

EARLY DEVELOPMENT INSTRUMENT RESULTS

Provincial Summary Reports Primary Students in *Nova Scotia* 2012/2013 School year

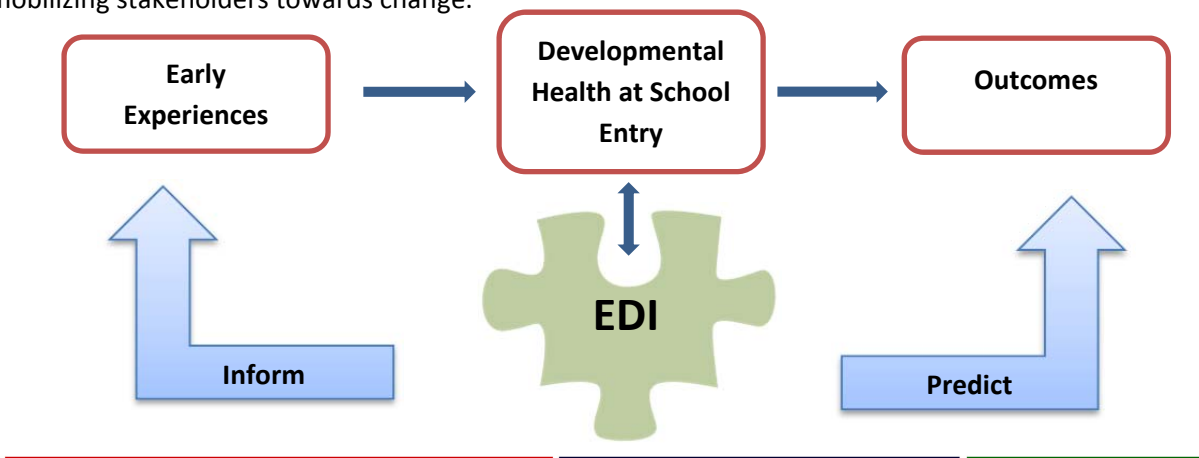
A snapshot of children’s developmental health at school entry

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 expectation at school entry. The Early Development project focuses on the outcomes for children as a health-relevant, measurable concept that has long-term consequences for individual outcomes and population health. The data derived from the collection of the EDI facilitates and encourages community, provincial, national and international monitoring of the developmental health of our young learners.

The EDI was finalized in 2000 in Ontario, Canada and has since become a population-level research tool utilized to various degrees in all Canadian provinces and territories. By the end of 2013, Ontario, Manitoba, British Columbia, Saskatchewan, Alberta, Prince Edward Island, New Brunswick, Nova Scotia, Newfoundland and Labrador, Yukon, Northwest Territories, and Quebec will have collected data at the provincial/territorial-level at least once and Nunavut will have collected data on some of their children.

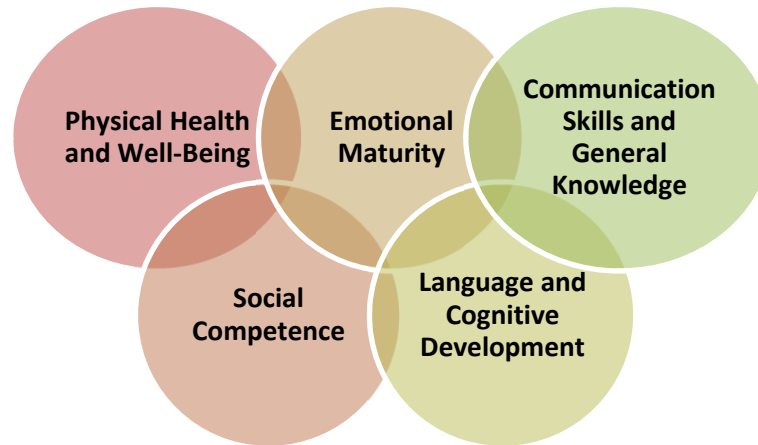
Current findings from the administration of EDI in Canada show that in most jurisdictions 25% or more of children entering Primary are vulnerable in at least one aspect of their development. Further research linking EDI findings to later educational data demonstrate that, on average, Primary vulnerability predicts ongoing vulnerability in the school system. Numerous studies have shown that early vulnerability predicts much about a person’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 bring a positive impact on children’s development in their local areas. Understanding the state of children’s development at the level of the population, that is for *all* children, is foundational to mobilizing stakeholders towards change.





EDI Domains


The Early Development Instrument (EDI) measures children's developmental health at school entry by asking questions covering five different areas of their early development:




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Physical Health & Well-Being - includes gross and fine motor skills - e.g., holding a pencil, running on the playground, motor coordination, and adequate energy levels for classroom activities.
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Social Competence - includes curiosity about the world, eagerness to try new experiences, knowledge of standards of acceptable behaviour in a public place, ability to control own behaviour, cooperation with others, following rules, and ability to play and work with other children.
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Emotional Maturity - includes ability to reflect before acting, a balance between too fearful and too impulsive, and ability to deal with feelings at the age appropriate level, and empathic response to other people's feelings.
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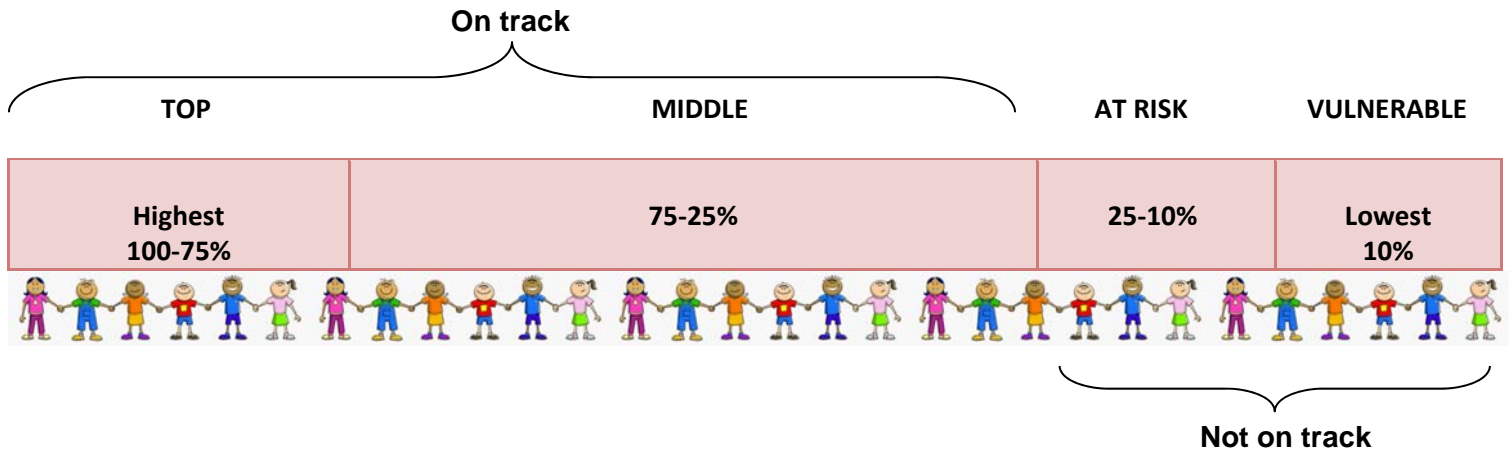
Language and Cognitive Development - includes reading awareness, age appropriate reading, writing and numeracy skills, board games, and ability to understand similarities and differences, and to recite back specific pieces of information from memory.
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Communication Skills and General Knowledge - includes skills to communicate needs and wants in socially appropriate ways, symbolic use of language, story-telling, and age appropriate knowledge about the life and world around.



EDI Outcomes:

The average EDI scores for each developmental area – Physical Health and Well-Being, Social Competence, Emotional Maturity, Language and Cognitive Development, and Communication Skills and General Knowledge – are divided into categories representing the highest scores to the lowest scores in the community.



On track (Top)

The total group of children who score in the highest 25th percentile of the distribution.

On track (Middle)

The total group of children who score between the 75th and 25th percentiles of the distribution.

Not on track (At risk)

The total group of children who score between the lowest 10th and 25th percentiles of the distribution.

Not on track (Vulnerable)

The total group of children who score below the lowest 10th percentile of the distribution.



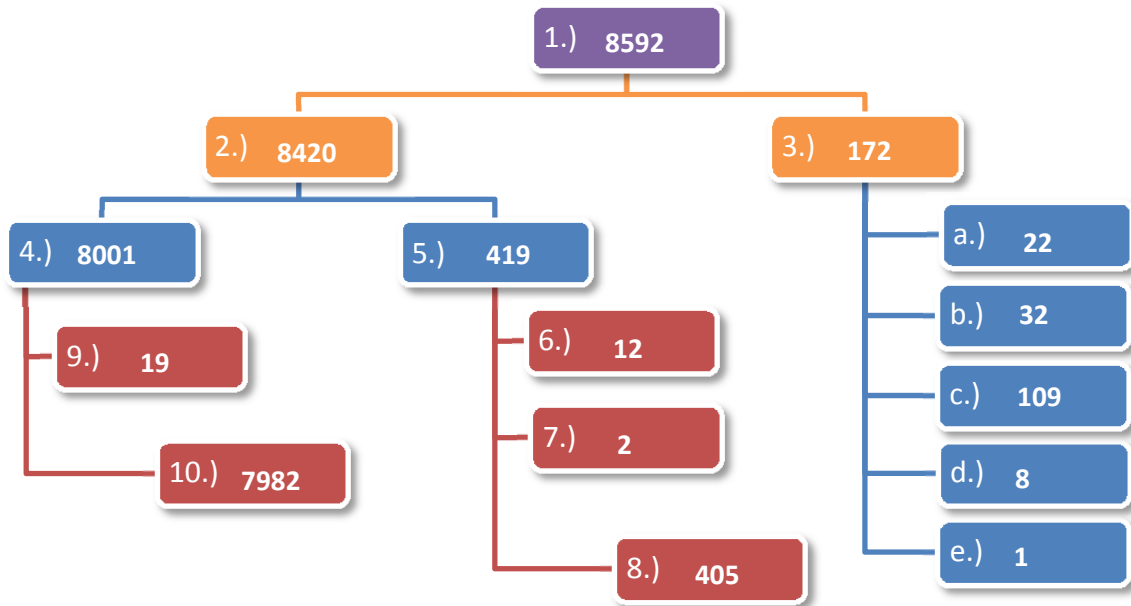
Nova Scotia School Boards

School Board	Count
Tri-County Regional School Board	413
Chignecto Central Regional School Board	1507
Conseil scolaire acadien provincial	450
Annapolis Valley Regional School Board	874
South Shore Regional School board	448
Cape Breton-Victoria Regional School Board	942
Halifax Regional School Board	3530
Strait Regional School Board	428



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.



1. Total EDIs completed
2. Questionnaires for children in class more than 1 month.
3. Questionnaires for children in class other than in class more than 1 month
 - a. in class <1 month
 - b. moved out of class
 - c. moved out of school
 - d. other
 - e. missing class assignment
4. Questionnaires for children with no SN
5. Questionnaires for children missing or indicated as SN
6. Questionnaires missing SN assignment
7. SN questionnaires missing data for more than 1 domain
8. Questionnaires valid for analyses in reports for children with Special Needs.
9. Non SN questionnaires missing data for more than 1 domain
10. Questionnaires valid for analyses in reports for children without Special Needs

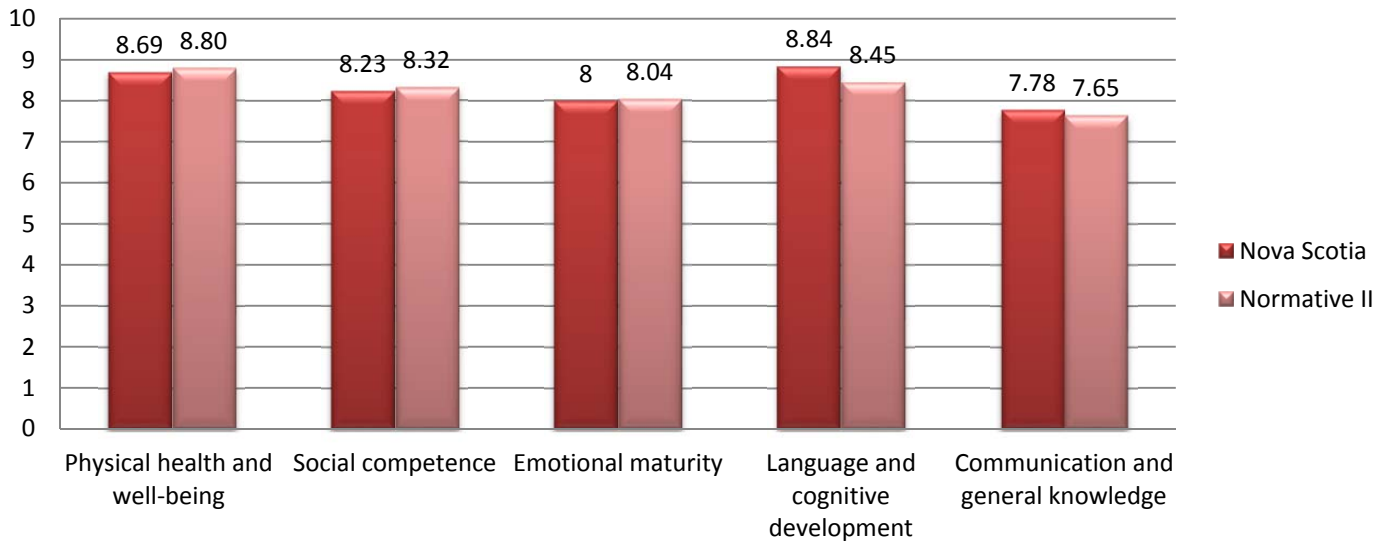


Descriptive Statistics

The EDI was completed for 7982 non-Special Needs Primary students in Nova Scotia in the 2012/2013 year. The table below illustrates the descriptive statistics of this Nova Scotia cohort.

Domains	Valid Questionnaires		Scores			Percentile Boundaries			
	# EDI Items	Valid Questionnaires	Min-Max	Mean	Standard Deviation	75	50	25	10
Physical Health and Well-Being	13	7973	1.5 - 10.0	8.69	1.45	10.00	9.23	8.08	6.54
Social Competence	26	7982	0.4 - 10.0	8.23	1.89	9.81	8.85	7.12	5.39
Emotional Maturity	30	7942	0.8 - 10.0	8.00	1.58	9.17	8.33	7.17	5.83
Language and Cognitive Development	26	7969	0.0 - 10.0	8.84	1.64	10.00	9.62	8.46	6.54
Communication Skills and General Knowledge	8	7980	0.0 - 10.0	7.78	2.46	10.00	8.75	5.63	4.38

EDI Mean Scores



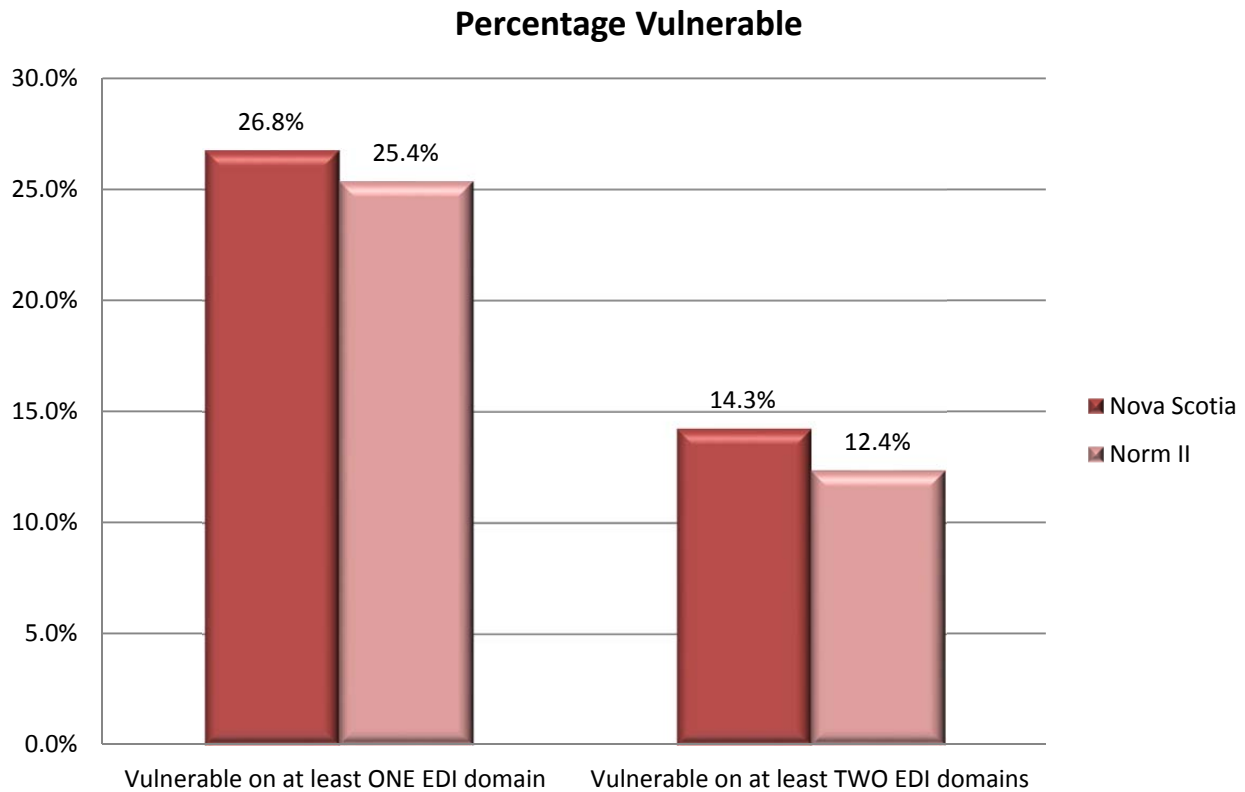
Vulnerable Children

“Vulnerable” describes the children who score low (below the 10th percentile cut-off of the comparison population) on any of the five domains.

The table below illustrates the percentage of Nova Scotia children that are vulnerable on at least one or on at least two domains based the Normative II cut-offs. These are compared to the percentages for the Normative II Cohort.

	Percentage	
	2012/2013 Nova Scotia (Normative II cut-offs)	Normative II
Vulnerable on at least ONE EDI domain	26.8%	25.4%
Vulnerable on at least TWO EDI domains	14.3%	12.4%

The graph below illustrates Nova Scotia 2012/2013 results for the percentage of children vulnerable on one and two domains compared to the Normative II cut-offs.



Percentage of Vulnerable Children by EDI Domain

The table below illustrates the percentage of Nova Scotia children who fell below the 10th percentile cut-off based on Normative II cut-offs. The percentage vulnerable by domain using Normative II cut-offs reflects the vulnerability in your site in relation to the distribution of scores in the Canadian population.

Domains	% Vulnerable	
	2012/2013 Nova Scotia (Normative II cut-offs)	Normative II
Physical Health Well-Being	13.1%	9.7%
Social Competence	11.2%	9.2%
Emotional Maturity	11.8%	10.7%
Language & Cognitive Development	6.4%	8.7%
Communication Skills & General Knowledge	10.7%	13.0%



EARLY DEVELOPMENT INSTRUMENT RESULTS REPORT
For Children with NO Special Needs

Primary Students in Nova Scotia
School year 2012/2013

Descriptive characteristics of the Nova Scotia 2012/2013 cohort (N=7982)

	Number	%
Gender		
Girl	3915	49.0%
Boy	4067	51.0%
Missing	0	0.0%
English/French as a Second Language (E/FSL)		
E/FSL	450	5.6%
No E/FSL	7528	94.3%
Missing	4	0.1%
Type of class		
Primary	6765	84.8%
Primary/1	1136	14.2%
Other	66	0.8%
Missing	15	0.2%
First language		
English	7494	93.9%
French	101	1.3%
Other Only	158	2.0%
English & French (Bilingual)	96	1.2%
English & Other (Bilingual)	56	0.7%
French & Other (Bilingual)	2	0.0%
Two Other Languages (Bilingual)	2	0.0%
Missing	73	0.9%
French Immersion		
French Immersion	1043	13.1%
Non-French Immersion	6938	86.9%
Missing	1	0.0%



Descriptive characteristics of the population continued...

	Number	%
Aboriginal		
Aboriginal	212	2.7%
Not Aboriginal	7281	91.2%
Missing	489	6.1%
Multiple Challenges		
Multiple Challenges	317	4.0%
No Multiple Challenges	7665	96.0%

Age composition

Age at the time of teacher assessment (Feb 2013-Mar 2013) was divided into groups of 3-month intervals. The age categories are expressed as year-month; for example, 5-11 means age 5 years and 11 months.

Age Category	Number	%
4-8 to 4-10	1	0.0%
4-11 to 5-1	31	0.4%
5-2 to 5-4	1356	17.0%
5-5 to 5-7	2085	26.1%
5-8 to 5-10	2051	25.7%
5-11 to 6-1	1835	23.0%
6-2 to 6-4	561	7.0%
6-5 to 6-7	45	0.6%
6-8 to 6-10	8	0.1%
6-11 and up	8	0.1%
Missing	1	0.0%

Please note: Months were rounded down for ages less than 15 days, and up for more than 15 days. Therefore, children aged less than 6 years 1.5 months belong to the 5-11 to 6-1 category, and children aged from 5 years 1.5 months to 5 years 4.5 months belong to the 5-2 to 5-4 category.

Frequencies of answers to questions in Section D – Special Problems

	Number	%
D1: Special Problems		
Yes	1031	12.9%
D2a: Physical Disability		
Yes, Observed	23	0.3%
Yes, Parents info/Diagnosis	15	0.2%
D2b: Visual Impairment		
Yes, Observed	35	0.4%
Yes, Parents info/Diagnosis	31	0.4%
D2c: Hearing Impairment		
Yes, Observed	19	0.2%
Yes, Parents info/Diagnosis	18	0.2%
D2d: Speech Impairment		
Yes, Observed	425	5.3%
Yes, Parents info/Diagnosis	137	1.7%
D2e: Learning Disability		
Yes, Observed	148	1.9%
Yes, Parents info/Diagnosis	10	0.1%
D2f: Emotional Problem		
Yes, Observed	201	2.5%
Yes, Parents info/Diagnosis	47	0.6%
D2g: Behavioural Problem		
Yes, Observed	391	4.9%
Yes, Parents info/Diagnosis	65	0.8%
D2h: Home Environment/problems at home		
Yes, Observed	161	2.0%
Yes, Parents info/Diagnosis	32	0.4%
D2i: Chronic Medical/Health Problems		
Yes, Observed	40	0.5%
Yes, Parents info/Diagnosis	39	0.5%

Frequencies of answers to questions in Section D – Special Problems continued

D2j: Unaddressed dental needs		
Yes, Observed	12	0.2%
Yes, Parents info/Diagnosis	4	0.1%
D2k: Other		
Yes, Observed	141	1.8%
Yes, Parents info/Diagnosis	32	0.4%
D4: Child Receiving School Based Support		
Yes	977	12.2%
No	6932	86.8%
Missing	73	0.9%
D5a: Child Currently Receiving Further Assessment		
Yes	401	5.0%
No	7426	93.0%
Missing	155	1.9%
D5b: Child Currently on Wait List to Receive Further Assessment		
Yes	353	4.4%
No	7457	93.4%
Missing	172	2.2%
D5c: Do You Feel that this Child Needs Further Assessment		
Yes	938	11.8%
No	6820	85.4%
Missing	224	2.8%



Frequencies of answers to questions in Section E – Additional Questions

	Number	%
E1: Child attended an early intervention program		
Yes	519	6.5%
No	5623	70.4%
Missing	1840	23.1%
E3: Child attended any other language or religion classes		
Yes	264	3.3%
No	3344	41.9%
Missing	4374	54.8%
E4: Child attended an organized part-time pre-school/nursery school		
Yes	2117	26.5%
No	2226	27.9%
Missing	3639	45.6%
E2: Non parental care:		
Yes	3349	42.0%
No	2106	26.4%
Missing	2527	31.7%
E2a: Centre-based, licensed, non-profit arrangement		
Yes	986	12.4%
E2b: Centre-based, licensed, for profit arrangement		
Yes	1267	15.9%
E2c: Other home-based, licensed arrangement		
Yes	161	2.0%
E2d: Other home-based, unlicensed, non-relative arrangement		
Yes	528	6.6%
E2e: Other home-based, unlicensed, relative arrangement		
Yes	293	3.7%
E2f: Child's home, non-relative arrangement		
Yes	152	1.9%



Frequencies of answers to questions in Section E – Additional Questions continued

E2g: Child’s home, relative arrangement		
Yes	440	5.5%
E2h: Other		
Yes	486	6.1%
E2i: Type of arrangement		
Full-time	2116	26.5%
Part-time	1227	15.4%
Missing	4639	58.1%



Special Skills and Special Problems

The table below shows the distribution of the numbers of Special Skills and Special Problems that were observed in this cohort. The minimum and maximum numbers indicate the smallest or largest number of Special Skills/Problems observed in this cohort. The mean number indicates the average number of Special Skills/Problems observed in this cohort of children.

Special Skills/Problems	Min	Max	Mean
Special Skills*	0	7	0.29
Special Problems**	0	11	0.22

Children in the *Nova Scotia* cohort had a minimum of zero special skills and a maximum of seven. On average each child had 0.29 special skills.

Children in the *Nova Scotia* cohort had a minimum of zero special problems and a maximum of eleven. On average each child had 0.22 special problems.

*Special Skills:

Section B

Questions 34 to 40

Minimum possible: 0

Maximum possible: 7

34. Demonstrates special numeracy skills or talents
35. Demonstrates special literacy skills or talents
36. Demonstrates special skills or talents in art
37. Demonstrates special skills or talents in music
38. Demonstrates special skills or talents in athletics/dance
39. Demonstrates special skills or talents in problem solving in a creative way
40. Demonstrates special skills or talents in other areas

**Special Problems:

Section D

Questions 2a to 2k

Minimum possible: 0

Maximum possible: 11

- 2a. physical disability
- 2b. visual impairment
- 2c. hearing impairment
- 2d. speech impairment
- 2e. learning disability
- 2f. emotional problem
- 2g. behavioural problem
- 2h. home environment/problems at home
- 2i. chronic medical/health problems
- 2j. unaddressed dental needs
- 2k. other



Group Comparisons

Nova Scotia, 2012/2013 (N = 7982)

Please note that higher mean scores indicate better levels of readiness-to-learn at school.

The effect size quantifies the size of the difference between two groups and is a standardized mean difference between the two groups. That is

$$\text{Effect size} = \frac{\text{mean}(\text{group1}) - \text{mean}(\text{group2})}{SD(\text{group1})} \quad \text{SD represents the Standard Deviation.}$$

As an example, an effect size of 0.8 indicates that the score of the average person in group 1 is 0.8 standard deviations above the average person in group 2, and hence exceeds the scores of 79% of group 2. Unlike statistical significance, the effect size statistic is independent of the group size and therefore considered more informative. It shows the degree of a “meaningful” difference between the two groups.

**Note that the reference groups (group1 in the equation) used in the calculations of effect size are indicated with an asterisk.*

Interpretation: it is accepted to consider effect sizes of 0.8 or more as large, between 0.8 and 0.2 as moderate, and of 0.2 and smaller as small. A negative effect size indicates that the mean of the reference group, group1, is lower than the mean of the comparison group, group2

1. Gender

Domain	Girls*			Boys			Effect Size
	N	Mean	SD	N	Mean	SD	
Physical health and well-being	3912	8.89	1.35	4061	8.49	1.51	0.30
Social competence	3915	8.63	1.66	4067	7.84	2.00	0.48
Emotional maturity	3901	8.41	1.35	4041	7.61	1.69	0.59
Language and cognitive development	3910	9.08	1.49	4059	8.61	1.74	0.32
Communication skills and general knowledge	3914	8.19	2.29	4066	7.38	2.55	0.35



2. Age of child (mean age is 5.69 years)

Domain	Above the mean age*			Below the mean age			Effect Size
	N	Mean	SD	N	Mean	SD	
Physical health and well-being	3954	8.88	1.37	4019	8.50	1.49	0.28
Social competence	3956	8.50	1.77	4026	7.96	1.96	0.31
Emotional maturity	3934	8.18	1.54	4008	7.82	1.61	0.23
Language and cognitive development	3943	9.09	1.42	4026	8.59	1.79	0.35
Communication skills and general knowledge	3956	8.15	2.30	4024	7.41	2.55	0.32

3. Children with E/FSL status

Domain	E/FSL			Not E/FSL*			Effect Size
	N	Mean	SD	N	Mean	SD	
Physical health and well-being	450	8.98	1.20	7519	8.67	1.46	-0.21
Social competence	450	8.00	1.89	7528	8.24	1.89	0.13
Emotional maturity	444	7.77	1.53	7494	8.01	1.59	0.15
Language and cognitive development	450	8.49	1.74	7515	8.86	1.63	0.23
Communication skills and general knowledge	450	6.65	2.65	7526	7.85	2.43	0.49



4. Children who attended French Immersion

Domain	French Immersion*			No French Immersion			Effect Size
	N	Mean	SD	N	Mean	SD	
Physical health and well-being	1042	8.75	1.37	6930	8.68	1.46	0.05
Social competence	1043	8.31	1.77	6938	8.22	1.90	0.05
Emotional maturity	1033	8.04	1.54	6908	7.99	1.59	0.03
Language and cognitive development	1030	8.99	1.48	6938	8.82	1.66	0.11
Communication skills and general knowledge	1042	8.11	2.25	6937	7.73	2.48	0.17

5. Children with Aboriginal Status

Domain	Aboriginal			Not Aboriginal*			Effect Size
	N	Mean	SD	N	Mean	SD	
Physical health and well-being	212	7.97	1.58	7272	8.72	1.43	0.52
Social competence	212	7.64	2.09	7281	8.26	1.87	0.33
Emotional maturity	210	7.55	1.79	7248	8.02	1.57	0.30
Language and cognitive development	212	8.28	2.08	7272	8.86	1.61	0.36
Communication skills and general knowledge	211	6.85	2.65	7280	7.82	2.43	0.40



6. Children who attended an early intervention program

Domain	Early Intervention			No early intervention*			Effect Size
	N	Mean	SD	N	Mean	SD	
Physical health and well-being	519	8.47	1.53	5616	8.73	1.41	0.18
Social competence	519	7.65	2.11	5623	8.31	1.86	0.35
Emotional maturity	519	7.50	1.82	5602	8.06	1.54	0.36
Language and cognitive development	518	8.65	1.70	5620	8.87	1.61	0.14
Communication skills and general knowledge	518	7.30	2.67	5622	7.86	2.42	0.23

7. Children who attended Language/Religion classes

Domain	Language/Religion classes*			No Language/Religion classes			Effect Size
	N	Mean	SD	N	Mean	SD	
Physical health and well-being	264	8.89	1.36	3341	8.65	1.44	0.18
Social competence	264	8.49	1.73	3344	8.15	1.92	0.20
Emotional maturity	264	8.03	1.59	3342	7.95	1.54	0.05
Language and cognitive development	264	8.94	1.59	3343	8.78	1.64	0.10
Communication skills and general knowledge	264	8.20	2.40	3344	7.71	2.48	0.20



8. Children who attended part-time preschool

Domain	Preschool*			No Preschool			Effect Size
	N	Mean	SD	N	Mean	SD	
Physical health and well-being	2115	8.83	1.32	2225	8.52	1.52	0.23
Social competence	2117	8.41	1.77	2226	7.99	2.01	0.24
Emotional maturity	2114	8.07	1.50	2218	7.83	1.64	0.16
Language and cognitive development	2117	8.95	1.53	2226	8.66	1.74	0.19
Communication skills and general knowledge	2117	8.02	2.35	2225	7.54	2.55	0.20

9. Type of non-parental care arrangement

Domain	Full Time*			Part Time			Effect Size
	N	Mean	SD	N	Mean	SD	
Physical health and well-being	2116	8.75	1.35	1224	8.70	1.38	0.04
Social competence	2116	8.14	1.91	1227	8.24	1.91	-0.05
Emotional maturity	2107	7.92	1.61	1221	7.94	1.57	-0.01
Language and cognitive development	2115	8.94	1.46	1227	8.78	1.74	0.11
Communication skills and general knowledge	2116	7.88	2.35	1227	7.72	2.49	0.07



SUBDOMAIN PROFILES

Nova Scotia, 2012/2013 (N = 7982)

Each of the five domains is divided into sub-domains, except for Communication Skills and General Knowledge. The sub-domains were originally identified using factor analysis¹. The table below shows the breakdown of sub-domains 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 and fine motor	Approaches to learning	Aggressive behaviour	Advanced literacy	
	Readiness to explore new things	Hyperactivity and inattention	Basic numeracy	

Scores for domains and sub-domains on the EDI vary from 0 to 10. Some sub-domains represent skills that a child in Primary, based on his or her developmental age, is expected to have mastered already (e.g., physical independence). Other sub-domains represent areas of development that are still emerging (e.g., prosocial behaviour).

Based on skills and abilities that each sub-domain represents, groups of scores were identified representing children who met all/almost all developmental expectations (reach the expectations for all or most of the subdomain items), some of the developmental expectations (reach the expectations for some of the subdomain items), and met few/none of the developmental expectations (reach expectations for none or few of the subdomain items)². In contrast to the “on track”, “at risk”, and “vulnerable” groups identified for domains in the main report, which are based on the distribution of scores in the province or in Canada, the sub-domain categories are distribution-free.

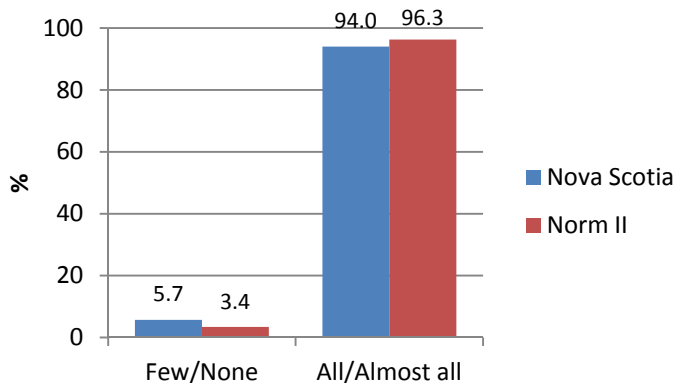
In this report, detailed descriptions of children who met all/almost all and of those who met few/none of the developmental expectations are given for each sub-domain. There is no detailed description for the “some” category because these children vary widely in their skills and abilities. An investigation of percentages of children who fall into the “few/none” category will identify areas of the greatest weakness in the population. The following report outlines the percentage of your children who are meeting all/almost all, some, or few/none of the developmental expectations in each of the five domains. The results for the Normative II population are also included as a comparison base.

¹ Results of the analyses are available on request.

² Formerly called “very ready”, “middle”, and “not ready”

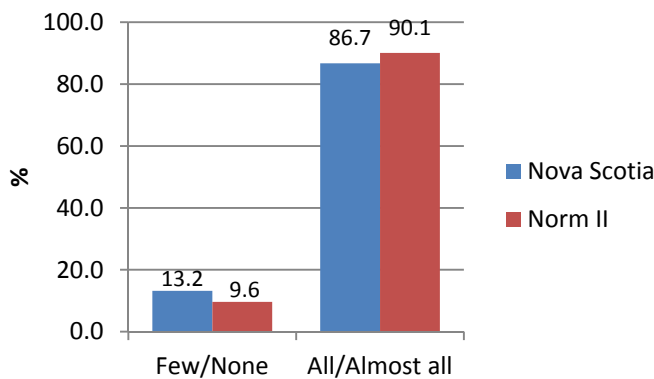


PHYSICAL HEALTH & WELL-BEING



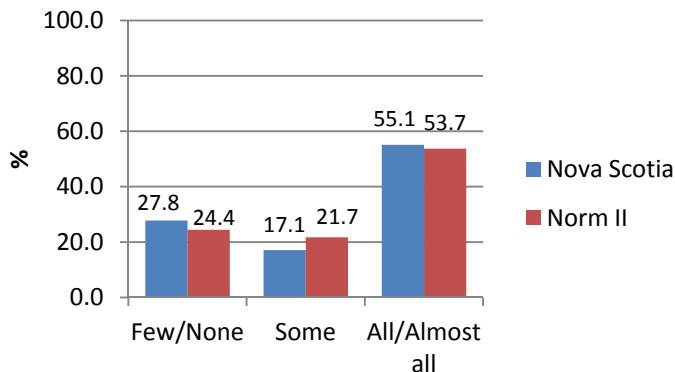
Physical readiness for school day

Children who reach **all or almost all** of the developmental expectations never or almost never experienced being dressed inappropriately for school activities, or coming to school tired, late or hungry. Child who reach **few or none** of the developmental expectations have at least sometimes experienced coming unprepared for the school day by being dressed inappropriately, or by coming to school late, hungry, or tired.



Physical independence

Children who reach **all or almost all** of the developmental expectations are independent in looking after their needs, have an established hand preference, are well coordinated, and do not suck a thumb/finger. Children who reach **few or none** of the developmental expectations vary from those who have not developed one of the three skills (independence, handedness, coordination) and/or suck a thumb to those who have not developed any of the skills and suck a thumb.

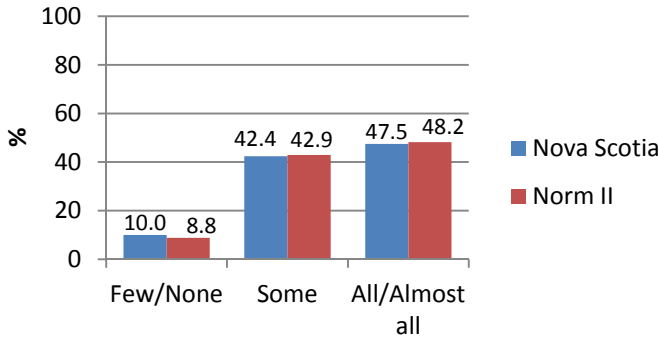


Gross and fine motor skills

Children who reach **all or almost all** of the developmental expectations have an excellent ability to physically tackle the school day and have excellent or good gross and fine motor skills. Children who reach **few or none** of the developmental expectations range from those who have an average ability to perform skills requiring gross and fine motor competence and good or average overall energy levels, to those who have poor fine and gross motor skills, poor overall energy levels and poor physical skills.

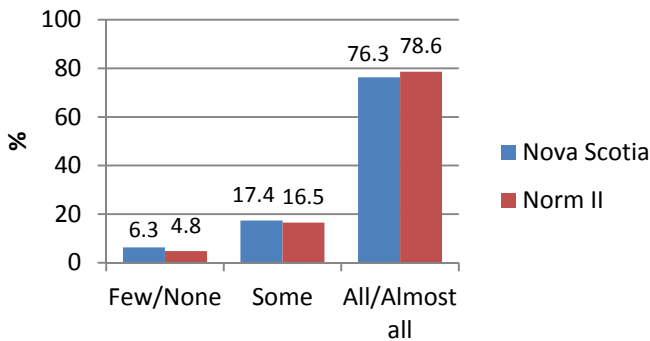


SOCIAL COMPETENCE



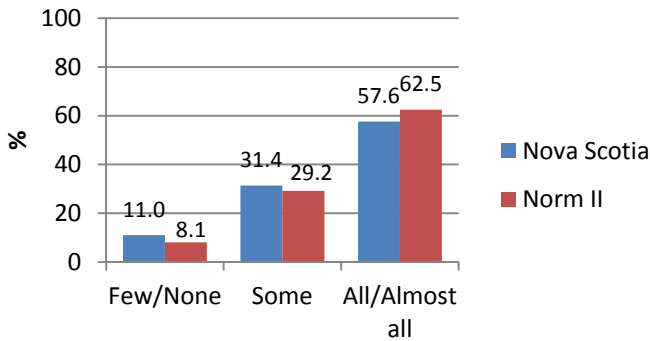
Overall social competence

Children who reach **all or almost all** of the developmental expectations have 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. Children who reach **few or none** of the developmental expectations have average to poor overall social skills, have low self-confidence and are rarely able to play with various children or interact cooperatively



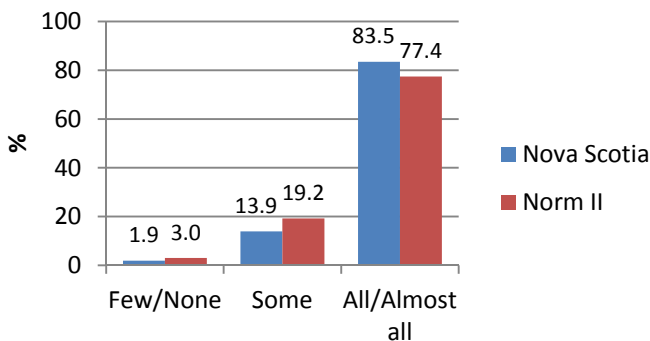
Responsibility and respect

Children who reach **all or almost all** of the developmental expectations always or most of the time show respect for others and for property, follow rules and take care of materials, accept responsibility for actions, and show self-control. Children who reach **few or none** of the developmental expectations only sometimes or never accept responsibility for actions, show respect for others and for property, demonstrate self-control, follow rules, and take care of materials



Approaches to learning

Children who reach **all or almost all** of the developmental expectations always or most of the time work neatly, work independently, solve problems, follow instructions and class routines, and easily adjust to changes. Children who reach **few or none** of the developmental expectations only sometimes or never work neatly, work independently, solve problems, follow class routines, and adjust to changes in routines

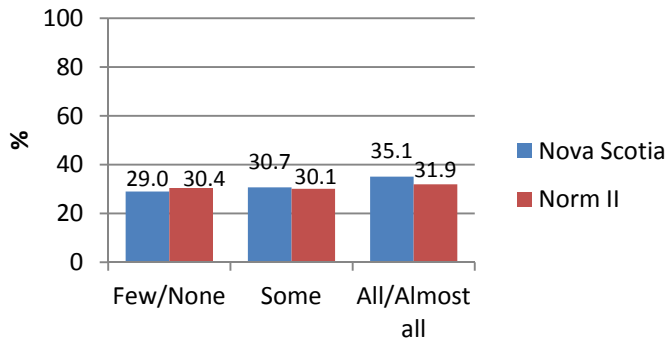


Readiness to explore new things

Children who reach **all or almost all** of the developmental expectations are curious about the surrounding world and are eager to explore new books, toys, and games. Children who reach **few or none** of the developmental expectations only sometimes or never show curiosity about the world and are rarely eager to explore new books, toys and games.



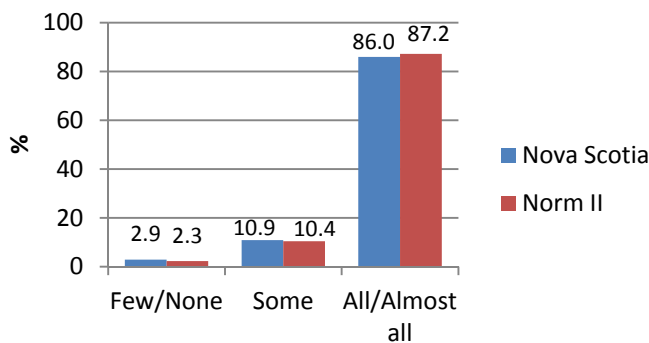
EMOTIONAL MATURITY



Prosocial and helping behaviour

Children who reach **all or almost all** of the developmental expectations show most of the helping behaviours: helping someone hurt, sick or upset, offering to help spontaneously, invite bystanders to join in

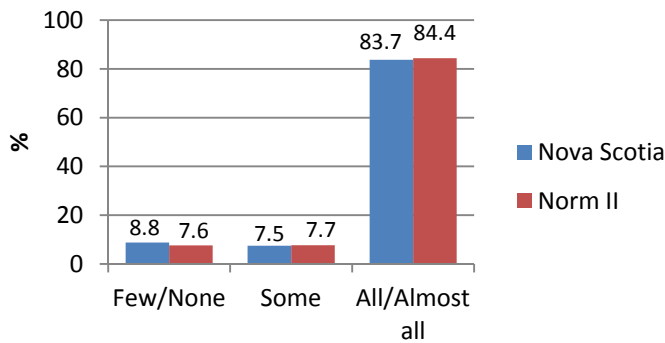
Children who reach **few or none** of the developmental expectations never or almost never show most of the helping behaviours; they do not help someone hurt, sick or upset, spontaneously offer to help, do not invite bystanders to join in



Anxious and fearful behaviour

Children who reach **all or almost all** of the developmental expectations 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

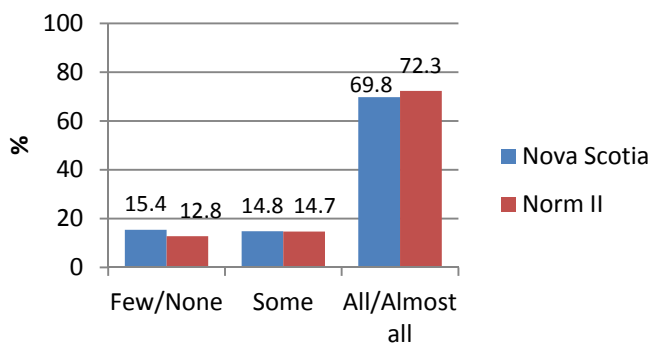
Children who reach **few or none** of the developmental expectations often show most of the anxious behaviours; they could be worried, unhappy, nervous, sad or excessively shy, indecisive; and they can be upset when left at school



Aggressive behaviour

Children who reach **all or almost all** of the developmental expectations rarely or never show most of the aggressive behaviours; they get into physical fights, kick or bite others, take other people's things, are disobedient or have temper tantrums

Children who reach **few or none** of the developmental expectations often show most of the aggressive behaviours; they get into physical fights, kick or bite others, take other people's things, are disobedient or have temper tantrums



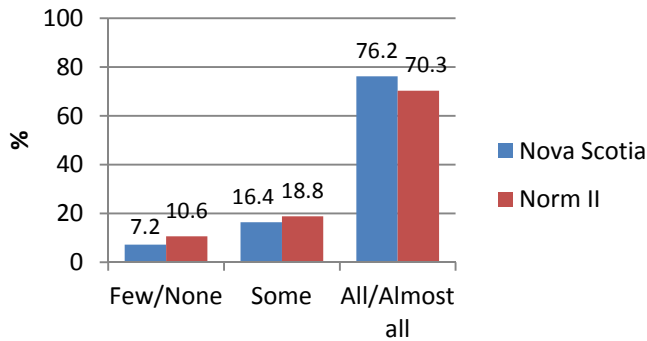
Hyperactivity and inattention

Children who reach **all or almost all** of the developmental expectations never show most of the hyperactive behaviours; they are able to concentrate, settle to chosen activities, wait their turn, and most of the time think before doing something

Children who reach **few or none** of the developmental expectations often show most of the hyperactive behaviours; they could be restless, distractible, impulsive; they fidget and have difficulty settling to activities



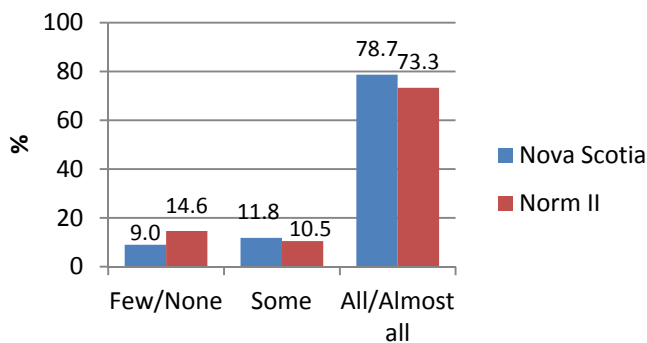
LANGUAGE AND COGNITIVE DEVELOPMENT



Basic literacy

Children who reach **all or almost all** of the developmental expectations 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

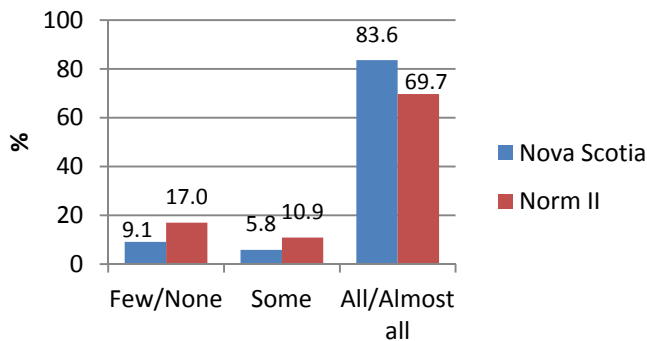
Children who reach **few or none** of the developmental expectations do not have most of the basic literacy skills; they have problems with identifying letters or attaching sounds to them, rhyming, may not know the writing directions and even how to write own name



Interest in literacy / numeracy and memory

Children who reach **all or almost all** of the developmental expectations show interest in books and reading, math and numbers, and have no difficulty with remembering things name

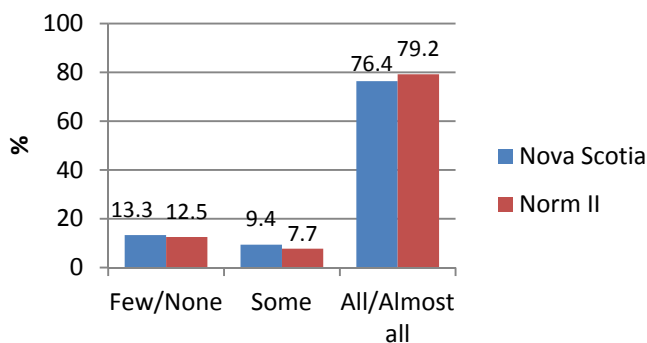
Children who reach **few or none** of the developmental expectations may not show interest in books and reading, or math and number games, or both, and may have difficulty remembering things



Advanced literacy

Children who reach **all or almost all** of the developmental expectations have at least half of the advanced literacy skills: reading simple, complex words or sentences, writing voluntarily, writing simple words or sentences

Children who reach **few or none** of the developmental expectations have only up to one of the advanced literacy skills; who cannot read or write simple words, or sentences and rarely write voluntarily



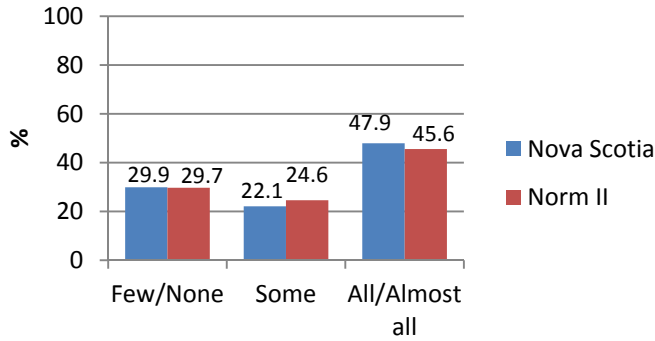
Basic numeracy

Children who reach **all or almost all** of the developmental expectations 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

Children who reach **few or none** of the developmental expectations have marked difficulty with numbers, cannot count, compare or recognize numbers, may not be able to name all the shapes and may have difficulty with time concepts



COMMUNICATION SKILLS AND GENERAL KNOWLEDGE



Communication skills and General knowledge

Children who reach **all or almost all** of the developmental expectations 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

Children who reach **few or none** of the developmental expectations can range from being average to very poor in effective communication, may have difficulty in participating in games involving the use of language, may be difficult to understand and may have difficulty to understand others; may show little general knowledge and may have difficulty with the native language



MULTIPLE CHALLENGE INDEX

There are 16 sub-domains within the five domains of the EDI. Each of the sub-domains represents a relatively homogenous aspect of a child’s development. If a child scores below expectations (below the cut-off) on 9 or more of the 16 sub-domains he/she is considered to have multiple challenges.

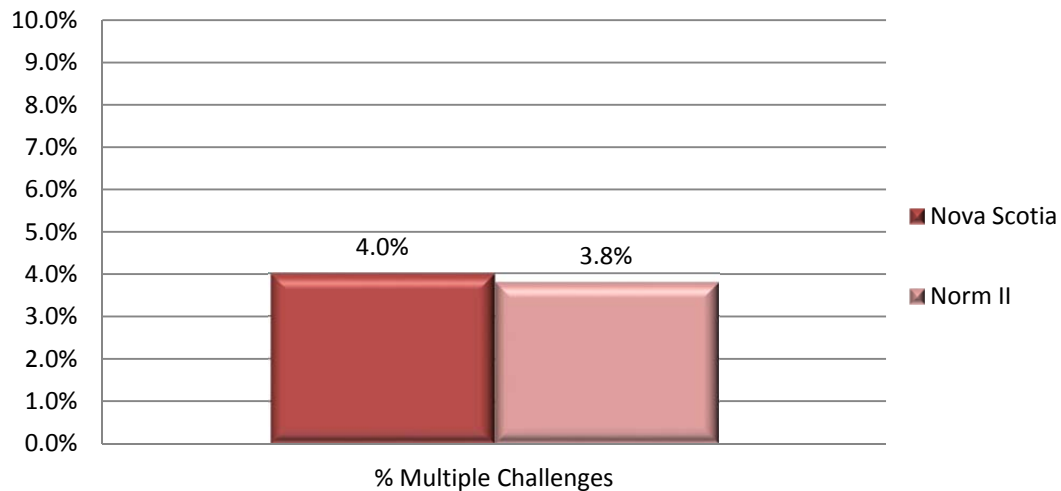
Analysis of the distribution of the number of challenges in one or more sub-domain indicates that having scores below the cut-off in 9 or more pointed to serious problems in multiple domains. Three of the 5 domains have 4 sub-domains, one has 3, and the last one has 1. Therefore experiencing challenge in 9 sub-domains means that they are from at least 3 of the major five developmental domains.

The cut-offs on the sub-domains are not community-specific and are not based on the Normative II cohort. They are based on the teacher’s endorsement of the items on the questionnaire (the actual responses a teacher completes on the questionnaire).

For example, the Physical Independence sub-domain of the Physical Health and Well-Being has four items, scored yes (10) or no (0), each of which represents a specific developmental skill, generally mastered by children by 4 years of age. Therefore, a “challenge” score for this sub-domain has been set at lower than 9.99, which would be given to a child where the teacher responded NO (score of 0) to all of the four skills.

Nova Scotia 2012/2013 Non-Special Needs Students (N=7982) & Norm II

Multiple Challenges



**EARLY DEVELOPMENT INSTRUMENT RESULTS REPORT
For Children with Special Needs**

**Primary Students in Nova Scotia
2012/2013 School Year**

**Descriptive characteristics of the Nova Scotia 2012/2013 Special Needs cohort
(N=405)**

	Number	%
Gender		
Girl	103	25.4%
Boy	302	74.6%
Missing	0	0.0%
English/French as a Second Language (E/FSL)		
E/FSL	19	4.7%
No E/FSL	386	95.3%
Missing	0	0.0%
Type of class		
Primary	354	87.4%
Primary/1	49	12.1%
Other	1	0.2%
Missing	1	0.2%
First language		
English	390	96.3%
French	3	0.7%
Other Only	5	1.2%
English & French (Bilingual)	5	1.2%
English & Other (Bilingual)	2	0.5%
French & Other (Bilingual)	0	0.0%
Two Other Languages (Bilingual)	0	0.0%
Missing	0	0.0%



Descriptive characteristics of the population continued...

	Number	%
French Immersion		
French Immersion	28	6.9%
Non-French Immersion	377	93.1%
Missing	0	0.0%
Aboriginal		
Aboriginal	11	2.7%
Not Aboriginal	367	90.6%
Missing	27	6.7%
Multiple Challenges		
Multiple Challenges	128	31.6%
No Multiple Challenges	277	68.4%

Age composition

Age at the time of teacher assessment (Feb 2013-Mar 2013) was divided into groups of 3-month intervals. The age categories are expressed as year-month; for example, 5-11 means age 5 years and 11 months.

Age Category	Number	%
4-8 to 4-10	0	0.0%
4-11 to 5-1	0	0.0%
5-2 to 5-4	50	12.3%
5-5 to 5-7	98	24.2%
5-8 to 5-10	103	25.4%
5-11 to 6-1	65	16.0%
6-2 to 6-4	50	12.3%
6-5 to 6-7	16	4.0%
6-8 to 6-10	18	4.4%
6-11 and up	5	1.2%
Missing	0	0.0%

Please note: Months were rounded down for ages less than 15 days, and up for more than 15 days. Therefore, children aged less than 6 years 1.5 months belong to the 5-11 to 6-1 category, and children aged from 5 years 1.5 months to 5 years 4.5 months belong to the 5-2 to 5-4 category.



Frequencies of answers to questions in Section D – Special Problems

	Number	%
D1: Special Problems		
Yes	341	84.2%
D2a: Physical Disability		
Yes, Observed	48	11.9%
Yes, Parents info/Diagnosis	36	8.9%
D2b: Visual Impairment		
Yes, Observed	21	5.2%
Yes, Parents info/Diagnosis	20	4.9%
D2c: Hearing Impairment		
Yes, Observed	10	2.5%
Yes, Parents info/Diagnosis	11	2.7%
D2d: Speech Impairment		
Yes, Observed	131	32.3%
Yes, Parents info/Diagnosis	93	23.0%
D2e: Learning Disability		
Yes, Observed	99	24.4%
Yes, Parents info/Diagnosis	53	13.1%
D2f: Emotional Problem		
Yes, Observed	74	18.3%
Yes, Parents info/Diagnosis	43	10.6%
D2g: Behavioural Problem		
Yes, Observed	127	31.4%
Yes, Parents info/Diagnosis	69	17.0%
D2h: Home Environment/problems at home		
Yes, Observed	41	10.1%
Yes, Parents info/Diagnosis	21	5.2%



Frequencies of answers to questions in Section D – Special Problems continued

D2i: Chronic Medical/Health Problems		
Yes, Observed	42	10.4%
Yes, Parents info/Diagnosis	29	7.2%
D2j: Unaddressed dental needs		
Yes, Observed	5	1.2%
Yes, Parents info/Diagnosis	3	0.7%
D2k: Other		
Yes, Observed	49	12.1%
Yes, Parents info/Diagnosis	31	7.7%
D4: Child Receiving School Based Support		
Yes	320	79.0%
No	80	19.8%
Missing	5	1.2%
D5a: Child Currently Receiving Further Assessment		
Yes	178	44.0%
No	207	51.1%
Missing	20	4.9%
D5b: Child Currently on Wait List to Receive Further Assessment		
Yes	100	24.7%
No	266	65.7%
Missing	39	9.6%
D5c: Do You Feel that this Child Needs Further Assessment		
Yes	178	44.0%
No	191	47.2%
Missing	36	8.9%



Frequencies of answers to questions in Section E – Additional Questions

	Number	%
E1: Child attended an early intervention program		
Yes	200	49.4%
No	133	32.8%
Missing	72	17.8%
E3: Child attended any other language or religion classes		
Yes	22	5.4%
No	188	46.4%
Missing	195	48.1%
E4: Child attended an organized part-time pre-school/nursery school		
Yes	130	32.1%
No	116	28.6%
Missing	159	39.3%
E2: Non parental care:		
Yes	213	52.6%
No	103	25.4%
Missing	89	22.0%
E2a: Centre-based, licensed, non-profit arrangement		
Yes	88	21.7%
E2b: Centre-based, licensed, for profit arrangement		
Yes	86	21.2%
E2c: Other home-based, licensed arrangement		
Yes	13	3.2%
E2d: Other home-based, unlicensed, non-relative arrangement		
Yes	24	5.9%



Frequencies of answers to questions in Section E – Additional Questions continued

E2e: Other home-based, unlicensed, relative arrangement		
Yes	12	3.0%
E2f: Child's home, non-relative arrangement		
Yes	20	4.9%
E2g: Child's home, relative arrangement		
Yes	33	8.1%
E2h: Other		
Yes	36	8.9%
E2i: Type of arrangement		
Full-time	131	32.3%
Part-time	87	21.5%
Missing	187	46.2%



Vulnerable Children

“*Vulnerable*” describes the children who score low (below the 10th percentile cut-off of the comparison population) on any of the five domains.

The table below illustrates the percentage of Nova Scotia Special Needs children that are vulnerable on at least one or on at least two domains based the Normative II cut-offs.

	Percentage
	2012/2013 Nova Scotia (Norm II cut-offs)
Vulnerable on at least ONE EDI domain	79.0%
Vulnerable on at least TWO EDI domains	65.2%

The table below illustrates the percentage of Nova Scotia special needs children who fell below the 10th percentile cut-off for each domain based on Normative II cut-offs.

Domains	% Vulnerable
	2012/2013 Nova Scotia (Norm II cut-offs)
Physical Health Well-Being	45.9%
Social Competence	51.6%
Emotional Maturity	54.8%
Language & Cognitive Development	30.9%
Communication Skills & General Knowledge	54.1%



Special Skills and Special Problems

The table below shows the distribution of the numbers of Special Skills and Special Problems that were observed in this special needs cohort. The minimum and maximum numbers indicate the smallest or largest number of Special Skills/Problems observed in this cohort. The mean number indicates the average number of Special Skills/Problems observed in this cohort of special needs children.

Special Skills/Problems	Min	Max	Mean
Special Skills*	0	6	0.21
Special Problems**	0	11	1.98

Special Needs children in the **Nova Scotia** cohort had a minimum of zero special skills and a maximum of six. On average each child had 0.21 special skills.

Special Needs children in the **Nova Scotia** cohort had a minimum of zero special problems and a maximum of eleven. On average each child had special problems 1.98.

*Special Skills:

Section B

Questions 34 to 40

Minimum possible: 0

Maximum possible: 7

34. Demonstrates special numeracy skills or talents
35. Demonstrates special literacy skills or talents
36. Demonstrates special skills or talents in art
37. Demonstrates special skills or talents in music
38. Demonstrates special skills or talents in athletics/dance
39. Demonstrates special skills or talents in problem solving in a creative way
40. Demonstrates special skills or talents in other areas

**Special Problems:

Section D

Questions 2a to 2k

Minimum possible: 0

Maximum possible: 11

- 2a. physical disability
- 2b. visual impairment
- 2c. hearing impairment
- 2d. speech impairment
- 2e. learning disability
- 2f. emotional problem
- 2g. behavioural problem
- 2h. home environment/problems at home
- 2i. chronic medical/health problems
- 2j. unaddressed dental needs
- 2k. other



EDI Reports FAQ and Glossary

DESCRIPTIVE REPORTS:

- 1) Q: What are site means and how are they calculated?
A: *'Site Mean' refers to the mean (average value of a set of numbers) of all Primary children tested in your site for that given year. Children with known special needs, missing more than 1 domain, with Student Status in class less than a month or "other", and missing Primary classification are excluded from the computation of the site mean.*
- 2) Q: What is Standard Deviation?
A: *Standard Deviation (\pm SD) indicates the range in which approximately two-thirds of the scores fall. For example, two-thirds of the scores on "physical health and well-being" fall between $8.79 - 1.05$ (7.74) and $8.79 + 1.05$ (9.84). Children with known special needs, missing more than 1 domain, with Student Status in class less than a month or "other", and missing Primary classification are excluded from the computation of the site standard deviation.*
- 3) Q: What is meant by 'Valid by Questionnaires by Domain'?
A: *Since scores for children with up to one missing domain are considered valid, the number of students with valid data may be equal to or less than the total valid number in the specific domains. A child is considered missing on a domain when more than 25% of the questions are left blank or with "I don't know" answered.*

DESCRIPTIVE DATA REPORTS:

- 1) Q: What comprises "missing"? Does it include a) Don't Know, b) left blank, c) not read by scanner, or d) child moved to another school.
A: *Missing includes data that could not be computed, 'don't know responses', and responses left blank.*
- 2) Q: Are all students included? Including special needs?
A: *The analyses are based on all non-missing cases for each category. **Children classified as special need, missing more than one domain, with Student Status in class less than a month or "other", and those missing Primary classification are excluded from the site Descriptive Data report. However, Special Needs children are included in the Special Needs Descriptive Data report.***
- 3) Q: Why are some of the Group Comparisons missing or labeled as NA?
A: *Some of Group Comparisons are labeled as Not Applicable (NA) or are missing from the analyses because the groups were too small (under ten students) to apply statistical tests and to retain confidentiality.*

SCHOOL REPORTS:

- 1) Q: Why do some schools/sites not receive school reports?
A: *Schools/Sites with less than 10 students do not receive school reports as having such a small number of children per school increases the risk of identifying individual children. However, the results of schools with less than 10 children are still included in the overall results for the site.*



Glossary

Percentiles:

Scores on each scale for all children in a site can be arranged from the lowest to the highest, and this could be called a “distribution of scores” (*an example for a 200 children). Then, they can be divided into groups, based on THE NUMBER OF CHILDREN in the site. It is most common to divide distribution into four groups, each consisting of scores of a quarter or one-fourth or 25% of the children in the site. These groups are called percentiles.

For example, if we arranged the Social Competence scores for a site with 200 children from the lowest to the highest, the first 50 scores from the lowest will be the lowest (or “bottom”) 25th percentile. The next 50 scores, starting right after the last in the previous group, will be the next 25th percentile, which is from the 51st to the 100th score. The next 50 scores will be the next 25th percentile, from 101st to 150th score, and finally, we are left with the last 50 scores (from 151st to 200th, the highest), which are the best or the “top” 25th percentile.

The actual score of the 50th child in the distribution (in this example, or the score of the 30th child in a cohort of 120, or 100th in a cohort of 400, etc. – the one on which the first one-fourth of children ends) is the lowest 25th percentile boundary.

Below the 10th percentile cut-off:

Refers to children who fall at or below the 10th percentile cut-off for a domain.

Mean:

The average value of a set of numbers. All scores are added together, and then divided by the number of children contributing data.

Standard Deviation:

Standard Deviation (\pm SD) indicates the range in which approximately two-thirds of the scores fall. For example, two-thirds of the scores on the normative cohort’s “physical health and well-being” fall between 8.79 - 1.05 (7.74) and 8.79 + 1.05 (9.84).

Effect Size:

The effect size quantifies the size of the difference between two groups and is a standardized mean difference between the two groups. That is

$$\text{Effect size} = \frac{\text{mean}(\text{group1}) - \text{mean}(\text{group2})}{SD(\text{group1})} \quad \text{SD represents the Standard Deviation.}$$

As an example, an effect size of 0.8 means that the score of the average person in group 1 is 0.8 standard deviations above the average person in group 2, and hence exceeds the scores of 79% of group 2. Unlike statistical significance, the effect size statistic is independent of the group size and therefore considered more informative. It shows the degree of a “meaningful” difference between the two groups.

Interpretation: it is accepted to consider effect sizes of 0.8 or more as large, between 0.8 and 0.2 as moderate, and of 0.2 and smaller as small.



Missing Data:

Missing includes data that could not be computed, that means ‘I don’t know’ responses, and responses left blank.

Early Intervention Program:

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

Macro level:

The *macro* level is a global one: province, community, school board as a whole. Average results for one community can be compared with average results for the rest of the city, province, or country, to determine whether, on average, children in this community are more or less ready to learn at school than children in those other places. It is the first step in looking at the EDI results. The major advantage of this level of analysis is that it puts the results of the EDI into perspective. Information provided at the macro level usually needs to be acted upon at that level.

Frequently, however, the results of the EDI on the macro level of analysis may not be striking enough to indicate broad action. Community-level average values do not tell us whether there are some children in the community who are not doing all right. It is the differences between neighbourhoods, (which often offset each other in global comparisons) that turn the EDI results into a community mobilization tool. It is the *micro* level that makes the difference.

Micro level:

Considering the results of the EDI on the *micro* level is like taking a magnifying glass to the “macro” set of results. On the micro level, the EDI results are analyzed school by school, and neighbourhood by neighbourhood.

The micro level shows how children in a particular neighbourhood are doing: where, despite neighbourhoods being disadvantaged, children seem to be ready to learn, and where, despite a high average socio-economic status, the neighbourhood schools seem to be lagging behind. In particular schools, it indicates areas of strengths that have to be cultivated, and points to areas of difficulties that students may have that need to be addressed.

Once the district-level EDI results are put in perspective, the individual school-level results can be explored. As stated before, the Early Development Instrument is designed to measure the outcomes of children’s early years, and not the school’s performance. Thus, relating the EDI results to the characteristics of neighbourhoods is more appropriate.

The school-level reports with the accompanying descriptive profiles for each domain, were designed to assist with the interpretation of the EDI results at the school level.

Multiple Challenge Index:

As outlined in the Behavioural Profiles report, there are 16 sub-domains within the five major domains of the EDI. Each of the sub-domains represents a relatively homogeneous aspect of a child’s development.

A “challenge” ability range was identified within each sub-domain, based on the range of scores. For each sub-domain, zero (0), equivalent to a child having no ability in all items within the sub-domain, was the lower boundary. The “challenge” cut-off boundary (i.e., the

one below which a child would be classified as having the challenge) was based on a mix of poor and average scores.

Analysis of the distribution of the number of challenges in one or more sub-domain indicated that having scores below the challenge ability in 9 or more pointed to serious problems in multiple domains. Three of the 5 domains have 4 sub-domains, one has 3, and the last one has 1. Therefore experiencing challenge in 9 sub-domains means that they are from at least 3 of the major five developmental domains.

The Multiple Challenge Index is therefore an indicator of a child experiencing challenges in at least three EDI domains. The MCI is scored based on challenges in 9 or more sub-domains, and is expressed as “existence of multiple challenges” (1), or “no multiple challenges” (0).

Detailed descriptions and cut-off boundaries for each of the sub-domains are listed on our website at <http://www.offordcentre.com/readiness/results.html>.

Special Needs Children:

Please use the general guidelines provided below.

Yes	Child identified already as needing special assistance due to chronic medical, physical, or mental disabling conditions (e.g., autism, fetal alcohol syndrome, Down syndrome)
	Child requires special assistance in the classroom
No	* Gifted or talented (please mark, instead, their special talents in Section B, questions 34-39)
	If you only suspect that the child may be suffering from a disabling condition, or the condition is not severe enough for the child to be classified as “special needs” (please indicate the problem in Section D of the questionnaire)

