is challenging for many families, especially those in low-income households. In effect, child care use in Canada is significantly associated with income: "low-income families were 12% less likely to use child care and 8% less likely to use licensed child care as the main child care arrangement, compared with families not in low income" (Findlay et al., 2021, p. 13).

Conversely, access to ECEC has a strong impact on the economic well-being of families (Findlay et al., 2021). When families facing socioeconomic disadvantages are more likely to postpone or discontinue work or school due to child care limitations, this can create a vicious cycle. Access to adequate and reliable child care impacts the ability of parents to stay in the workforce and find stable employment.

GENDERED EFFECTS OF ECEC ACCESSIBILITY

Female caregivers, particularly single parents and those in low-income households, are disproportionately affected by the lack of child care and early education services in Canada.

Women continue to assume a larger share of unpaid, domestic child care duties (Milne, 2016). Access to affordable child care and early education services is a prerequisite to re-enter the labour market after child birth, or to further their education and training in order to secure stable employment.

The connection between female caregivers' labour market participation and changes in access to ECEC have been made clear during two significant moments in Canada's recent history. Following the expansion of child care spaces and a reduction in fees across Quebec's ECEC system, several studies confirmed an increase in the employment rates of mothers of children aged 0 to 5 years. In 2022, two years after the policy was extended to children aged 0 to 4, researchers estimate that labour force participation of mothers increased by 8.8 percentage points (Fortin et al., 2012). Four years later, as available child care spaces increased by 35 per cent from 2002, the labour force participation of mothers increased by 12 percentage points (Fortin et al., 2012). Importantly, the effects of the increase in labour force participation rates were equally distributed by levels of education (Fortin et al., 2012).

Conversely, the labour market participation of women was significantly reduced during the COVID-19 pandemic-era closure of child care centres (Akbari et al., 2024). The closure of these centres due to public health guidelines had an adverse effect on mothers who, as primary caregivers of children, were more likely to leave their employment to provide care at home to their children (Akbari et al., 2024).

For many female caregivers, the lack of predictable, stable, and affordable ECEC services has a direct impact on their household's—and their own—economic security.

SHORTAGE OF ECEC PROFESSIONALS

ECEs and other ECEC professionals are central to early childhood education and child care. Yet, across the country, there are not enough ECEC professionals to meet the demand for early years child care. Despite many years of local and national efforts to improve recruitment and retention of ECEC professionals, the lack of qualified professionals prevails (Macdonald & Friendly, 2023).

In multilateral agreements, the federal and PT governments recognized the concomitant need for a national ECEC workforce strategy, including provisions to improve wages, working conditions for ECEC professionals, increased training opportunities, and lower costs of training (ESDC, 2019).

Still, staff shortages remain acute. ECEC workforce shortfalls were amplified following the COVID-19 pandemic. As public health restrictions required the closer of child care centres, ECEC professionals were laid off and staff shortages never recovered, even after pandemic-related lockdowns were removed (Friendly et al., 2023). In fact, annual surveys of the ECEC workforce

in British Columbia between 2019 and 2023 found that the proportion of ECEC professionals who expected to leave the workforce within a year reached its highest level in 2022 (SRDC, 2023).

LOW WAGES AND LACK OF BENEFITS

All PTs have acknowledged—to varying degrees—that current wages paid to ECEs are insufficient (Child Care Now, 2024). Similarly to wages, benefits are generally left to individual employers to provide and tend to be lower than those provided to other professionals in the K-12 education sector.

Indeed, to recruit new educators and to retain practising professionals in the field, wages and benefits need to be sufficiently attractive. Increasing the supply of workers will increase programming quality. Yet, providing sufficiently high wages to meet these objectives would require an increase to existing fees paid by caregivers and families to access child care services. These fees are already higher than many households can afford; an increase could further reduce participation.

Low wages and lack of benefits offered to qualified staff are the primary causes of recruitment challenges faced by ECEC providers, and the most significant contributors to the staff shortages that have left many providers in a "survival mode" (Muttart Foundation, 2023, p. 7; SRDC, 2023).

Wages for ECEs are often subsidized by government. For instance, ECE wage supplements in British Columbia began at $1 per hour in 2018 and increased to up to $6 per hour in 2024 for ECEs who meet the eligibility criteria. These subsidies raise wages and are intended to enhance recruitment and retention of ECEs. Yet, subsidies in the absence of a wage grid—a system that sets pay levels for all professionals across the ECEC system, commensurate with qualifications and experience—only serve to increase wages relative to the amount paid by the employer.

Prior to the recent multilateral agreements, very few PTs had a province-wide wage grid for licensed child care. By 2024, however, "most provinces and territories committed to developing a wage grid in their funding agreement with the Government of Canada" (Child Care Now, 2024). Still, the policy solutions proposed by governments range from a fully funded wage grid to small dollar increases in wage supplements, which, in the latter case, will not provide the systemwide consistency sought by ECEC professionals.

In terms of benefits provided to ECEC professionals, there is still much work to be done. Yukon and Nova Scotia are the only jurisdictions in Canada that committed in their Canada-wide agreements to provide health benefits to their ECEC workforce (Child Care Now, 2024).

RECOMMENDATIONS

These recommendations represent a considered response to what it would take for every child in Canada to be learning foundational literacy skills by the age of five. Many changes would be needed to be implemented by a wide range of stakeholders.

The recommendations are in many ways sequential, while also interconnected. We see this challenge as requiring a whole systems approach. All recommendations would need to be pursued in a coordinated way to represent *what it would take* since they reinforce each other's effect. The transformation is unlikely to succeed from selective or piecemeal implementation of these steps.

RECOMMENDATION 1: DEVELOP AND DISSEMINATE CANADIAN EVIDENCE

A coordinated strategy is needed to develop and test early years' curricula

Sufficient evidence on what works—either in the content of an early years' curriculum or in its implementation—is not yet available in Canada. Even in jurisdictions that have committed considerable resources to research in this area, there are gaps in knowledge about the applicability of the curriculum to specific groups and methods and contexts of implementation.

What is needed is a cadre of curriculum developers who have the training and experience to field-test their products in a systematic way and within a framework that allows transferable knowledge to be centrally compiled. In recognition of Canada's diversity and multiculturalism, recruited researchers should be trained to respect the wide diversity of early learning contexts within the country's communities and populations.

The number of rigorous curriculum-developer-testers available to build this knowledge base may very well insufficient in the short term. Evidence building will need to be scaled up. We caution that a rush for answers could impede the more valuable, long-term establishment of a process for knowledge creation. Stakeholders—and policy-makers especially—should be patient for results, and intentional in the choice of learning outcomes and their measurements.

A Canadian Early Skills Centre should be established to support new research

The federal government should consider the establishment of a dedicated Early Skills Centre to oversee, coordinate, and disseminate findings of early years' research projects. The establishment of such a centre would create the mechanism for issuing funding for research projects covering a broad range of early learning topics, extending beyond pre-literacy.

The federal government is in a good position to activate research management structures required to oversee this evidence building work, to ensure it progresses as quickly and comprehensively as possible. Akin to the Future Skills Centre, such a centre could be run at arm's length from the government under the auspice of CMEC, an institution of higher learning (e.g., university or college), a Research Council, or another non-profit group with a national focus.

An Early Skills Centre would help accelerate the generation of knowledge about early learning in Canada, including while also extending beyond precursor literacy skills. Such knowledge could improve our understanding of child development, through the implementation of interventions that support a broader range of skills (e.g., social emotional learning) within environments that support early literacy.

The Centre could also engage in public outreach and education to support, inform, and potentially influence the early learning decisions of caregivers and families. Equally important will be informing the public of the imperative to improve literacy outcomes of young children. This role may be vital if Canadian taxpayers seek justifications for the public expenditures required to universalize access to early learning.

A clearinghouse of effective evidence should be housed within the Early Skills Centre

The inclusion of a clearinghouse of effective evidence—on a par with the Institute of Education Sciences (IES) in the United States—within the Early Skills Centre will ensure that knowledge generated is accessible to stakeholders across the country. In effect, an Early Skills Centre—whose purpose is to manage projects that generate new evidence on effective practices—will have minimal impact if stakeholders with the power to affect or influence change cannot readily access research findings.

The Centre's repository of findings should set clear principles to determine the inclusion of research. For instance, all relevant studies (whether funded by the centre or not) that meet minimum standards of evidence should be considered for inclusion, particularly if they support the Centre's overall objectives. Like the IES clearinghouse, the Canadian centre could produce a

range of products such as practice guides to translate lessons learned for practitioners, right down to curriculum guides and lesson plans.

RECOMMENDATION 2: MOBILIZE NEW KNOWLEDGE AND INSIGHTS INTO ACTION

Knowledge translation—from research to practise—takes time. *Access to* and *availability of* rigorous evidence is not sufficient to bring about the necessary transformations at the local level, at least not in the absence of intentional efforts. The mobilization and transformation of knowledge into practice are part of a long-term endeavour that includes relationship building, organizational capacity building, and leadership development.

In the short term, governments and ECEC organizations should start planning how knowledge can be mobilized, which includes the creation of a Plan of Action, a national information campaign, and a network of early learning champions who can bring about bottom-up pressure on policy-makers to make necessary changes in early learning.

Create a Plan of Action

The 2024 National Academies report, *A New Vision for High-Quality Preschool Curriculum,* provides the perfect blueprint for Canadian research and evidence creation. A similar exercise in Canada—an exhaustive review of existing ECEC programs—would document best practices, identify areas of knowledge where evidence is incomplete, and provide the necessary plan of action to advance decision-making in Canadian jurisdictions.

PT and Indigenous communities should be encouraged to contribute to this process from its genesis. Jurisdictions could inform the research focus, provide research questions they need answered, and share required information.

Ultimately, a Plan of Action report would provide a research agenda that will guide policy-makers across Canada. The Plan of Action would ensure that new evidence will meet the dual goals of (1) justifying the need for action and (2) supporting reforms to early learning frameworks for young children.

Launch an information campaign to sway policy-makers and inform the public

Young children and their families would be better served if available resources were concentrated toward supporting their development more generally and ensuring they have

access to an early learning system focused on developing pre-literacy skills. Our research suggests many key players remain unconvinced of this conclusion.

Therefore, an information campaign needs to be undertaken to convey the importance of pre-literacy in the early years, the risks posed to society by current levels of skill development, and the practicality of implementing solutions that will reach all children.

Arguments opposing robust investments in early learning vary widely. Credible and convincing messaging will therefore need to be customized to reach caregivers, educators, early childhood advocates, and policy-makers at national, PT, and local levels. An Early Skills Centre, as previously discussed, could play a pivotal role in this process by providing robust, Canadian-specific evidence of the benefits of early education to children and families, society, economy, and taxpayers (i.e., efficient use of public resources).

Establish a network of early literacy champions

As our report indicates, Canada has an early learning and child care ecosystem that includes a wide array of stakeholders who are passionate about children and their education. While there is an important role for federal and PT governments to play in coordinating a national and regional knowledge mobilization campaign, other actors are well positioned to employ a bottom-up approach to achieve change in early literacy. They include early learning service providers, educators, community organizations, caregivers and families, schools, foundations, and others involved in the education and care of young children.

These actors could be activated as part of a network of early literacy champions that would be responsible for locally disseminating knowledge on effective ECEC practices, increasing public pressure on PT governments to review early learning frameworks, and to encourage demand for greater access to early literacy opportunities. Foundations such as the Canadian Children's Literacy Foundation (CCLF), could promote relevant foundational skills research findings and publicize their importance at the local level, among ECEs and caregivers.

Build consensus on early childhood development and learning

If any of the recommended actions are to be sustained, all levels of government need to work in concert to plan, coordinate, and implement changes to policy, curricula development, and early learning program delivery. The precondition, then, is that governments arrive at a clear consensus on the scope and scale of change so that all Canadian children are reading foundational literacy skills by the age of five.

What is needed is a national roundtable to coordinate interjurisdictional planning, to expose policy-makers to new evidence, and to foster dialogue between PTs and Indigenous communities. CMEC is well positioned to establish such a structure. The federal government could also create a national table of ministers and Indigenous leaders to ensure the success of its Canada-wide Early Learning and Child Care system. Regardless of how and by whom such a structure is implemented, the recommendation implores the establishment of a permanent structure that fosters dialogue between government and policy-makers.

We can expect some governments to be reluctant to participate—especially if the aim is to encourage an overhaul of their jurisdiction's early learning frameworks and ECE competencies. Though, public pressure to participate in response to urgent systemic challenges within the ECEC system could overcome initial refusals.

RECOMMENDATION 3: REVISE SUBNATIONAL EARLY LEARNING POLICY

Subnational jurisdictions must revise ELFs to include the instruction of pre-literacy skills

Early Learning Frameworks (ELFs) inform policy and guide practice in early learning within PTs and Indigenous communities. However, our research indicates that ELFs across the country do not include clear references of specific pre-literacy activities or skills.

Most jurisdictions encourage a holistic approach to learning and emphasize the benefits of play-based learning. Early literacy is also defined mainly in terms of *communication*. Collectively, these references fail to capture the depth and breadth of pre-literacy learning and specific skill instruction that occurs in the early years.

Revision of ELFs need to incorporate more specific references to the instruction of pre-literacy skills and the expected learning outcomes at every developmental stage. In doing so, jurisdictions can clearly prioritize the skills children must acquire to be learning foundational literacy skills by the age of five.

Subnational jurisdictions must revise organizational and occupational policies governing ECEC

ELFs are often used to inform, guide, and develop policies that support the ECEC system. Therefore, considering the previous recommendation, PTs and Indigenous communities should

commit to making the necessary changes to their respective organizational and occupational policies governing their early learning systems.

Specifically, governments should focus on updating the following:

- Occupational competencies for ECEs, including certification requirements,
- Postsecondary program curricula across public and private institutions,
- Professional development requirements and opportunities that align with revised ELFs and expected early learning outcomes,
- Recruitment and remuneration policies.

These policy changes—in concert with revised ELFs—will have a direct impact on the quality of ECEC programs that support children's early learning. Over the longer term, governments should implement effective mechanisms to coordinate policy changes across the diverse early learning professional development space and to communicate new evidence and best practices in early learning pedagogy.

An urgent need to increase the number of ECEC professionals

Across Canada, there are not enough ECEC professionals to meet the demands for ECEC programs. Yet, to ensure that all children are learning foundational literacy skills by the age of five, all children should be extended the opportunity to participate in ECEC—including those not currently attending ECEC programs. Clearly, without a plan to address systemic recruitment, training, and retention challenges of ECE professionals currently affecting ECEC systems across Canada, an expansion of the system will not be realized.

The scale of the recruitment and retention problem should not be underestimated. Factors such as low wages, insufficient benefits, a lack of career advancement opportunities, and unfavourable working conditions have made a career in ECEC less attractive to new educators and encouraged current professionals to seek better paid work in other fields. Understanding what works to help recruit and retain ECEC professionals in the sector could be considered among the key priority areas of research for the Early Skills Centre.

A crucial component of the Plan of Action will be an estimate of the increase in human resources required to meet the goals of this report in an expanded ECEC sector. Yet, creating the conditions that will allow jurisdictions to build up, train, and retain a professional ECEC workforce is already an urgent priority, though, certainly not a trivial undertaking. Three concrete actions could be taken by governments immediately:

- An expansion in the number of available places in postsecondary ECE programs to increase the number of trained early learning professionals;
- A commitment to improve the predictability of wages by introducing a wage grid;
- A commitment to improve the sufficiency of wages by introducing permanent wage subsidies.

RECOMMENDATION 4: EXPAND EARLY LEARNING TO REACH ALL CHILDREN

Recognize universal access to early childhood education as a right

Access to ECEC programs—from infancy to school age—should be recognized as a right for all children, one that can justifiably be supported by public policy and, to the extent necessary, receive public financing.

ECEC should be considered a first step within the education system

To make it easier for policy-makers and the public to recognize ECEC as a right, ECEC should be integrated within the primary school system and considered an integral step within the broader education system. The benefits of physical integration of ECEC within education are many:

- **Creating a continuity of learning:** Pedagogical continuity between ECEC and is beneficial for children as well as educators, teachers, and families as it fosters collaboration across all adults involved while fostering the child's early learning needs (Council of Ministers of Education, Canada [CMEC], 2021).
- **Maintaining consistency in pedagogical standards and practices:** Pedagogical and professional continuity among educators and teachers might make it easier to sustain high pre-service education quality standards across ECEC and education.
- **Improving early diagnostics of learning needs:** Coordination between ECEC and primary school could ensure continuity in identification of needs and individualized support for children who can benefit from early screening.
- **Improving access to learning resources in the early years:** Incorporating ECEC into education would improve access to resources for special education support for young

children, which tend to be relatively robust in the K-12 system but lacking in ECEC (Philpott, 2019).

The connections between ECEC and school should be strengthened

In many communities across Canada, the physical integration of ECEC centres within primary schools may not be practical. However, the connections between ECEC and prekindergarten or kindergarten programs could be strengthened, especially with a view toward facilitating children's transitions into the school system.

This transition from ECEC or home care to school can be difficult for children as they learn to adapt to experiences in a new environment, with different routines and people. Caregivers and families may also find it difficult to adjust to the change.

ECEC centres are well positioned to facilitate these transitions. Research has shown that attendance in an ECEC program is associated with improved transitions to school (Philpott, 2019). Schools are also used to managing these transitions. Thus, programs that create a bridge from ECEC to school—similar to Strong Start's Get Ready for School program—should be encouraged. Ensuring smooth and successful transitions will help children build on the gains made in the early years (Council of Ministers of Education, Canada [CMEC], 2021).

Improve education quality wherever children learn

Young children spend their early years learning in various settings: at home with their caregiver or family members, in an ECEC centre, or in a facilitated caregiver-led drop-in program (e.g., Strong Start). To improve the quality of learning for every young child in Canada, policy-makers need to support evidence-informed educational programming in *all* environments where children learn.

To meet this recommendation, policy-makers need to consider how children can access the services that promote learning opportunities, and how the quality of these programs can be improved.

Expand opportunities where learning occurs

ECEC centres should be required and have the capacity to ensure places for every child in their community;

Caregiver-child programs should have the capacity to offer places to every child not in ECEC;

Pre-kindergarten attendance should be encouraged or universally provided.

Increase the quality of care everywhere

More rigorous **training and certification requirements** should be mandated for educators providing family-based care;

Caregivers and families should be informed of **effective parenting approaches** that support the development of pre-literacy skills in the early years.

All levels of government must commit to increase investments in ECEC

The preceding recommendations call for a transformative change to Canada's early learning systems, including new mechanisms for evidence creation and knowledge dissemination, and a broad expansion of ECEC programming, among other changes. When it comes to needed reforms to early childhood systems, the policy priority list is long.

To be clear: implementing these recommendations will require permanent and committed increase in public spending. Were the changes limited to the development and implementation of new ECEC curricula, the level of investment requested might seem excessive.

Indeed, governments may question whether the costs are justifiable. Some may also question whether investments in pre-literacy would not be better spent fostering other dimensions of child development, such as early numeracy skills.

To provide a thorough response would require a robust, social cost benefit analysis of early childhood education. Once again, an Early Skills Centre would be well positioned to provide a jurisdictional analysis of the economic and social benefits that society could expect to see following the transformational change proposed by this report.

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APPENDIX A: METHODOLOGY UNDERLYING THIS REPORT

This report is the final product following 18 months of research activity at SRDC with two key stages.

SRDC first undertook a wide-ranging review of policy and practice in relation to early literacy. This was a broad review, in at least three senses: it tried to give consideration to all the potential influences on children's early learning that have a bearing on their acquisition of early literacy skills; it considered the approaches of multiple jurisdictions worldwide from Finland and Norway to California and New Zealand, as well as two Canadian provinces; and it used three core data gathering methods from an initial environmental scan of early learning frameworks through key informant interviews with Canadian early childhood experts to a final literature review inspired by the learnings of the first two data gathering exercises. SRDC produced a draft report on this first stage for CCLF in February 2024. After CCLF review and several discussions to hone objectives, SRDC agreed to pursue a second stage of work that would narrow the project focus considerably to the question of what it would take to ensure every child in Canada was learning the five foundational skills for early literacy by age 5. This stage used relevant key learnings from the first stage supplemented by additional reviews of the literature.

FIRST STAGE METHODOLOGY

The SRDC team met with CCLF roughly monthly from the project outset to fine-tune the plans for data collection, analysis and reporting. These meetings set key definitions for early literacy and of ECEC environments; established an initial list of relevant jurisdictions outside Canada to include in the policy review and environmental scan; and shortlisted early learning experts to be approached for key informant interviews.[2]

Data collection and analysis included three interconnected stages.

Environmental scan

SRDC gathered and reviewed early learning frameworks and policy documents from Canadian and select international jurisdictions to assess the priority, instruments, and mechanisms associated with early literacy development. Cross-jurisdictional reviews of these frameworks were included in this stage of data gathering. SRDC analyzed the frameworks to classify the

[2] ECEC was broadly defined for this project, and included formal and informal child care, home learning and community-based literacy supports.

treatment of early literacy development. It constructed a typology for early learning frameworks since these present the prevailing policy contexts governing the promotion and support of early literacy.

Key informant interviews

SRDC's initial conceptual framework and typology of approaches were then taken to other early learning experts for validation via key informant interviews. Initially in these interviews, SRDC sought to learn of any omissions and misconceptions in order to refine its proposed framework. A second function of key informant interviews was to capture formal and informal research and evaluation activities that have been used to assess the effectiveness of approaches to operationalize early literacy objectives in policy. SRDC pursued its own literature search for the project but anticipated the experts would likely be aware of work in development and not yet cited in bibliographic databases. Finally, experts were asked to share their own professional opinions on what had proven effective and ineffective as models for enhancing early literacy for children, as applicable to Canada. Five interviews were conducted with academics and policy researchers with expertise in early child development and brain development including leaders within early learning and child development in Anglophone and Francophone organizations, a child care research and policy consultant and an expert in Indigenous child education and development.

Literature review

SRDC built a literature database drawing on its own previous work in ECEC and from leads provided to SRDC in the first two stages. The review of the accumulated literature considered the effectiveness of different approaches to promote and support early literacy. It included a cross-jurisdictional exploration of what practices had been found to work to foster the translation of policy to practise for different early learning contexts.

Analysis and synthesis

The closing phase of the first stage of the project synthesized learning from the above three stages of data collection and analysis into a 73-page draft report submitted to CCLF in February 2024.

SECOND STAGE METHODOLOGY

For the second stage of work, SRDC engaged with CCLF on discussions to narrow the project focus. A specific question was set for the second report to answer: "What would it take for every child in Canada by age five to be learning the five foundational literacy skills for reading?" along

with a detailed outline of the nine-section report that would tackle this question. There would be a selective reworking of the initial report material combined with key additional literature searches and syntheses of evidence on what policy steps could be needed to promote acquisition and learning of these skills. New literature was sought to ensure the report included the most up-to-date knowledge on foundational early literacy skills for reading. The key additions were recently published literature, cited in publications since 2023, that relate to the report's central question.

The publication of a National Academies of Sciences, Engineering and Medicine Consensus Study Report *A New Vision for High-Quality Preschool Curriculum* (The National Academies Report) in April 2024 was fortuitous. Given the mandate given to its authoring committee of experts—to review research on early childhood development (including research on access to contemporary early learning opportunities), and to consider the experiences of diverse young children, their families, and early childhood educators with a view to make recommendations aimed at creating a new vision for high-quality pre-Kindergarten curriculum—it presented a timely synthesis of start-of-the-art knowledge on what would be needed from a U.S. perspective to promote foundational skills for early literacy, alongside other early learning outcomes. SRDC committed to draw heavily on its own comprehensive review of this 376-page document to consider the implications of the state of knowledge it revealed for the Canadian context. A key advantage to SRDC was that the National Academies Consensus Study reports are subjected to a rigorous and independent peer-review process and present the position of the National Academies on the set task. A substantive part of the consensus view on what has been learned by 2024 about what it would take to ensure every child acquires foundational skills, and what has yet to be learned, would be covered by the report.

Recognizing that the National Academies report, a well-resourced and rigorous exploration of what it would take to produce high-quality curriculum that would yield equitable outcomes for all children, might omit Canadian-relevant evidence, SRDC sought to supplement their findings with our own systematic review of Canada-specific evidence. SRDC adapted the detailed search terms within a *Science of Reading* literature review performed by Hanover Research for the Connecticut Department of Education. SRDC paired primary and secondary search terms and added "emergent literacy" or "early literacy" and "Canada" as additional search terms. For example, for the foundational skill of *phonemic awareness*, SRDC executed the following searches:

- phonemic awareness AND development AND Canada AND emergent literacy
- phonemic awareness AND efficacy AND Canada AND emergent literacy
- phonemic awareness AND implementation AND Canada AND emergent literacy
- phonemic awareness AND instruction AND Canada AND emergent literacy

- phonemic awareness AND instruction AND efficacy AND Canada AND emergent literacy
- phonemic awareness AND practices AND Canada AND emergent literacy

SRDC used the Ontario Council of University Libraries academic search tool Omni, which captures academic journal articles from diverse databases such as ProQuest. The majority of articles were found in this way. SRDC also carried out a complementary e-scan to check for articles or reports not previously found. Most of the additions from the e-scan were reports (grey literature) and not articles. Much of the literature obtained and reviewed updated the information available to the first stage report, simply due to the passage of time. Finally, from the results SRDC included only Canadian-based articles.

APPENDIX B: EARLY LEARNING FRAMEWORKS TYPOLOGY

OVERVIEW AND GENERAL COMMENTS

SRDC's typology of Early Learning Frameworks (ELFs) (Tables 3 through 6) categorizes and compares key information on early literacy strategies and approaches from jurisdictions across Canada and internationally. In compiling these tables, SRDC reviewed and synthesized over 20 documents. Consequently, these tables are intended to be reflective of regional and national practices, but not exhaustive in its detail. Further, the typology is intended to provide comparative information and is therefore presented at a high level, which means that it does not capture all relevant surrounding literature.

Although many ELFs have remarkable similarity, there are a few that stand out. To this end, they can be thought of as existing on a continuum across a **depth of focus**.

On the broader end of the spectrum stands Canada's national Indigenous ELF, one of the more recent ELFs. Its focus is on establishing policies that support the development of FNMI ECEC systems in Canada.

On the other end of the spectrum is California, with some of the oldest and most detailed frameworks, which has a narrower focus on school readiness.

In between, we present several jurisdictions whose frameworks provide guidance within existing child care settings and generally focus on learning outcomes, pedagogical principles, values, and considerations for practice.

Table 4 Canada—National Indigenous ELF

Criteria	Findings
Focus of frameworks	Focus is on **guiding the design, development, and governance of an Indigenous ECEC system** anchored in self-determination and culture. Within the framework, there are 3 distinction-based frameworks for FNMI communities. These include principles, strategic priorities, and recommendations.
Pedagogical approach	**Culturally responsive**. There are distinctions-based approaches for FNMI audiences, which also include holistic and child-centred approaches, as well as a focus on self-determination.
Ages covered	0–6
Primary setting	Custodial, home, and community
Connection to K-12 curricula	No connection to curricula, but acknowledgement that high-quality Indigenous ECEC programming contributes to school readiness and overall well-being into adulthood.
Details related to early literacy	Few; however, the frameworks are grounded in culture, which is inherently tied to language. There is little curricular content in general as the focus is on building child care systems, with curricular frameworks still to be developed.
Early literacy terms	Language and culture
Standardized literacy-related measurements	No scales listed. Evaluation is framed as being needed to determine if Indigenous ECEC programs are meeting the needs of Indigenous children, caregivers, and communities.
Literacy-related connection to technology	No reference to technology as related to literacy.
Date frameworks last updated	2018
Number of frameworks	1*

Criteria	Findings
Page count	32
Learning outcomes	Learning outcomes were identified as priorities to be developed in each distinctions-based framework.
Description of early literacy/delivery models	The first principle of the framework is Indigenous Knowledges, Languages, and Cultures: "Realizing the crucial importance of Indigenous ELCC that is rooted in distinct Indigenous cultures, languages and knowledge, as the foundation from which children form their individual and collective identity, and as an essential component of well-being." (p 6)
Literacy approach to additional languages	Not specific to literacy, but Indigenous languages are an essential element of the frameworks.
Approaches to reconciliation	All three frameworks are rooted in self-determination for FNMI peoples. Each distinction-based framework has principles/goals as well as strategic priorities/recommendations that focus on concrete actions. The Framework was co-developed with Indigenous partners.
Linkages to other settings	Coordination across a variety of settings is intended: "This Framework provides a guide for communities, program administrators, service providers, policy-makers and governments to work toward achieving a shared vision." (p 5)
Framework names	Indigenous Early Learning and Child Care Framework—Government of Canada
Ratios and qualifications	Not specified in Framework

* The Framework includes 3 distinction-based frameworks for FNMI communities.

Table 5 International—Australia, Finland, New Zealand

Criteria	Findings
Focus of frameworks	Generally, focus is on **providing guidance to families and educators working with children in existing child care settings**. Frameworks commonly include principles, values, learning outcomes, and considerations for practice.
Pedagogical approach	**Holistic**, with additional elements of child-centred, culturally responsive, play-based, and strengths-based approaches.
Ages covered	0–6*
Primary setting	**Primarily custodial and school**; also community (Australia and NZ) and home (Finland)
Connection to K-12 curricula	Connection to curricula, ranging from mention of successful transition to school in Australia and New Zealand, to fully integrated with K-12 curricula in Finland.
Details related to early literacy	Moderate; all mention literacy terms but none go into extensive detail.
Early literacy terms	Literacy; literacy and numeracy; literacy, reading, and writing; multiliteracy; linguistic identity; communication
Standardized literacy-related measurements	No scales listed. Evaluation is mandatory in Finland but the practices are specified in local curricula. All acknowledge both formal and informal assessment.
Literacy-related connection to technology	Strong emphasis on technology as a way for children to interact with the world and represent their ideas.
Date frameworks last updated	2017–2022
Number of frameworks	3
Page count	69–72
Learning outcomes	Described as “learning outcomes” or “transversal competencies.” These include: 1. Well-being/belonging 2. Thinking/learning/exploration 3. Connection/cultural competence/participation 4. Communication/expression/multiliteracy 5. Identity/taking care of oneself/confidence 6. Digital competence (Finland only)

Criteria	Findings
Description of early literacy/delivery models	Multimodal interaction is emphasized, including different modes of communication (music, movement, dance), media and digital literacy, and listening, talking, reading, and writing. Broadly speaking, the goals of early literacy in these jurisdictions include children developing an interest in literacy and being able to meaningfully interact with their environment.
Literacy approach to additional languages	General recognition of the importance various languages, though in different ways. Australia notes that competence is not tied to any particular language or culture, while Finland guarantees that ECEC is available in the child's mother tongue (if Finnish, Swedish, or Sámi). New Zealand acknowledges the importance of children having an opportunity to experience languages *other* than their first language. NZ also mentions non-verbal languages such as Sign.
Approaches to reconciliation	Indigenous considerations are embedded throughout the frameworks. NZ's Framework, Te Whāriki, means "woven mat" in Māori and is completely bicultural. It contains two pathways within one framework, each with its own pedagogy: one bicultural, derived from a synthesis of traditional Māori thinking and sociocultural theorizing; and one Indigenous, for use in traditional child care settings.
Linkages to other settings	Strong acknowledgement that effective early care involves partnerships among educators, families, and communities. Finland's Framework is a legal document relevant to policy-makers, but still maintains that "the primary responsibility for bringing up children rests with the guardians. ECEC supports and complements the home's educational task and bears its share of the responsibility for children's well-being." (p 4)
Framework names	Australia—Belonging, Being and Becoming: The Early Years Learning Framework for Australia Finland—National Core Curriculum for Early Childhood Education and Care New Zealand—Te Whāriki—Early Childhood Curriculum
Ratios and qualifications	Not specified in Framework

* Upper age of NZ Framework is unknown—only reference is to school entry, suggesting 5–6

Table 6 Canada—Provincial/Territorial*

Criteria	Findings
Focus of frameworks	Generally, focus is on **providing guidance to educators working with children in existing child care settings**. Frameworks commonly include principles, values, learning outcomes, and considerations for practice.
Pedagogical approach	Wide range, but all include **holistic or play-based** approaches. Common additional approaches include child-centred, strengths-based, constructivist, culturally responsive, or negotiated learning**.**
Ages covered	0–8
Primary setting	**Primarily custodial**; also some home, community, and school
Connection to K-12 curricula	Most connect to local curricula; only NS does not reference K-12 curricula or the importance of a smooth transition to kindergarten.
Details related to early literacy	Moderate; all mention early literacy terms but none go into extensive detail. There is a wide range, with MB and SK on the low end, and ON on the high end. The province of New Brunswick has a literacy strategy (separate from framework), but it is not specific to early childhood.
Early literacy terms	Communication; language/development; emerging literacy/reading and writing.
Standardized literacy-related measurements	No scales listed. AB and PEI specifically state that rigid checklists are unlikely to adequately capture children's capacity.
Literacy-related connection to technology	Some reference to technology as a tool/pathway for literacy (e.g., BC, NWT), while MB notes that screen time can be harmful to young children.
Date frameworks last updated	2008–2023
Number of frameworks	14
Page count	28 - 247 (average = 112)**
Learning outcomes	Often described as "learning outcomes," "living inquiries," or "foundations for learning." Most include: 1. Well-being/belonging (sometimes separate)

Criteria	Findings
	2. Play/exploration/physical or motor development 3. Communication/expression/language 4. Social-emotional development/social responsibility/diversity/identity Both French frameworks included domains for cognitive development but not well-being. MB's frameworks are organized differently around the "components" of a curriculum (e.g., environments, relationships, experiences).
Description of early literacy/delivery models	Early literacy is conceptualized as a way in which children express themselves. A variety of delivery models are noted, including: ▪ providing a material-rich, multimodal environment in which children can interact with language ▪ genuine conversations and interactions with young children; adults should model language and give children meaningful words that connect to their intentions and activities ▪ encouraging children develop positive attitudes toward literacy and learning through play and social relationships
Literacy approach to additional languages	Mentioned in about half of the frameworks—usually emphasizing the importance of encouraging literacy in the child's mother language, as well as non-verbal languages such as Sign or Braille.
Approaches to reconciliation	Atlantic, Western, and Northern PTs are most likely to reference reconciliation; all have some recognition of diversity and inclusion broadly. BC and YT's Framework strives to "contribute to reconciliation through implicitly and explicitly honouring Indigenous authorities in education" (p 4).
Linkages to other settings	Most frameworks acknowledge the importance of multiple actors in supporting children's literacy. Most are geared toward educators in centre-based care, but also allude to home care, families, schools, libraries, and governments.
Framework names	AB— Flight Framework BC— Early Learning Framework MB— Early Returns: Manitoba's Early Learning and Child Care Curriculum Framework (both Infant/Toddler and Preschool/Nursery School frameworks) NB— Curriculum Framework for Early Learning and Child Care N.B.—*Le Curriculum éducatif Services de gardes francophone* NL— Navigating the Early Years: An Early Childhood Learning Framework NS— Capable, Confident, and Curious: Nova Scotia's Early Learning Curriculum Framework NU—N/A*

Criteria	Findings
	NT— NWT Junior Kindergarten/Kindergarten Curriculum ON— How Does Learning Happen? Pedagogy for the Early Years PE—PEI Early Learning Framework 2011 QC — *Accueillir la petite enfance — Programme éducatif pour les services de garde éducatifs à l'enfance* SK — Play and Exploration: Early Learning Program Guide (plus companion booklet for Infants/Toddlers) YT—BC's Early Learning Framework
Ratios and qualifications	Not specified in Frameworks

* Nunavut's framework is currently in development. NWT has only a junior kindergarten/kindergarten framework, which was included in this scan.

** Excludes one outlier, New Brunswick's French framework, which is not a single document but a collection of documents totalling 781 pages.

Table 7 California

Criteria	Findings
Focus of frameworks	Focus is on **strengthening the education system**. Frameworks include curricular content and competencies.
Pedagogical approach	**Holistic**, with elements of child-centred, constructivist, culturally responsive, and strengths-based approaches. Learning is an integrative experience.
Ages covered	0–5
Primary setting	**Custodial,** with the expectation that programs and families collaborate to care for children.
Connection to K-12 curricula	Strong connection to curricula. Frameworks are strategically aligned and preschool framework is aimed at school readiness.
Details related to early literacy	Extensive; one of the four central domains of the frameworks. There are entire chapters in each framework with specific literacy-related competencies.
Early literacy terms	Language development; language and literacy; listening and speaking; reading; writing
Standardized literacy-related measurements	Reference to the Infant/Toddler Desired Results Developmental Profile, a teacher observation tool that includes a Literacy and Language Development domain. But the preschool framework states, “the foundations are not intended to be assessment items.” (p 47)
Literacy-related connection to technology	No reference to technology in infant/toddler; preschool framework has limited mention of technology in the form of assistive devices that may be necessary for some children to demonstrate proficiency.
Date frameworks last updated	2008–2009
Number of frameworks	2
Page count	128 - 205
Learning outcomes	Four domains or foundations: 1. Social-emotional 2. Language/literacy/English language development (split into two domains in preschool framework)

Criteria	Findings
	3. Cognitive/perceptual/motor (infant/toddler only, split into two domains) 4. Mathematics (preschool only)
Description of early literacy/delivery models	Infant/Toddler:• Receptive Language: The child's developing ability to understand words and increasingly complex utterances• Expressive Language: The child's developing ability to produce the sounds of language, and speak with an increasingly expansive vocabulary and use increasingly complex utterances• Communication Skills and Knowledge: The child's developing ability to communicate nonverbally and verbally• Interest in Print: The child's developing interest in engaging with print in books and in the environment (p xi) Preschool:1. Listening and Speaking, which includes language use and conventions, vocabulary, and grammar 2. Reading, which covers concepts about print, phonological awareness, alphabetic and word/print recognition, comprehension and analysis of age-appropriate text, and literacy interest and response3. Writing, which focuses on writing strategies, including the emergent use of writing and writing-like behaviours (pp xii-xiii)
Literacy approach to additional languages	No specific references to additional languages in infant/toddler; descriptions of language development apply to learning in any language. In preschool framework, English Language Development is a "domain" similar to Language and Literacy, and includes the literacy-related strands listening, speaking, reading, and writing.
Approaches to reconciliation	No reference to reconciliation or considerations for Indigenous children.
Linkages to other settings	Expectation that infant/toddler child care professionals develop strong partnerships with families: "high-quality programs offer infants and toddlers primary relationships in small groups. Such programs provide personalized care that reflects consideration for individual differences among children. Programs also develop partnerships with children's families to connect children's experiences at home with their experiences in the infant/toddler program. These partnerships with families are the cornerstone of culturally sensitive care." (p ix) Preschool framework is broader: "It is anticipated that teachers, administrators, caregivers, and policy-makers will use the foundations as a springboard to augment efforts to enable all young children to acquire the competencies that will prepare them for success in school" (p xii) [teachers in the context of preschools]
Framework names	California Infant/Toddler Learning & Development Foundations California Preschool Curriculum Foundations
Ratios and qualifications	Not specified in Framework

Criteria	Findings
Overview and general comments	This typology brings together information on early literacy from Early Learning Frameworks (ELFs) from across Canada and select international jurisdictions. As more than 20 documents are reflected, this summary is necessarily high-level. While it is exhaustive of the pre-K ELFs in the areas covered, it does not fully capture all relevant surrounding literature. Although many ELFs have remarkable similarity, there are a few that stand out. To this end, they can be thought of as existing on a continuum across **depth of focus**. On the left, we have Canada's national Indigenous ELF, which is quite broad; as one of the newer ELFs, the focus is on establishing policies that support the development of FNMI ECEC systems in Canada. On the right end of the spectrum is California, with some of the oldest and most detailed frameworks. Here, the focus is quite narrow on school readiness. In the middle are a variety of jurisdictions whose frameworks provide guidance within existing child care settings and generally focus on learning outcomes, pedagogical principles, values, and considerations for practice. Thus, the conceptualizations of early literacy across these jurisdictions are variable and situated in the broader contexts in which the ELFs were created.

APPENDIX C: THE NATIONAL ACADEMIES' NEW VISION FOR HIGH-QUALITY PRESCHOOL CURRICULUM

The National Academies Report, "New Vision for High-Quality Preschool Curriculum," is the product of its authors' study of the quality of curricula in the United States for children aged 3–5, "with particular attention to the needs of specific subpopulations, including Black and Latine children, multilingual learners, children with disabilities, and children experiencing poverty" (The National Academies, 2024, p. 18).

The report is a huge undertaking, reviewing a vast body of evidence consistent with the National Academies' standards for evidence set out in its earlier report *Scientific Research in Education* (National Research Council, 2002), which support "a wide variety of legitimate scientific designs available for education research" (p. 35).

Existing curricula were identified by the commissioned literature review through a systematic search of preschool curricula included or referenced in publications or that were publicly available. They identified 172 curricula matching those criteria; 88 were multi-domain and 84 domain-specific. Of the 172, 146 were identified as commercially available, 15 as proprietary, 6 as public and freely available, 4 as discontinued, and 1 as rebranded.

The report acknowledged that the criteria excluded locally developed curricula as well as those that were not included in publications. The committee was not tasked with the evaluation of existing curricula but rather to review literature on related topics to make recommendations aligned with four predefined questions (tackled at the end); as such, it was not clear whether any of the identified curricula would represent a good starting point for the development of the target high-quality curriculum (Appendix D).

Its publication in April 2024 was fortuitous. The authors, consisting of a committee of experts, were mandated to provide a synthesis of existing knowledge on what would be needed to promote foundational early literacy skills and other early learning outcomes, in order to provide a new vision for a high-quality preschool curriculum. Their research sought to review research on early childhood development, and to consider the experiences of diverse young children, their families, and early childhood educators.

SRDC has undertaken its own comprehensive review of this 376-page document to consider the implications of the state of knowledge it reveals for the Canadian context. A key advantage to SRDC was that the National Academies Consensus Study reports have been subjected to a rigorous and independent peer-review process and present the position of the National

Academies on the set task. Its consensus view on what has been learned by 2024 addresses many of the questions that need to be tackled to answer the question, *what would it take to ensure that every child in Canada is learning foundational literacy skills by the age of five?*

The report is a key exemplar for Canada in terms of its approach and thoroughness. Our review suggests caution in direct transfer of its methods (Appendix E) and recommendations (Appendix F), however, given the different policy and population contexts the National Academies report was addressing.

APPENDIX D: CHARACTERISTICS OF HIGH-QUALITY, EQUITY-DRIVEN PRESCHOOL CURRICULUM

Reproduced with permission from the National Academies report (2024, pp. 127–128) where it was adapted from the Preschool Curriculum Consumer Report Criteria (Head Start Early Childhood Learning and Knowledge Center [ECLKC], 2020).

Research-based	Is curriculum based on current research on content and teaching practices that support children's development and learning? Are essential principles of how children develop and learn reflected in the curriculum's philosophy and planned experiences?
Evidenced-based for child outcomes	Has the curriculum been rigorously validated? Does research show positive learning outcomes from its use with children of racially, ethnically, linguistically, culturally, and socioeconomically diverse backgrounds?
Scope and sequence	Does the curriculum provide an organized framework and sequence to guide teachers' decision-making and children's development and learning?
Focus is across developmental domains and content areas or coherently incorporates domain-specific curriculum	Does the curriculum address "the whole child"—all domains of development (cognitive, social, emotional, and physical)—and content areas such as literacy, mathematics, science, social studies, health and physical education, and the arts? OR Are domain-specific curricula, such as focused literacy and mathematics, coherently organized to guide educators' implementation?
Covers content and learning domains in depth	Is there an organized scope and sequence in each of the learning domains that describes progressive steps and individual learning experiences? Does the curriculum build on children's prior learning and experiences?
Clearly defines specific developmentally appropriate learning goals	Does the curriculum address important goals such as the standards of the disciplines (e.g., mathematics, literacy, science) and/or the state or federal early learning standards? Are the goals reasonable expectations for most 3- to 5-year-old children?
Includes well-designed learning experiences and interactions	Does the curriculum provide opportunities for children to be active and engaged both mentally and physically?
Emphasizes responsive, intentional teaching	Do learning experiences include both child-focused exploration and investigation and teacher-guided instruction? Is the curriculum responsive to children's strengths and interests? Does it promote positive interactions among teachers and children?

Provides guidance to prepare developmentally appropriate, engaging learning environments, materials, and schedules	Does the curriculum provide flexible guidance on daily, weekly, and/or monthly schedules? Is there guidance on needed age-appropriate and culturally and linguistically relevant books, equipment, and materials for children and teachers that are flexible to support children's interests and progress over time? Is there guidance on organization of the environment, including use of diverse learning contexts designed to meet important, meaningful goals—such as centres, small and large groups, and individual experiences?
Supports culturally relevant, responsive, and sustaining teaching and learning	Does the curriculum promote a strengths-based approach, recognizing that all development and learning are a product of cultural experiences? Does the curriculum positively promote children's cultural and racial identities and home languages, and recognize and build on their prior knowledge and competence acquired in their families and communities?
Supports multilingual learners and various language system	Does the curriculum provide instructional support for teachers to scaffold children's English language development while also supporting multilingual learners' home languages or their language system (e.g., African American English)? Is emergent bilingualism for MLs a goal? Are there linguistically affirming and culturally responsive materials and activities in children's home languages and language system that support multilingual/multidialectal learners' development?
Provides individuation and effective supports for children with identified disabilities	Does the curriculum provide for adaptations, accommodations, modifications, and effective supports for children with identified disabilities or developmental delays?
Supports individualized instruction for every child	Does the curriculum offer guidance for teachers to adapt recommended teaching strategies and learning experiences according to individual children's strengths, interests, abilities, needs, and continuing learning progress? Is the guidance detailed and easy to use, including both key components of high-quality formative assessment, assessing to understand children's level of thinking, strategies, etc., and modifying tasks and teaching strategies based on this understanding?
Supports family engagement	Does the curriculum promote reciprocal partnerships with families? Are materials and strategies provided for families in their preferred languages so they can engage in school experiences and decisions and extend children's learning at home?
Includes ongoing assessment tools and strategies aligned with goals and experiences	Is there support for teachers to collect, analyze, and use information from both formative and summative assessments to adapt and individualize instruction and to help children make continued progress?
Provides professional development	Are there initial and ongoing professional learning opportunities to ensure that teachers implement the curriculum with fidelity (often a balance of compliance fidelity with fidelity of vision)?

APPENDIX E: DEVELOPING HIGH QUALITY CURRICULUM FOR LITERACY AND LANGUAGE

The National Academies report presents a large-scale meta-analysis of research on early literacy development (National Institute for Literacy, 2008) which identified knowledge and skills that are precursors to reading and writing. These include alphabet knowledge, phonological awareness, concepts of print, early writing, and oral language. The report also mentions recent work focusing on the development of foundational literacy skills in family and preschool settings.

Evidence appears to be mixed regarding effective and ineffective curriculum for letter name and sound instruction. For instance, the National Academies report section concludes that teaching techniques such as multi-sensory techniques, letters within context, or combined alphabet and phonological awareness are not supported, based on one study (Piasta, 2023), though the report also presents research results demonstrating that explicit teaching of letter sounds using mnemonics and words drawn from interesting stories increase motivation and learning outcomes (Roberts & Sadler, 2019) and that teaching both letter names and sounds simultaneously lead to greater learning (Piasta, 2023; Piasta et al., 2010 & 2022). In contrast, research on language instruction aligns with that of mathematical instruction regarding the added value of tailored material.

Three studies demonstrate that small group or assessment/skill/student-based letter instruction is more effective than whole-group instructions (Piasta, 2014 & 2023; Piasta et al., 2022). Finally, some research also suggests that letters are best taught with easier more common ones first (e.g., A, B, X before Q, U, V) (Piasta et al., 2022).

Shared book reading, particularly dialogic reading (an interactive technique where children are engaged via prompts and questions) have demonstrated increases in language skills (Institute of Education Sciences, 2007).

Yet the report notes that emphasis on exposure to book reading, and its impact on language skills can be context-dependent and that other factors beyond printed words affect language outcomes (e.g., oral storytelling, storytelling and story acting). As an example, the report notes that oral storytelling is an important aspect of Black Americans', Native Americans' and Pacific Islanders' culture and that there is now evidence that Black preschoolers' oral storytelling abilities are correlated with their early literacy skills (Gardner-Neblett & Iruka, 2015).

The report then gives two examples of curriculum with demonstrated effects on language skills, including: Opening the World of Learning (OWL) a comprehensive but literacy-focused curriculum that has some positive effects on language and literacy outcomes for both English- and dual-language learners (with an English-Spanish version of the curriculum), and Doors to Discovery that yielded increased oral language and print knowledge.

Practices highlighted as guidance based on the National Academies research included: "intentional use of literacy artifacts in dramatic play and throughout the learning environment," "brief, clear, systematic, and explicit instruction in letter names, the sound(s) associated with the letters, and how the letters are shaped and formed," along with others during read alouds, with reference to print, vocabulary, and comprehension; writing; rich conversations; assessment; abundant materials; and collaboration with families.

The section on literacy and language concludes with a note about the importance of explicit support for teaching subject-matter content, especially for the background knowledge that is necessary for reading comprehension.

APPENDIX F: NATIONAL ACADEMIES REPORT RECOMMENDATIONS

Extracted in full with permission from the National Academies of Sciences, Engineering, and Medicine (2024, pp. 385–395).

GUIDANCE FOR THE CONTENT DESIGN, DEVELOPMENT, SELECTION, IMPLEMENTATION, AND FORMATIVE AND SUMMATIVE EVALUATION OF HIGH-QUALITY, EQUITY-DRIVEN CURRICULUM

RECOMMENDATION 1

In the next 5 years, federal agencies, state and school district policy-makers, foundations and funders, publishers, and teacher educators should support the revision of existing curricula and development of new curricula to align with the committee's vision. These curricula should be developed or revised by collaborative teams of researchers, curriculum developers, teacher educators, and practitioners—informed by the needs of children, families, and communities—following equity-based and rigorous, empirically driven, iterative design and evaluation processes as described in this report.

RECOMMENDATION 2

In the next 5 years, program leaders should transition to adopting and implementing evidence-validated curricula that, when integrated coherently, support the learning and development of the whole child. Essential features of evidence-based curricula include developmentally appropriate learning goals, a scope and sequence, coherent alignment with specific domains, and rich content.

RECOMMENDATION 3

In the next 5 years, researchers and curriculum developers should (1) develop and evaluate appropriate criteria and metrics for assessing racial, cultural, linguistic, and ability bias in curricula; (2) continually review curricula for these potential racial, cultural, linguistic, and ability biases; and (3) develop and provide adaptations and revisions so that the curricula are culturally and linguistically responsive and foster an anti-bias, anti-racist, multilingual, and inclusive approach in early childhood education.

RECOMMENDATION 4

From the outset, curriculum developers, in partnership with researchers and teacher educators, should develop curricula and supporting materials in Spanish, English, and other languages commonly spoken by children with a home language other than English. Whenever possible, curriculum developers should include adaptations for other language groups and those who speak dialects of English, such as African American Vernacular English (AAVE); they should also consider the unique approach warranted in Indigenous communities that are invested in language revitalization and maintenance.

RECOMMENDATION 5

In the next 5 years, funders should support the development of new, or revision of existing, child assessment measures aligned with the committee's vision. These assessment measures should be both formative and summative, should consider the role of bias (e.g., race, language, culture, disability status) in assessment, and should capture the full range of meaningful child outcomes and experiences (i.e., including positive social-emotional development, positive racial identity for children of color, and bilingualism/biliteracy for multilingual learners).

SUPPORTS AND PROFESSIONAL DEVELOPMENT NEEDED FOR EQUITABLE AND EFFECTIVE CURRICULUM IMPLEMENTATION

RECOMMENDATION 6

Curriculum developers should incorporate resources and structures that help teachers gain knowledge about effective teaching strategies and practices, including bolstering content knowledge and understanding how children's thinking and learning can be best supported.

RECOMMENDATION 7

Early childhood educators should collaborate with families to co-construct curricular components that are meaningful and relevant for all children in the classroom; authentically elevate the role of families in supporting their children's development; recognize the diversity in and value of family practices and integrate these practices when possible; honor their languages, cultures, beliefs, traditions, and talents; and invite these assets into the classroom.

RECOMMENDATION 8

Program leaders and policy makers should ensure that educators receive professional development, regular in-classroom coaching, and access to materials tied to the implementation of evidence-based curricula, including supports for delivering curricula in children's home language alongside English, or for monolingual English-speaking teachers, supporting multilingual learners through cross-linguistic connections and other research-informed practices that bridge languages.

RECOMMENDATION 9

Curriculum developers should provide scaffolded supports, developed in partnership with researchers and teacher educators, that increase opportunities for effectively integrating children with disabilities in general education early childhood settings while effectively meeting their unique developmental needs and fostering healthy peer relationships.

FUNDING MECHANISMS, STATE AND FEDERAL POLICIES, AND INNOVATIONS TO SUPPORT THE SELECTION AND USE OF EFFECTIVE AND EQUITABLE PRESCHOOL CURRICULA

RECOMMENDATION 10

The U.S. Department of Education, in partnership with the U.S. Department of Health and Human Services and state early childhood education agencies, should

- create a research-practice-partnership network of diverse researchers and early childhood programs that are willing to engage in research to study curricula and practices aligned with the committee's vision;
- create a data system for capturing details on curricula being used in programs, along with characteristics of the children being served, the quality of programs, and a comprehensive set of outcomes;
- align quality metrics, measures, and rating systems with the new vision of curricula and associated practices;
- incentivize the adoption and use of high-quality curricula that align with the new vision; and
- provide quality improvement supports and resources for addressing equity and inclusion gaps.

RECOMMENDATION 11

As curricula aligned with the committee's vision are adopted and implemented, state and local early care and education agencies and public education institutions should develop policies, provide technical assistance, and target funding to support ongoing professional development for educators that aligns with the vision, as well as strong curriculum implementation, with strategies and resources for addressing the high staffing turnover rates experienced across the country in early childhood programs.

RECOMMENDATION 12

As curricula aligned with the committee's vision are adopted and implemented, state and local early care and education agencies and public education institutions should identify opportunities to expand children's access to schools, communities, and programs that implement these curricula and associated practices.

CREATION OF AN EVIDENCE BASE TO ADVANCE CURRICULUM DEVELOPMENT AND IMPLEMENTATION

RECOMMENDATION 13

In the next 5 years, publishers should collect and provide rigorous and meaningful evidence of improved short—and long-term academic and developmental outcomes for all children, with particular attention to Black, Latine, Indigenous, Asian, and Pacific Islander children; multilingual learners; children with disabilities; and children living in poverty. They should also document the experiences of children in grades K—2 and determine whether there is coherence in the curricular vision across the transition from preschool to these early grades.

RECOMMENDATION 14

Researchers should continue to conduct rigorous evaluations of curriculum approaches, along with implementation research, to assess the extent to which curricula promote children's holistic and healthy development and learning, regardless of place or socioeconomic status, and affirm children's full identities, including race, culture, home language, gender, and ability.

RECOMMENDATION 15

To build the necessary evidence base over the next 5–10 years, relevant federal agencies, states, and philanthropies should invest in ongoing research aimed at developing implementation systems to support the transition to evidence-based curricula that are practical and accessible. These investments should:

- ensure the representation of Black, Indigenous, Latine, Asian, and Pacific Islander children, multilingual learners, children with disabilities, and children living in poverty in study samples with explicit attention to their unique experiences;
- support implementation research that describes and identifies effective practices used by individual educators and programs for delivering and adapting curricula in ways that are culturally and linguistically responsive and relevant for children and families in their programs;
- support studies that compare different domain-specific combinations and outcomes beyond those traditionally used, in order to capture new understanding of what the term "whole child" encompasses in a diverse society (i.e., to capture culturally and linguistically affirming and anti-bias practices);
- expand measured child outcomes of interest to include multilingual development, sense of belonging, agency, group pride, curiosity, creativity, and problem solving, and expand teacher outcomes to include the reduction of implicit and explicit bias, effective teaching, and cultural and linguistic responsiveness; and
- launch a federal technical assistance center that is grounded in implementation science, is dedicated to supporting the development of new curricula and the adoption and implementation of evidence-based curricula, and includes supports for assessing fidelity.

APPENDIX G: EVIDENCE ON DEVELOPMENT OF FOUNDATIONAL SKILLS FROM CANADA

SRDC undertook a systematic search for research evidence on the success of efforts to test curriculum and practices intended to improve children's early literacy development. These included studies of new approaches as well as research on their implementation. We followed the process adopted in recent U.S. summaries of the evidence underlying the Science of Reading (see Appendix A: Methodology), with a Canadian focus.

Broadly speaking, the evidence from Canada is scant relative to the U.S. and the picture emerging here on what works to support development of early literacy among Canadian children is even more incomplete. There have been several studies with rigorous methodologies that broadly substantiate findings seen in the U.S. literature. Much of the literature adopts a lower scientific standard, however, with very few randomized trials, for example. In general, the number of studies (and coverage of different population contexts) is not sufficient either to support conclusions as to the Canada-wide applicability of models of reading developed from U.S. evidence or to develop an alternative Canadian model.

For example, the Canadian Language & Literacy Research Network compiled research on early literacy and learning before school (Millard & Waese, 2007). Key findings include that speaking more slowly and with a higher pitch increased language awareness in infants and that shared storybook reading and direct reading, writing, and phonological awareness instruction all increased early literacy skills in preschool-aged children. Other factors found to increase language and literacy development in infants and young children included print awareness through adults reading with children, phonological awareness activities, teaching the alphabet and its phonology. While some measures (such as co-reading) did not require explicit instruction, others called for direct instruction (such as alphabet knowledge).

Romano et al. (2010) undertook longitudinal research as a replication of Canada-wide research by Duncan et al. (2007), looking at the effects of levels of kindergarten literacy on reading and mathematics outcomes in grade 3. There were other parts of the study concerning children's socioemotional states. In the first quantitative study, the average age of the participants was around 4.8 years old and the regression model uses children's scores on the Peabody Picture Vocabulary Test—Revised (PPVT-R). In another part of the study, focused on a different dataset looking at socioemotional behaviour and school readiness, the authors found that higher math skills in kindergarten predicted lower aggression, anxiety, and other negative emotional behaviours, in grade 3. All of these results generally showed that reading and math skills in prekindergarten predicted math and reading level in grade 3, which indicates some of the early

literacy precursors essential to development of these skills by later grades. Additionally, these skills predict better emotional regulation and behaviour in school. This research reinforces the general idea that early literacy is essential for the appropriate levels of reading and math skills that children need when they start school.

Ouellette and Haley (2013) considered factors influencing phonemic awareness in 75 5-year-old children in eastern Canada, by having the children carry out awareness tasks. A year later the same children were assessed in Grade 1 to measure the progression and the impacts of their knowledge in kindergarten on their skills in Grade 1. The study found that "oral vocabulary was the only significant unique predictor of analytic phonemic awareness" (p. 36), though alphabetic knowledge and vocabulary were also important. Additionally, more advanced phonemic skills in kindergarteners predicted more advanced skills in Grade 1 children.

Ouellette et al. (2013) establish "a teaching program that guided children's invented spelling within a Vygotskian framework would facilitate emergent reading skills" (p. 264) in kindergarten children in eastern Canada. The participants were pre-tested, participated in the program, then tested after the program ended, and again in Grade 1. The children had over 15 20-minute teaching sessions over a period of weeks when they participated in letter-sound instruction and letter chants. One group was taught to vary their invented spelling while the other was taught to use phonological awareness to read words. The results showed that both the teaching methodology and the activities provided increased spelling, alphabet, and phonological skills in the children.

Ouellette and Sénéchal (2017) conducted another, later study focused on invented spelling in kindergarten and its outcomes and influence on reading and spelling in Grade 1. The participants were over 170 eastern Canadian public school kindergarteners. The authors found that invented spelling did positively predict spelling, alphabetic knowledge, and phonological awareness. Children experimenting with inventing their own spelling did not hinder their future accuracy in spelling.

Heppner (2020) undertook a literature review of oral language development measures used in early and emergent literacy. There are various measures and conceptualization/theories on this subject, including tests of types of vocabulary, phonemic and phonological awareness, alphabet and vocabulary knowledge, early grammar, comprehension, and more. The authors advise the main takeaway is that oral language is central in early literacy and educators should be trained in and employ various oral language skills and assess their students' development more in preschool as well as primary school.

Davis et al. (2010) and Davis and Evans (2020) conducted studies that validate the use of phonemic and phonological awareness. The earlier study of 52 southwestern Ontario 5-year-old participants and their caregivers found that in children reading alphabet books to their

caregivers, they used phonemic awareness to guide their reading and labelling, while the caregivers used these books to encourage and elevate the children's reading skills. In the later study, over ninety Ontario kindergarten children were given assessments, based on Robert Siegler's overlapping waves model [that children's cognitive development is the result of shifts in the dominance of several simultaneous but competing models of thinking] on two different occasions to test their emergent literacy skills while reading an alphabet book. Their strategies and skills, as well as accuracy and mistakes were noted. The results suggest, in line with Siegler's model, that children improve their knowledge, skills, and strategy (including letter recognition and phonological awareness) in emergent literacy from reading on their own and using alphabet books.

Forgie et al. (2022) considered ECEC educators' role in the development of early literacy, focusing on their skills. The study assessed the linguistic knowledge and phonemic awareness through tests of fifty pre-service or in-service ECEs in a city in Ontario. Both groups of participants scored quite low in general linguistic knowledge, and phonemic awareness and oral language knowledge, as well as not having high confidence in their abilities in instructing either to children. This sample is limited to only 54 participants at two universities, which limits the effectiveness of the research and requires more extensive testing. However, these results still indicate that ECEC professionals require better and more rigorous training in order to provide children with the skills, tools, and knowledge to attain early literacy and advance in phonemic awareness.

EARLY LITERACY PROGRAMMING TESTED IN CANADA

Community- and home-based learning

Proportionately more of the scientific literature in Canada related to early literacy appears to focus on programming outside of ECEC settings.

For example, Graham et al. (2011) placed 14 4-year-old children into "a five-week summer literacy programme" involving the children with their caregivers. The program was intended to mitigate the summer learning gap for at-risk (socioeconomically or educationally) children. There were no learning losses over the summer and instead children improved in all levels of literacy.

Graham and Gagnon (2013) examined the Regina Public Library's early literacy program, a "Mainly Mother Goose" (MMG) program for infants 24 months and under, which was designed to provide literacy engagement in both caregivers and children. The authors measured various aspects, including changes in caregiver participation, engagement, knowledge, and confidence in undertaking literacy activities with their children, through questionnaires (distributed to over

300 caregivers). The results, reported by caregivers, indicated that the MMG program increased and enhanced caregiver involvement in the early literacy skills of their children, where they were maintaining "early literacy skill development activities" (p. 120) and increasing their confidence in employing these activities. Another result was the increased use of libraries and library facilities by participants. The research was limited, especially in that it did not actually measure children's literacy skills.

Inoue et al. (2018) assessed early literacy outcomes following home learning in central and western Canada. Kindergarten and grades 1–3 students' naming speed, phonological awareness, and other literacy skills were analyzed through the home literacy model in a longitudinal study. Both caregivers and children were analyzed, with caregivers' home literacy habits with their children documented, and the children tested before and after a period of being exposed to these. For the children aged 5 at the beginning of the study, the researchers found that "both parent teaching and shared book reading before and during kindergarten can have a relatively long-lasting association with different reading skills, even after controlling for the effects of family SES" (p. 284). The statistics and overall findings included that "parent teaching … was associated with letter knowledge and PA" (p. 284) and reading books together indicated higher vocabulary and object naming speed. Overall, home literacy activities with caregivers and children showed a sustained effect on literacy, reading comprehension, vocabulary, and more, into Grade 3 at least.

Phillips et al. (2014) measured the maternal educational level and reading proficiency of a sample of over 150 children aged 3–5 from a low income and low educational background in Western Canada. The results were suggestive that the reading level of the mother does affect the child's literacy and vocabulary level, while maternal education influences reading (before school) but not vocabulary. This association, while not causal, supports evidence from elsewhere that caregivers' socioeconomic status and educational attainment affect children's literacy levels. Lukie et al. (2013) also carried out a survey of caregivers of more than 170 preschoolers from "a large Canadian city" (p. 253). The questions centred on the children and caregivers' literacy and numeracy activities and involvement. There were also further in-depth interviews with a few mothers. The results showed that exploratory and collaborative activities, including numeracy in play increased the children's reported numeracy and literacy levels.

Segal and Martin-Chang (2019) study caregiver reading and feedback in child-caregiver reading, 70 English-speaking Quebec caregivers carried out reading-based activities with their children. The results showed that children's higher scores on a reading test correlated highly with caregivers reading knowledge.

Shaw (2021) describes emergent literacy and infant development and growth in the healthcare setting including various ways to strengthen children's early literacy, including speaking and reading extensively to children (even when it does not seem that they will understand), reading

books together, and generally having books available in the home. Singing is also mentioned as a good way to promote literacy and phonological awareness in children.

Martini and Sénéchal (2012) undertook a study, centred on the Home Literacy Model, that involved over 100 Ottawa kindergarten children. Their caregivers were given a questionnaire assessing their own literacy teaching activities and the literacy skills of their children. Following this, children's reading skills, interest in literacy, and analytic intelligence were tested two times. The findings found that while caregiver teaching did not fully account for children's literacy and interest, there was a strong correlation between these.

Formal programming

MacDonald and Figueredo (2010) tested the importance of early interventions on young children's literacy skills. In the project, at-risk kindergarteners (with low literacy skill development) in urban Central-East Canada were placed in an additional half-day program (KELT) after their regular kindergarten. In this after-school program, the students spent extra time with tutors improving their emergent literacy skills, including through field trips and other experiences. This KELT group ultimately met or exceeded the skills of the comparison group, showing the importance of extra help and support for improving literacy on young at-risk children.

In conjunction with speech-language pathologists (SLPs), McMahon-Morin et al. (2020) developed a study incorporating an "interactive book-reading intervention" (p. 67) where children received interactive book-reading sessions and instruction (which varied based on whether teachers or SLPs carried out the instruction). The children, from kindergarten (around age 5) and junior kindergarten (around age 4) were from "schools with low socioeconomic indexes according to the Quebec provincial system" (p. 68). The findings included an increase in causal inference and referential inferences in the two experimental groups compared to the control group.

Sénéchal (2017) carried out a longitudinal study following Canadian kindergarten students to grade 1, using the Nested Skills Model, which asserts that the possession of simpler literacy skills (such as imagined spelling) compound and lead to the acquisition and mastery of more complex skills. The results indicated that emergent reading and phoneme skills are in part predicted by spelling, and vice versa. The kindergarten (5-year-old) children's skills in imagined spelling and accurate spelling for the most part predicted more or less advanced spelling and reading skills for grade 1 (6 years old) students. However (though this may have been outside of the scope of this study), there was little to no exploration of the ways that children learned this invented spelling or had better or worse emergent reading outcomes than their peers. Another downside of this study is that the results seemed quite variable.

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