The Preemptive Nature of Quality Early Child Education on Special Educational Needs in Children

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Preface

Given the growth of scholarship in early child education (ECE), as well as the rapid emergence of the sector as an area of academic inquiry, a team of special education/mental health scholars opted to explore its preemptive nature. Despite long and distinguished careers in childhood special educational needs (SEN), ECE has never been an area of attention for them, and they proceeded with unbiased perspectives to answer: Does participation in quality ECE lessen SEN and insulate children against requiring supports later in their school experience?

Inclusive education is now an international standard for all children and the recent Canadian bilateral agreements between the federal and provincial/territorial governments strive to increase access to ECE for all children, including those with diverse needs. How inclusive is ECE and will access lessen the amount of support required by children with identified SEN, allowing them a smoother school start and ensuring better educational outcomes? Particular attention was given to children with specific needs: those with autism spectrum disorder (ASD) who typically struggle with starting school and usually require intensive supports; and those with mental health concerns.

An extensive review of the literature, with particular attention to longitudinal studies, was undertaken by the team. Additionally, the *Effective Pre-school, Primary and Secondary Education Project study*[1] in the UK was re-examined by Dr. Edward Melhuish to track the SEN of children across their full school experience. Public data from a representative number of Canadian provinces was also examined to help answer the questions above and illuminate the nature of inclusion in ECE programs.

Surprisingly, while the literature was rich on the preemptive nature of ECE, provincial/ territorial data on inclusion during the early years was scant. Poor and inconsistent data collection processes, and an absence of policy to mandate it, sabotages the sector and leads to uninformed public policy. While all regions report policies supporting inclusive ECE programs, the absence of data and inclusive practice creates an illusion of inclusion during the early years.

What emerges is significant, especially for the discipline of special education which traditionally views early identification and intervention as beginning at age six. By examining the impact of quality ECE with a common lens, both the ECE sector and the K-12 system obtain startling findings that poses an opportunity to develop *earlier* identification and intervention to alter the trajectory of the lives of vulnerable children. A continuum of evidence, from multiple studies in multiple countries unanimously converge on the preemptive nature of ECE on SEN. Inclusive, high quality ECE reduces SEN in young children and improves developmental outcomes, especially for vulnerable children and those with complex needs. The need for intervention is both removed for some children and reduced for others. Front loading interventions during the early years is wise public policy. Educators, parents, policy makers and governments could benefit from these findings.

[1] Sylva et al. 2004

CHAPTER 1 The Preemptive Nature of Quality Early Child Education

INTRODUCTION

The lasting benefits of early child education (ECE) on human development are well documented in research literature. National and international studies consistently reach joint consensus that participation in quality early learning environments with intentional play-based pedagogy, improves human development, especially for children from disadvantaged backgrounds[1]. In addition, longitudinal studies from numerous countries conclude that investing in the early years has lasting societal/economic impact for families, communities, and economies[2].

ECE is a growing area of academic inquiry rich with research and educational programs at universities/colleges worldwide. Empirical research drives scholarly pursuit and informs public policy. Likewise, special education has a long history of scholarly inquiry which has informed the evolution of disability services globally. Early identification and intervention are central to discussions around special education, however the discipline has historically viewed intervention as beginning with entry to formal schooling at six years of age. Children who do get identified during the early years often have to wait for services and often experience frustrating disruption when transitioning to school. Despite sharing many goals, such as optimizing human developmental outcomes, ECE and special education have remained separate and distinct areas of inquiry, practice and even application.

The demand for extra support services (e.g., special education and/or mental health services) continues to grow throughout the school years and beyond, causing the preventative nature of ECE to gain increased attention from researchers, policy makers, and educators. This report attempts to begin a conversation that will unify the disciplines of ECE and special education, forming a common lens through which the preemptive nature of quality ECE on special educational needs (SEN), including mental health needs can be examined. The report is organized into four sections:

HIGHLIGHTS

- Approximately 15% of students require special education supports
- 60% of these children struggle in three highly preventative areas: language, literacy/numeracy, behaviour
- Research unanimously agrees that quality ECE strengthens a child's language, literacy / numeracy and behavior, and enhances high school completion
- International longitudinal studies confirm that two years of quality ECE lowers special education placement by 40-60% for children with cognitive risk and 10-30% for social/behavioural risk
- An absence of accurate data sabotages informed public policy for ECE

1. who actually develops SEN, as well as what is already known about the impact of ECE on these students;
2. the benefits of inclusive ECE for children with identified SEN;
3. the challenges and benefits of including children with Autism Spectrum Disorder (ASD), given the intensity of service provision and the particular growth in identification[3];
4. And, finally, the research on the impact of ECE on child mental health.

IMPORTANCE OF SUCH A LINE OF INQUIRY

As provincial/territorial ministries and departments of education move toward integrated governance and develop programs for four and five year old children, this conversation is timely. The education of children in Canada is slowly morphing towards one continuum of planning and development, from the early years through to high school graduation. An opportunity is arising for earlier identification and intervention, as well as opportunities to strengthen family engagement and transition planning. For example, children identified early with ASD can begin receiving early intervention services such as speech/language supports and intensive therapy at two to three years of age. Given the growth in the rate of ASD[4], the K-12 system would benefit immensely if these services were to be optimized before the child reaches first grade. Early intervention is underscored by the growing recognition of the uneven nature of school readiness. The preschool years hold vast differences in opportunities for young children, based on factors such as socioeconomic status (SES) of the family, access to nutrition and health care, and participation in ECE programs (which vary greatly in quality and access). A recent report by UNICEF[5] outlines that 60% of Canadian families must pay as much as a third of their income for access to ECE. Furthermore, 44% of Canadian children live in areas where there is insufficient access to quality ECE. The UNICEF report concludes that while children enter school with diverse skills, Canadian schools do a relatively decent job of equalizing child development, except for marginalized children such as those with SEN. Exploring this latter cohort of students is, then, particularly important.

CHALLENGES OF SUCH A LINE OF INQUIRY

Education in Canada, while influenced by federal and municipal policies, remains, for the most part, a provincial or territorial jurisdiction. As a result, there is wide variance in terminology, curriculum, pedagogy, policies, practices and outcomes, both in the K-12 sector as well as ECE programs[6]. As a result, commenting on education as a whole in Canada becomes a challenge, especially when comparing practices and outcomes. Differing models of support services, evolving diagnostic criteria, and changing concepts of disability, all serve to limit comparisons between jurisdictions and over time. Likewise, the ECE field has evolved dramatically, informed by emerging research and changing social norms. The emergence of common curriculum frameworks, enhanced training for educators, a shift towards play-based pedagogy, and public policy to define and monitor quality have all combined to create enhanced professionalized standards, despite regional variations in programs[7].

Inconsistent data collection in the ECE sector proved to be a significant obstacle in conducting this study. Significant variation in tracking attendance, instability of ECE placements, poor record keeping policies, or an absence of policy to identify or categorize individual needs all combine to create a dearth of reliable data about inclusive ECE programs in the country. The provinces/territories simply do

not collect the same data at the same time or in the same way, if they collect data at all. The absence of a comprehensive data repository with strong policy and practice sabotages the development of informed public policy on ECE.

WHO REQUIRES SPECIAL EDUCATION?

The World Health Organization[8] (WHO) estimates that one billion people, 15% of the population live with disabilities. The United Nations Children's Fund (2005)[9] estimates that about 150 million children/youth are living with disabilities. The American based National Center for Education Statistics (2018) identified 13% of the student population attending public schools required special education during the 2014/2015 academic year[10]. Of those students, 60% manifested delays in highly preventive areas such as speech/language, emotional/behavioral regulation, or academic performance. Research is also definitive in stating that children with low SES are at a significant higher risk of having SEN[11].

In the educational context, being identified with SEN does not necessarily require a medical diagnosis. In Canada, each province has policy stipulating categories of support (if any), and concurrent requirements for approval and delivery models. While there is variation among the provinces/territories, there is generally a parallel approach of screening, assessment, formal identification, and service delivery[12]. Except for severe and complex issues, children's development is typically observed during the early and primary years with teacher/parent based supports starting in an informal manner. If these supports do not lead to sufficient progress, the child is typically referred for more in-depth assessment. If results indicate that the child meets the requirements for the provincial special education program, they could be categorized. However, any given child can qualify for supports in one jurisdiction but move to another and no longer fit the utilized criteria[13].

The provision of supports for students with SEN has a long history in contemporary schools. Evolving from complete segregation prior to the mid 1980s, social movements such as normalization, integration, deinstitutionalization, and more recently, inclusion have resulted in contemporary classrooms being characterized by their diversity[14]. Today, the provision of supports for students with SEN is anchored in legislation and consumes a significant portion of educational budgets[15]. Consequently, early identification and intervention strives to optimize student progress to mitigate the long term consequences of failing to meet curricular goals.

Table 1[16]- School-aged children with SEN in the U.S.

TYPE OF DISABILITY	% OF FULL POPULATION	% OF SPECIAL EDUCATION STUDENTS BY EXCEPTIONALITY
Autism	1.1	8.5
Developmental delay	0.8	6.2
Emotional/behaviour disturbance	0.7	5.4
Hearing impairment	0.2	1.5
Intellectual disability	0.8	6.2
Multiple disabilities	0.3	2.3
Orthopedic impairment	0.1	0.8
Other health impairment	1.7	13.1
Specific learning disabilities	4.5	34.6
Speech or language impairment	2.6	20
Traumatic brain injury	0.1	0.8
Visual impairment	0.1	0.8

A representative sample of Canadian provinces was contacted for this study requesting publicly available information on the number of students with SEN[17]. Variation in categories of support and practices emerged. Some provinces, such as New Brunswick and Manitoba, no longer categorize children. Other provinces such as Alberta, Newfoundland and Labrador, and Quebec have distinct categories of SEN and a category for children without specific diagnoses. Several provinces do not include children with speech/language delays in special education enrollments while others do not include behavioural or emotional challenges, excepting those that are identified as severe. Provinces that include speech/language and behaviour/mental health have slightly higher rates of special education participation (Newfoundland-22%; Quebec-21.8%; Ontario-17%; Nova Scotia-17.6%). For each of these provinces, slightly over 50% of students in these groups receive services because of speech/language, literacy/numeracy lags or emotional/behavioural concerns.

The Early Development Instrument[18] (EDI), used worldwide to assess young children's readiness for school, provides an indication of the developmental needs of young children. It monitors early child development by allowing Kindergarten educators to complete checklists on students' performances related to their physical health and well-being, social competence, emotional maturity, language/cognitive development, and communication skills/general knowledge. While this data is collected and reported by jurisdiction, in 2014, a 10-year comparison of EDI data in Ontario[19] showed that 14.4% of children were vulnerable in two or more domains. Of the 11.7% of children in that province identified on the EDI as having "special needs" over 90% of these children were identified as having speech impairments, emotional/behavioural problems or a learning disability – all highly preventative areas impacted by quality ECE.

While not necessarily considered as an area of special education, mental health is a growing area of need in our school populations. Between 10 to 20% of Canadians will develop a mental health disorder in their lifetimes with the onset of most of these disorders beginning in childhood. If these disorders are not treated, they may lead to poor educational, employment, health and social outcomes, and potentially even to early mortality. These cited rates are expected to increase significantly as social norms change and awareness increases[20]. Early identification and intervention are critical to preventing and mitigating mental health problems from developing.

THE INTERSECTION OF QUALITY ECE AND SEN

The disciplines of special education and the early years have much to gain from research which aligns the benefits of ECE with reasoning around why children develop SEN. Central to such research is a series of longitudinal studies which followed children from participation in ECE programs through to adulthood. Table 2 profiles a series of these studies and their findings. What emerges is unanimity on the long term impact on children's development in the very areas where children develop SEN. While each of these studies commented, to various degrees, on the ability for ECE to lower SEN, the true impact emerges when they are examined collectively. Such collective examinations were recently conducted by Canadian and American research teams.

Table 2- Longitudinal studies on the benefits of ECE

Longitudinal Study	Enhanced literacy/ numeracy	Enhanced language skills	Enhanced social/ emotional skills	Greatest gains for low SES children	Reduction in special education	Control group used	Cost-Benefits
Abbott[21]	Yes	Yes		Yes	Yes	Yes	Yes
BBBF Project[22]	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Chicago Study[23]	Yes	Yes		Yes	Yes	Yes	Yes
High/Scope[24]	Yes	Yes	Yes	Yes	Yes	Yes	
EPPE project[25]	Yes	Yes	Yes	Yes	Yes	Yes	
EPPSE 3-16+[26]	Yes	Yes	Yes	Yes	Yes	Yes	Yes
EYTSEN [27]	Yes	Yes	Yes	Yes	Yes	Yes	
Abecedarian[28]	Yes	Yes	Yes	Yes	Yes	Yes	Yes

In Canada, *Ready for Life*[29] examined these studies for the economic impact of ECE, reporting evidence that it positively effects economies and families. It also reported that ECE economically advantages individual children by enhancing educational outcomes, improving rates of high school completion, increasing enrollment in postsecondary education, and subsequently raising their socio-economic status. This is a significant conclusion for the population of children with SEN. Those conclusions were validated by a 2018 American Nobel Laureate for the National Bureau of Economic Research[30].

The economic benefit of investing in the early years has been exceptionally well established. Costs-benefits associated with ECE have been significant in many of the longitudinal studies listed above. The Abbott study[31] concluded that children who did not attend ECE programs required costly supports later in school to help them catch up with those students who did. *The Chicago program*[32] found that ECE returned approximately $10.83 per dollar back to society through the forms of increased earnings, tax

revenues, and nonengagement in the criminal system. The *Abecedarian program*[33] found a financial return of $2.50 per dollar spent on ECE. In Quebec, researchers concluded that increased participation in ECE boosted maternal labour market participation and their gross domestic product with a return on investment of $13 for every dollar invested[34]. Similar findings emerged from a European study, where it was found that ECE created lifetime financial returns to the individual, household and the government[35]. Today, economists conclude that one of the best ways a country can boost prosperity, promote inclusive economic growth, expand equitable opportunity, and end extreme poverty is by investing in ECE [36].

However, looking beyond economics, the benefits of ECE that emerge in the longitudinal studies, examined with a lens of who develops SEN provide an interesting parallel, as presented in Table 3. Research has long established that quality ECE benefits all children, especially those with low SES. The lasting benefits are enhanced language, self-regulation/behavioural management and literacy/numeracy skills[37].

Table 3: The parallel between ECE and SEN

Most significant benefits from ECE	Enhanced literacy/numeracy skills	Enhanced language skills	Stronger behavioural regulation	Benefits low SES the most
Most common reasons for SEN	Literacy/numeracy lags	Language delays	Behavioural problems	Low SES over represented

In America, a research team[38] recently examined the longitudinal studies with a specific look at their impact on SEN, grade retention, and high school graduation. A meta-analysis of 22 longitudinal ECE programs from the 1960s to 2016 concluded that enrollment in quality ECE reduced participation in special education programs by over 8%, decreased grade retention by 8.29%, and increased high school graduation by over 11%. These outcomes stem from the finding that the skills typically targeted by ECE programming (including cognitive skills in language, literacy, and math, and socio-emotional capacities in self-regulation, motivation, engagement, and persistence) are likely precursors of children's ability to maintain a positive academic trajectory[39]. As a result, educational outcomes are theoretically relevant as more distal targets of ECE programming [40]. The prevalence and cost of special education, grade retention, and especially high school dropout are large[41], and as such, understanding the possible benefits of ECE for mitigating negative educational outcomes is of particular importance to educational policymaking. The team concluded that this rich and diverse data confirmed the utility of ECE in reducing education related expenditures and promoting child well-being. That team cites data that ECE saves between $8000 to $12000 annually, per child enrolled in special education and that failure to meet high school graduation leads to a $689 000 reduction in lifetime earnings, and an additional $262 000 costs to the broader economy[42]. Research continues to indicate that the years before kindergarten hold the key to improving academic and developmental trajectories, especially for at-risk children.[43]

In Canada, a longitudinal study also commented directly on the impact of ECE programs in lowering SEN. *Better Beginnings: Better Futures (BBBF)*[44] created quality early intervention programs for young children in high risk communities, and found identical results, especially for programs that were school based. Teachers' ratings at grade six indicated that youth from BBBF sites required fewer special education services than youth from comparison sites (22% for BBBF sites versus 32% for comparison sites). The improvements in school functioning associated with BBBF sites at grade nine included fewer special education services, less grade repetition, better adaptive functioning/behavior at school, better preparedness to learn in the classroom, and potential to go further in school. By high school completion, only 15% of children who participated in the intervention group had SEN compared to 23% of children in the control group. In addition to higher academic skills, participants had better adaptive functioning, regulated behaviour, social functioning, and fewer emotional problems than the comparison group.

There were savings to government in the BBBF sites in five of the outcomes: children's grade repetition and use of special education services, arrests, and amount parents received from social assistance/disability support programs. Of these, reduced use of special education services resulted in the highest cost savings to the government between the BBBF sites versus the comparison sites (a savings of $4,035 per child per year). Youth who had participated in the BBBF project were better prepared and more adapted to school, less likely to repeat a grade, had less SEN and required less special classes or specialized services offered by psychologists or social workers. As with the US based study, researchers also commented on the financial savings in special education expenses, additional savings to health and social programs, and enhanced income potential due to higher levels of formal education.

In Denmark, a research team explored the impact of quality ECE on children's school performance on the grade nine Danish exams in 2008, for those who attended ECE programs in 1998[45]. The intention was to examine not just the lasting impacts on the children's performance but the impact of quality of ECE program. They factored in a higher staff per child ratio, a higher share of male staff, a higher share of staff with formal preschool teacher training, and stability (or lower turnover of staff). Conclusions were that the higher the quality of ECE the more significant the gains in children's test results. Boys benefitted more from the higher quality ECE program, and ethnic minority children benefitted from higher staff stability.

In the UK, this notion of factoring in quality and quantity was also explored. In perhaps the richest source of longitudinal data listed in Table 2 above is *the Effective Provision of Pre-School Education Project* (EPPE) in the UK, which tracked over 3 000 children beginning in 1997. The initial study was eventually extended through to high school in two follow-up studies: the *Effective Pre-school, Primary and Secondary Education Project (EPPSE 3-16+);* and, the *Early Years Transition & Special Educational Needs (EYTSEN).* Collectively, these studies created a significant data base that stretched over 18 years to 2015. Like the above cited research projects, these studies confirmed the lasting benefits of ECE on children's development, particularly in academics, language, and social/emotional development. Again, children from low socio-economic backgrounds benefitted the most. The EYTSEN component of that study tracked the children into primary school and concluded that they were at a significantly lower risk for referral to special education based on cognitive or social/behavioural issues[46]. The EPPE

database remains operational, and a research team revisited it in 2018[47] with the intention of tracking referrals for special education services, not just into primary school, but across their full school experience.

Researchers extrapolated three measures of quality of the ECE program and took the average of the three scores as the bench mark. It measured student performance at four different times: the start of school (five years), end of primary (seven years), end of elementary (11 years), and at the end of high school (16 years). Cognitive attainment was evaluated at age five using a standardized ability measure. At ages seven, 11 and 16, performance on national assessments of reading and math were used. Social/behavioral development and wellbeing were investigated via a teacher rating scale providing measures of self-regulation, internalizing (anxious/worried) and externalizing behaviour (anti-social). If children scored more than one standard deviation from the mean in a negative direction, they were considered at-risk for SEN. It was a robust study of over 3000 students across their full education experience, amassing a wealth of data. What emerged is a decisive comment on the preemptive nature of ECE.

All children enrolled in ECE programs had significantly reduced risk of SEN, in all domains, throughout their school experience but the risk reduction increased significantly with the quality of the program. For example, five year old children with low quality ECE had a 36% reduction for cognitive risk while those with high quality ECE had a 45% reduction. By high school completion this reduction in risk was 40% for those with low quality ECE versus a 55% reduction for those who had a high quality ECE experience. Similar, though less dramatic, reductions occurred for well-being and social/behavioral risks with quality of ECE being a more significant factor in the reduction, especially by the end of elementary school. For example, children with low quality ECE had a 5% reduction in risk for well-being concern at age 11 but those with high quality ECE had a 39% reduction. Researchers cautioned however, that measuring well-being and social/behavioral risk is much more subjective than measuring cognitive development. Performance on test scores is more definitive than the subjective nature of teacher checklists of observed behavior. Nonetheless, while well-being and social/behavioral risks were less dramatic and more scattered, the pattern of reduction is similar.

The 2018 reexamination of the EPPSE data set confirms what the other longitudinal studies have been indicating: providing ECE for children decreases the risk of SEN. This effect is greater in regards to the quality of ECE for cognitive outcomes, where, overall, children who had high quality ECE showed a 40 to 60% lower level of risk for cognitive concerns. The results are less dramatic for socio-emotional outcomes, but overall the pattern is similar with children who had high quality ECE showing a 10 to 30% lower risk of developing socio-emotional challenges.

This database was significant in the length of time that the children were followed and in the extensiveness of data collected. Its biggest contribution to the literature, however, is the importance of factoring in quality of programming along with length of participation. Given the wealth of data collected, Appendix A holds more detail on this study and an upcoming publication will release the full study.

In Canada, this focus on quantity and quality is currently being explored in an Ontario study[48]. Capitalizing on the opportunity provided with that province's decision to phase in a two year, full day kindergarten (FDK) at age four, utilizing a quality, play-based curriculum framework, delivered by early child educators co-teaching with kindergarten teachers, the study is tracking the impact of a careful combination of quantity and quality early intervention. The study is emerging as a longitudinal project and the participants are now in grade five and six. It is building on a previous study that showed the benefits of a pilot two year ECE program that integrated half-day kindergarten (HDK) with half-day child care, and were co-taught by a registered early child educator and a kindergarten teacher[49]. The FDK program was designed to be play-based and to move away from lengthy whole-group instruction and follow-up desk activities.

The research tracked 592 FDK and HDK children over the kindergarten years and throughout primary school with direct academic and social measures of reading, writing, number knowledge, drawing complexity and self-regulation to the end of grade two, and wide-scale standardized test scores for reading, writing and mathematics in grade three. Results of the direct child assessments taken each year from kindergarten to grade two demonstrated that children in FDK programs outperformed children in HDK programs at the end of kindergarten with benefits continuing to the end of grade two. The greatest impact of FDK was in the areas of self-regulation and reading. In addition, FDK children outperformed HDK children in number knowledge in kindergarten, and this advantage held through grades one and two. A drawing task designed to capture children's voices showed that FDK children's drawings showed greater complexity than did those of HDK children; interviews with children showed that FDK children reported significantly more often than HDK children that play is important[50]. Vocabulary scores remained consistently higher for FDK children; significant results occurred for children who spoke English as a first language. Notable were the results of the grade three wide-scale standardized provincial testing that showed particular benefits for children who had attended FDK in comparison to HDK. FDK children were more likely to achieve, or exceed, provincial expectations in reading and mathematics; reading represented a significant difference in grade three and the difference in mathematics was just short of statistical significance.

The data allowed exploration into whether participation in FDK, in comparison to HDK, made a particular difference for children who were deemed to be at risk for placement in special education[51]. Children were divided into three groups based on their initial standardized vocabulary scores in kindergarten, and these groups formed the basis for the longitudinal analyses. FDK, compared to HDK, showed greater learning benefits related to reading and self-regulation for children in the lowest vocabulary group. The effect of FDK was most pronounced at the end of kindergarten. This points to the importance of FDK for children at-risk and brings forward the issue of maintaining early gains once these children enter the primary grades through the experience of intentional play-based programs.

SUMMARY

Emergent research such as the recent reexamination of the EPPSE data, and ongoing study in Ontario, is valuable not just because results confirm what we already know, but it tracks the impact of high quality with sufficient quantity of early intervention. It speaks to the impact of collaborative teaching, in a play-based, language rich environment for two years prior to the first grade. Coupled with

integrated governance, this research informs public policy on the importance of the early years and the impact of readying children for school, but also readying schools for children. As such, it heralds a whole new era of evaluating the impact of quality ECE and underscores the importance of thorough data collection. If schools are indeed a great equalizer for child development, sufficient participation in high quality ECE maximizes this equalization for all children, especially those at-risk for SEN.

Collectively, research affords a shared lens for both early child educators and special educators to find common ground. The majority of children receiving special education struggle with literacy/numeracy, language, and behavioural self-regulation. Quality ECE inoculates children against these very struggles, especially those who are at greatest risk. Special education teachers have known for years that these skills cannot be taught from a blackboard and that waiting until children fall behind before supports are implemented to help them catch up is futile; yet, these practices continue. When examining the research from such a shared lens a continuum of evidence emerges that contemporary ECE, with trained early child educators, strong curriculum frameworks, delivered through play-based pedagogy, optimizes child development and offers protection against SEN.

One of the best ways a country can boost shared prosperity, promote inclusive economic growth, expand equitable opportunity, and end extreme poverty is by investing in the ECE sector. Investing in ECE benefits governments, businesses, communities, and families, and is cost effective. For every $1 spent on early child development interventions, the return on investment can be as high as $13. This research that unanimously concludes that quality ECE lowers special education participation increases this return exponentially, especially over their lifetimes. Children who do not have the benefit of nurturing care in their earliest years are more likely to encounter learning difficulties in school, in turn reducing their future earnings and impacting the wellbeing and prosperity of their families and societies[52].

There will always be a need for special education programs, and children will have speech/language needs, emotional/behavioral challenges, and learning disabilities. Earlier intervention and support by way of quality ECE programs can significantly lessen the supports children require later in school and assure their graduation rates. Likewise, young children with identified SEN require access to ECE programs to avail of the many benefits outlined above. Educators and policy makers need to consider the impact of prioritizing quality ECE in redirecting the trajectory of young children's lives.

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[1] See: Pascal (2009); McCain et al. (2011); Melhuish (2012); Melhuish et al. (2016); Pelletier & Corter (2018)
[2] See: Alexander (2012); Aos et al.(2004)
[3] Autism Canada (2017)
[4] Public Health Agency of Canada (2018)
[5] UNICEF (2018).
[6] Richardson & Langford (2018); Akbari (2015)
[7] See: The Atkinson Center (2017); The Atkinson Centre (2014); Richardson & Langford (2018)
[8] World Health Organization (2018)
[9] United Nations Children's Fund (2005)
[10] National Center for Education Statistics (2018)
[11] See: Heckman (2011); The New Jersey Council on Developmental Disabilities (2016)
[12] Hutchinson (2017)

[13] See: Philpott & Cahill (2008); Edmunds & Martch-Litt (2008)
[14] See: Philpott et al. (2010); Lawton et al. (2011); Hutchinson (2017)
[15] See: Mccoy et al. (2017); Levenson (2012)
[16] National Center for Education Statistics (2018)
[17] Data provided by Department of Education in: NL, NS, NB, QC, ON, MN, AB, BC
[18] Offord Centre for Child Studies (2018a)
[19] Offord Centre for Child Studies (2018b)
[20] Whitley et al. (2012)
[21] Barnett et al. (2013)
[22] Peters et al. (2010)
[23] Reynolds et al. (2001); Reynolds et al. (2011)
[24] Schweinhart & Weikart (1997)
[25] Sylva et al. (2004)
[26] Taggart et al. (2015)
[27] Sammons et al. (2003)
[28] See: Campbell et al. (2002); Campbell et al. (2012); Campbell & Ramey (1995)
[29] Alexander et al. (2017)
[30] Mahnken (2017)
[31] Barnett et al. (2013)
[32] Reynolds et al. (2011)
[33] Campbell et al. (2012)
[34] Fortin et al. (2012)
[35] Taggart et al. (2015)
[36] OECD (2013)
[37] See: Sylva et al. (2004, 2009, 2010, 2014)
[38] McCoy et al. (2017)
[39] Heckman et al. (2013)
[40] McCoy et al. (2017)
[41] Levin et al. (2007)
[42] McCoy et al. (2017) p. 475-476
[43] Von Hippel et al. (2018)
[44] See: Peters et al. (2010); Peters, Nelson et al. (2010)
[45] Bauchmüller, Gørtz, & Rasmussen (2014)
[46] See: Sammons et al. (2003)
[47] Melhuish el al. (2018) In Press
[48] See: Pelletier & Corter (2018); Pelletier et al. (2019) In Press
[49] See: Corter et al. (2012); Corter & Pelletier (2010); Pelletier (2012)
[50] Heagle et al. (2017)
[51] Pelletier & Fesseha (2019)
[52] World Health Organization (2018)

CHAPTER 2 Inclusive ECE Programs for all Children

INTRODUCTION

Recognizing the many benefits of ECE and its preemptive impact on SEN, and exploration of the nature of inclusion in ECE programs become critical. Article 23 of the *United Nations Conventions on the Rights of the Child* [1] specifically addresses the rights of children with disabilities to be active participants within their communities. In order to realize this right, governments must effortfully ensure that individuals with disabilities can access inclusive, quality educational programs on an equal basis with others in the communities in which they live. Quality educational programs for infants and toddlers have: small groups; high staff-to-child ratios; adherence to health and safety policies; highly trained, well-compensated staff; explicit curriculum frameworks, and well-planned physical environments.

Inclusion facilitates the development of positive social skills, and the potential costs, both economic and social, can be minimized when children with SEN are included in ECE programs[2]. Despite the benefits of inclusion, the barriers to it during the early years are evident in the limited formal education, professional development, resources, knowledge and skills specific to inclusion available to ECE professionals[3]. Research argues that if we truly wish to provide our children with an equal opportunity to maximize their potentials, it is vital that we do everything we can to enhance the early development for all children. Inclusive and accessible ECE programs can optimize the development of young children with SEN, support their families, facilitate smooth transitions to primary school, and benefit all children as they participate in diverse learning communities.

INTERNATIONAL RESEARCH ON ACCESSIBLE INCLUSIVE ECE

International organizations and the European Union (EU) regard quality ECE and inclusive early childhood education (IECE) as an essential foundation for lifelong learning[4]. High-quality ECE programs contain a lower staff-per-child ratio, a higher share of male staff, and a higher share of staff with formal ECE teacher training: factors associated with significant improvements in children's test results[5]. The impact of quality ECE is evident which

HIGHLIGHTS

- Canada has an illusion of inclusion in ECE. Fewer than a quarter of children with SEN attend ECE programs
- Human resources is a significant obstacle to inclusive ECE
- Transition planning is critical for young children, especially those with SEN
- Typically developing children benefit from inclusive ECE programs

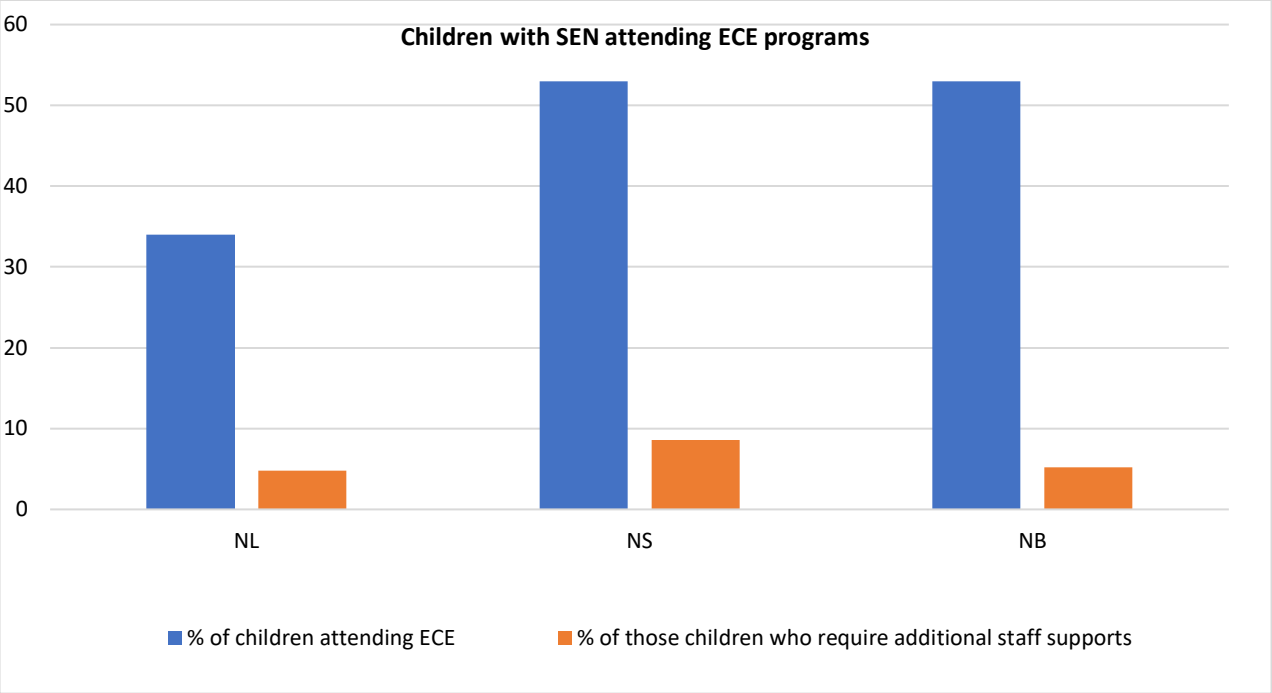
makes the early years particularly critical for children at risk of SEN when their individual learning or developmental needs are often first detected. Therefore, one EU benchmark in the strategic framework for European co-operation in education and training is that at least 95% of children between the age of four and compulsory school age should participate in ECE[6]. There are concerns, however, about the accessibility and quality of ECE/IECE provisions. Despite its importance, the Organisation for Economic Co-operation and Development (OECD)[7] reports that only one quarter of children with SEN are included in mainstream ECE programs.

Investments in high-quality ECE pays dividends in terms of children's short- and long-term learning and development. Many OECD countries[8] recognise this effect and have increased public spending on ECE; particularly, to expand access to such programs for all children. Universal or quasi-universal access to at least one year of ECE is now a reality in most countries, which constitutes significant progress towards sustainable development and education targets.

EXAMINING THE CANADIAN CONTEXT

Neither Canada as a whole, nor individual provinces/territories, offer entitlement to service or inclusion for children with SEN in regulated ECE programs. Since the 1980s, community-based ECE programs have voluntarily expanded their mandates, often with the support of provincial/territorial funding, to include more children with SEN. While early childhood advocates, researchers, service providers and policy makers, have identified inclusive ECE as "best practice", in Canada it is, however, not yet the reality for families[9]. The *Early Childhood Education Report 2017*[10], which monitors public policy on the early years, indicates that the benchmark "funding conditional on including children with special needs in licensed child care" was only met by Manitoba and Ontario, and partially by Saskatchewan Alberta and Prince Edward Island. That benchmark has hardly improved in the seven years since monitoring of ECE was launched in 2010[11].

While special education is robust in the K-12 system, a different picture emerges for the ECE sector. A representative sample of Canadian provinces were contacted for public data on students with SEN in ECE programs. All provinces reported having inclusive policies, but few were able to quantify how many children were requiring supports, and none could identify the specific reasons for such supports[12]. Again, data limitations prevent thorough analysis and undermine informed policy development. The early years are often the years to begin the process of having developmental needs identified and, excepting physical and sensory disabilities, most provinces approve extra supports based on documentation that the child, for whatever reason, needs additional staff attention. There is a strong argument against categorizing children during these early years and focusing instead on providing support based on displayed need. Nonetheless, the following profile sheds light on how inclusive ECE is in three provinces.



There are multiple reasons for this: the high cost of ECE for families with low SES, children not yet identified with an exceptionality, and the human resource implications of accepting children with SEN who will require extra staff attention.

SUPPORTING SEN DURING THE EARLY YEARS

Despite the lack of inclusion in ECE programs, most provinces have inclusive policies that outline supports for regulated ECE programs to help train staff and lower the staff ratio to accommodate children with SEN. Human resources, both for sufficient training and for appropriate child-staff ratios are dominant challenges. Accepting a child with additional needs will require additional staff attention which impacts budgets. Understanding the child's needs and knowing how to support them requires additional training which may or may not be available.

In British Columbia, the Supported Child Development (SCD) program assists families and ECE providers to fully include children with SEN in inclusive ECE settings[13]. While services vary amongst regions, provided services include individualized planning, training, information and resources, referrals to other specialized services and when required, extra staffing.

In Manitoba, the Inclusion Support Program (ISP) ensures that children of all abilities have equal access to, and participate meaningfully in, ECE programs by providing grants to licensed non-profit ECE programs, nursery schools and family/group child care homes. Staffing Grant Payments allow non-profit ECE programs to hire additional staff to help facilitate inclusion. A Guaranteed Space Payment (based on two spaces for one child) may be an option for family and group child care homes to dedicate more time to children with SEN by covering payment to secure space[14]. Regulations require that each facility must have an inclusion policy with respect to children with SEN. It is recommended

that the daily program is inclusive of children, that Individual Program Plans are developed and reviewed annually for each child, and that all staff are aware of the center's inclusion policy and Individual Program Plans[15]. While additional staff and low child-to-staff ratios are important, early childhood educators need training and practical experiences to feel efficacious in inclusive ECE programs.

The Ontario Ministry of Education provides funding to plan, manage, and coordinate ECE. Special Needs Resourcing funds may be used to support the inclusion of children with SEN in licensed ECE programs, by acquiring the services of a resource teacher, consultant, or supplemental staff where necessary, and providing training for staff[16]. The type and level of service can vary depending on each child's needs, the local service model, and available resources. However, resource consultants typically provide ECE staff with program accommodations, modification strategies or professional development, support for individualized support plans, developmental screeners and referral to community agencies, and information and resources for parents.

In New Brunswick, the Department of Education and Early Childhood Development funds ECE programs to pay the salary costs of support workers for young children with SEN, in order to lower the child-to-staff ratio so as to accommodate the child in a regulated ECE program[17]. Developmental Child Care funding may be provided to support the cost of care at the part-time subsidy rate, the salary of support staff, and transportation, if required. The Enhanced Support Worker Program is designed to support children with SEN, whose parents are working or studying. Supporting mothers currently in, or seeking to get into, the labour force benefits families, as ECE program participation is associated with significantly lower rates of grade retention, special education placement, child maltreatment, and juvenile arrests for violence[18].

Newfoundland and Labrador operates an inclusive childcare program to provide assistance for regulated ECE services to include children with SEN. Issues surround access to quality ECE but few statistics are kept on the number of children with SEN attending inclusive childcare facilities. Inclusion supports include funding for consultation, training, and staffing ratios to employ a child-specific support staff above the minimum staff to child ratio or to reduce the number of children in the room or child care home. Parents do not pay for these additional supports, but issues persist around both access and training, as there are no special training requirements for staff members supporting children with special needs.

Federal, provincial, and territorial ministers recognize that ECE programs play an important role in promoting the social, emotional, physical and cognitive development of young children and can support positive lifelong benefits. In 2017, the Canadian federal government reached bilateral agreements with the provinces and territories to help support early learning and child care programs. With a goal of promoting increased access to developmentally appropriate programs, it also prioritized greater inclusion of diverse children[19]. However, the agreements preclude quality measures or funding to track for quality assurance. Outcomes are measured by expanded access only. Improving access without addressing quality is not sufficient to secure positive individual and social outcomes. But increasing access requires identifying and addressing the actual barriers to inclusion. Research[20] has long identified that policy alone does not necessarily result in change as there are three types of policy:

what is written, what is stated, and what is actually enacted. Ensuring inclusive ECE programs will require a focus on what is actually enacted through both quality assurance and accurate data collection.

SPECIALIST STAFF

While there is great variance amongst regions in regard to access to inclusive ECE, there is also great variance in professional licensure for early child educators as well as ongoing professional development opportunities. Early child educators are an important component of inclusive programs as they are central to its success, both in program planning and delivery. Program quality is determined by the attitude of staff toward inclusion, their skills in managing the learning environment, and their ability to collaborate and engage in teamwork. The attitude of staff toward inclusion can influence educational practice and outcomes, and their attitudes may be influenced by staff training, the nature of the child's special needs, the experience of the staff, availability of resources, parental attitudes and collaboration with parents, and by the leadership approach of the program director. Early child educators with knowledge of inclusion are more positive towards the inclusion of children with SEN. Practices such as school and home visits, communication with parents and ECE staff, transition planning meetings, and developing specific child interventions are especially useful[21].

One- and two-year college diplomas in early child education are the norm, but increasingly, university degrees are being offered, with master's and doctoral studies available as it becomes a growing area of scholarship. However, additional educational requirements for specialization to work with children who have SEN are rare. In British Columbia, serving as a special needs ECE educator requires the completion of the basic early childhood education program, completed through a post-secondary educational institution, that includes 250 hours addressing: child development; working with children with SEN, families, and administrators; health, safety, and nutrition; and a 200-hour special needs practicum[22]. In Alberta, the Inclusive Childcare Program provides supports to facilitate inclusion of children with SEN in approved ECE settings. Additional training for staff working with children with SEN is not required in legislation, but staff members typically have an ECE credential[23]. In Ontario, specialized ECE educators must hold a diploma in Early Childhood Education and have additional education and experience related to working with children with SEN. They can be appointed if they hold a standard first aid credential including an infant/child cardiopulmonary resuscitation (CPR) certificate[24], often core curriculum in most early child diplomas. If ECE programs are to become inclusive centres staff will need to be trained on inclusive pedagogies and practices and be provided with ongoing professional development.

BENEFITS OF INCLUSIVE ECE PROGRAMS

The early identification of young children's learning needs as well as the development of specific strategies to support them are increasingly recognised as crucial to facilitating good adjustment to school and to ensuring that such children are helped to reach their full potential[25]. In Canadian schools, the majority of students are educated in their neighborhood schools where the classroom teacher takes responsibility for the learning of all students. Inclusion is the recommended teaching practice in Canada and is mandated by every provincial and territorial government across the country.

Research reports that there are no adverse effects or differences in the achievement of typically developing peers when students with SEN are educated in the regular classroom[26]; the inclusive classroom environment is more positive (or no different) than segregated settings for students with learning disabilities, intellectual disabilities, and language impairments[27]; and children who are educated in high inclusive settings are in better health, enjoy going to school more, progress more quickly in school, and interact more positively with peers compared to students educated in low inclusive settings[28].

Research[29] has long identified that young children who participate in inclusive classrooms have stronger understandings of disabilities, are more tolerant of diversity, have greater empathy, and have more positive attitudes toward children who have SEN. Young children are more likely to engage with a peer with SEN than older children due to such early exposure, especially if initial interaction is educator facilitated. Such experiences promote the development of positive attitudes and prosocial behaviours in young children. Educators also benefit by acquiring inclusive pedagogies, collaborating more effectively and becoming better at directing play among diverse learners, with less peer conflict and children forming stronger relationships[30]. Other research[31] has shown that introducing children who are typically developing with children who have SEN at an early age promotes friendships and acceptance of diversity[32].

Settings that promote inclusion are more successful in achieving learning for all, the ultimate goal of education. While the majority of students with diverse learning needs in Canada are taught in inclusive classrooms, inclusion is a process of learning for students and educators alike. Even when placed in inclusive classrooms, many students with diverse learning needs do not participate optimally in the academic or social life of the classroom.

Families benefit from inclusive ECE programming. It allows both parents to continue to work, which can be crucial to meeting SEN related expenses and to the family's economic and psychological well-being, both in the short and long term [33]. It also allows parents to work and support their families with the peace of mind that their children are safe and well cared for[34]. Women continue to be overwhelmingly responsible for the care of young children and are more likely than fathers to stay home full-time or work part-time to care for children [35]. Mothers' employment situations are affected approximately 90% of the time in families with a child with SEN [36]. Parents of children with SEN face barriers to labour force participation or to advancing their careers, and are faced with additional financial costs pertaining to their child's SEN.

Accessible and affordable ECE programs have been especially positive for parental employment in families who have children with SEN. Research[37] has found that families who have children with SEN are more inclined to experience poverty, are subject to higher financial costs related to SEN, and are more likely to experience barriers to employment. A study completed by the Roeher Institute found that of the 60% of mothers who care or children with disabilities and participate in the paid workforce, almost half worked part time hours[38]. Although many felt that working part-time caused financial strain on the family, they felt they had little choice but to stay home for caregiving purposes[39]. Mothers of children with SEN spend significant time caring for their child(ren), on average 50-60 hours

a week[40]. This affects the health and well-being of mothers and the entire family unit. Studies have pointed to the necessity of affordable ECE to enable parents to participate in the workplace[41]. Canada has no comprehensive system of ECE, despite rising numbers of women working outside the home and a decline in extended family support[42]. While local education authorities in all provinces are funded to provide one year of kindergarten at age 5, there is little support for children with disabilities[43], and this impacts parental employment. A young child with SEN who does not have access to ECE results in an unemployed, or underemployed, parent.

IMPORTANCE OF SUPPORTING TRANSITION PLANNING

There is growing recognition of the importance of providing professional services and supports in ECE programs for young children with SEN to facilitate transition to school and ensure optimal school start experiences[44]. Coordination between education, child care, developmental services, and healthcare sectors is needed to support educational achievement for students with SEN.[45] The transition from ECE to primary school can be complex for children who often experience changes in the services they receive, as well as changes in providers, locations and frequency of these services. It can be an upsetting and difficult process for families[46]. Positive transitions are associated with "the consistent use of developmentally appropriate practices across programs, especially for children with disabilities"[47]. Other researchers estimate that 48% of children experience moderate to serious problems with adjustment to school[48]. It is particularly important for children with complex needs so to ensure that programs are in place, behaviors are settled and relationships with parents are established to avoid loss of significant instructional time and expensive resources. Establishing effective programs for these children during the early years will allow a redeployment of resources and an enhanced school experience for them and their families.

Integrated governance affords an opportunity for a streamlined identification, planning, and program delivery model where transition of knowledge on children's development can be seamless. Common terminology and a shared, comprehensive data management system could inform policies and curricula that are consistent from the early years through to high school graduation. The process of moving from ECE programs into and through school should be fluid for all children and their families, especially for those with SEN. However, an OECD report[49] on transition planning within integrated governance outlines that smooth transitions is not a guarantee. A fluid education system would ensure continuity of training for all educators, continuity of professional development and continuity of policy and programs. There should be a transition of curriculum frameworks, pedagogical practices and interactions, and developmental opportunities. The OECD report recommends examination of the structural roadblocks to smooth transitions. This is especially critical for children with SEN where early years educators accumulate vast knowledge of children during the early years. Grade one teachers could be given valuable information about children on or before the first day of school and then be truly ready to welcome them with services already in place and relationships with families and service providers established, especially for children with complex needs.

The OECD report goes on to recommend careful development of curriculum frameworks between the early years and primary school, with a continuum of developmental outcomes that complement each other. There should also be professional continuity of staff with ECEs having opportunities to interact

with primary educators, observe practices, availability of shared professional development and have opportunities to meet and discuss the needs of children and program plan collaboratively.

Parental involvement is particularly important for both transition practices and children's school achievement[50]. The transition process is critical to the early school experiences of children with SEN yet challenging for their parents[51]. Transition planning guidelines emphasize the importance of parent involvement and inter-professional collaboration to facilitate transition of children into the education system. Recognizing that special education planning may be new for families, educators should: provide families with specific information about special education policies and procedures as well as the roles and responsibilities of all educators involved in the child's education program; initiate a formal planning meeting at the start of the school year so that parents and educators directly involved with teaching the child can share information and plan together; recognize that transition is a process for the family as well as the child; involve families of children with SEN in orientation events; and appoint a key facilitator to ensure effective communication between the home and school[52].

Researchers[53] examined the characteristics of a large American study on children with SEN enrolled in ECE programs to explore the services they receive, their transitions across educational levels, and their performance over time on assessments of academic and adaptive skills. Parents and teachers reported that the ease of transition varied by child characteristics, such as severity of impairment, academic ability, and social skills. The ease of transition also varied depending on whether the school initiated actions to facilitate the transition process and how much support was provided to teachers. Data on successful transitions to school indicate that teachers of children with disabilities used a variety of strategies to facilitate this transition, including early meetings with the new school, family/child meeting the new staff, receiving children's previous records, new teachers visiting the ECE site, and involving the parents.

Another study[54] found teachers reporting children with ECE make a smoother transition compared with children without ECE. Teachers state that academic, social and emotional skills of students entering kindergarten were predictive of academic success. Teachers in this study indicated that approximately one sixth of children entering kindergarten faced serious general adjustment problems. An additional one third of children entering kindergarten experienced minor adjustment problems.

Facilitating successful transition to school is crucial for establishing the foundation of children's future development, as a positive transition is associated with favorable academic and social outcomes[55]. Child-centered transitions are effective and communication between school and home is a vital link for successful transitions[56].

SUMMARY

Research shows that the trajectory of a child's life is established early and that positive early experiences impact that path, more so for those who are vulnerable. While inclusive education is an international norm, the early years is the last frontier in ensuring equitable educational opportunities for all children. Educational policy should be strengthened to ensure compliance with Article 23 of the *United Nations Conventions on the Rights of the Child.* While early child educators need to be equipped

with inclusive pedagogies and better understandings of learner diversity, the larger obstacle to inclusion during the early years is a human resource issue. The ECE sector is of critical importance to children, families, communities and economies yet it continues to be marginalized by poor pay and benefit packages. The federal governments bilateral agreements with the provinces/territories attempts to increase access, especially for diverse learners, yet spending to address this obstacle is disallowed.

In order to be prepared for educational attainment and adult health, a child should be ready and able to profit from the social and academic environment provided by school[57]. Readiness develops during the early years and is moulded by multiple factors such as qualifications of the staff, curriculum, pedagogical practices and the social and emotional experiences during their days. Children with SEN and those at-risk of developing it require a particularly positive experience during those formative years. Children with complex needs would have a radically different start to school if programs are established in the early years and would consume significantly less service during their school years. A continuum of curriculum, pedagogy and practice should characterize the transition from ECE to school. Inclusive policies matched with pragmatic practices will not only ready children for school but also ready the school for children. Integrated governance affords an opportunity to ensure one fluid continuum of care but informed conversations and careful planning are needed to ensure that happens.

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[1] United Nations Conventions on the Rights of the Child (1990)
[2] OECD (2004a)
[3] See: Killoran et al. (2007); Doherty et al. (2000)
[4] Stahmer et al. (2011)
[5] Bauchmüller et al. (2014)
[6] Stahmer et al. (2011)
[7] OECD (2004a)
[8] OECD (2018)
[9] Halfon & Friendly (2013)
[10] Early Childhood Education Report (2017)
[11] McCain et al. (2010)
[12] Data provided by Departments of Education in: NL, NS, NB, ON, MN, AB, BC and analyzed with data in Early Childhood Education Report (2017)
[13] Friendly et al. (2018)
[14] Ibid
[15] Ibid
[16] Ibid
[17] Ibid
[18] Reynolds et a. (2011)
[19] Government of Canada (2017)
[20] McDonald (1981)
[21] McIntyre & Wildenger (2011)
[22] Friendly et al. (2018)
[23] Ibid
[24] Ibid

[25] Anders et al. (2010)
[26] Kalambouka et al. (2007)
[27] Canadian Council on Learning (2009)
[28] Timmons & Wagner (2008)
[29] See: Diamond & Huang (2005); Odom et al. (2011)
[30] Kwon et al. (2017)
[31] Odom et al. (2006)
[32] Vignes et al. (2009)
[33] Mayer (2009)
[34] Halfon & Friendly (2013)
[35] Ibid
[36] Human Resources and Skills Canada (2011)
[37] Hanvey (2002)
[38] Roehr Institute (2000a)
[39] Ibid
[40] Ibid
[41] Roehr Institute (2000b)
[42] Ibid
[43] Ibid
[44] Odom et al. (2011)
[45] See: Clark & Crandall (2009); Janus (2011); McIntyre et al. (2006)
[46] See: Janus, Lefort et al. (2007); Siddiqua & Janus (201); Daley et al. (2011)
[47] Rouse et al. (2007) p. 15
[48] Pianta et al. 1998
[49] OECD (2017)
[50] Schulting et al. (2005)
[51] Villeneuve et al. (2013)
[52] Ibid
[53] Carlson et al. (2009)
[54] Rimm-Kaufman et al. (2000)
[55] Berlin et al. (2011)
[56] Stoner et al. (2007)
[57] Janus & Offord (2007)

CHAPTER 3 The Early Years for Children with Autism Spectrum Disorder

INTRODUCTION

The bourgeoning prevalence rate of young children with ASD, paired with the complexity of their everyday needs, necessitates that they be included in conversations about the benefits of ECE. This well-researched group of children clearly benefits from intervention beginning during the early years but few are enrolled in ECE programs. Early interventions typically appear to take the form of intensive, therapeutic approaches from an evidence-based behavioural framework which may take place in clinical, home, or ECE settings provided by clinicians, and often funded by the government. Everyone involved has much to gain from children with ASD, and their families, participating in ECE programs with well-trained early child educators who can support, scaffold, and generalize skills prior to grade one.

FOUNDATIONS

To understand research and publications in the field of ASD, it is important to likewise recognize the contextual history of ASD and our changing understanding of related diagnoses over time, including the elasticity in terminology since its origins. Since Leo Kanner and Hans Asperger brought the historic understanding of autism into public significance in the 1940s[1], differentiating this group from children previously thought to have childhood schizophrenia, it is now understood as a wide spectrum diagnostic area which can be part of complex, dual diagnoses[2]. In a marked and recent departure from the previous five sub-diagnoses of ASD, the Diagnostic and Statistical Manual of Mental Disorders (DSM-5)[3] now offers a single category of ASD to represent what is termed a social communication disorder with restricted, repetitive behaviours and three levels of severity[4]. ASD has a rising prevalence rate and is considered “one of the most challenging public health issues today”[5]. It is essential to recognize that changing criteria for diagnosis and understanding of the ASD diagnosis complicates research, as well as research outcomes over time, including those related to early interventions. It is also essential to recognize that skill development provided by such interventions may focus on foundational skills such as communication, socialization,

HIGHLIGHTS

- 1 in 66 Canadians aged 5 to 17 have ASD
- 56% of children with ASD are diagnosed by age 6 and 75% by age 8
- Early intervention prepares children with ASD for a smoother school start
- Early child educators need more training and support to ensure that child care programs are fully accessible for young children with ASD

behaviour, and functional skills of daily living and demand an intensive level of services, including those needed to transition to the school environment. The earlier we begin, the better.

STATISTICS

Despite recent changes in diagnostic criteria, the first comprehensive Canadian report on ASD prevalence was published in 2018[6]. Overall, the Canadian prevalence rate reported for 2015 was calculated at one in 66 for ages five to 17. It is also important to note that the ratio of male to female diagnosis was calculated at four to one, making this an intersectional conversation around disability and gender. Over half of these ASD diagnoses (56%) occurred by age six and almost 75% by age eight[7], meaning that over half of children with ASD are diagnosed during the early years, highlighting the need, and possibilities, for early intervention in ECE programs.

Across Canada, funding related to such early intervention as well as support throughout the lifespan in both health and educational services is jurisdictionally controlled by provincial or territorial ministries. Autism Canada[8] compiled the most recent jurisdictional funding options, ranging from multiple ASD-specific funded programs for children and families (e.g., British Columbia), to funding for adults with disabilities (e.g., Ontario), to no ASD-specific funded programs (e.g., Nunavut). Varied combinations of direct, program-specific to individualized funding models are used for third party interventions. Intensive funding for therapeutic interventions for young children with ASD is a focus across Canada [see (Early) Intensive Behaviour Intervention, below]. Beyond Canada, the US Department of Education reports that 1.1% or 576 000 children with ASD between ages three to 21 are served under their national *Individuals with Disabilities Education Act*[9].

CHILD CARE REPORTS

Few reports on ECE (either nationally or internationally) include information that is specific to the ASD diagnosis[10]. This may relate to age of diagnosis, a desire for inclusivity, a non-categorical approach, or parents who are concerned about rejection: the latter may be a justified parental concern. One research team, for example, found that 35% of ECE programs in the Toronto, Ontario area refused to admit children who already had disability labels[11]. Other provinces report total numbers of children using their support services in childcare settings, but do not specify the number of children with ASD receiving services[12].

Universal early screening is one way that young children might be flagged for concerns related to ASD; however, widespread screening is an area of ongoing concern. One research team systematically examined reviews of universal screening and found only three related to ASD[13]. They noted substantial risks of bias and reported that results of universal screenings are inconclusive, and that research is insufficient to conclude that such tools are more helpful than harmful. They also shared that the Canadian Task Force on Preventative Health Care recommends “against screening for developmental delay using standardized tools in children aged one to four years with no apparent signs of developmental delay and whose parents and clinicians have no concerns about development” (p. 14). Even so, the need for prompt and comprehensive responses to concerned parents and educators who

identify red flags related to ASD is a necessity for young children to qualify for intensive early interventions.

As previously noted, training for educators (early child educators and K-12 teachers) is scant when it comes to childhood SEN, inclusion, and specifically ASD, much less on evidence-based strategies used to teach children with ASD. Practical applications of inclusion-related learning within ECE programs and within K-12 settings is an ongoing issue, although inclusion is considered to be the best-practice approach in Canada[14].

EVIDENCE-BASED INTERVENTION

Evidence-based practice and evidence-based interventions in the field of ASD are an important part of this conversation. One systematic review of 40 research projects[15] focused on early intervention for infants and/or young children with ASD diagnoses or risks, with the specific purpose of identifying the evidence behind the intervention. This review of random controlled trials is notable since: "this is the first systematic review to comprehensively look at the evidence base for early intervention in ASD, encompassing the full range of available treatment modalities and including infants and young children up to six years of age"[16]. With 32 varied intervention approaches, no common approach or ingredient for ASD intervention was found.

Research did, however, identify that social communication is essential within and beyond the early years and that inclusive environments do provide social, cognitive and other opportunities for skill development, as well as effective interventions that help some subgroups of children with ASD. For example, research has indicated that children with more severe impairments (e.g., difficulties with social skills and adaptive behaviour) may benefit more from inclusive ECE programs. It appears to be worth further investigation of whether specific clinical profiles and specific ECE programs can be more closely identified and matched for greater success in young children with ASD[17]. Surely, higher levels of intensive skill development with or within accessible ECE programs will support positive transitions in the school environment with decreased demands for school-based resources.

In contrast, the behaviour field categorizes and evaluates research with a different lens. Three reports in particular are of recent importance when it comes to examining what interventions are successful: *Evidence-Based Practices for Children, Youth, and Young Adults with ASD*[18], the *National Autism Center's National Standards Project* (Phase 2)[19], and the *Canadian Evidence-Based Practices for Individuals with ASD*[20]. None of these reports supersede one another; rather, they provide varied views on this topic from a North American perspective. At minimum, the first two are considered essential reports to consult regarding interventions in the field of ASD. Interventions focused on Applied Behavioural Analysis (ABA) feature prominently in these fundamental reports. A well-known intensive intervention for young children with ASD is a subset of ABA (defined below), most often referred to as some derivation of (Early) Intensive Behavioural Intervention (EIBI or IBI). It is categorized as an established therapeutic intervention by NAC provided in a 25 to 40 hours per week intensity levels; however, target skills for daily life in home, school, and community are informed by assessment and developed by a team (e.g., parents, educators, and clinicians). The target ages to establish this

intervention were birth to nine years of age to ensure skill-building (e.g., academic readiness) and decreasing behaviours (i.e., problem behaviours).

(Early) Intensive Behaviour Intervention

ABA is defined, in part, as "the science in which tactics derived from the principles of behaviour are applied systematically to improve socially significant behaviour"[21]. However, it is essential to understand that the North American geo-political lens of this applied research is not necessarily a world-wide perspective in the field of ASD. Major UK health care reports from 2013 and 2014 conclude that there was no evidence for the use of ABA and no possibility of ranking its use as a field of intervention[22]. NAC's term is Comprehensive Behavioral Treatment for Young Children; they define it as:

> … intensive early behavioral interventions that target a range of essential skills which define or are associated with ASD (e.g., communication, social, and pre-academic/academic skills, etc.). These interventions are often described as ABA, EIBI, or behavioral inclusive programs[23].

From its outset, research[24] on (E)IBI established its greater effectiveness with young children. More recent research concluded that "early intervention has been recognized as the best indicator for optimal outcome"[25]. Due to this typical conclusion, Canadian jurisdictions have increased funding for this intervention type[26]. Trained early child educators would be able to utilize, reinforce, and generalize the principles of ABA that are embedded into individualized program to support inclusion of these children in ECE programs.

It is well known that ASD is a heterogeneous disorder along a continuum or spectrum of characteristics. Subsequently, best practices and interventions are highly individualized, resulting in disagreement in research findings. The above-noted gains through (E)IBI may or may not persist when compared to other interventions[27]. However, it is also important to note that early intervention may need to be paired with ongoing supports and intervention in order to maintain gains that persist into adulthood. For example, in one longitudinal study that included three phases of assessment, researchers found "significant gains" (i.e., IQ gains; decreased symptomology) at age six compared to a group with dissimilar interventions; these positive contrasting gains disappeared in early adulthood[28]. It is also essential to realize that some parents disagree with the emphasis placed on one model of intervention and its focus in the early years[29] and that some adults with ASD are also speaking out about negative childhood experiences related to (E)IBI[30]. Parental involvement in decision making on how best to support their child is essential. In general, many major longitudinal studies that discuss the benefits of ECE have overlooked ASD and, thus, have not then provided outcomes specific to children diagnosed with ASD[31]. This evident lack of specific coding of the ASD diagnosis or identification proves to be a problematic area for researchers attempting to extract specific recommendations to support children with ASD.

Even with the proliferation of ABA-based strategies evident in therapy and research, its application in a school environment, including ECE programs, can be challenging. Though young children may be diagnosed with ASD when they are attending ECE programs, diagnostic-specific statistics appear

unavailable (excepting that the majority are diagnosed before age six)[32]. Educators in ECE programs attempting to provide effective accommodations or interventions to young children with ASD diagnosis or characteristics are often untrained and are "left alone without personnel support or helpful resources"[33]. The EDI, described as population-based measures for communities, are not specific to the diagnosis of ASD and do not include a specific social / communication or neurodevelopmental disorder category. Ontario's 2014/2015 summary EDI document reported that 11.7% of, or, 14 779 children had Special Concerns/Problems (including subcategories such as behavioural problems); 4.9% of these children were receiving specialized supports at school and 3.8% were waitlisted for assessment in senior kindergarten (now year two in Ontario)[34].

The provision of intensive, therapeutic interventions such as EIBI is inconsistent within ECE programs. In Newfoundland and Labrador, for example, though EIBI therapists almost exclusively deliver EIBI (termed Intensive ABA in NL) to its 422 children receiving therapy in home settings, they *may* visit ECE programs to support social skills growth and generalization. However, this support is dependent on the willingness of the center itself[35]. Similarly, in Manitoba, the delivery of therapeutic programming for children with ASD would be both unusual and made on a center by center, case-by-case basis[36]. However, this type of collaboration between EIBI and ECE programs is not unusual in Nova Scotia[37]. Clearly, such collaboration is possible if not consistently implemented.

PARENTS

As well as locating, accessing, and advocating for services, including early intervention services, parents themselves also seek further education on ASD. Research identified that "the relationship between the role of parents and diagnosed children has changed significantly over time, shifting from historic, pointed blame, to a changed understanding of their critical membership on treatment teams"[38]. Other research identified that parent education is often recommended as an adjunct to child-focused intervention services[39]. One urban center in Ontario provided 10 group-based parent education sessions to 141 participants and concluded that "parents were better informed on characteristics of ASD, aware of available community resources and how to access them and had perceived competence in their abilities to use behaviour analytic methods to support their children's learning".[40]

Informed and aware parents do make a difference in the lives of their children and in the wider field of ASD. In a qualitative examination of autism policy in the Canadian context, researchers found that "Canadian autism policy has been characterized by intense acrimony, potentially hindering progress on improving children's services"[41] and that parents continue to influence services for all children with ASD throughout their lives. The researchers described this successful, influential, and even litigious advocacy for children as extraordinary for families and children with extraordinary burdens. Parents in this study talked about the shock, panic, and urgency to find early interventions, calling their search a quest and an investment in the future. Yet, it is important to also realize the context of interventions for very young children with ASD and that research around intervention for toddler-aged children is in its first generation[42].

SUMMARY

It is essential to understand that such intensive and ongoing support for young children with ASD does affect families, especially mothers. In a review of Canadian and international literature related to parental employment, a research team[43] noted "the uniqueness of the experience of having a child with autism in comparison with other chronic or physical disabilities", and that "mothers may reduce their employment hours or quit working outside the home to care for their child with a developmental disability." Other researchers[44] reflected that "there may be something about ASD that differentiates it from other special health care needs in the degree and nature of its impact on families' daily routines, employment, financial status, and childcare arrangements," and found that reliability and training in child care related to ASD was an ongoing issue. They concluded: "It is arguably the case that those parents of children with ASD, who most need stable and reliable care arrangements, are least able to expend the time and resources necessary to secure them." [45]

It is similarly essential to develop policy explicitly prohibiting the exclusion of children with ASD from inclusive ECE programs and provide government-funded training and human resource support, of a sufficient level to provide individualized education and care. More specifically, such training should be sufficient so that all program staff can support young children with ASD, including recognizing signs of ASD and the basics of evidence-based strategies such as ABA. It is also important to prioritize the collection of prevalence data on young children with ASD (or at-risk of ASD) in ECE programs so we can know the current state of support to plan for the future, and measure future change. In addition, collaborative policies and practices between ECE programs and therapeutic services such as EIBIs should be encouraged and supported.

Key points in this noteworthy topic include: over half of those diagnosed with ASD receive their diagnosis during the early years; that early intervention in the form of (E)IBI appears to optimize skill development in young children with ASD; and that skills developed in (E)IBI are intended to be reinforced and generalized in classroom settings, including ECE programs. However, early child educators do not typically appear to be specifically trained in either ASD or its evidence-based interventions as a routine feature of professional preparation. Given that children with ASD need highly individualized models of intervention and support with parents as robust partners, it is clear that inclusive ECE programs, with trained early child educators, can and should play a particularly pivotal role in supporting, reinforcing, and generalizing therapeutic interventions to everyday settings and situation.

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[1] Maich & Hall (2016)
[2] See: Lyons & Fitzgerald (2007); Rapoport et al (2009)
[3] DSM-IV-TR; American Psychiatric Association (2000); American Psychiatric Association (2013)
[4] See: American Psychological Association (2013); Autism Speaks (2015)
[5] Johnson & Myers (2007). p. 1185
[6] Public Health Agency of Canada (2018)
[7] Ibid.
[8] Autism Canada (2017)

[9] National Center for Education Statistics (2018)
[10] See: The Atkinson Centre for Society and Child Development (2017); Friendly et al. (2018)
[11] Killoran et al. (2007)
[12] See: Friendly et al. (2018); Data provided by Department of Education in BC & MN
[13] Letto & Bornstein (2018)
[14] See: Maich & Hall (2014); van Rhijn et al. (2018); Haflon & Friendly (2013)
[15] French & Kennedy (2018)
[16] Ibid. p.444
[17] See: Hansen et al. (2014); Nahmias et al. (2014)
[18] Wong et al. (2014)
[19] National Autism Center's National Standards Project. Phase 2 (2015)
[20] Ontario Association for Behaviour Analysis (2017)
[21] Cooper et al. (2007). p. 20
[22] Keenen (2016)
[23] National Autism Center's National Standards Project. Phase 2 (2015). p. 47.
[24] Lovaas (1987)
[25] Booth & Keenan (2016). p.16.
[26] Shepherd & Waddell (2015)
[27] See: Howard et al. (2014); Kovshoff et al. (2011)
[28] Jónsdóttir et al. (2018)
[29] Ibid.
[30] Hurlbutt & Chalmers (2002)
[31] See: Reynolds et al. (2001); Peters et al. (2010); Peters et al. (2010); Barnett et al. (2013).
[32] See: Public Health Agency of Canada (2018); Data provided by Departments of Education in NL, ON, & NS
[33] Brodzeller et al. (2018). p. 278
[34] Offord Centre (2014/2015). p.15
[35] Department of Health & Community Services, Government of NL, (2018)
[36] Data provided by Department of Education in MN
[37] Data provided by Department of Education in NS
[38] Alves & Maich (2018) p. 4.
[39] See: Steiner et al. (2012); National Research Council (2001)
[40] Alves & Maich (2018). p. 19.
[41] Shepherd & Waddell (2015). p. 3562
[42] Schertz et al. (2011)
[43] Maich et al. (2018)
[44] Houser et al. (2014)
[45] Ibid p. 682

CHAPTER 4 ECE and Student Mental Health

INTRODUCTION

With the rise of mental health issues, researchers are particularly interested in the impact of ECE on reducing mental health concerns. As noted earlier in this report, research is conclusive that quality ECE enhances children's language skills, strengthens prosocial behaviour, and enhances children's self-regulation skills, all of which are vital to child mental health. Children who can communicate effectively, who are able to interact appropriately, and able to regulate their behaviour and emotions are at a significantly reduced risk for developing mental health issues or being diagnosed with an emotional or behavioural disorder (EBD). However, the research is also clear that early curriculum frameworks need explicit social and emotional learning (SEL) outcomes embedded to reduce mental health issues in our most vulnerable children.

GLOBAL AND CANADIAN STATISTICS

The reported estimate of mental health and substance abuse disorders globally ranges from 15 to 20% of the population, carrying an associated disease burden of 7% (and as much as 14% in some countries), consuming a significant amount of health care budgets[1]. In Canada, mental health issues account for "13% of the burden" of disease [2]. Between 10 and 20% of Canadians will develop a mental health issue in their lifetime. The onset for most of these disorders will begin in childhood or adolescence. Between 10 and 25% of young children have mental health issues (mild to severe) that interfere with their daily social and environmental interactions, indicating that mental health issues may begin early[3]. Of children ages two to five years, 17% meet the diagnostic criteria for a mental health diagnosis[4]. Although estimates vary, "the percentage of children and youth experiencing mental health concerns; including anxiety, depression, or ADHD is suggested to be between 15 to 30% and is predicted to increase to 50% by 2020[5]". In 2012-2013, 5% of emergency room visits and 18% of inpatient hospitalizations for individuals between five and 24 years were related to mental health issues. When compared with the 2006-2007 rates, this suggested an increase of 45% for emergency room visit and 37% increase for hospitalizations[6]. If not identified and treated these

HIGHLIGHTS

- Explicit social emotional learning outcomes need to be embedded into ECE curriculum frameworks
- Maladaptive behaviors, once entrenched, are more difficult and costlier to remediate
- Working conditions and mental health status of early child educators impact the mental health of children
- Children with challenging behaviours are far more likely to be excluded from ECE programs

mental health issues may lead to poor educational, employment, health and social outcomes, and potentially early mortality. Individuals who develop mental health issues are also at risk for becoming involved in the criminal justice system.

Research[7] suggests that poverty, developmental vulnerabilities (such as low birth weight, genetic disorders[8], developmental coordination disorder, and ADHD), gender, education level of the mother, maternal mental health problems, harsh and/or inconsistent parenting, and poor home environments increase the risks for children in the development of mental health problems. Conversely, nurturing and stable relationships lay a foundation for positive outcomes including learning, self-awareness, social skills, understanding the emotions of others, and the development of successful relationships[9]. Children are required to negotiate complex contexts, have appropriate skills to interact, be effective in achieving goals, engage in reciprocal interactions, and develop friendships[10]. Mastering these early developmental outcomes is critical for well-being and future outcomes.

Mental health problems occur in young children but often go unrecognized and are not remediated[11]. While firm diagnoses of mental health disorders in the early years is complex, early warning signs need to be identified. Emotional dysregulation, peer rejection, disturbed sleeping/eating, aggression, irritability and defiance are some visible early signs[12]. However, these early behavioural characteristics need to be viewed through a developmental lens with the contextual knowledge that some problems may be temporary or transitory. Nonetheless, when behaviours such as these are evident it is important to provide developmentally appropriate supports around both the child and the child's primary caregivers and family[13]. Maladaptive behaviours in the early years can be indicative of negative outcomes in adulthood[14]. Young children with developmental disabilities are also at-risk of developing mental health problems which will further sabotage their development as they age[15].

The ongoing development of children is a complex interplay between genetics and ecology. The debate is no longer nature versus nurture but rather nature via nurture as researchers look beyond genetics to examine how, and to what degree, genes are activated by the child's environment and experiences[16]. Poverty related adversity can affect children's development as adversity can cause increased stress hormones[17]. An increase in stress hormones can impact the child's brain and physical development and can have long-term impacts on a child's development of social, emotional, attentional, executive functioning skills, and overall physical and mental well-being.

Early behavioural difficulties carry an additional risk: dismissal from ECE programs. These programs are not governed by the same level of accountability as the K-12 system and have great diversity in quality and structure. Research[18] has shown that ECE programs, especially for-profit centers, are more likely to expel children with significant mental health issues, especially those with externalized behaviours. One study[19] looked at expulsions and suspensions in ECE programs and found them 34 times more likely to expel children with behavioural difficulties than the K-12 rate. Expulsions are related to a variety of factors including child characteristics, characteristics of the class (group size, racial composition), and teacher reported stress and depressive symptoms. Teacher stress has been found to be the most robust correlate with expulsions and suspensions. Poor attendance in these very ECE programs also places children at-risk[20]. Children who attend ECE programs, even those children with challenging behaviors, poor attendance, and challenging home environments make a better transition and

adaptation to school[21]. Research also shows that with appropriate interventions these children can be successful in their ECE program[22].

While much of the research has examined and focused on the impact of caregiver characteristics and mental health problems for mothers, the mental health of the educator may also impact child development outcomes [23]. Another risk factor is educators with lowered expectations for children from poor socio-economic and minority backgrounds.

PREDICTORS OF SUCCESS

Children who are able follow directions, attend, and regulate their behaviour are better prepared and more successful in school. School readiness has an impact beyond the first few months of school and can impact the child's overall success in school and throughout their lives[24]. The best predictors of successful outcomes at the child/family level are the birth weight and the home learning environments[25]. Early intervention has been supported by research, from pregnancy through the early years as this is considered the most vulnerable period in a child's life and the period of most rapid development[26]. While families are primary deliverers of care, research indicates that the strongest influence outside the family is children's participation in quality ECE.

At the school level the best predictors are quality of care, curriculum and staff-child interactions[27]. Quality ECE mediates risk factors for children. A longitudinal study[28] examined the quality of ECE programs and found that these are likely the second most frequent environment in which children spend time and the quality of the program plays a significant role in determining development outcomes (short- and long- term). The quality of children's ECE experience is a strong predictor for school readiness. The closeness of relationships between educator and child tended to be a similar or even a stronger predictor (compared to mother's education) of the child's behaviour and social skills. High quality ECE can improve students' cognitive, social, behavioural and emotional outcomes, especially for those at-risk[29]. Interventions need to be evidence-based as well as developmentally and contextually appropriate.

Another factor that predicts mental health outcomes for children is the classroom management techniques used by educators. In one study, classroom management emerged as the most significant factor influencing both behavioural and academic outcomes. Classrooms with better classroom management and more varied approaches to learning had better results. Classroom management emerged as the most salient finding across multiple outcomes (behavioral and cognitive, self-control, work habits, engagement and off-task behaviour)[30].

BARRIERS TO EARLY IDENTIFICATION AND INTERVENTION

The literature identifies a number of barriers to early identification and early interventions. First, as mentioned earlier, children's behaviour may be temporary and should be viewed from a developmental lens. Identification should be dependent on the context of when and where behaviour occurs. As well, individual differences, family expectations, and/or familial cultural expectations

influence children's behaviour. However, early behaviours require attention and intervention to ensure maladaptive behaviours are not reinforced[31].

Primary health care physicians are generally the first contact for many families with children experiencing behavioural difficulties. Physicians act as the gatekeepers for more specialized services and mental health screening. Many doctors may not recognize serious mental illness in young children and as a result, children under five years have the lowest rate of diagnosis[32]. Strict eligibility criteria and limited resources pose significant barriers.

The diagnostic criteria for mental health disorders often requires behaviours be present for a specified period of time[33], yet diagnoses provide families with eligibility to access services and supports. Often practitioners are reluctant to diagnose mental health problems in children, making access to services difficult. Proactive and early interventions are often not provided, due to a "wait and see" approach where medical personnel need more time or let the child age in the hope that they outgrow the issue[34].

Mental health services for young children are limited and those that do exist are often independent of one another. Most interventions that are available for young children are for cognitive, motor, language, and adaptive functioning. A further barrier is personalizing the child as the problem and not contextualizing the behaviour with the systems in which the child interacts. Often when services are implemented they are provided to the child and not the family or other care providers, and communication is problematic. Families are amongst the best positioned to identify mental health problems in their children. They have ongoing involvement with their children and a unique understanding of their children's behaviours, yet their knowledge and opinions about their children and their mental health status is not often considered[35].

Pre-service and in-service training in student mental health can also be an issue in the early identification and remediation of children's behaviour. Most early child educators are not adequately trained to identify early problems. Identification and intervention for children experiencing mental health issues requires a deep understanding of child development, family dynamics, clinical skills, and cultural understanding. Systems working with young children and their families should support comprehensive services that are high quality and evidence-based, with appropriate standards of care policies[36].

PLAY-BASED PEDAGOGY

Play facilitates social interaction, emotional regulation, physical development, higher cognitive processes and creativity. During play children are more likely to be self-directed, self-organized, self-controlled and be able to negotiate with others. Play also fulfills the need for affiliation and supports academic learning[37]. Play-based pedagogies rely on a continuum of approaches, ranging from free play to educator directed play with guided experiences and specific learning goals. Collectively, this full spectrum of play activities are all child centered, are developmentally appropriate and become the platform where early learning blossoms. Play-based pedagogy and social/emotional development are of particular importance as seen in the curriculum frameworks for many provinces in Canada. A 2014[38]

review of the provincial/territorial curricula frameworks identified social and emotional development featured in all of the frameworks included in the review.

Play has received attention in the development of SEL, particularly during educator directed play with specific SEL curriculum goals imbedded. One study examined the impact of a manualized enrichment program which provided teachers with a scope and sequence of SEL curriculum[39]. It was reported that prosocial engagement and self-regulation are closely linked with emotional competence and social problem solving. They found that children who can manage their behaviour can meet classroom expectations and exhibit higher achievement. The study provided teachers with a curriculum guide and on-going mentoring so that the program had implementation fidelity. They were also able to provide integrated instruction through pre-existing structures. They used emotional coaching and social emotional problem solving during free play. The findings were significant. Children who participated in the program showed improvement in vocabulary, literacy, emotional and social problem-solving, social behaviour and learning engagement[40].

Another study[41] investigated an integrated approach that brought all child/family services into the school site in an integrated model. Known as *Toronto First Duty*, the neighborhood school became a one-stop site for families With ECE programs being housed in the neighborhood school and many related services such as health coming there as well. Findings from the project were significant. There was a strong positive association between staff teamwork and quality of programs. The program benefitted parents by empowering them. They experienced fewer parenting hassles and less difficulty navigating between child care and school. They reported receiving greater supports, continuity of care and seamless services. Positive effects included social and emotional development and more intense use (defined as more hours or dosage) predicted better cognitive and language skills. Universal access to these programs helped reduce stigma, provide pressure to improve quality by drawing in middle class parents, and reach all children. Integrated services improved child development, promoted healthy life-long development, strengthened school readiness, and stand to prevent problems later in life.

Integrated services (for example, those that include home, community and school) showed a positive influence on social development, positive behaviour and self-regulation[42]. The largest impact was on the cognitive outcomes; however, there were also positive results for social skills and school progress. Another meta-analysis focused on the use of SEL in the K-12 system[43]. They examined multiple outcomes: social and emotional, attitude toward self and others, positive social behaviour, conduct problems (externalizing behaviours), emotional distress (internalizing) and academic performance (literacy and numeracy). Overall findings of the meta-analysis suggest the largest overall effect size was for SEL. This study also identified that educators can effectively implement SEL programs and have them incorporated into the regular classroom routines. They identified two significant variables that influenced the effectiveness of the programs that were included in the meta-analysis. First, the programs have to be well designed, and have four elements; sequenced, active, focused, and explicit. Second, the programs need to be properly implemented to be successful.

One study examined[44] self-regulation at school entry and found that positive self-regulation skills ratings by teachers at the beginning of school were associated with teachers' reports of higher

cognitive self-control, behavioural self-control, and positive work habits later in the school year. The researchers also differentiated children who attended ECE and found that they out performed children without ECE experience on all measures of behaviour including self-regulation and engagement in academic learning.

The impact of children attending a program named Head Start for two years of pre-school (ages three to five) was investigated and compared to children who only attended for one year[45]. The results suggested children who attended pre-school for two years scored higher on measures of social and emotional competency as well as higher levels of overall cognitive and adaptive functioning when compared with children who only attended for one year.

A meta-analysis on the effects of full day kindergarten on student achievement and social development was also completed[46]. Children who attended FDK performed better on academic achievement measures when compared with children who attended only HDK programs. Small positive associations were displayed between FDK and attendance (positive but not significant), self-confidence (varied), and ability to play with others. There is a statistically significant difference in children who attended FDK compared with children who attended half day kindergarten on self-regulation tasks.

A study[47] examined interactions between children, attending a Head Start program, and their teachers and peers under three conditions: structured, unstructured and games and play. They examined five dimensions of behaviour: oppositional behaviour, aggression, inattention and hyperactivity, withdrawn and low energy, and socially reticent behaviour. Early behaviour problems in structured learning situations differentially predicted lower levels of both literacy and language skills by the end of kindergarten and grade one. Problems with peers predicted lower levels of phoneme segmentation and reading fluency rates by the end of grade one. Children with early behavioural problems within structured teacher-initiated learning and peer mediated learning were at the greatest risk for poor academic outcomes. This article draws attention to active engagement, highlights the link between SEL and early identification. These authors caution against pathologizing the child, rather increasing the capacity for teachers and staff to use developmentally and contextually appropriate assessment and interventions to prevent significant mental health issues within this population. They recommend greater collaboration across disciplines and systems to guide and sustain meaningful interventions.

Children's self-regulation responses were investigated in a variety of classroom contexts, including small group instruction, play, large group instruction, and during transitions[48]. It looked at children's self-regulation and engagement across a variety of contexts. Results found the highest level of self-regulations occurred during small group, followed by play, then large group and finally during transitions. Engagement was highest during play, then next highest during small group followed by large group and transitions.

SUMMARY

Family support programs, early child educators, medical personnel, mental health services providers, and child welfare staff need to work together to provide children with an environment that ensures successful outcomes. The literature supports a collaborative approach to working with families and

caregivers to provide seamless services as well as expert assistance in evidence-based practices for children who are struggling with regulating their emotions and behaviours. Ensuring access to quality ECE is critical for children with challenging behaviours and emergent mental health needs. Keeping them enrolled in ECE programs should be a high priority, especially for those with complex needs. Earlier intervention is vital to mitigating long term consequences and ensuring optimal outcomes.

However, we also know from examining the research literature that the mental health status of early child educators, job stress, and working conditions impact outcomes for young children. Therefore, this is a critical factor in improving outcomes for children attending ECE programs. It is important that provinces and territories recognize the value of early child educators and work to improve their working conditions.

The provision of universal ECE programs for all children regardless of their behavioural needs reduces stigma and mitigates long-term consequences. ECE programs benefit children's academic and behavioural outcomes. The provision of explicit SEL outcomes, incorporated into play-based learning approaches, provides added benefits for all, not only for ECE programs but for primary curriculum as well. Continuity of curriculum as well as continuity of pedagogical practise are critically important. Play-based teaching affords a valuable opportunity for this to occur.

Early child educators need to be knowledgeable about child mental health and skilled in both recognizing issues and intervening to address it. They need to be skilled in general classroom management techniques with prevention of problem behaviour as a focus. They should be provided education and support in developing skills and expertise in evidence-based practices for children exhibiting problem behaviours. The current practices of professional development may not result in changes in classroom practices. Models such as coaching, mentoring, or communities of practice should be developed to ensure quality of care for children.

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[1] See: National Research Council and Institute of Medicine (2009); Ritchie & Roser (2018); The World Health Organization (2017); Center on the Developing Child at Harvard (2016)
[2] Canadian Institute for Health Information (2015), p. 5
[3] Bricker et al. (2004)
[4] Clinton et al. (2014)
[5] Whitley et al. (2012) p. 57
[6] Canadian Institute for Health Information (2015)
[7] See: Masi & Gignac (2015); Anders et al. (2010); Bergen & Pronin-Fromberg (2009); Blair & Raver (2012); Isaac (2012); Peisner-Feinberg et al. (YEAR); National Scientific Council on the Developing Child (2008/2012); Sylvia et al. (2009)
[8] Masi & Gagnac (2015)
[9] Shonkoff & Garner (2012)
[10] Conroy & Brown (2004)
[11] The Center on the Developing Child at Harvard (2004)
[12] National Scientific Council on the Developing Child (2008/2012)
[13] See: Conroy & Brown (2004); National Scientific Council on the Developing Child (2008/2012)
[14] See: Burt et al. (2008); Carlson et al. (2007); Denham et al. (2003)
[15] Bricker et al. (2004)
[16] See: National Scientific Council on the Developing Child (2008/2012); Sylvia et al. (2009)

[17] Blair & Raver (2012)
[18] See: Gilliam & Shahar (2006); Perry et al. (2008)
[19] Gilliam & Shahar (2006)
[20] Ehrlichet al. 2018
[21] Isaacs (2012)
[22] Perry et al. (2008)
[23] See: Gilliam & Shahar (2006); Oberle & Schonert-Reichl (2016)
[24] Burt et al. (2008)
[25] Hall et al. (2009) p. 346
[26] Sylva et al. (2009)
[27] Hall et al. (2009) p. 346
[28] Peisner-Feinberg et al. (2001)
[29] Anders et al. (2010)
[30] Rimm-Kaufman et al. (2009)
[31] Bricker et al. (2004)
[32] Bricker et al. (2004)
[33] APA (2013)
[34] See: Conroy & Brown (2004); Government of NL (2016)
[35] See: Bricker et al. (2004); Smith & Fox (2003)
[36] See: Conroy & Brown (2004); Brown & Conroy (2010)
[37] See: Bergen & Pronin Fromberg (2009); Corter & Pelletier (2010)
[38] Atkinson Centre (2014)
[39] Bierman et al. (2008)
[40] Bierman et al. (2008)
[41] Corter & Pelletier (2010)
[42] Ibid.
[43] Durlak et al. (2011)
[44] Rimm-Kaufman et al. (2009)
[45] Moore et al. (2015)
[46] Cooper et al. (2010)
[47] Butosky-Shearer & Fantuzzo (2011)
[48] Timmons et al. (2016)

Appendix A - Report by Dr. Edward Melhuish

A longitudinal study of the long-term influence of Early Childhood Education and Care (ECEC) for the risk of developing Special Educational Needs (SEN).

Dr. Edward Melhuish, University of Oxford & Birkbeck, University of London

INTRODUCTION

The Effective Pre-school, Primary and Secondary Education (EPPSE) project began in 1997 as a study of the effects of ECEC up to age 7. As the project was extended throughout primary school it became the Effective Pre-school and Primary Education project. Subsequently as it was extended through to the end of compulsory education it became the Effective Pre-school, Primary and Secondary Education (EPPSE) project. The EPPSE students completed compulsory education by 2013, and during this time school was only compulsory up to age 16. Since then young people in England are obliged by law to remain in some form of education or training until the age of 18. Hence, the EPPSE project is a longitudinal study primarily up to age 16 years, with a partial follow-up of those still in education at age 18. A wealth of data was collected that informed numerous publications and has earned international respect for both the calibre of the study as well as the impact it has had on public policy.

The project has consistently found significant positive effects for early childhood education and care (ECEC) experiences on child outcomes that last up to and continue beyond the end of compulsory education. For instance, attending ECEC or not was a significant predictor of higher total General Certificate of Secondary Education (GCSE) scores and higher grades in GCSE English and maths. ECEC attendance also predicted achieving five or more GCSEs at grades in the range of A-C, the vital 'entry ticket' to high-value A level courses that can lead to a place in a good university at age 18. Having established that attending any ECEC had benefits that last up to, and beyond age 16, EPPSE also showed that the amount of time spent in ECEC (duration in months) continued to have positive effects in terms of predicting higher total GCSE scores and grades in English and maths. In other words, both attendance (yes or no) and the 'duration dose' (in months) of early education continue to shape academic outcomes up to the end of statutory education. ECEC quality mattered too, significantly predicting total GCSE scores as well as English and maths grades. There were some indications that ECEC quality had somewhat stronger effects for students whose parents had lower qualifications compared to those with better educated parents. These differential effects were found in GCSE English scores as well as maths and suggest that quality matters most for children whose parents have low qualification levels. Findings such as these suggest that high quality ECEC has the potential to help narrow the equity gap in achievement between those from well-educated families and those whose parents have more modest qualifications. For social-behavioural development, only the quality of the ECEC continued to influence outcomes at age 16. High quality ECEC was linked to better socio-emotional development including self-regulation and pro-social behaviour.

The EPPSE study undertook some analyses of the link between ECEC experience and risk of SEN during the first two years of primary school. This work was called the Early Years Transition and Special Educational Needs (EYTSEN) project (Sammons et al., 2004). The EYTSEN project documented links between ECEC experience and the risk of SEN. This current report goes further than the EYTSEN project in looking into greater detail at the risk of SEN and dealing with this topic across the whole of the compulsory school years (age 5-16 years).

METHODOLOGY

Participants

One hundred and forty-one early childhood education and care (ECEC) centres were randomly chosen because together they had a demographic make-up similar to that of England overall. These 141 centres included all types of group-based early childhood education and care (ECEC) that existed in England at the time. The research was designed to study group ECEC and the possible impact on young children, and hence did not study other forms of ECEC such as relatives, childminders (family day care) or nannies. From the 141 ECEC centres, 2857 children were recruited into a longitudinal study. Children already in ECEC centres were recruited when they became 3 years old; children starting in a centre after their third birthday were recruited at entry to the ECEC centre. Children who had not attended ECEC but were in the same reception class in primary school were also recruited to the study at a home (no ECEC) group (n=310). This allowed comparison of not attending an ECEC centre with the effects of different patterns of ECEC experience. Thus 3167 children were recruited to the study in total. This sample closely resembled the demographic characteristics of England overall but with a slightly greater incidence of disadvantaged families.

Sample attrition

The analysis sample was 3167 children. However, inevitably, as in all longitudinal studies, there has been some attrition from the sample. For instance, the GCSE academic outcome at age 16 had valid data for 2582 students (81.5% of the original 3167 sample). The social-behavioural outcomes at age 16 were available for 2,401 students (75.8% of the original sample). Analyses indicate that the EPPE sample was still broadly representative of a national sample of young people and their families. In order to overcome any potential bias that may have been introduced as a result of attrition, multiple imputation was used in the analyses of data.

MEASURES

Parents and Home

When children entered the study, parent interviews provided data on parents' education, occupation and employment, family income, family structure, ethnicity, the child's birth weight, health, development and behavior, the use of preschool provision and childcare history. The first parental interview included questions concerning the frequency that children engaged in various activities in the home that were used to construct a home learning environment measure. The Home Learning Environment (HLE) measure was invented as a 'marker' or 'proxy' measure of the 'cultural capital' available in the home environment by Melhuish et al., (2001) and proved to be very predictive of later development (Melhuish et al., 2008).

ECEC centres

ECEC quality: Detailed information included observational rating scales of structural and process quality. ECEC quality was measured by observation in 141 centres using the Early Childhood Environment Rating Scale – Revised (ECERS-R) (Harms et al., 1998); focusing on emotional and social care and the Early Childhood Environment Rating Scale – Extension ECERS-E (Sylva et al., 2003) focusing on activities supporting the curriculum, specifically activities related to literacy, numeracy, science and diversity. The Caregiver Interaction Scale was also used (Arnett, 1998) to give an additional measure of interactional aspects of quality. Interviews with the centre managers provided extensive additional information on the characteristics of centre, including: group size, child-staff ratio, staff training, aims, policies, curriculum, and parental involvement. The mean of these three observational measures was used as an overall quality measure.

ECEC effectiveness: In addition, measures of ECEC effectiveness were used. Where children in a centre perform better than expected on the basis of initial attainment and background characteristics, then that centre is regarded as effective. Conversely where the children perform less well than expected, then it was considered a relatively ineffective centre. We constructed a continuous measure of ECEC effectiveness. Children's attainment at the start of primary school (4-5 years) was analyzed in multilevel models controlling for their prior attainment at entry to the study (3+years) and background influences (family and area characteristics). As children were clustered in the model by ECEC centre, centre level residuals from the statistical model provided a measure of the ECEC centre's effectiveness in promoting learning and development. ECEC effectiveness was calculated for literacy and numeracy at the start of primary school. The mean of these effectiveness measures was used as an overall ECEC effectiveness measure.

Child measures of "risk for SEN"

This report concerns the incidence of Special Educational Needs (SEN), which has been defined by the UK Department for Education in a Code of Practice (2001). The Code of Practice, while laying emphasis on cognitive attainment, also considers the child's social and behavioural development. A child may receive a statement of SEN if their behaviour is such that it affects their attainment potential. However, the application of the Code of Practice for SEN varies considerably between local authorities and even between schools within a local authority. The incentives to declare children as having SEN vary by school and from year to year as government policies change, and the pressures to maximize school-level achievement figures produce varying incentives (often perverse incentives) regarding the SEN classification of children. While initially it might seem that using school's own classification of SEN might be useful for a project such as EPPSE, the variability between schools in the use of the Code of Practice means that a given child might be treated differently depending on which school is attended. This makes school classification an unreliable measure of SEN to use across a national sample.

To circumvent this issue the approach adopted has been to measure risk of SEN in terms of whether a child is one standard deviation (SD) or more from the mean in the direction of SEN classification. For example, a child scoring one SD or more below the mean on a measure of cognitive development would be at risk of developing SEN. Hence this report examines the concept of SEN within a framework of potential risk, rather than attempting to use schools' classification. Both cognitive and

social/behavioural measures of children's development are considered relevant. The report explores the predictors of SEN within these two domains and acknowledges the need to look at multiple outcomes within the education and care system and their association with different child, parent, family and home characteristics, as well as the child ECEC experience. In investigating the quality of ECEC experiences and their relationship with children's risk of SEN a wide range of covariates reflecting child, parent, family and home characteristics are statistically controlled.

RESULTS

Overall quality was defined as the mean of the ECERS-R, ECERS-E and Arnett quality measures. This measure was used in analyses as a predictor of risk of SEN. In addition, overall effectiveness of ECEC was available for each ECEC centre in the study and was also used as a predictor of risk of SEN. In each analysis model, No Formal ECEC (None) was taken as the comparison group. Models controlled for the following covariates: Family day care (yes / no), Relative day care (yes / no), Birth weight, Sex, Ethnicity, Term of birth, Couple / lone parent, Mother's and father's employment, Child's health and developmental problems (0-3), Number of siblings, Maternal and paternal age, Highest parental qualification, Highest parental socio-economic status (SES), Family income, Home Learning Environment index.

Logistic mixed-effects models were fitted, with a random effect for ECEC centre to account for clustering in the data. All results control for the effects of the covariates listed above.
Results were calculated for the risk of SEN at ages 5, 7, 11, and 16 years. Here we present the results combined across those ages in terms of ever at risk (5-16 years) of cognitive SEN, or ever at risk (5-16 years) of socio-emotional SEN. The graphs below illustrate these results.

Ever at risk of SEN throughout school (5-16 years)

Fig. 21: Ever at risk of cognitive SEN: Odds Ratios for Risk of SEN: Low, Medium and High Quality and Effectiveness ECEC compared with None (lower values equals less risk).

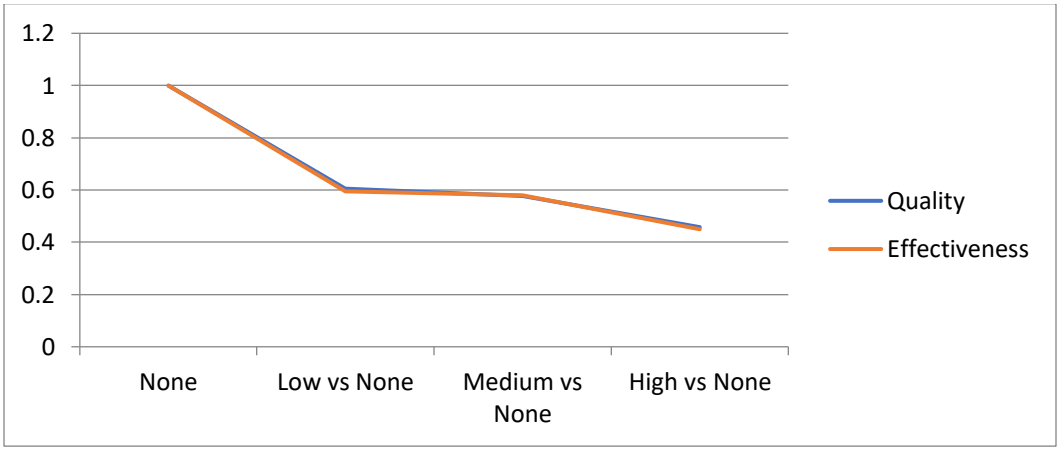
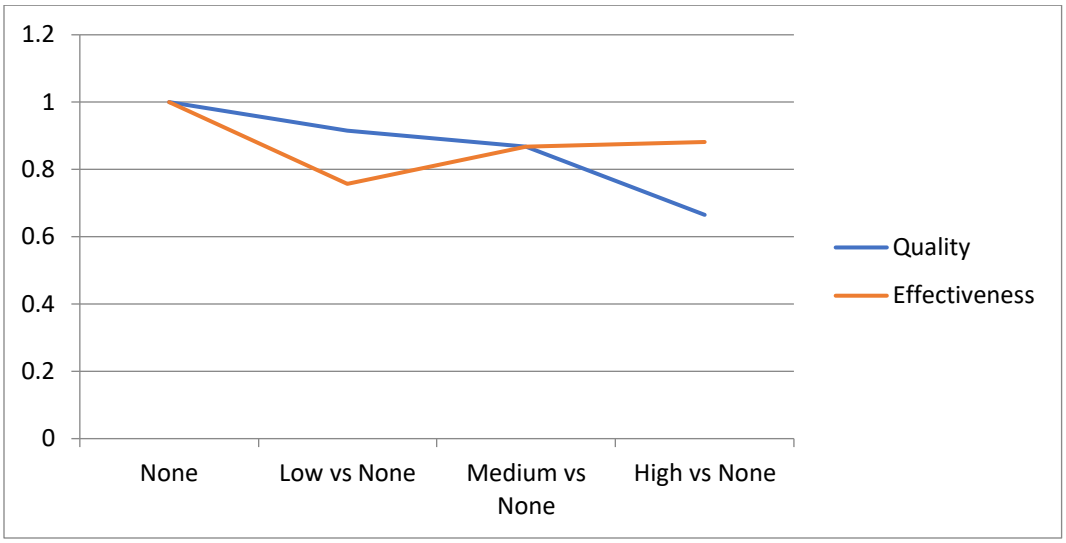


Fig. 22: Ever at risk of socio-emotional SEN: Odds Ratios for Risk of SEN: Low, Medium and High Quality and Effectiveness ECEC compared with None (lower values equals less risk).



DISCUSSION AND CONCLUSIONS

The results indicate that if a child uses ECEC there is a reduced risk of cognitive SEN, and this is apparent from the start of school (age 5) through to the end of compulsory schooling (age 16). Additionally, this reduction in risk of SEN becomes greater the higher the quality or effectiveness of the ECEC centre attended. The graphs of the risk of SEN for cognitive outcomes clearly show this pattern, and it is very consistent throughout ages 5, 7, 11 and 16 years. This pattern of results appears for both ECEC quality and ECEC effectiveness, and these effects are net of demographic factors and home learning environment.

The ECEC quality measure is derived from ratings based on direct observation by a researcher, whereas the ECEC effectiveness measure is statistically derived from data collected on child outcomes. Given the difference in methods and forms of data underlying these two measures it might have been expected that the patterns of results for prediction of SEN would be rather different. However, there is great similarity in the pattern of results for these two different measures of ECEC "quality". The degree of this similarity of results for quality and effectiveness measures is quite striking as it is revealed in the graphs. This is gratifying in that it supports the notion that the results are reflecting real substantive differences in the ECEC experiences of children, and this similarity of results is a form of joint validation for both of the measures.

For socio-emotional outcomes, the pattern of results is not quite as consistent as it is for the cognitive outcomes. When we look at the graphs for 'ever at risk (5-16 years)' the difference in consistency of results is reflected in the fact that the graph for cognitive SEN shows a regular decline in risk with increasing quality (or effectiveness) of ECEC, albeit with a flattening of the gradient between low and medium quality. This may indicate that after the initial benefits of receiving any ECEC that subsequent improvement does require high quality ECEC. For 'ever at risk' for socio-emotional outcomes the

decline in risk of SEN with quality of ECEC is there but is less steep, and for effectiveness of ECEC the pattern is less clear, with some increase in risk after the initial benefit of receiving any ECEC.

In summary the results clearly show that providing ECEC for children decreases the risk of SEN in later years. This effect is greater when addressing the quality of ECEC for cognitive outcomes, where overall children who had high quality (or effective) ECEC showed a 40-60% lower level of risk for cognitive SEN. The results are not so clear-cut for socio-emotional outcomes but overall the pattern is similar with children who had high quality (or effective) ECEC showing a 10-30% lower risk of developing socio-emotional SEN.

REFERENCES

Arnett, J. (1989). Caregivers in day care centres: Does training matter? *Journal of Applied Developmental Psychology*, 10, 541-552.

Harms, T., Clifford, R., & Cryer, D. (1998). Early Childhood Environment Rating Scale, Revised Edition. NY; Teachers College Press.

Melhuish, E. C., Sylva, K., Sammons, P., Siraj-Blatchford, I., & Taggart, B. (2001). *The Effective Provision of Pre-school Education Project, Technical Paper 7: Social/behavioural and cognitive development at 3-4 years in relation to family background.* London: Institute of Education/DfES.

Melhuish, E.C., Sylva, K., Sammons, P., Siraj-Blatchford, I., Taggart, B., & Phan, M. (2008). Effects of the Home Learning Environment and preschool center experience upon literacy and numeracy development in early primary school. *J. of Social Issues, 64,* 95-114**.**

Sylva, K., Siraj-Blatchfird, I., & Taggart, B. (2003). ECERS-E: The Early Childhood Environment Rating Scale Curricular Extenson to ECERS-R. London: IOE press & Trentham.

Appendix B - References

Akbari, E., Boivin, M., & Jenkins, J. (2015). *Empowering the future: Best evidence for investing in early childhood education in Canada*. Retrieved from: http://www.oise.utoronto.ca/atkinson/About_Us/What_We_Do/Empowering_The_Future.html

Akbari, E. & McCuaig, K. (2017) *Early Childhood Education Report*. Atkinson Centre for Society and Child Development, Ontario Institute for Studies in Education/University of Toronto.

Alexander, C. (2012). *Early Childhood Education has widespread and long-lasting benefits. TD Economies*. Retrieved from: https://www.td.com/document/PDF/economics/special/di1112_EarlyChildhoodEducation.pdf

Alexander, C., Beckman, K., Macdonald, A., Renner, C. & Stewart, M. (2017). *Ready for Life: A Socio-Economic Analysis of Early Childhood Education and Care.* Ottawa: The Conference Board of Canada.

Alves, K., & Maich, K. (2018). *What parents want: Parental perspectives of children with ASD on a community-based parent education program* (unpublished manuscript).

American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders* (4th ed. *text rev.*). Washington, DC: Author.

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Washington, DC: Author.

Anders, Y., Sammons, P., Taggart, B., Sylva, K., Melhuish, E., & Siraj-Blatchford, I. (2011). The influence of child, family, home factors and pre-school education on the identification of special educational needs at age 10. *British Educational Research Journal, 37*(3), 421-441.

Aos, S., Lieb, R., Mayfield, J., Miller, M. & Pennucci, A. (2004). *Benefits and costs of prevention and early intervention programs for youth.* Washington State Institute for Public Policy. Retrieved from: http://www.wsipp.wa.gov/

Arora, N., Knowles, S., Gomes, T., Mamdani, M., Juurlink, D., Carlisle, C., & Tadrous, M. (2016). Interprovincial Variation in Antipsychotic and Antidepressant Prescriptions Dispensed in the Canadian Pediatric Population. *The Canadian Journal of Psychiatry, 61*(12), 758-765.

Autism Canada. (2017). *Provincial and territorial funding programs for autism therapy*. Retrieved from https://autismcanada.org/wp-content/uploads/2017/12/AC_ProgramsForAutismTherapy.pdf

Autism Speaks. (2015). *DSM-5 diagnostic criteria*. Retrieved from: www.autismspeaks.org/what-autism/diagnosis/dsm-5-diagnostic-criteria

Balaban, N. (2011). Transition to group care for infants, toddlers, and families. *Educating the Young Child: Advances in Theory and Research, Implications for Practice, 4*(2) 7-20.

Barnett, W. S., Jung, K., Youn, M.J., & Frede, E. C. (2013). *Abbott Preschool Program Longitudinal Effects Fifth Grade Follow-up*. Retrieved from: http://nieer.org/wpcontent/uploads/2014/09/APPLES205th20Grade.pdf

Bauchmüller, Gørtz, & Rasmussen. (2014). Long-run benefits from universal high-quality preschooling. *Early Childhood Research Quarterly, 29*(4), 457-470.

Berlin, L. J., Dunning, R. D., & Dodge, K. A. (2011). Enhancing the transition to kindergarten: A randomized trial to test the efficacy of the "Stars" Summer Kindergarten Orientation Program. E*arly Childhood Research Quarterly, 26*, 247–254.

Bergen, D. & Pronin Fromberg, D. (2009). Play and social interaction in middle childhood. *Phi Delta Kappan, 90*(6), 426-430. doi:10.1177/003172170909000610

Bierman, K.C., Domintrovich, C., Nix, R.L., Gest, S.D., Welsh, J.D., Greenberg, K.E., & Gill, S. (2008). Promoting academic and social-emotional school readiness: The Head Start REDI program. *Child Development*, *79*(6), 1802-1817.

Blair, C., & Raver, C. (2012). Child development in the context of adversity: Experiential canalization of brain and behavior. *American Psychologist 67*(4), 309-318. doi:10.1037/a0027493

Booth, N., & Keenan, M. (2016). Autism Spectrum Disorder post-diagnosis experience in Northern Ireland: views from caregivers*. Špeciálny Pedagóg*, *1*(5), 15-33.

Brodzeller, K. L., Ottley, J. R., Jung, J., & Coogle, C. G. (2018). Interventions and adaptations for children with autism spectrum disorder in inclusive early childhood settings. *Early Childhood Education Journal, 46*(3), 277-286. doi:/10.1007/s10643-017-0859-5

Brown, W. H. & Conroy, M.A., (2011). Social-Emotional competence in young children with developmental delays. *Journal of Early Intervention*, *33*(4), 310-320. doi: 10.1177/ 1053815111429969

Brownell, M., Nickel, N., Chateau, D., Martens, P., Taylor, C., Crockett, L., & Goh, C. (2015). Long-term benefits of full-day kindergarten: A longitudinal population-based study. *Early Child Development and Care, 185*(2), 291-316.

Bulotsky-Shearer, R.J., & Fantuzzo, J.W. (2011). Preschool behavior problems in classroom learning situations and literacy outcomes in Kindergarten and first grade. *Early Childhood Quarterly*, *26*, 61-73. doi: 10.1016/j.ecresq.2010.04.004

Burt, K.B., Obradovic, J., Long, J.D., & Masten, A.S. (2008). The interplay of social competence and psychopathology over 20 years: Testing transactional and cascade models. *Child Development, 79*(2), 359-374.

Camilli, G., Vargas, S., Ryan, S., & Barnett, W.S. (2010). Meta -analysis of the effects of early education interventions on cognitive and social development. *Teachers College Record, 112*(3), 579-620.

Campbell, F., & Ramey, C. (1995). Cognitive and School Outcomes for High-Risk African-American Students at Middle Adolescence: Positive Effects of Early Intervention. *American Educational Research Journal, 32*(4), 743-772.

Campbell, F., Ramey, C., Pungello, E., Sparling, J., & Miller-Johnson, S. (2002). Early Childhood Education: Young adult outcomes from the Abecedarian Project. *Applied Developmental Science, 6*(1), 42-57.

Campbell, Frances A., Pungello, Elizabeth P., Burchinal, Margaret, Kainz, Kirsten, Pan, Yi, Wasik, Barbara H., Barbarin, O.A., Sparling, J.J., Ramey, & Craig T. (2012). Adult Outcomes as a Function of an Early Childhood Educational Program: An Abecedarian Project Follow-Up. *Developmental Psychology, 48*(4), 1033-1043.

Canadian Council on Learning (2008). *State of Learning in Canada: Toward a Learning Future*, *Report on Learning in Canada.* Ottawa, ON: Canadian Council on Learning. Retrieved from: www.ccl-cca.ca

Canadian Council on Learning (2009). Does placement matter? Comparing the academic performance of students with special needs in inclusive and separate settings. Lessons in learning. Retrieved from: https://files.eric.ed.gov/fulltext/ED519296.pdf

Canadian Institute for Health Information (2015). *Care for Children and Youth with Mental Disorders*. Ottawa, ON. Retrieved from: https://secure.cihi.ca/free_products/CIHI%20CYMH%20Final%20for%20pubs_EN_web.pdf

Carlson,E., Daley, T., Bitterman, A., Heinzen, H., Keller, B., Markowitz, J., & Riley, J. (2009). *Earl y School Transitions and the Social Behavior ofChildren with Disabilities: Selected Findings Fro m the PreElementary Education Longitudinal Study.* Rockville, MD: Westat. Retrieved from: https://ies.ed.gov/ncser/pdf/20093016.pdf

Center on the Developing Child at Harvard University (2016). *From Best Practices to Breakthrough Impacts: A Science-Based Approach to Building a More Promising Future for Young Children and Families.* Retrieved from: www.developingchild.harvard.edu.

Clark, M. A., & Crandall, B. (2009). School counsellor inclusion: A collaborative model to provide academic and social-emotional support in the classroom setting. *Journal of Counselling and Development, 87*, 6-11.

Clinton, J., Kays-Burden, A., Carter, C., Bhasin, K., Cairney, J., Carrey, N., Janus, M., Kulkarni, C. & Williams, R. (2014). *Supporting Ontario's Youngest Minds: Investing in the Mental Health of Children Under 6. Ontario Centre of Excellence for Child and Youth Mental Health.* Retrieved from: www.excellenceforchildandyouth.ca

Conroy, M.A., & Brown, W.H. (2004). Early identification, prevention, and early identification with young children at risk for emotional and behavioural disorders: Issues, trends, and call for action. *Behavioral Disorders, 29*(3), 224-239.

Cooper, H., Batts Allen, A., Patall, E., & Dent, A. (2010). Effects of full-day kindergarten on academic achievement and social development. *Review of Educational Research*, *80*(1), 34-70.

Cooper, J. O., Heron, T. E., & Heward, W. L. (2007). *Applied behavior analysis* (*2*nd ed.). Upper Saddle River, NJ: Pearson.

Corter, C. & Pelletier, J. (2010). Schools as integrated service hubs for young children and families. *International Journal of Child Care and Education Policy*, *4*(2), 45-54.

Corter, C., Janmohamed, Z., & Pelletier, J. (Eds). (2012). *Toronto First Duty Phase 3 Report.* Toronto, ON. Retrieved from: http://www.oise.utoronto.ca/atkinson/About_Us/What_We_Do/Toronto_First_Duty/inde x.html

Cryan, J.R., Sheehan, R., Wiechel, J., & Bandy-HeddenI.G. (1992). Success outcomes of Full Day Kindergarten: More positive behavior and increased achievement. *Early Childhood Research Quarterly*, *7*, 187-203.

Culture, Tourism, and the Centre for Education Statistics. (2013). Summary Elementary and Secondary School Indicators for Canada, the Provinces, and Territories, 2006/7 to 2010/2011. Retrieved from: https://www150.statcan.gc.ca/n1/pub/81-595-m/81-595-m2013099eng.pfd

Daley, T. C., Munk, T., & Carlson, E. (2011) A national study of kindergarten transition practices for children with disabilities. *Early Childhood Research Quarterly, 26,* 409–419.

Diamond, K. E., & Huang, H. (2005). Preschoolers' ideas about disabilities. *Infants & Young Children*, 18, 37-46.

Doherty, G., Lero, D. S., Goelman, H., LaGrange, A. & Tougas, J. (2000). *You Bet I Care! A Canada-wide Study On: Wages, Working Conditions, and Practices in Child Care Centres.* Guelph, ON: Centre for Families, Work and Well-Being, University of Guelph.

Durlak, J.A., Weissberg, R.P., Dymnicki, A.B., Schellinger, K.B. & Taylor, R.D. (2011). The impact of enhancing students' social and emotional learning: A meta-analysis of school based universal interventions. *Child Development*, *82*(1), 405-432. doi: 10.1111/j.1467-8624.2010.01564.x

Edmunds, A.L. & Martch-Litt, S. (2008). ADHD assessment and diagnosis in Canada: An inconsistent but fixable process. *Exceptionality Education Canada, 18*(2/3).

Ehrlich, S.B., Gwynne, J.A., & Allensworth, E.M. (2018). Preschool attendance matters: Early and chronic absence patterns and relationship to learning outcomes. *Early Childhood Research Quarterly*, *44*, 136-151. doi: 10.1016/j.ecresq.2018.02.012

European Agency for Special Needs and Inclusive Education. (2017). *Inclusive Early Childhood Education: Literature Review.* Retrieved from https://www.european-agency.org/

Fortin, P., Godbout, L., & St-Cerny, S. (2012). Impact of Quebec's universal low-fee childcare program on female labour force participation, domestic income and government budgets. Retrieved from: https://www.homelesshub.ca/resource/impact-quebecs-universal-low- fee-childcare-program-female-labour-force-participation

Frawley, D., (2014). Combating educational disadvantage through early years and primary school investment. *Irish Educational Studies, 33*(2), 155–171.

French, L., & Kennedy, E. M. M. (2018). Early Intervention for infants and young children with, or at-risk of, autism spectrum disorder: A systematic review. *Journal of Child Psychology & Psychiatry, 59*(4), 444-456.

Friendly, M. & Lero, D.S. (2005). Social inclusion through early childhood education and care. In T. Richmond & A. Saloojee (eds.) *Social Inclusion: Canadian Perspectives.* Halifax: Fernwood Publishing.

Friendly, M., Larsen, E., Feltham, L.E., Grady, B., Forer, B., & Jones, M. (2018). *Early childhood education and care in Canada 2016.* Toronto: Childcare Resource and Research Unit.

Gilliam, W. S., & Shahar, G. (2006). Preschool and child care expulsions and suspensions: Rates and predictors in one state. *Infants and Young Children*, *19*(3), 228-245.

Government of Canada (2017*). Multilateral early learning and child care framework*. Retrieved from: https://www.canada.ca/en/employment-social-development/programs/early-learning-child-care/reports/2017-multilateral-framework.html

Government of Newfoundland and Labrador (2016). Mental illness/mental health statement. Retrieved from http://www.ed.gov.nl.ca/edu/k12/studentsupportservices/pdf/MI_Mental_Health_statement.pdf

Green, K., Terry, N., & Gallagher, P. (2014). Progress in language and literacy skills among children with disabilities in inclusive early reading first classrooms. *Topics in Early Childhood Special Education, 33*(4), 249-259.

Halfon, S., & Friendly, M. (2013). *Inclusion of young children with disabilities in regulated child care in Canada: A snapshot. Research, Policy and Practice*. Toronto: Childcare Resource and Research Unit. Retrieved from: http://www.childcarecanada.org/sites/default/files/Occasional%20paper%2027%20FINAL.pdf

Hall, J., Sylva, K., Melhuish, E., Sammons, P., Siraj-Blatchford, I., & Taggart, B. (2009). The role of pre-school quality in promoting resilience in the cognitive development of young children. *Oxford Review of Education, 35*(3), 331-352.

Hansen, S., Blakely, G., Dolata, A., Raulston, W., & Machalicek, J. (2014). Children with autism in the inclusive preschool classroom: A systematic review of single-subject design interventions on social communication skills. *Journal of Autism and Developmental Disorders, 7unb 1*(3), 192-206.

Hanvey, L. (2002). Children with disabilities in Canada. Retrieved from: http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.457.3999&rep=rep1&type=pdf

Heagle, K., Timmons, K., Hargreaves, F., & Pelletier, J. (2017). The social kindergartener: comparing children's perspectives of full-and half-day kindergarten. *Early Child Development and Care*, *187*(5-6), 978-989.

Health Child Manitoba. (2002). Guidelines for Early Childhood Transition to School for Children with Special Need. Retrieved from: https://www.gov.mb.ca/healthychild/publications/protocol_cwsn.pdf

Heckman, J., Pinto, R., & Savelyev, P. (2013). Understanding the mechanisms through which an influential early childhood program boosted adult outcomes. *American Economic Review, 103*(6). 2052–208. http://dx.doi.org/10.1257/aer.103.6.2052

Heitzeg, N.A. (2009). Education on incarceration: Zero tolerance policies and the school to prison pipeline. *Forum on public policy.* Retrieved from: https://www.researchgate.net/publication/238723944_Education_Or_Incarceration_Zero_Tolerance_Policies_And_The_School_To_Prison_Pipeline

Houser, L., McCarthy, M., Lawer, L., & Mandell, D. (2014). A challenging fit: Employment, childcare, and therapeutic support in families of children with autism spectrum disorders. *Journal of Social Service Research, 40*(5), 681-698.

Howard, J.S., Stanislaw, H., Green, G., Sparkman, C., & Cohen, H.G. (2014). Comparison of behavior analytic and eclectic early interventions for young children with autism after three years. *Research in Developmental Disabilities, 35*(12), 3326-3344.

Human Resources and Skills Development Canada (HRSDC). (2011). *Disability in Canada: A 2006 profile.* Retrieved from: http://publications.gc.ca/collections/collection_2011/rhdcc-hrsdc/HS64-11-2010-eng.pdf

Hurlbutt, K., & Chalmers, L. (2002). Adults with autism speak out: Perceptions of their life experiences. *Focus on Autism & Other Developmental Disabilities, 17*(2), 103-111.

Hutchinson, N.L. (2017). *Inclusion of exceptional learners in Canadian schools: A practical handbook for teachers* (5th ed.). Toronto, ON: Pearson Education Canada.

Janus, M., Kopechanski, L., Cameron, R., & Hughes, D. (2008). In transition: Experiences of parents of children with special needs at school entry. *Early Childhood Education Journal of Applied Developmental Psychology, 35*, 479–485.

Janus, M., Lefort, J., Cameron, R., & Kopechanski, L. (2007). Starting kindergarten: Transition issues for children with special needs. *Canadian Journal of Education, 30*, 628–648.

Janus, M. (2011). Impact of Impairment on Children with Special Needs at School Entry: Comparison of School Readiness Outcomes in Canada, Australia, and Mexico. *Exceptionality Education International, 21*, 29-44. Retrieved from: https://ir.lib.uwo.ca/eei/vol21/iss2/5

Janus, M. & Offord, D.R. (2007). Development and psychometric properties of the Early Development Instrument (EDI): A measure of children's school readiness. *Canadian Journal of Behavioural Science*, 39(1), 1-22.

Jeon, H., Peterson, C., Wall, S., Carta, J., Luze, G., Eshbaugh, E., & Swanson, M. (2011). Predicting school readiness for low-income children with disability risks identified early. *Exceptional Children, 77*(4), 435-452.

Johnson, C. P., & Myers, S. M. (2007). Identification and evaluation of children with autism spectrum disorders. *Pediatrics, 5*, 1183.

Jones, S. M., Brown, J. L., & Aber, J. J. (2011). Two-year impacts of a universal school-based social-emotional and literacy intervention: An experiment in translational developmental research. *Child Development*, *82*(2), 533-554. doi: 10.1111/j.1467-8624.2010.01560.x

Jónsdóttir, S. L., Brynjarsdóttir, B., Saemundsen, E., & Sigurdsson, J. F. (2018). Long-term outcome of children with autism who received different forms of intervention during their preschool years: A pilot study of 15 adults. *Scandinavian Journal of Child & Adolescent Psychiatry & Psychology, 6*(1), 28-39. doi:10.21307/sjcapp-2018-006

Kalambouka, A., Farrell, P., Dyson, A. & Kaplan, I. (2007). The impact of placing pupils with special educational needs in mainstream schools on the achievement of their peers. *Educational Research, 49*, 365-382. doi: 10.1080/00131880701717222

Keenan, M. (2016). ABA and the nail that sticks out. *Špeciálny Pedagóg*, *1*(5), 3-14.

Killoran, I., Tymon, D. & Frempong, G. (2007). Disabilities and inclusive practices within Toronto preschools. *International Journal of Inclusive Education, 11*, 81-95.

Kovshoff, H., Hastings, R., & Remington, B. (2011). Two-year outcomes for children with autism after the cessation of early intensive behavioral intervention. *Behavior Modification, 35*(5), 427-450.

Kwon, K. A., Hong, S. Y., & Jeon, H. J. (2017). Classroom readiness for successful inclusion: teacher factors and preschool children's experience with and attitudes toward peers with disabilities. *Journal of Research in Childhood Education*, *31*(3), 360-378.

LaParo, K. M., Pianta, R. C., & Cox, M. J. (2000). Teachers' reported transition practices for children transitioning into kindergarten and first grade. *Exceptional Children, 67*(1), 7-20.

Lawton S., Philpott, D.F., & Furey, E. (2011). Funding education in a time of diversity. *International Studies in Educational Administration. 39(1).*

Letto, A, & Bornstein, S. (2018). *Preschool screening. Rapid Evidence Reports: Newfoundland & Labrador Centre for Applied Health Research*. Retrieved from: https://www.nlcahr.mun.ca/CHRSP/Preschool_Screening_RER_Oct_2018.pdf

Levenson, N. (2012). *Boosting the quality and efficiency of special education.* Retrieved from: https://files.eric.ed.gov/fulltext/ED534985.pdf

Levin, H., Belfield, C., Muennig, P., & Rouse, C. (2007). *The costs and benefits of an excellent education for all of America's children (Vol. 9).* New York, NY: Teachers College, Columbia University

Lovaas, O. I. (1987). Behavioral treatment and normal educational and intellectual functioning in young autistic children. *Journal of Consulting and Clinical Psychology, 55*(1), 3-9.

Lyons, V., & Fitzgerald, M. (2007). Asperger (1906-1980) and Kanner (1894-1981), the two pioneers of autism. *Journal of Autism and Developmental Disorders*, 37, 2022-2023. doi: 10.1007/s10803-007-0383-3

Mahnken, K. (2017). *Intensive preschool programs can yield massive returns, especially for boys, Nobel Laureate's study shows*. Retrieved from: https://www.the74million.org/article/intensive-preschool-programs-can-yield-massive-returns-especially-for-boys-nobel-laureates-study-shows/

Maich, K. & Hall, C. (2016). *Autism spectrum disorders in the Ontario context: An introduction*. Toronto: Canadian Scholars Press, Inc.

Maich, K., & Hall, C. (2014). Are we ready? Examining the level of preparedness of early childhood education students for school-based special education. *Canadian Children, 39*(3), 42-52. Retrieved from: http://cayc.ca/content/canadian-children-vol-39-no-3

Maich, K., Davies, A., & Sohrabi, T. (2018). *Autism spectrum disorder and maternal employment barriers: A comprehensive gender-based inquiry* (unpublished manuscript).

Masi, L., & Gignac, M. (2015). ADHD and Comorbid Disorders in Childhood Psychiatric Problems, Medical Problems, Learning Disorders and Developmental Coordination. *Clinical Psychiatry*, *1*(1), 5.

Mayer, D. (2009). Disability and inclusion: Changing attitudes – Changing policy. Our Schools Our Selves, 18(3), 159–168.

McCain, M. N., Mustard, J. F., & McCuaig, K. (2011). *Early Years Study 3: Making Decisions, Taking Action.* Toronto: Margaret & Wallace McCain Family Foundation.

McCoy, D., Yoshikawa, H., Ziol-Guest, K., Duncan, G., Schindler, H., Magnuson, K., Yang, R., Koepp, A., & Shonkoff, J. (2017). Impacts of early childhood education on medium- and long-term educational outcomes. *Educational Researcher, 46*(8), 474-487.

Macdonald, I. (1981). Assessment: a social dimension. In L. Barton and S. Tomlinson, (Eds). *Special Education: Policy, Practices and Social Issues.* London, UK: Harper & Row.

McIntyre, L. L., & Wildenger, L. K. (2011). Examining the state of the science. *Educating the Young Child: Advances in Theory and Research, Implications for Practice, 4*(3) 21-32.

McIntyre, L. L., Blacher, J., & Baker, B. L. (2006). The transition to school: Adaptation in young children with and without intellectual disability. *Journal of Intellectual Disability Research, 50*(5), 349-361.

Melhuish, E. (2016). Longitudinal research and early years policy development in the UK. *International Journal of Child Care and Education Policy.* 10(3).

Melhuish, E., Quinn E., Sylva, K., Sammons, P., Siraj-Blatchford, I., & Taggart, B. (2012). Preschool affects longer term literacy and numeracy: results from a general population longitudinal study in Northern Ireland. *School Effectiveness and School Improvement: An International Journal of Research*, *Policy and Practice. 24*. 234-250.

Moore, J., Rhoades Cooper, B., Domitrovich, C.E., Morgan, N.R., Cleveland, M.J., Shah, H., Jacobson, L. & Greenberg, M.T. (2015). Early Childhood Research Quarterly, 32, 127-138. doi: 10.1016/j.ecresq.2015.03.04

Nahmias, A. S., Kase, C., & Mandell, D. S. (2014). Comparing cognitive outcomes among children with autism spectrum disorders receiving community-based early intervention in one of three placements. *Autism: The International Journal of Research and Practice, 18*(3), 311-320.

National Autism Center. (2015). Findings and conclusions, national standards project, phase 2. Retrieved from: http://www.nationalautismcenter.org/national-standards-project/

National Center for Education Statistics (2018). *Students with disabilities.* Retrieved from: https://nces.ed.gov/fastfacts/display.asp?id=64

National Research Council and Institute of Medicine. (2009). *Preventing Mental, Emotional, and Behavioral Disorders Among Young People: Progress and Possibilities*. Committee on the Prevention of Mental Disorders and Substance Abuse Among Children, Youth, and Young Adults: Research Advances and Promising Interventions. Mary Ellen O'Connell, Thomas Boat, and Kenneth E. Warner, Editors. Board on Children, Youth, and Families, Division of Behavioral and Social Sciences and Education. Washington, DC: The National Academies Press.

National Scientific Council on the Developing Child (2008/2012). *Establishing a level foundation for life: Mental health begins in early childhood: Working paper 6.* Retrieved from: https://46y5eh11fhgw3ve3ytpwxt9r-wpengine.netdna-ssl.com/wp-content/uploads/2008/05/Establishing-a-Level-Foundation-for-Life-Mental-Health-Begins-in-Early-Childhood.pdf

National Scientific Council on the Developing Child (2004a). *Young children develop in an environment of relationships: Working Paper No.1.* http:/www.developingchild.net

National Scientific Council on the developing child (2004b). *Children's Emotional Development is Built into the Architecture of their Brains: Working Paper No.2.* http:/www.developingchild.net

Oberle, E. & Schonert-Reichl, K.A. (2017). Social and Emotional Learning: Recent Research and Practical Strategies for Promoting Children's Social and Emotional Competence in Schools. In J.L. Matson (ed.), *Handbook of Social Behavior and Skills in Children*, *Autism and Child Psychopathology Series* (pp. 175-197). doi: 10.1007/978-3-319-64592-6_11

Oberle, E., & Schonert-Reichl, K.A. (2016). Stress contagion in the classroom? The link between classroom teacher burnout and morning cortisol in elementary school students. *Social Science and Medicine, 159, 30-37.* doi:10.1016/j.soscimed.2016.04.031

Odom, S. L., Buysse, V. A., & Soukakou, E. (2011). Inclusion for young children with disabilities: A quarter century of research perspectives. *Journal of Early Intervention, 33*(4)*,* 344-356.

Odom, S. L., Zercher, C., Li, S., Marquart, J., & Sandall, S. (2006). Social acceptance and social rejection of young children with disabilities in inclusive classes*. Journal of Educational Psychology, 98*, 807-823.

OECD (2004a). Early Childhood Education and Care Policy: Canada Country Note. Retrieved April 1, 2013 from http://www.oecd.org/education/school/33850725.pdf

OECD (2004b). *Meeting of OECD Education Ministers – Raising the Quality of Learning for All – Chair's Summary*. Retrieved on from www.oecd.org/document/33/0,3746,en_21571361_27379727_30739169_1_1_1_1,00.html

OECD (2006). *Starting Strong II: Early Childhood Education and Care.* Paris: OECD Publishing

OECD (2017). *Starting Strong V: Transitions from Early Childhood Education and Care to Primary Education*, Starting Strong, OECD Publishing, Paris. Retrieved from: https://doi.org/10.1787/9789264276253-en.

OECD (2013). *Educators indicators in focus.* OECD Publishing, Paris. Retrieved from: http://www.oecd.org/education/skills-beyond-school/EDIF11.pdf

OECD (2018). *Engaging Young Children: Lessons from Research about Quality in Early Childhood Education and Care, Starting Strong*. OECD Publishing, Paris. http://dx.doi.org/10.1787/9789264085145-en

Offord Centre for Child Studies (2018a). *What is the EDI?* Retrieved at https://edi.offordcentre.com/about/what-is-the-edi/

Offord Centre for Child Studies (2018b). *EDI in Ontario.* Retrieved at https://edi.offordcentre.com/partners/canada/edi-in-ontario/#Vulnerability

Offord Centre. (2014/2015). *Summary Report: Senior Kindergarten Students in the province of Ontario*. Retrieved from: https://edi.offordcentre.com/wp/wp-content/uploads/2016/09/Ontario-Cycle-4-Provincial-EDI-report-2014-2015-EN.pdf

Ontario Association for Behaviour Analysis. (2017). *Evidence-based practices for individual with Autism Spectrum Disorder: Recommendations for caregivers, practitioners, and policy makers*. *Report on the Ontario scientific expert taskforce for the treatment of Autism Spectrum Disorders*. Retrieved from http://www.behaviourinnovations.com/sites/default/files/PDF/ONTABA%20OSETT-ASD%20REPORT.pdf

Parsa-Pajouh, B., Stockburger, J., Greenwood, M., & Prediger, A-M. (2005). *Inclusive child care in Northern British Columbia: An inquiry into the successes and challenges*. Retrieved from: https://www.researchgate.net/publication/242271724_Inclusive_Child_Care_in_Northern_British_Columbia_An_Inquiry_into_the_Successes_and_Challenges

Pascal, C. (2009). *With our best future in mind: Implementing early learning in Ontario*. Toronto: Queen's Printer for Ontario.

Patel, S., Corter, C., Pelletier, J., & Bertrand, J. (2016). 'Dose-response' relations between participation in integrated early childhood services and children's early development. *Early Childhood Research Quarterly, 35*(C), 49-62.

Peisner-Feinberg, E.S., Burchinal, M.R., Clifford, R.M., Culkin, M.L., Howes, C., Kagan, S.L & Yazejian, N. (2001). The relation of preschool child-care quality to children's cognitive and social developmental trajectories through second grade. *Child Development*, 72(5), 1534-1553.

Pelletier, J. (2012). New directions in integrated early childhood services in school-as-hub models: Lessons from Toronto First Duty and Peel Best Start. In N. Howe and L. Prochner (Eds.), *New Directions in Early Childhood Care and Education in Canada* (pp. 367-396). Toronto, Ontario, Canada: University of Toronto Press.

Pelletier, J., & Corter, J. (2018, in press). A longitudinal comparison of learning outcomes in full-day and half-day kindergarten. *The Journal of Educational Research*. doi:https://doi.org/10.1080/00220671.2018.1486280

Pelletier, J., & Fesseha, E. (2019). Impact of full-day kindergarten on learning and self-regulation among kindergarten children at risk for placement in special education.

Perry, D.F., Dunne, M.C., McFadden, L. & Campbell, D. (2008). Reducing risk for preschool expulsion: Mental Health consultation for young Children with challenging behaviours. *Journal of Child and Family Studies*, 17(1), 44-54, doi.org/10.1007/s10826-007-9140-7

Peters, R., Bradshaw, A., Petrunka, K., Nelson, G., Herry, Y., Craig, W., Arnold, R., Parker K.C., Khan, S.R., Hoch, J.S., Pancer, S.M., Loomis, C., Bélanger, J-M., Evers, S., Maltais, C., Thompson, K., Rossiter, M.D., & Collins, W. (2010). The better beginnings, better futures project: findings from grade 3 to grade 9. *Monographs of the Society for Research in Child Development, 75*(3), I-176. Retrieved from: http://www.jstor.org/stable/40984372

Peters, R., De V., Nelson, G., Petrunka, K., Pancer, S.M., Loomis, C., Hasford, J., Janzen, R., Armstrong, L., & Van Andel, A. (2010). *Highlights of Better Beginnings, Better Futures Research Findings at Grade 12*. Retrieved from: http://bbbf.ca/Portals/15/pdfs/Grade%2012%20report%20FINAL%20version.pdf

Philpott, D.F. & Cahill M. (2008). A Pan-Canadian perspective on the professional knowledge base of learning disabilities. *International Journal of Disability and Community Rehabilitation.* 7(2), www.ijdcr.ca/

Philpott, D.F., Furey, E., & Penney, S. (2010). Promoting leadership in the professional development of teachers: responding to globalization and inclusion. *Exceptionality Education International. 20*(2). *38-54.*

Pianta, R., & Cox, M. (1998). *Kindergarten Transitions. Teachers: 48% of Children Have Transition Problems. NCEDL Spotlight Series, No. 1. (REPORT NO R307A60004).* National Center for Early Development & Learning, Chapel Hill, NC.

Public Health Agency of Canada. (2018). Autism Spectrum Disorder Among children and Youth in Canada 2018-A report of the National Autism Spectrum Disorder Surveillance System. Retrieved from: https://www.canada.ca/en/public-health/services/publications/diseases-conditions/autism-spectrum-disorder-children-youth-canada-2018.html

Rapoport, J., Chavez, A., Greenstein, D., Addington, A., & Gogtay, N. (2009). Autism Spectrum Disorder and childhood-onset schizophrenia: clinical and biological contributions to a relation revisited. *Journal of the American Academy of Child & Adolescent Psychiatry, 48*(1), 10-18.

Raver, C.C., Jones, S.M., Li-Grining, C.P., Metzger, M., Champion, K.M., & Sardin, L. (2008). Improving preschool classroom processes: Preliminary findings from a randomized trial implemented in Head Start settings. *Early Childhood Research Quarterly, 23*, 10-26. doi:10.1016/j.ecresq.2007.09.001

Redden, S., Forness, S., Ramey, S., Ramey, C., Brezausek, C., & Kavale, K. (2001). Children at risk: Effects of a four-year Head Start transition program on special education identification. *Journal of Child and Family Studies, 10*(2), 255–270.

Reynolds, A. J. (2000). *Success in Early Intervention: The Chicago Child-Parent Centers*. Lincoln: University of Nebraska Press.

Reynolds, A. J., Temple, J. A., Robertson, D. L., & Mann, E. A. (2002). Age 21 cost-benefit analysis of the Title I Chicago Child-Parent Centers. *Educational Evaluation and Policy Analysis, 24*, 267–303.

Reynolds, A. J., Temple, J. A., White, B. A. B., Ou, S., & Robertson, D. L. (2011). Age 26 cost-benefit analysis of the child-parent center early education program. *Child Development, 82*(1), 379-404.

Reynolds, A., Temple, J., Robertson, D., & Mann, E. (2001). Long-term effects of an early childhood intervention on educational achievement and juvenile arrest: A 15-year follow-up of low-income children in public schools. *JAMA, 285*(18), 2339-46.

Richardson, B. & Langford, R. (2018). Early childhood education and care in Canada: consistently inconsistent childcare policy. In *International Perspectives on Early Childhood Education and Care* (pp. 38-51). Routledge.

Ritchie, H. & Roser, M. (2018). Mental Health. *Published online at OurWorldInData.org.* Retrieved from: https://ourworldindata.org/mental-health

Rimm-Kaufman, S.E., Curby, T.W, Grimm, K.J., Nathanson, L. & Brock, L.L. (2009). The contribution of children's self-regulation and classroom quality to children's adaptive behaviours in the kindergarten classroom. *Developmental Psychology, 45*(4), 958-972. doi: 10.1037/a0015861

Roeher Institute (2000a). *Beyond the limits: Mothers Caring for Children with Disabilities.* North York, ON: L'Institut Roeher Institute.

Roeher Institute (2000b). *Count Us In: A Demographic Overview of Childhood and Disability in Canada*. North York: L'Institut Roeher Institute.

Rouse, B., Myers, C., & Stricklin, S. (2007). Strategies for supporting transitions of young children with special needs and their families. *Journal of Early Intervention, 30*(1), 1–18.

Sammons, P., Taggart, B., Smees, R., Sylva, K., Melhuish, E., Siraj-Blatchford, I., & Elliot, K. (2003). *The Early Years Transitions & Special Educational Needs (EYTSEN) Project*. Institute of Education, University of London. Retrieved from: http://dera.ioe.ac.uk/18204/1/RR431.pdf

Schertz, H., Baker, C., Hurwitz, S., & Benner, L. (2011). Principles of early intervention reflected in toddler research in autism spectrum disorders. *Topics in Early Childhood Special Education, 31*(1), 4-21.

Schonkoff, J.P., & Garner, A.C. (2012). The lifelong effects of early childhood adversity and toxic stress. *Pediatrics, 129*(1), e232-246. doi:10.1542/peds.2011-2663

Schulting, A., Malone, P., & Dodge, K. (2005). The effect of school-based kindergarten transition policies and practices on child academic outcomes. *Developmental Psychology, 41*(6), 860–871.

Schweinhart, L. J. (2004). *The High/Scope Perry Preschool study through age 40: Summary, conclusions, and frequently asked questions*. High/Scope Educational Research Foundation.

Schweinhart, Lawrence J., & Weikart, David P. (1997). The High/Scope Preschool Curriculum Comparison Study through Age 23. *Early Childhood Research Quarterly, 12*(2), 117-43.

Shepherd, C., & Waddell, A. (2015). A qualitative study of autism policy in Canada: seeking consensus on children's services. *Journal of Autism and Developmental Disorders, 45*(11), 3550-3564.

Siddiqua, A., & Janus, M. (2016). Experiences of parents of children with special needs at school entry: A mixed method approach. *Child, Care, Health and Development, 43*(4), 566-576. doi:10.1111/cch.12443

Siraj, I., Melhuish, E., Howard, S., Neilson-Hewitt, C., Kingston, D., deRosnay, M. Duursma, E., Feng, X., & Luu, B. (2018). *Fostering effective early learning study*. Retrieved from https://education.nsw.gov.au/media/ecec/pdf-documents/FEEL-Study-Literature-Review-Final.pdf

Smith, B. J., & Fox, L. (2003). *Systems of Service Delivery: A Synthesis of Evidence Relevant to Young Children at Risk of or Who Have Challenging Behavior*. Tampa, Florida: University of South Florida, Center for Evidence-Based Practice: Young Children with Challenging Behavior.

Stahmer, A., Akshoomoff, N., & Cunningham, A. B. J. (2011). Inclusion for Toddlers with Autism Spectrum Disorders: The First Ten Years of a Community Program. *Autism, 15*(5), 625-641. doi: 10.1177/1362361310392253

Steiner, A. M., Koegel, L. K., Koegel, R. L., & Ence, W. A. (2012). Issues and theoretical constructs regarding parent education for autism spectrum disorders. *Journal of Autism and Developmental Disorders, 42*(6), 1218-1227. doi:10.1007/s10803-011-1194-0

Stoner, J. B., Angell, M. E., House, J. J., & Bock, S. J. (2007) Transitions: Perspectives from parents of young children autism spectrum disorder (ASD). *Journal of Developmental and Physical Disabilities, 19*, 23–39.

Stormont, M., Beckner, R., Mitchell, B., & Richter, M. (2005). Supporting successful transition to kindergarten: General challenges and specific implications for students with problem behaviour. *Psychology in Schools, 42*, 765–778.

Sylva, K., Melhuish, E. C., Sammons, P., Siraj, I. and Taggart, B. with Smees, R., Toth, K. & Welcomme W. (2014). *Effective Pre-school, Primary and Secondary Education 3-16 Project (EPPSE 3-16). Students' educational and developmental outcomes at age 16*. Department for Education Research Report RR354.

Sylva, K., Melhuish, E., Sammons, P., Siraj-Blatchford, I., & Taggart, B. (2004). *The final report: Effective pre-school education. Technical paper 12*. London, UK: Institute of Education, University of London.

Sylva, K., Melhuish, E., Sammons, P., Siraj-Blatchford, I., & Taggart, B. (2009). *Effective Pre-School and Primary Education 3–11 (EPPE 3–11). Final report from the primary phase: Pre-school, school, and family influences on children's development during key stage 2 (Age 7–11).* London, UK: Institute of Education, University of London.

Sylva, K., Melhuish, E., Sammons, P., Siraj-Blatchford, I., Taggart, B., & Elliot, K. (2004). *The effective provision of pre-school education (EPPE) project: Findings from the pre-school period to end of key stage 1*. Retrieved from: https://ro.uow.edu.au/cgi/viewcontent.cgi?referer=https://www.google.ca/&httpsredir=1&article=3155&context=sspapers

Sylva, K., Melhuish, T., Sammons, P., Siraj–Blatchford, I., & Taggart, B. (2010). *Early Childhood Matters*, Routledge, London, UK.

Taggart, B., Sylva, K., Melhuish, E., Sammons, P., & Siraj, I. (2015). Effective pre-school, primary, and secondary education project (EPPSE 3-16+). Retrieved from: http://dera.ioe.ac.uk/23344/1/RB455_Effective_preschool_primary_and_secondary_education_project.pdf

Taggart, B., Sylva, K., Melhuish, E., Sammons, P., & Siraj, I. (2015). *Effective Pre-school, Primary and Secondary Education 3-16 Project (EPPSE 3-16+): How Pre-School Influences Children and Young People's Attainment and Developmental Outcomes Over Time*. Retrieved from: http://dera.ioe.ac.uk/23344/1/RB455_Effective_preschool_primary_and_secondary_education_project.pdf

The Atkinson Centre for Society and Child Development. (2017). *Early Childhood Education Report.* Retrieved from: http://ecereport.ca/media/uploads/2017-report-pdfs/ece-report2017-en-feb6.pdf

The Atkinson Centre. (2014). *Review of Early Learning Frameworks in Canada*. Retrieved from: https://www.oise.utoronto.ca/atkinson/UserFiles/File/Resources_Topics/Resources_Topics_CurriculumPedagogy/Review_of_Early_Learning_Frameworks_in_Canada-all.pdf

The New Jersey Council on Developmental Disabilities (2016). *Homelessness, Poverty, and Special Education*. Retrieved from: https://www.njcommonground.org/homelessness-poverty-and-special-education/

Timmons, K., Pelletier, J., & Corter, C. (2016). Understanding children's self-regulation within different classroom contexts. *Early Childhood Development and Care*, 186(2), 249-267. doi: 10.1080/03004430.2015.1027699

Timmons, V & Wagner, M. (2008). Inclusive education knowledge exchange initiative: An analysis of the Statistics Canada Participation and Activity Limitation Survey. Retrieved from: http://en.copian.ca/library/research/ccl/inclusive_edu_know/inclusive_edu_know.pdf

Troup, K. S., & Malone, D. M. (2002). Transitioning preschool children with developmental concerns into kindergarten: Ecological characteristics of inclusive kindergarten programs. *Journal of Developmental and Physical Disabilities, 14*(4), 339-352.

UNICEF (2018). Report Card 15: The Equalizer: How Education Creates Fairness for Children in Canada. Retrieved from: https://www.unicef.ca/en/unicef-report-card-15?utm_medium=email&utm_source=UNICEF+eNewsletter&utm_campaign=2018_Oct_30_One_Youth_Email_EN&utm_content=ONEYOUTH::One+Youth+Email+Oct+30+2018+EN

United Nations Children's Fund (2005). *The state of the world's children 2006: excluded and invisible.* Retrieved from: https://www.unicef.org/sowc06/pdfs/sowc06_fullreport.pdf

United Nations Commissioner for Human Rights. (1990). Convention on the rights of the child. Retrieved October 15, 2018, from https://www.ohchr.org/en/professionalinterest /pages/crc.aspx

van Rhijn, T., Baumann, D., Maich, K., Schwartz, L., Britton, D., & Malhotra, A. (2018). *Quality inclusion training in pre-service early childhood educators in Canada* (unpublished manuscript).

Vignes, C., Godeau, E., Sentenac, M., Coley, N., Navarro, F., Grandjean, H., & Arnaud, C. (2009). Determinants of students' attitudes towards peers with disabilities. *Developmental Medicine & Child Neurology, 51*(6), 473-479. doi: 10.1111/j.1469-8749.2009.03283.x

Villeneuve, M., Chatenoud, C., Hutchinson, N. L., Minnes, P., Perry, A., Dionne, C., Frankel, E. B., Isaacs, B., Loh, A., Versnel, J., & Weiss, J., (2013). *Canadian Journal of Education, 36*(1), 4-43

Von Hippel, P., Workman, J., & Downey, D. (2018). Inequality in Reading and Math Skills Forms Mainly before Kindergarten: A Replication, and Partial Correction, of "Are Schools the Great Equalizer?". *Sociology of Education,91*(4), 323-357.

Whitley, J., Smith, D., & Vaillancourt, T. (2012). Promoting mental health literacy among educators: Critical in school-based prevention and intervention. *Canadian Journal of School Psychology, 28*, 56–70.

World Health Organization (WHO), United Nations Children's Fund, World Bank Group. (2018). *Nurturing care for early childhood development: A framework for helping children survive and thrive to transform health and human potential*. Geneva: World Health Organization; Licence: CC BY-NC-SA 3.0 IGO.

Wildenger, L. K. & McIntyre, L. L. (2012). Investigating the relation between kindergarten preparation and child socio-behavioural school outcomes. *Early Childhood Education Journal, 40*, 169–17

Wong, C., Odom, S. L., Hume, K. Cox, A. W., Fettig, A., Kucharczyk, S., & Schultz, T. R. (2014). *Evidence-based practices for children, youth, and young adults with Autism Spectrum Disorder.* Chapel Hill: The University of North Carolina, Frank Porter Graham Child Development Institute, Autism Evidence-Based Practice Review Group

World Health Organization (2018). *Disability and health.* Retrieved from: http://www.who.int/en/ news-room/fact-sheets/detail/disability-and-health

World Health Organization (WHO), United Nations Children's Fund, World Bank Group. (2018). *Nurturing care for early childhood development: A framework for helping children survive and thrive to transform health and human potential*. Geneva: World Health Organization; Licence: CC BY-NC-SA 3.0 IGO

Appendix C - Authors

Dr. David Philpott, EdD is a professor in the Faculty of Education at Memorial University of Newfoundland (MUN) and has enjoyed a career of more than 35 years in education and child development. He has worked in a range of teaching and management positions in special education, including a 25-year clinical practice in child mental health and assessment. He has an extensive national and international research/publication portfolio in areas such as inclusive education, assessment, Indigenous/Aboriginal education, family empowerment, international students, early child education, and teacher training. His full Curriculum Vitae can be viewed at: http://www.mun.ca/educ/people/dphilpott/PhilpottCV.php

Dr. Gabrielle Young, PhD, is an Assistant Professor in the Faculty of Education, at MUN, where she teaches undergraduate and graduate courses surrounding understanding and supporting students with specific learning disorders, as well as the practicum in special education. Gabrielle's research interests surround the use of assistive and instructional technology in inclusive classrooms, applying the principles of universal design for learning and differentiated instruction to support students with exceptionalities in the general education classroom, and pre-service teachers' efficacy to support students in inclusive classrooms and facilitate positive mental health.

Dr. Kimberly Maich, PhD, OCT, BCBA is an Associate Professor in the Faculty of Education at MUN, a certified teacher, a special education specialist, and a board-certified behaviour analyst. Her research and writing is focused on special education in general and autism spectrum disorders, emotional/behaviour disorders, early learners, and assistive technology more specifically. She engages in qualitative, mixed-methods, and single case quantitative experimental research design and is committed to community-based knowledge mobilization of research findings and the use of case study in teaching and learning. She is currently accepting new graduate students.

Dr. Sharon Penney, PhD, is an Associate Professor in the Faculty of Education at MUN, a certified teacher and registered psychologist with the Newfoundland and Labrador Psychology Board. Her research is focused on special education, autism spectrum disorders, home and school partnerships as well as positive mental health. She works primarily with qualitative methodologies and mixed methods research.

Emily Butler is a Master of Education (Counselling Psychology) Candidate at Memorial University. She has a Bachelor of Arts degree with a major in psychology, and a Bachelor of Education. Her past work experience includes teaching in the Newfoundland and Labrador English School District, working as an applied behavioural analysis home therapist, an inclusion support worker in early child education centres, and a research assistant on projects within MUN. She is planning to become a Registered Psychologist in Newfoundland and is interested in child psychology, play therapy, and inclusive programs for children with mental health concerns or special educational needs in early years settings and K-12 school system.