



**EARLY DEVELOPMENT INSTRUMENT**  
a population-based measure for communities

# Summary Report

Senior Kindergarten Students in the  
province of Ontario

**WATERLOO**

**School year 2017/2018**

*A snapshot of children's  
developmental health at school entry*





**EARLY DEVELOPMENT INSTRUMENT**  
a population-based measure for communities

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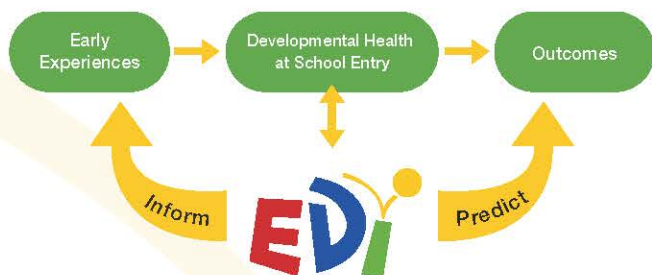
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## About the EDI

A teacher-completed instrument called the Early Development Instrument (EDI) was developed at the Offord Centre for Child Studies at McMaster University to measure children's ability to meet age-appropriate developmental expectations at school entry. The EDI focuses on the overall outcomes for children as a health-relevant, measurable concept that has long-term consequences for individuals and populations. The data derived from the collection of the EDI facilitate and encourage community, provincial, national, and international monitoring of the developmental health of our young learners.

Data collection across Canada shows that in most jurisdictions 25% or more of children entering kindergarten are vulnerable in at least one aspect of their development. Further research linking EDI findings to later educational data demonstrate that, on average, kindergarten vulnerability predicts ongoing vulnerability in the school system. Numerous studies have shown that early vulnerability predicts a child's lifelong health, learning, and behaviour.

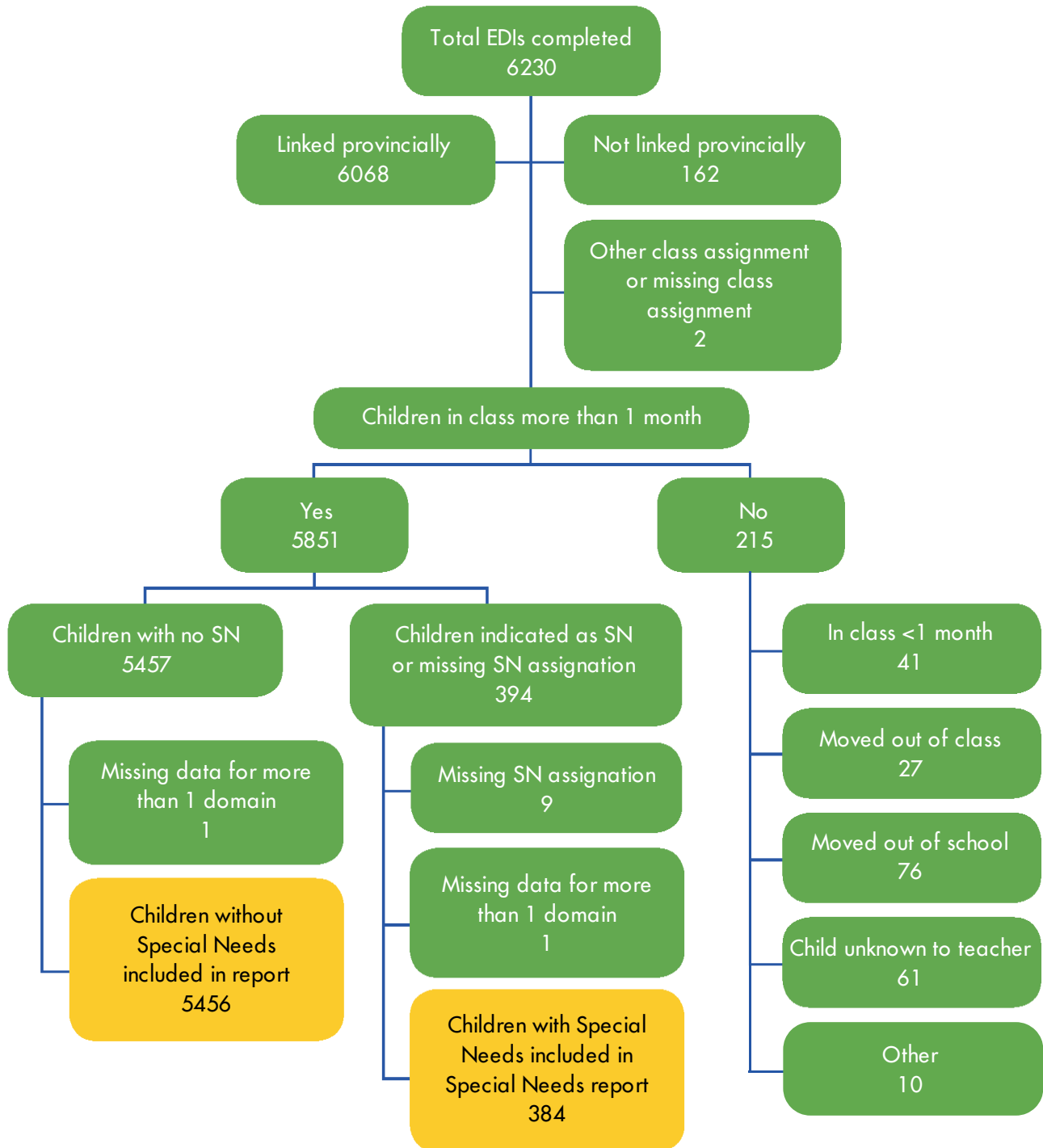
The EDI is designed to be a tool to increase the mobilization of communities and policy makers in order to have a positive impact on children's development in their local areas. Understanding the state of children's development at the population level, that is for all children, is foundational to mobilizing stakeholders towards change.



Thanks to all of our partners for their hard work and commitment to the EDI. A very special thanks to all of the teachers who have committed their time and energy to filling out EDI questionnaires over the years. Without you, none of this would have been possible.

## Number of Children in Analyses: From Received Questionnaires to Reports

Below is an illustration of the flow of EDI questionnaires from when they are received to the final valid number of questionnaires used for analysis. Special Needs reports will only be generated for sites with at least 10 children.





The EDI measures children’s developmental health at school entry by asking questions covering five different areas of their early development.

## EDI Domains

- **Physical Health & Well-Being** - 13 questions  
Children are healthy, independent, and rested each day.
- **Social Competence** - 26 questions  
Children play and get along with others, share, and show self-confidence.
- **Emotional Maturity** - 30 questions  
Children can concentrate on tasks, help others, show patience, and are not often aggressive or angry.
- **Language & Cognitive Development** - 26 questions  
Children are interested in reading and writing, can count, and recognize numbers and shapes.
- **Communication Skills & General Knowledge** - 8 questions  
Children can tell a story and communicate with adults and other children.

## Descriptive characteristics of the WATERLOO 2017/2018 cohort (N=5456)

	Number	%
<b>Sex</b>		
Girl	2709	49.7%
Boy	2747	50.3%
Missing	0	0.0%
<b>Language Status</b>		
ELL	450	8.2%
ALF	84	1.5%
PANA	1	0.0%
None	4919	90.2%
Missing	2	0.0%
<b>French Immersion</b>		
French Immersion	8	0.1%
Non-French Immersion	5438	99.7%
Missing	10	0.2%
<b>Age</b>		
Average Age	5.7	-

These are some examples of the contextual variables that may influence EDI scores. Communities are encouraged to explore other contextual factors that may help better explain EDI data.

On average, older children have better EDI scores than younger children.

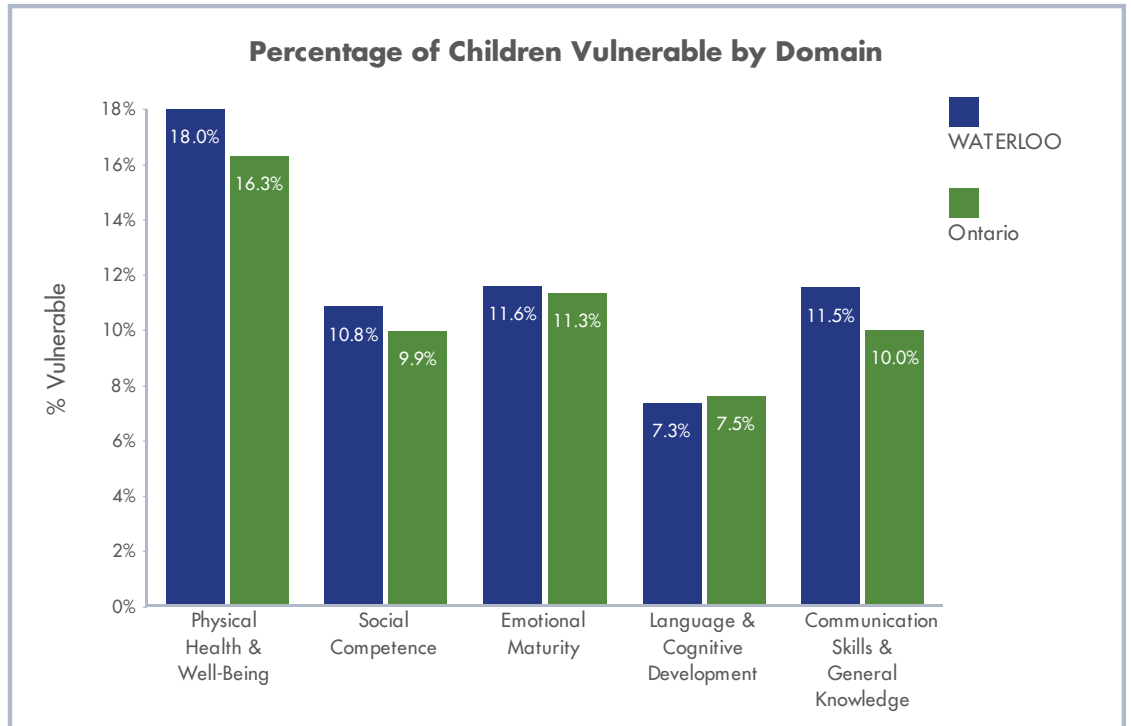




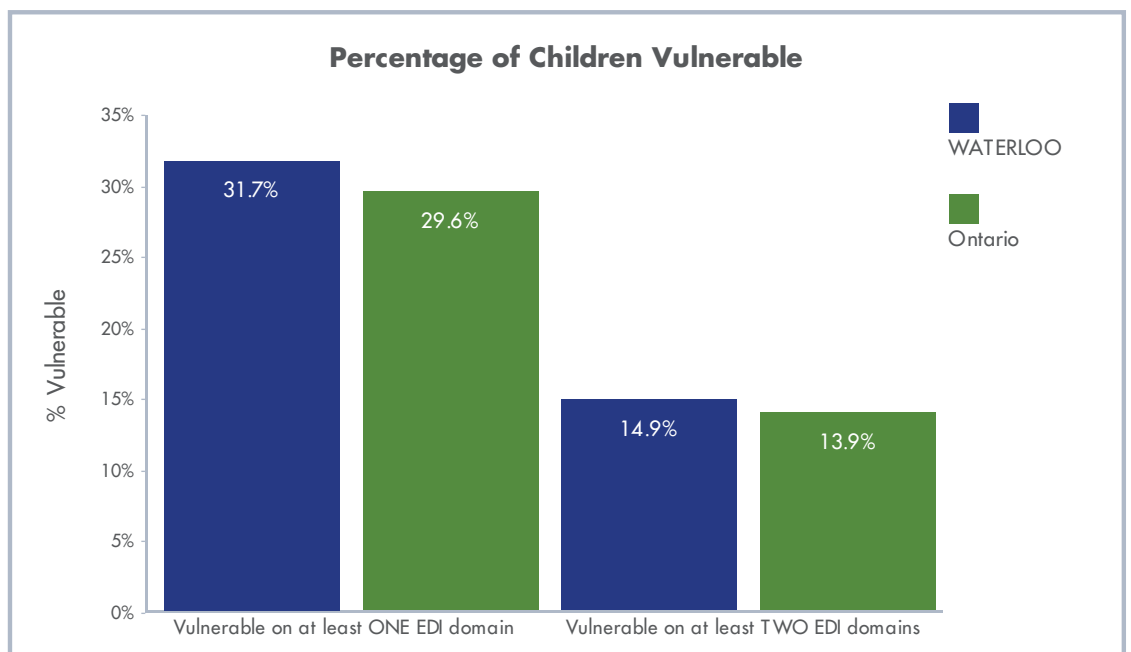
The EDI uses the 10th percentile for vulnerability because it captures all the children who are struggling, even those whose struggles may not be apparent.

## Vulnerable Children

"Vulnerable" describes the children who score below the 10th percentile cut-off of the Ontario baseline population. Higher vulnerability indicates that a greater percentage of children are struggling.



The graph below illustrates WATERLOO 2017/2018 results for the percentage of children vulnerable on at least one and at least two domains compared to the Ontario population.





EDI research across Canada shows that vulnerability at school entry is associated with poorer scores on provincial standardized tests in Grades 3 and 4. Research also shows an association between vulnerability and the likelihood of having some form of Special Needs status by Grade 9.

(Brown & Parekh, 2010; Calman & Crawford, 2013; D'Angiulli, Warburton, Dahinten, & Hertzman, 2009)

## Distribution of EDI Scores

The graphs below illustrate the percentage of WATERLOO children who fall in the Vulnerable, At Risk, and On Track categories for each domain. Your site is shown in relation to the distribution of scores in Ontario.

### WATERLOO (n = 5456)

Physical Health & Well-Being (n = 5455)



Social Competence (n = 5456)



Emotional Maturity (n = 5452)



Language & Cognitive Development (n = 5456)



Communication Skills & General Knowledge (n = 5456)



**Vulnerable**

Children with scores below the 10<sup>th</sup> percentile

**At Risk**

Children with scores between the 10<sup>th</sup> and 25<sup>th</sup> percentiles

**On Track**

Children with scores above the 25<sup>th</sup> percentile

### Ontario (n = 123912)

Physical Health & Well-Being (n = 123870)



Social Competence (n = 123907)



Emotional Maturity (n = 123557)



Language & Cognitive Development (n = 123811)



Communication Skills & General Knowledge (n = 123890)



Note: Distributions may not equal 100% due to missing values in a domain



**Special Concerns**

Minimum: 0

Maximum: 11

- physical disability
- visual impairment
- hearing impairment
- speech impairment
- learning disability
- emotional problem
- behavioural problem
- home environment/problems at home
- chronic medical/health problems
- unaddressed dental needs
- other

**Special Skills**

Minimum: 0

Maximum: 7

- Demonstrates special numeracy skills or talents
- Demonstrates special literacy skills or talents
- Demonstrates special skills or talents in art
- Demonstrates special skills or talents in music
- Demonstrates special skills or talents in athletics/dance
- Demonstrates special skills or talents in problem solving in a creative way
- Demonstrates special skills or talents in other areas

**Section D – Special Concerns**

Note: the following chart ONLY includes children who do not have Special Needs.

Special Concerns	13.3% 727 Yes	Yes, Observed		Yes, Parent Info/Diagnosis		Yes, Both	
		Number	%	Number	%	Number	%
Physical Disability		9	0.2%	7	0.1%	4	0.1%
Visual Impairment		21	0.4%	12	0.2%	6	0.1%
Hearing Impairment		14	0.3%	9	0.2%	9	0.2%
Speech Impairment		154	2.8%	23	0.4%	54	1.0%
Learning Disability		147	2.7%	5	0.1%	5	0.1%
Emotional Problem		190	3.5%	11	0.2%	31	0.6%
Behavioural Problem		239	4.4%	7	0.1%	29	0.5%
Home Environment / Problems at Home		132	2.4%	14	0.3%	19	0.3%
Chronic Medical / Health Problems		26	0.5%	16	0.3%	9	0.2%
Unaddressed Dental Needs		12	0.2%	3	0.1%	6	0.1%
Other		114	2.1%	17	0.3%	16	0.3%

	Yes		No		Missing	
	Number	%	Number	%	Number	%
Child Receiving School Based Support	332	6.1%	5116	93.8%	8	0.1%
Child Currently Receiving Further Assessment	200	3.7%	5224	95.7%	32	0.6%
Child Currently on Wait List to Receive Further Assessment	168	3.1%	5240	96.0%	48	0.9%
Child Needs Further Assessment	675	12.4%	4735	86.8%	46	0.8%

Children with 1+ Special Skills

**30.8%**

Children with 1+ Special Concerns

**14.9%**

**Early Intervention****Program:**

Includes: speech/ language therapy, a parent who attended a parenting program, a Head Start program, a School's Cool program, etc., or if child has had similar in-home services

**Section E – Additional Questions****Child attended Year 1 (Junior Kindergarten)**

**93.8%** **5.1%** **1.2%**  
**5116** **277** **63**  
*Yes* *No* *Missing*

**Child attended an early intervention program**

**6.2%** **74.5%** **19.3%**  
**338** **4064** **1054**  
*Yes* *No* *Missing*

**Child attended other community learning program**

**36.5%** **24.4%** **39.1%**  
**1993** **1331** **2132**  
*Yes* *No* *Missing*

**In non-parental care prior to kindergarten entry**

**30.3%** **38.5%** **31.1%**  
**1654** **2103** **1699**  
*Yes* *No* *Missing*

**Centre based, within our school building**

**4.8%**  
**262**  
*Yes*

**Centre based, in the community**

**8.2%**  
**446**  
*Yes*

**Home based child care**

**7.0%**  
**381**  
*Yes*

**Child's home, non-relative**

**1.0%**  
**55**  
*Yes*

**Child's home, relative**

**4.4%**  
**242**  
*Yes*

**Pre-school/Nursery school**

**3.2%**  
**173**  
*Yes*

**Other/Don't know**

**2.9%**  
**159**  
*Yes*

**Type of arrangement**

**19.0%** **5.6%** **75.4%**  
**1035** **307** **4114**  
*Full-time* *Part-time* *Missing*







Recognizing the contextual factors in your community, like a child's experiences before school entry, may help explain EDI vulnerability. In addition to the variables on the EDI, all communities are encouraged to explore locally relevant factors that may affect children's development.



## Section E – Additional Questions

### Type of care arrangement before school

Centre based, within our school building	<b>13.8%</b> 753 Yes
Centre based, in the community	<b>0.4%</b> 23 Yes
Home based child care	<b>2.6%</b> 143 Yes
Child's home, non-relative	<b>0.5%</b> 26 Yes
Child's home, relative	<b>3.5%</b> 191 Yes
Other/don't know	<b>1.2%</b> 64 Yes

### Type of care arrangement after school

Centre based, within our school building	<b>18.8%</b> 1028 Yes
Centre based, in the community	<b>0.5%</b> 28 Yes
Home based child care	<b>4.1%</b> 222 Yes
Child's home, non-relative	<b>1.0%</b> 53 Yes
Child's home, relative	<b>12.8%</b> 701 Yes
Other/don't know	<b>6.3%</b> 341 Yes

Child gets dropped off <b>before</b> school			
<b>27.3%</b>	<b>52.8%</b>	<b>7.8%</b>	<b>3.3%</b>
<b>1487</b>	<b>2881</b>	<b>427</b>	<b>178</b>
<i>By bus</i>	<i>By parent / guardian</i>	<i>From school-based child-care</i>	<i>Other</i>

Child gets picked up <b>after</b> school			
<b>25.7%</b>	<b>48.5%</b>	<b>12.2%</b>	<b>5.3%</b>
<b>1404</b>	<b>2646</b>	<b>664</b>	<b>287</b>
<i>By bus</i>	<i>By parent / guardian</i>	<i>From school-based child-care</i>	<i>Other</i>





**Please note:**

Some of the group comparisons may be labeled as Not Applicable (N/A) or are missing from the analyses because the groups were too small (under five students) to retain confidentiality.

Older children are defined as those above the mean age and younger children are defined as those below the mean age.

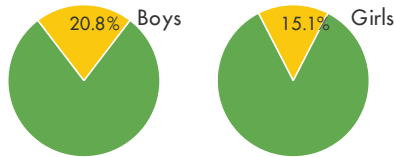


## Group Comparisons

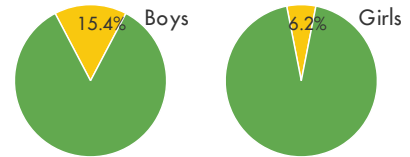
Although understanding overall vulnerability for your site is important, it does not tell the whole story. Comparing children based on certain demographics, such as sex and age, is an effective way of understanding how contextual factors in your site may be influencing EDI vulnerability rates.

### Sex

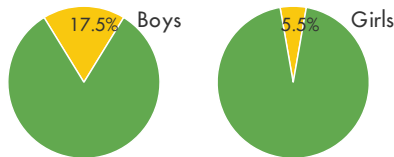
#### Physical Health & Well-Being



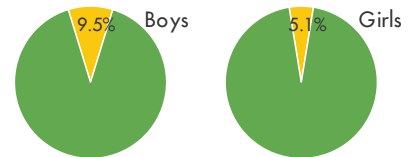
#### Social Competence



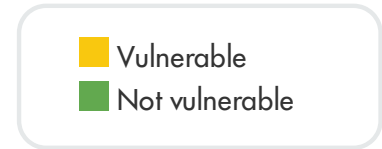
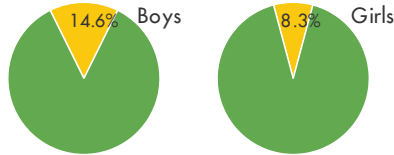
#### Emotional Maturity



#### Language & Cognitive Development

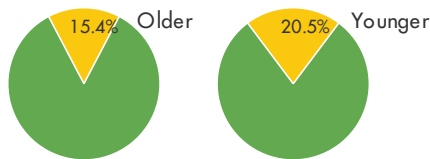


#### Communication Skills & General Knowledge

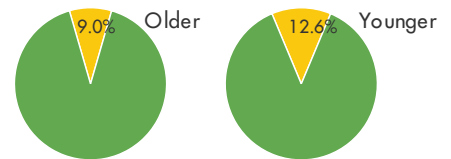


### Age of child

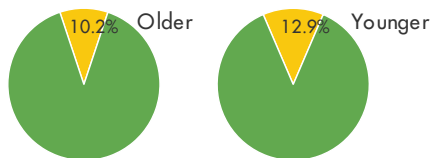
#### Physical Health & Well-Being



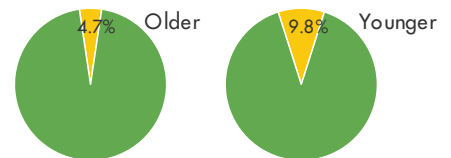
#### Social Competence



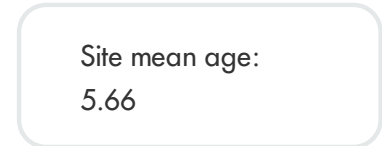
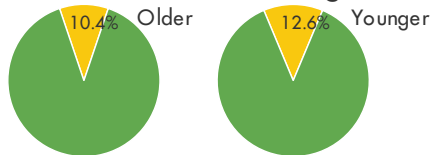
#### Emotional Maturity



#### Language & Cognitive Development



#### Communication Skills & General Knowledge





Exploring subdomains is an important step in determining the areas of development that are influencing vulnerability rates in various domains. Subdomains in which a large percentage of children are doing poorly can be used to inform the action needed to address children's weaknesses.

## Subdomain Profiles

Each of the five domains is divided into subdomains, except for Communication Skills and General Knowledge. The subdomains were originally identified using factor analysis. The table below shows the breakdown of subdomains for each domain.

Physical Health & Well-being	Social Competence	Emotional Maturity	Language & Cognitive Development	Communication Skills & General Knowledge
Physical readiness for school day	Overall social competence	Prosocial & helping behaviour	Basic literacy	Communication skills & general knowledge
Physical independence	Responsibility & respect	Anxious & fearful behaviour	Interest in literacy/numeracy & memory	
Gross & fine motor skills	Approaches to learning	Aggressive behaviour	Advanced literacy	
	Readiness to explore new things	Hyperactivity & inattention	Basic numeracy	

Scores for domains and subdomains on the EDI vary from 0 to 10. Some subdomains represent skills that a child in kindergarten, based on his or her developmental age, is expected to have mastered already. Other subdomains represent areas of development that are still emerging.

Based on skills and abilities that each subdomain represents, groups of scores were identified representing children who met:

- All/almost all of the developmental expectations
- Some of the developmental expectations
- Few/none of the developmental expectations

In contrast to the "on track", "at risk", and "vulnerable" groups identified for domains in the EDI Descriptive Report, which are based on the distribution of scores in the province/territory or in Canada, the subdomain categories are distribution-free.

The following section outlines the percentage of your children who are meeting all/almost all, some, or few/none of the developmental expectations for each subdomain. An investigation of percentages of children who fall into the "few/none" category will identify areas of the greatest weakness in the population. The results for the Ontario Cycle 5 population are included as a comparison.



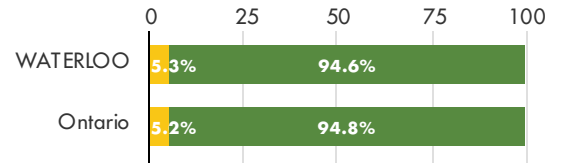


## Physical Health & Well-being

■ Few/None ■ Some ■ All/Almost All

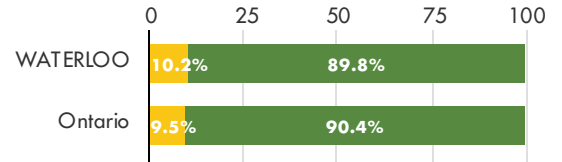
### Physical readiness for school day

Children who never or almost never experienced being dressed inappropriately for school activities, coming to school tired, late or hungry.



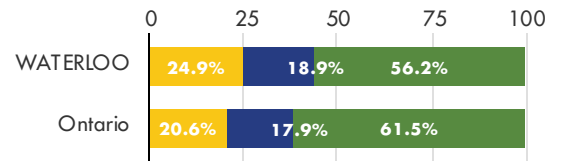
### Physical independence

Children who are independent in looking after their needs, have an established hand preference, are well coordinated, and do not suck a thumb/finger.



### Gross & fine motor skills

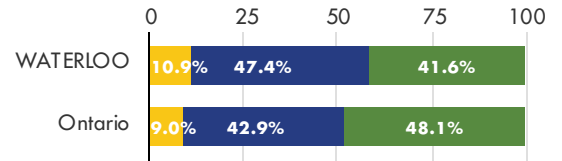
Children who have an excellent ability to physically tackle the school day and have excellent or good Gross & fine motor skills.



## Social Competence

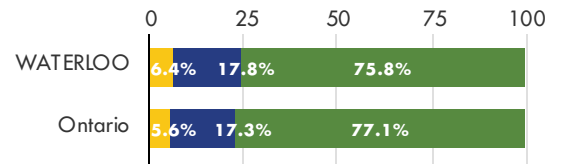
### Overall social competence

Children with excellent or good overall social development, very good ability to get along with other children and play with various children, usually cooperative and self-confident.



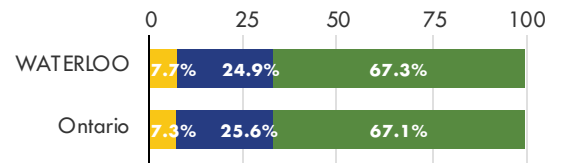
### Responsibility and respect

Children who always or most of the time show respect for others, and other's property, follow rules and take care of materials, accept responsibility for actions, and show self-control.



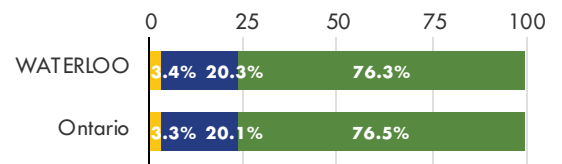
### Approaches to learning

Children who always or most of the time work neatly, independently, and solve problems, follow instructions and class routines, easily adjust to changes.



### Readiness to explore new things

Children who are curious about the surrounding world, and are eager to explore new books, toys and games.





“Children grow according to the qualities of stimulation, support, and nurturance they get on a moment to moment basis throughout their waking hours.”

– Dr. Clyde Hertzman

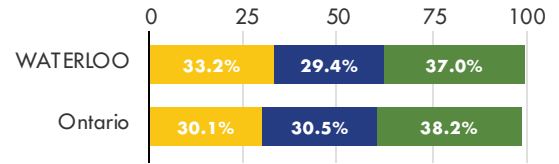


## Emotional Maturity

■ Few/None ■ Some ■ All/Almost All

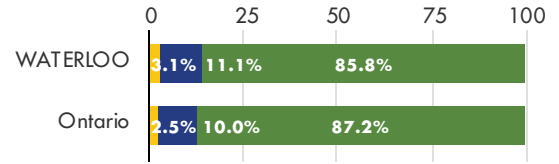
### Prosocial and helping behaviour

Children who often show most of the helping behaviours: helping someone hurt, sick or upset, offering to help spontaneously, invite bystanders to join in.



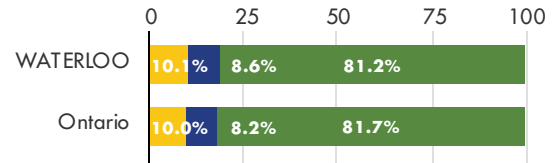
### Anxious and fearful behaviour

Children who rarely or never show most of the anxious behaviours; they are happy and able to enjoy school, and are comfortable being left at school by caregivers.



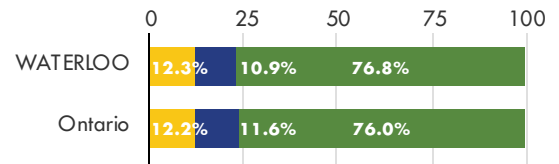
### Aggressive behaviour

Children who rarely or never show most of the aggressive behaviours; they do not use aggression as a means of solving a conflict, do not have temper tantrums, and are not mean to others.



### Hyperactivity & inattention

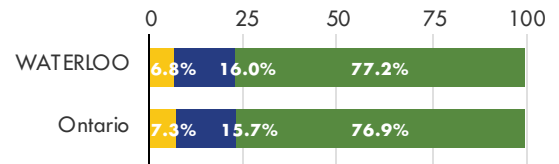
Children who never show most of the hyperactive behaviours; they are able to concentrate, settle in to chosen activities, wait their turn, and most of the time think before doing something.



## Language & Cognitive Development

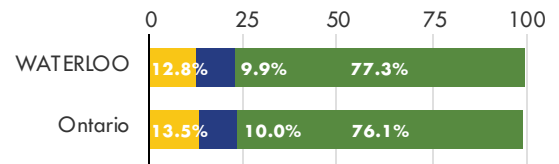
### Basic literacy

Children who have all the basic literacy skills: know how to handle a book, can identify some letters and attach sounds to some letters, show awareness of rhyming words, know the writing directions, and are able to write their own name.



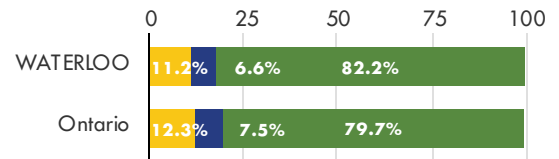
### Interest in literacy / numeracy and memory

Children who show an interest in books and reading, math and numbers, and have no difficulty with remembering things.



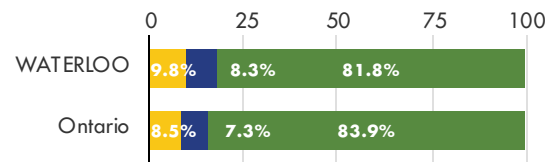
### Advanced literacy

Children who have at least half of the advanced literacy skills: reading simple, complex words or sentences, writing voluntarily, writing simple words or sentences.



### Basic numeracy

Children who have all the basic numeracy skills: can count to 20 and recognize shapes and numbers, compare numbers, sort and classify, use one-to-one correspondence, and understand simple time concepts.



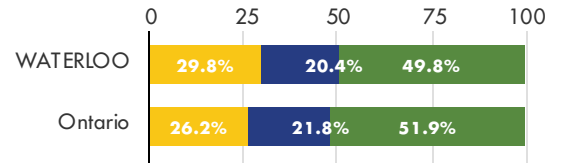


## Communication Skills & General Knowledge

### Communication Skills & General Knowledge

Children who have excellent or very good communication skills; can communicate easily and effectively, can participate in story-telling or imaginative play, articulates clearly, show adequate general knowledge, and are proficient in their native language.

■ Few/None ■ Some ■ All/Almost All





## Special Needs Report

The rate of special needs amongst kindergarten children in the EDI Normative II sample is 3.8%. This is comparable to the rate of 4.2% of children ages 5 to 9 with disabilities found on the 2006 Statistics Canada Participation and Activity Limitation Survey.

(Janus, Hughes, & Duku, 2010; Statistics Canada, 2008).



Under the definition of special needs is a broad range of disorders affecting behaviour, communication, as well as physical or intellectual development. Children with special needs often contend with multiple problems, which require tailor-made, flexible support. These children may also have above average abilities in certain areas, adding to the complexity of providing appropriate support to help them reach their optimal development.

### Children with Special Needs: General Guidelines

The child has already been identified as having special needs (e.g., a medical, physical, mental health diagnosis by a doctor, pediatrician, psychologist, or assessment by a Speech and Language Pathologist, Audiologist, etc.)

Because of the unique challenges associated with helping children with special needs, the following report is provided so not to lose the individuality of the results of these children. The more specific needs of this group must be addressed individually. Providing the following Special Needs Report allows for the school boards and communities to focus on these children’s needs and to plan better for future years.

## Descriptive characteristics of the WATERLOO 2017/2018 Special Needs cohort (N=384)

	Number	%
<b>Sex</b>		
Girl	106	27.6%
Boy	278	72.4%
Missing	0	0.0%
<b>Language Status</b>		
ELL	32	8.3%
ALF	7	1.8%
PANA	1	0.3%
None	343	89.3%
Missing	1	0.3%
<b>French Immersion</b>		
French Immersion	1	0.3%
Non-French Immersion	382	99.5%
Missing	1	0.3%
<b>Age</b>		
Average Age	5.6	-

It is important to remember that children with special needs do not constitute a uniform group, and much can be learned by examining EDI scores across categories of impairment.

On average, older children have better EDI scores than younger children.



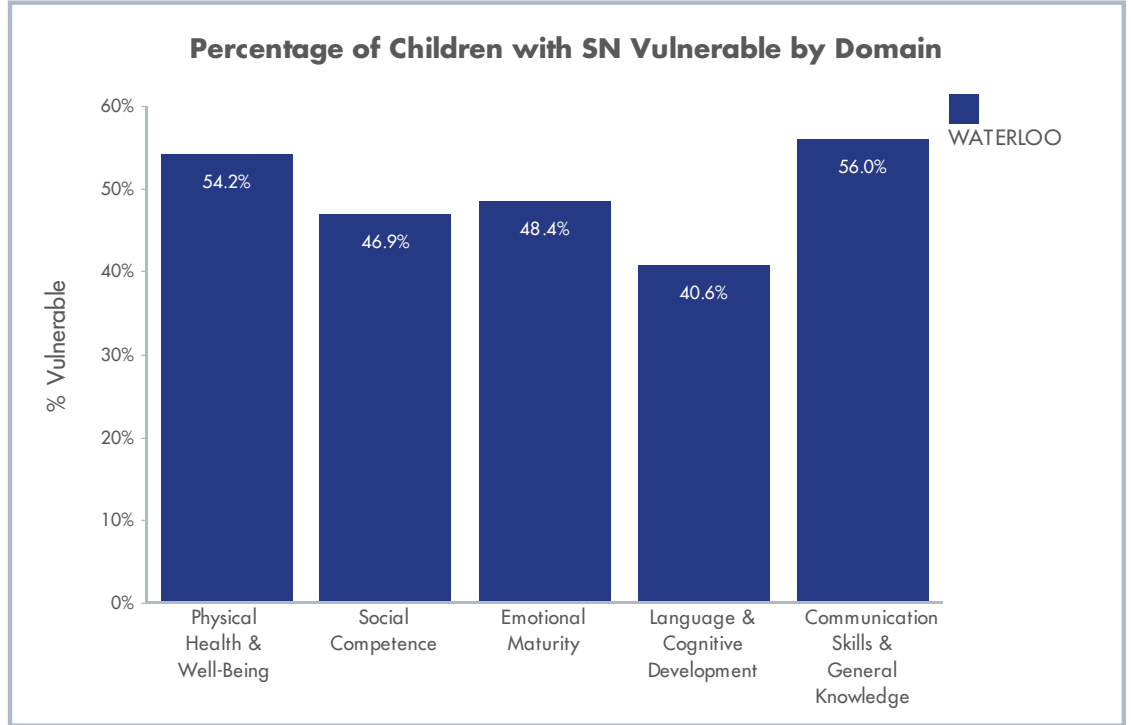


The EDI uses the 10th percentile for vulnerability because it captures all the children who are struggling, even those whose struggles may not be apparent.

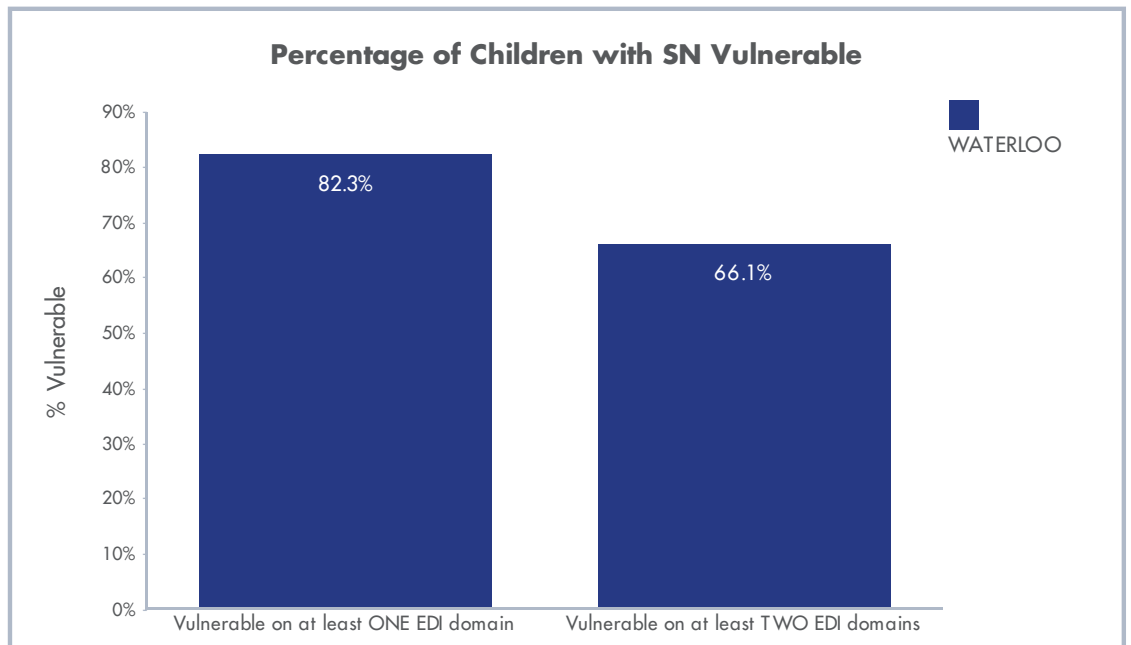


## Vulnerable Children

"Vulnerable" describes the children who score below the 10th percentile cut-off of the Ontario baseline population. Higher vulnerability indicates that a greater percentage of children are struggling. A comparison group is not provided because the composition of the special needs group in each individual site may not be reflective of the province-wide group of children with special needs.



The graph below illustrates WATERLOO 2017/2018 results for the percentage of children with special needs vulnerable on at least one and at least two domains.





### Special Concerns

Minimum: 0

Maximum: 11

- physical disability
- visual impairment
- hearing impairment
- speech impairment
- learning disability
- emotional problem
- behavioural problem
- home environment/problems at home
- chronic medical/health problems
- unaddressed dental needs
- other

### Special Skills

Minimum: 0

Maximum: 7

- Demonstrates special numeracy skills or talents
- Demonstrates special literacy skills or talents
- Demonstrates special skills or talents in art
- Demonstrates special skills or talents in music
- Demonstrates special skills or talents in athletics/dance
- Demonstrates special skills or talents in problem solving in a creative way
- Demonstrates special skills or talents in other areas



## Section D – Special Concerns

Note: the following chart ONLY includes children who have Special Needs.

Special Concerns	84.4% 324 Yes		Yes, Observed		Yes, Parent Info/Diagnosis		Yes, Both	
	Number	%	Number	%	Number	%	Number	%
Physical Disability	27	7.0%	10	2.6%	27	7.0%		
Visual Impairment	11	2.9%	7	1.8%	7	1.8%		
Hearing Impairment	4	1.0%	4	1.0%	10	2.6%		
Speech Impairment	64	16.7%	40	10.4%	85	22.1%		
Learning Disability	55	14.3%	21	5.5%	28	7.3%		
Emotional Problem	55	14.3%	11	2.9%	27	7.0%		
Behavioural Problem	69	18.0%	18	4.7%	48	12.5%		
Home Environment / Problems at Home	35	9.1%	7	1.8%	6	1.6%		
Chronic Medical / Health Problems	15	3.9%	16	4.2%	19	4.9%		
Unaddressed Dental Needs	4	1.0%	2	0.5%	3	0.8%		
Other	25	6.5%	10	2.6%	35	9.1%		

	Yes		No		Missing	
	Number	%	Number	%	Number	%
Child Receiving School Based Support	279	72.7%	105	27.3%	0	0.0%
Child Currently Receiving Further Assessment	171	44.5%	188	49.0%	25	6.5%
Child Currently on Wait List to Receive Further Assessment	91	23.7%	243	63.3%	50	13.0%
Child Needs Further Assessment	175	45.6%	190	49.5%	19	4.9%

Children with 1+ Special Skills **21.6%**

Children with 1+ Special Concerns **87.5%**

## Glossary

**Developmental health:** The full range of developmental outcomes, including physical and mental health, behavioural adjustment, literacy, mathematics achievement, and more.

**Special Needs:** Children identified as needing special assistance in the classroom due to chronic medical, physical, or mental disabling conditions.

**On track:** The total group of children with scores above the 25th percentile of the distribution.

**At risk:** The total group of children with scores between the 10th and 25th percentiles of the distribution.

**Vulnerable:** The total group of children with scores below the 10th percentile cut-off of the distribution.

**French Immersion:** Only for Anglophone communities; a program in which kindergarten students are introduced early to French language through immersion, however, the main language of the schools remains to be English.

**Domains:** Broad areas of development which include physical health and well-being, social competence, emotional maturity, language and cognitive development, and communication skills and general knowledge.

**Subdomains:** Each of the five EDI domains is comprised of subdomains that measure a more specific area of development. There are 16 subdomains in total. Children are rated as 'meeting few/no developmental expectations', 'meeting some developmental expectations', and 'meeting all/almost all developmental expectations' on each subdomain.

**Ontario baseline:** The first provincial EDI collection in Ontario from 2004-2006. Used as a reference for all subsequent EDI collections in Ontario. Vulnerability is based on cut-offs from this population.

**Ontario 2018:** The fifth provincial collection that took place during the 2017-18 school year.

**Linked provincially:** EDI questionnaires that have been matched by the Ontario government to a student information database.

**Missing:** Question not answered by teachers.