

# A LAYPERSON'S GUIDE TO PIAAC

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Practical PIAAC: What Alberta Practitioners  
Need to Know

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September 18, 2014

# Two reports – International and Canada



## OECD Skills Outlook 2013

FIRST RESULTS FROM THE SURVEY  
OF ADULT SKILLS



Catalogue no. 88-555-X  
ISBN 978-1-100-22678-1

## Skills in Canada: First Results from the Programme for the International Assessment of Adult Competencies (PIAAC)



Tourism and the Centre for Education Statistics Division  
Main Building, Room 2001, Ottawa, K1A 0T6  
Telephone: 1-800-263-1136

 Statistics Canada / Statistique Canada

 Canada

 Employment and Social Development Canada / Emploi et Développement social Canada

 cmec  
Council of Ministers of Education, Canada / Conseil des ministres de l'éducation (Canada)

# Literacy surveys

- **1989**

- Literacy Skills Used in Daily Activity (LSUDA) (Canada)

- **1994**

- International Adult Literacy Survey (first wave)

- **2003**

- International Adult Literacy and Skills Survey (IALSS) (first wave)
  - known as the Adult Literacy and Life Skills Survey (ALL) internationally

- **2011**

- Programme for the International Assessment of Adult Competencies (PIAAC)

## Three objectives

- Provide PIAAC data and an overview
- Why does PIAAC matter?
- Why PIAAC is not enough

# What is PIAAC

- 166,000 adults, randomly selected
- Ages 16 - 65
- 24 countries (so far)
- Shares a common conceptual framework with IALS and IALSS
- Canadian sample = 27,000 (largest in PIAAC)

# Definition – literacy

IALS & IALSS	PIAAC
<p><b>Prose Literacy:</b></p> <p>The knowledge and skills needed to understand and use information from texts including editorials, news stories, brochures, and instruction manuals.</p>	<p><b>Literacy:</b></p> <p>Understanding, evaluating, using and engaging with written texts to participate in society, to achieve one's goals and to develop one's knowledge and potential</p>
<p><b>Document Literacy:</b></p> <p>The knowledge and skills required to locate and use information contained in various formats, including job applications, payroll forms, transportation schedules, maps, tables and charts</p>	

# Definition – numeracy

IALS	IALSS	PIAAC
<p><b>Quantitative Literacy:</b></p> <p>The knowledge and skills required to apply arithmetic operations, either alone or sequentially, to numbers embedded in print materials, such as balancing a chequebook, figure out a tip, completing an order form or determining the amount of interest on a loan from an advertisement.</p>	<p><b>Numeracy:</b></p> <p>The knowledge and skills required to effectively manage the mathematical demands of diverse situations.</p>	<p><b>Numeracy:</b></p> <p>The ability to access, use, interpret, and communicate mathematical information and ideas, in order to engage in and manage mathematical demands of a range of situations in adult life.</p>

Look at the job search results webpage. Click the box next to a company name to answer the question below.

Which company is looking for an employee to work at night?

Literacy item  
Level = 1



URL:



Connecting you to the BEST Jobs

Refine results

Work Type

- Full Time only
- Part Time only
- Temporary only
- Casual/Vacation only

Salary

\$0 - \$200k+ per year | hour



Refine

6 jobs found

Office Administrative Assistant

[M.A.S.S. Media](#)

- Exciting media relations company
- Report directly to senior management
- Accounts experience required
- Salary negotiable

Join our dynamic and progressive team of professionals.

Administration & Office Support > Administrative Assistants

Client Liaison Officer

[Foss & Russ Engineering Ltd](#)

Use your excellent communication skills to keep customers informed about our latest products. You will learn to send out emails with images embedded and produce targeted marketing materials. Great company training program available to all in-coming employees. Full-time position available immediately.

Engineering > Customer Service





Look at the article about the gender gap. Highlight the sentence in the article that answers the question below.

According to the article, what has the impact of increased educational attainment been over the past 50 years?

Literacy item  
Level = 4 (low)

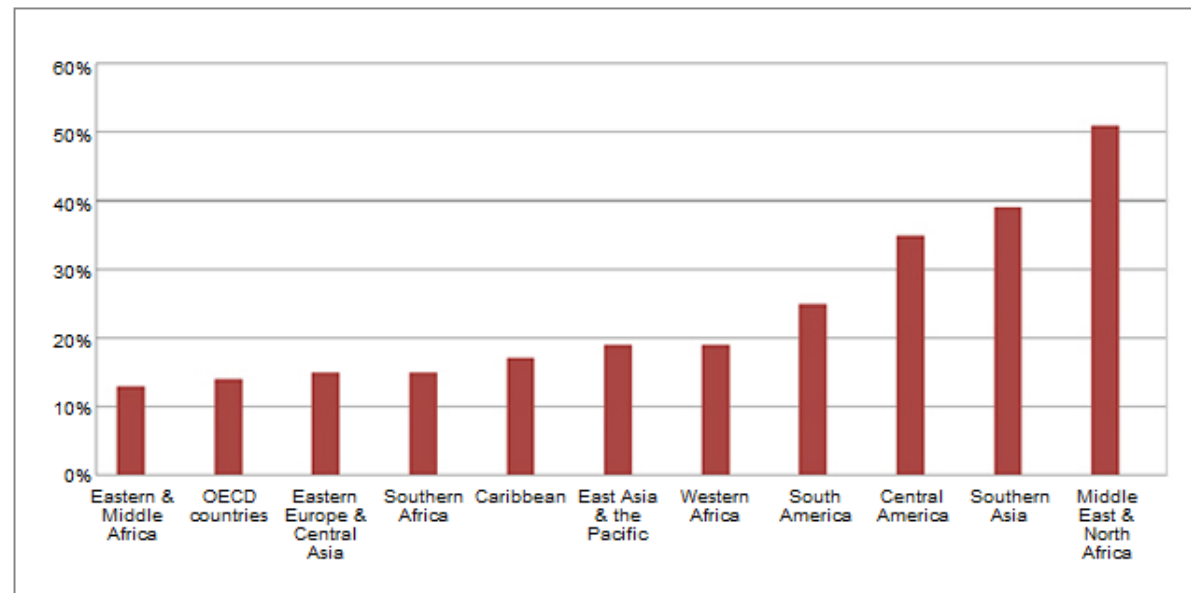
## Tackle Gender Gap to Boost Growth

Breaking down barriers to gender equality in education, employment and entrepreneurship would create new sources of economic growth and help make better use of everyone's skills, according to a new report by the OECD, an organization of some 34 countries promoting policies to improve economic and social well being.

Overall, good progress has been made in education. Increased educational attainment is responsible for half of the GDP<sup>1</sup> growth across the OECD over the last 50 years. Every extra year of education of the population leads to an average increase of around 9% in GDP per capita, says the report. More progress will be essential for countries to benefit from the economic contributions women can make and to not waste the years of investment in the education of girls and young women. Ensuring that more girls have access to higher levels of education is also key for developing countries.

Employment rates are 13 percentage points lower for women than for men in OECD countries. As Figure 1 shows, gender differences in employment rates vary considerably in different regions of the world. Women are also much more likely to work part-time. Better and more affordable child care and more flexible work conditions are key to helping women to be in paid work or increase hours and work full time, says the report.

Figure 1: Gender gap in employment rates worldwide, 2010



Pay gaps also remain stubbornly high. On average in OECD countries women earn 16% less than men.

Look at the shoe sale advertisement.  
Using the number keys, type your  
answer to the question below.

How much would you pay during the  
sale if you purchase the two pairs of  
shoes shown?

\$

Numeracy item  
Level = 3

## Running Shoes

**SALE! Buy one pair - get the second (of equal or lesser value) for half price!**



\$29.50



\$34.20



Look at the cash flow table for a restaurant. Using the number keys, type your answer to the question below.

What was the mean for the total expenditures over the three months?

€

Numeracy item  
Level = 4

The table below shows a three-month summary of income and expenditures for a restaurant in Florence, Italy.

<b>CASH FLOW</b> (In Thousands of Euro)				
	<b>JUL</b>	<b>AUG</b>	<b>SEP</b>	<b>TOTAL</b>
<b>INCOME</b>				
Cash from sales	120.3	40.5	77.2	238.0
Other income	9.2	4.2	6.0	19.4
<b>Totals</b>	<b>129.5</b>	<b>44.7</b>	<b>83.2</b>	<b>257.4</b>
<b>EXPENDITURE</b>				
Materials from suppliers	51.6	27.0	70.4	149.0
Wages and salaries	13.4	15.0	12.6	41.0
Overheads	23.0	11.0	11.0	45.0
Capital expenditure	6.0	8.0	3.0	17.0
<b>Totals</b>	<b>94.0</b>	<b>61.0</b>	<b>97.0</b>	<b>252.0</b>



# Reading components

- Knowledge of vocabulary (word recognition)
- The ability to evaluate the logic of sentences
- Fluency in reading passages of text

# Problem solving

## IALSS

### **Problem solving:**

Problem solving involves goal-directed thinking and action in situations for which no routine solution procedure is available. The problem solver has a more or less well defined goal, but does not immediately know how to reach it. The incongruence of goals and admissible operators constitutes a problem. The understanding of the problem situation and its systematic transformation, based on planning and reasoning constitute the process of problem solving.

## PIAAC

### **Problem solving in technology-rich environments:**

Using digital technology, communication tools and networks to acquire and evaluate information, communicate with others and perform practical tasks. It focuses on the abilities to solve problems for personal, work and civic purposes by setting up appropriate goals and plans, and accessing and making use of information through computers and computer networks.

You ordered a desk lamp from KE-Lamps.com.

The desk lamp arrived, but it was not the color you ordered.

Using the company's website, arrange to exchange the lamp you received for the one you ordered.

Once you have finished, click Next to go on.

### Problem Solving Level=2

[Note that PIAAC Problem Solving scale has the following levels--Below Level 1, Level 1, Level 2, and Level 3]

Web

File Edit Bookmark Help

← → Home Search ? URL :  →

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**KE-Lamps.com**  
*The best way to light your life*

Bedroom Lamps
Desk Lamps
Floor Lamps
Table Lamps
New Arrivals
<b>SALE!</b>




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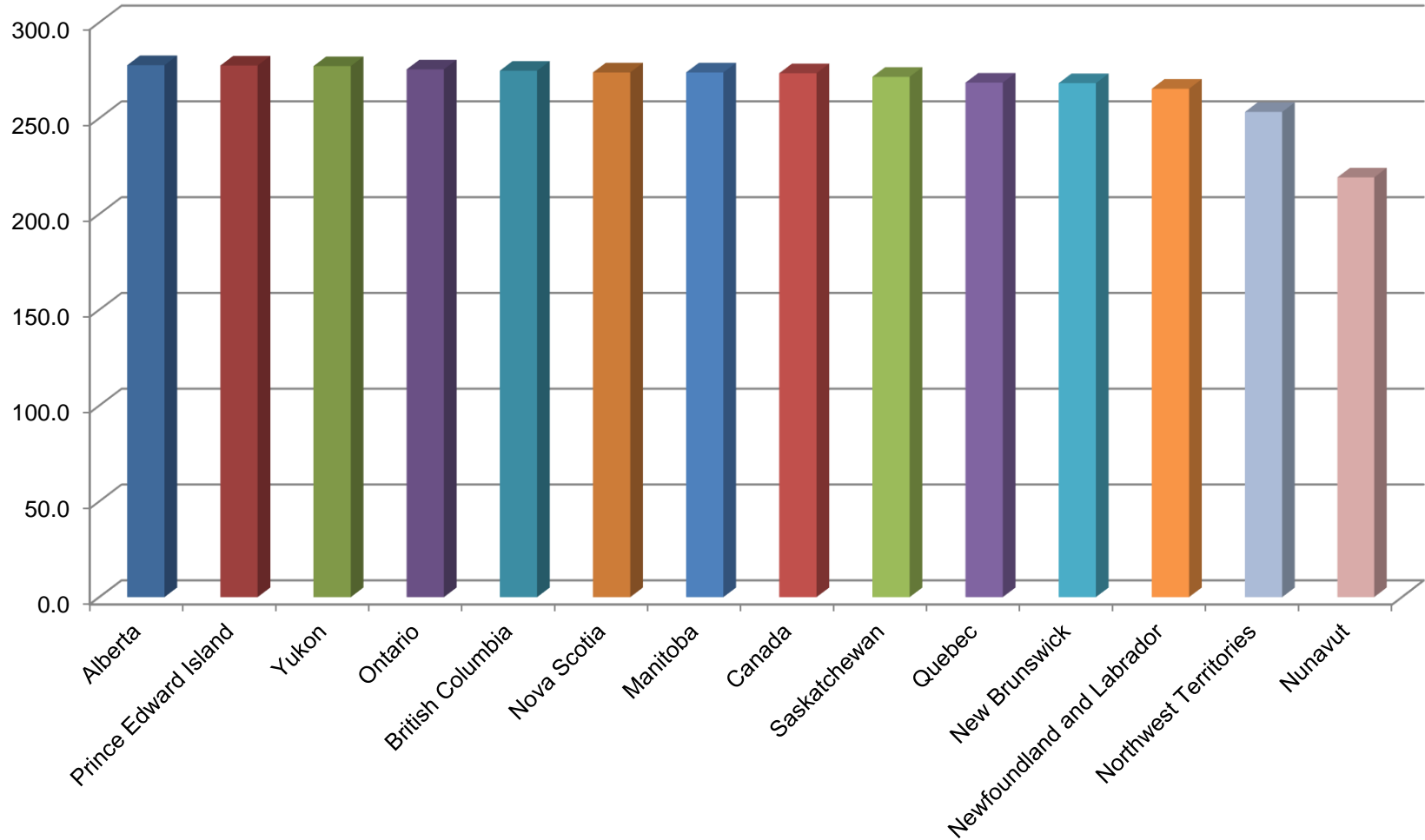
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# Oversamples

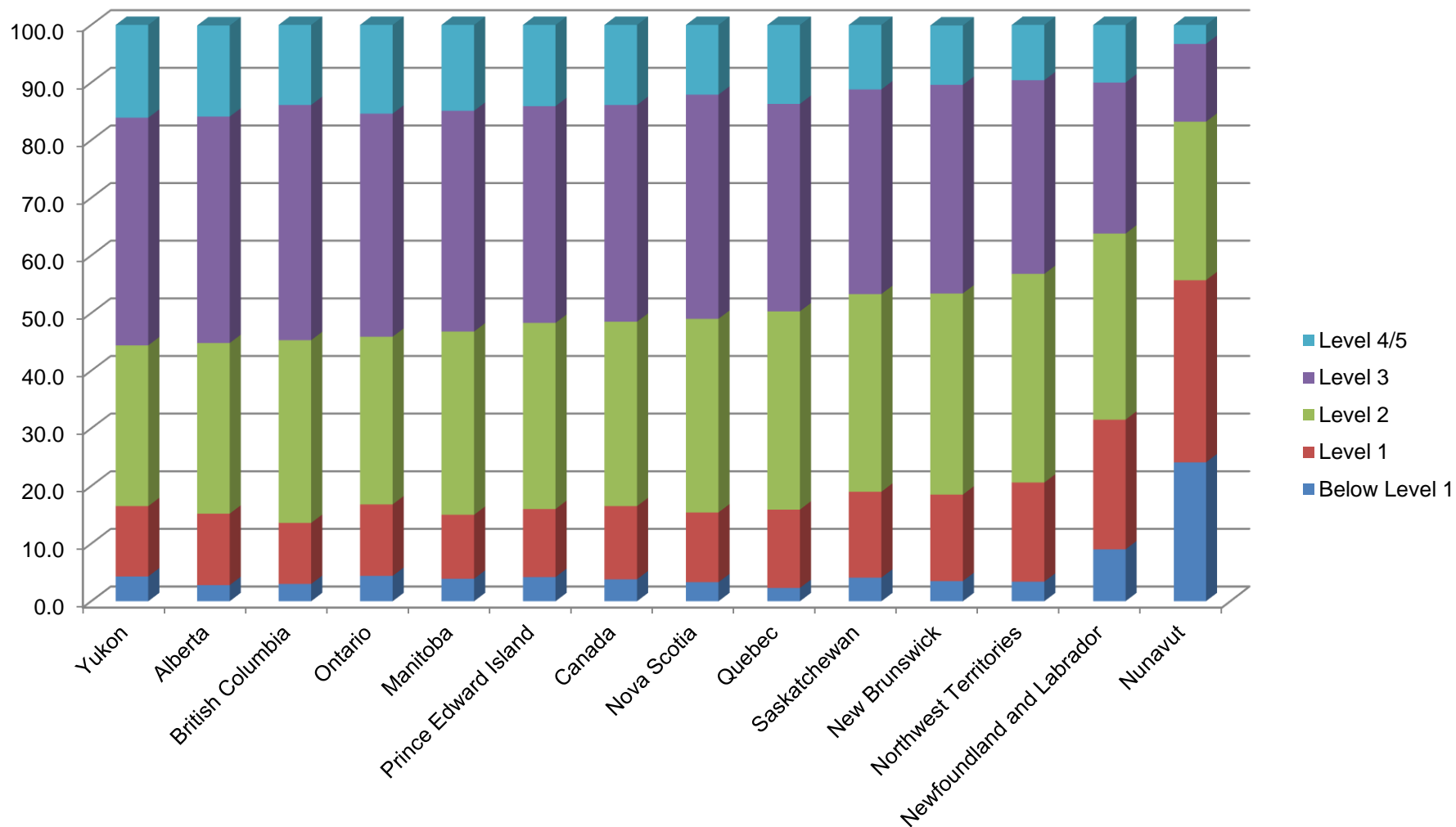
Aboriginal People	Immigrants	Official Language Minorities
British Columbia	British Columbia	Manitoba
Manitoba	Ontario	New Brunswick
Ontario	Quebec	Ontario
Saskatchewan		Quebec
Northwest Territories		
Nunavut		
Yukon		

# Average literacy scores





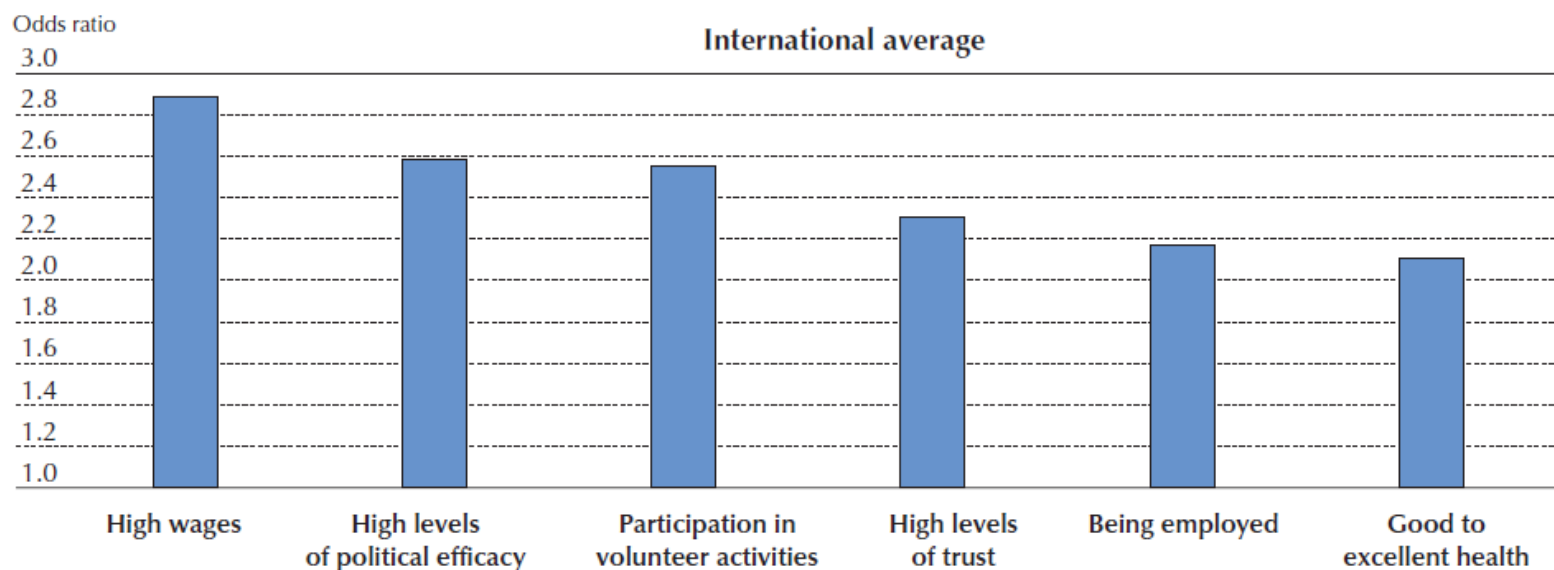
# Literacy levels by province/territory



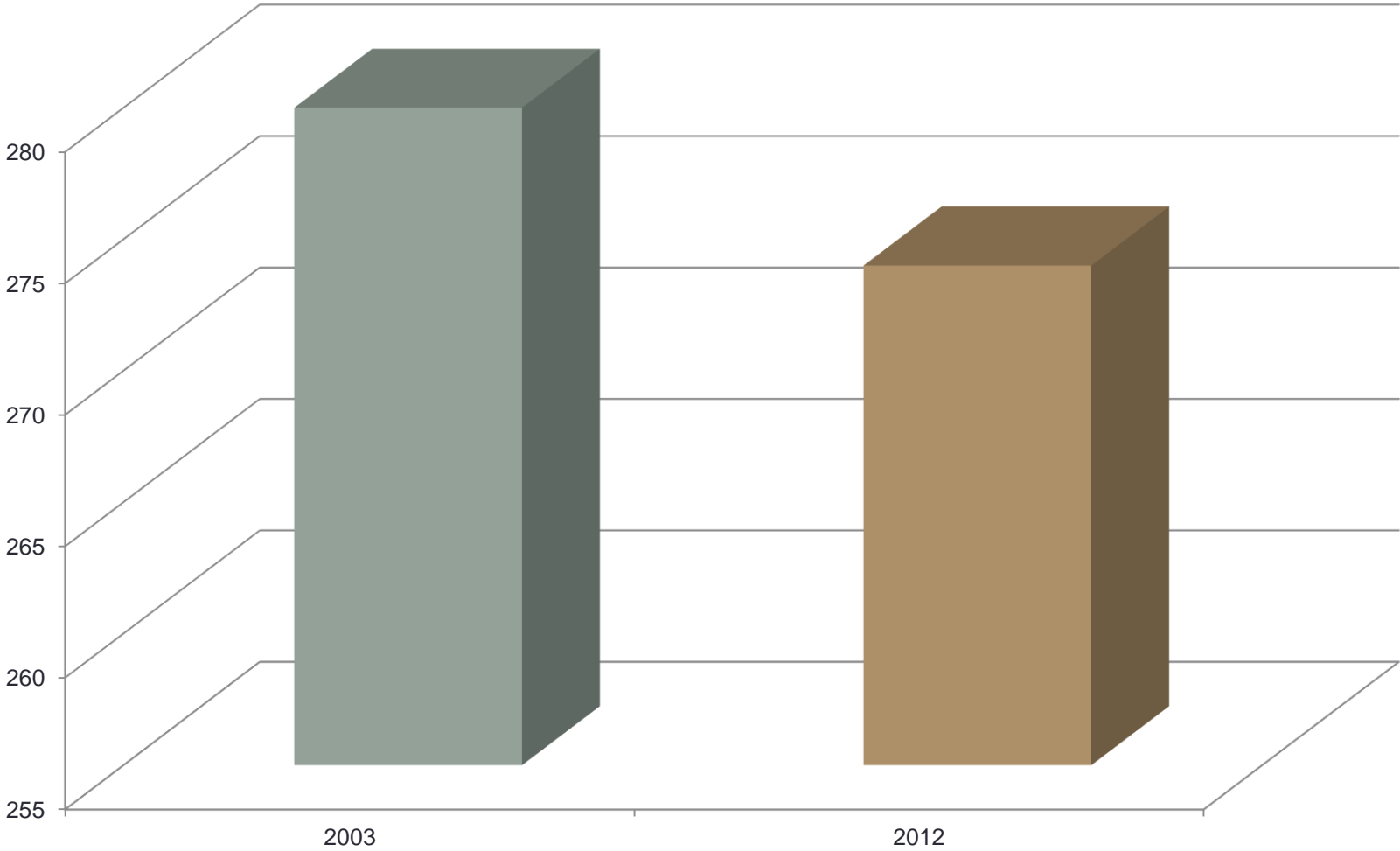
# Social and economic outcomes

## Likelihood of positive social and economic outcomes among highly literate adults

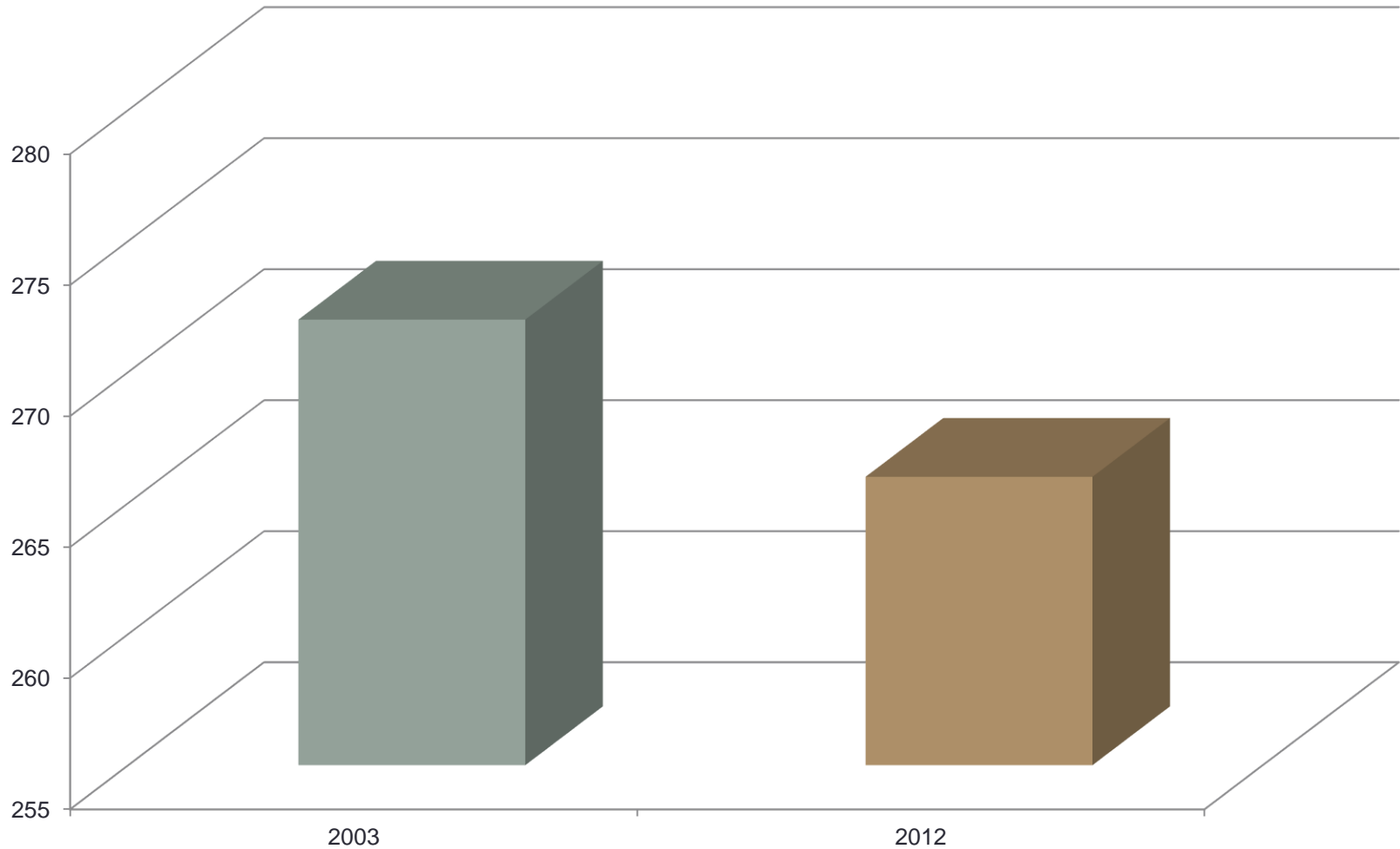
*Increased likelihood (odds ratio) of adults scoring at Level 4/5 in literacy reporting high earnings, high levels of trust and political efficacy, good health, participating in volunteer activities and being employed, compared with adults scoring at or below Level 1 in literacy (adjusted)*



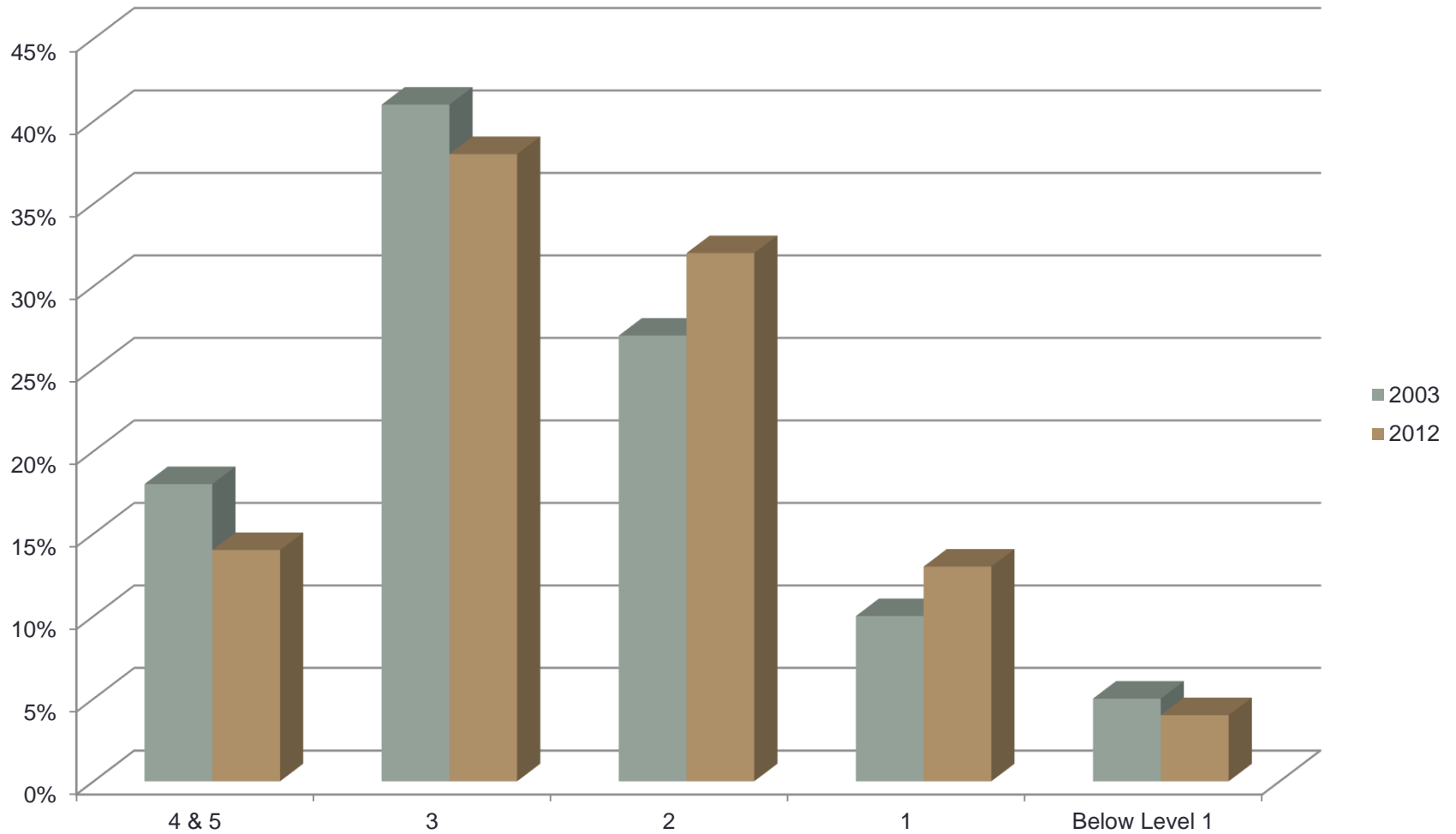
# Average literacy scores – 2003 & 2012



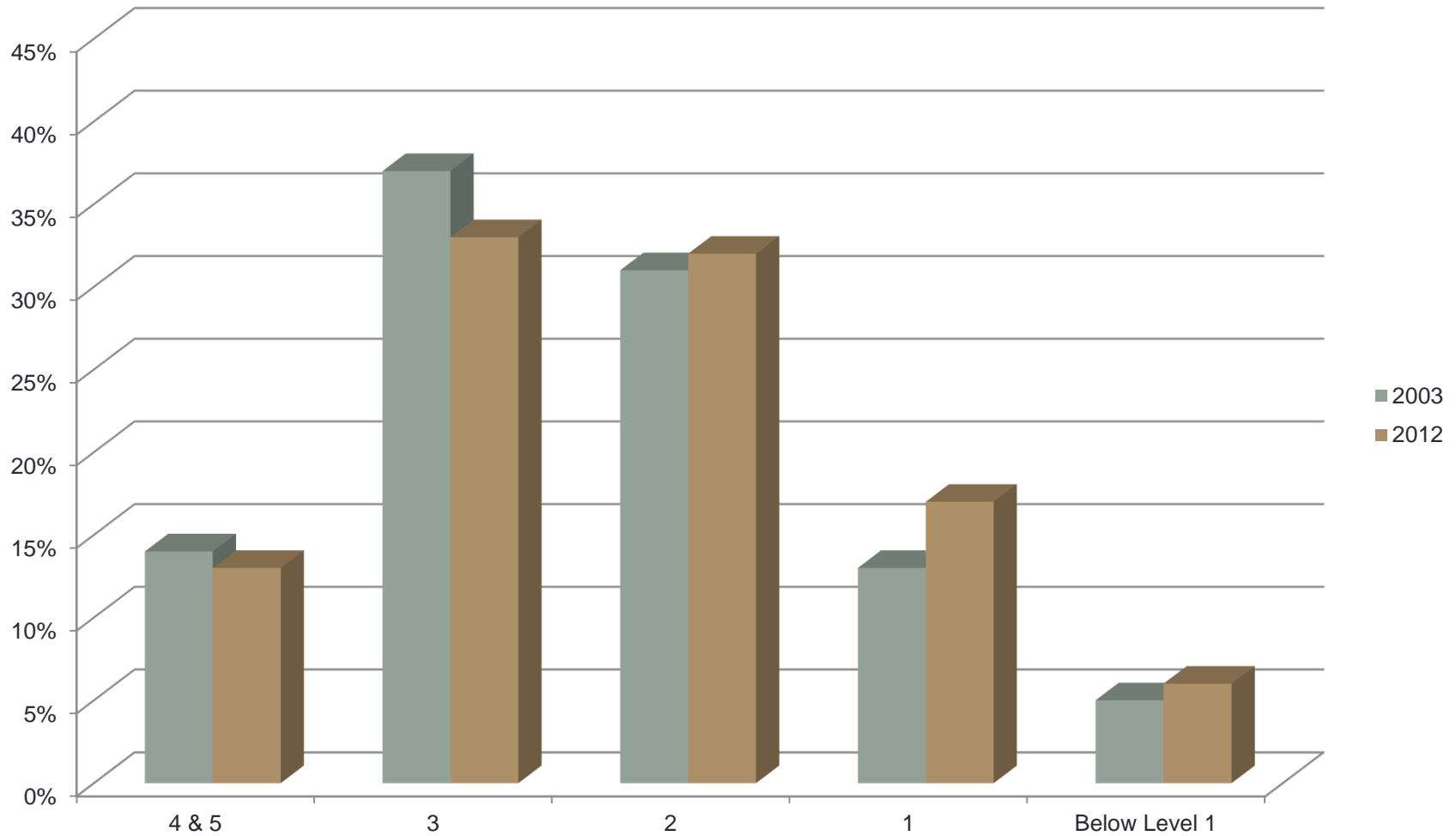
# Average numeracy scores – 2003 & 2012



# Literacy levels – 2003 and 2012



# Numeracy levels – 2003 and 2012



# Who are the Canadians performing at the lowest proficiency levels?

Category	Literacy (Level 1 & below)	Numeracy (Level 1 & below)	PS-TRE (Below level 1)
General population aged 16 to 65	17%	23%	15%
45 to 65 years of age	21%	28%	19%
Less-than-high-school educational attainment	41%	51%	22%
Not in labour force	26%	35%	17%
Service and support occupations	18%	28%	16%
Immigrant	27%	33%	19%
Off-reserve Aboriginal identification	24%	35%	18%
First language is not the same as the language of the test	27%	33%	19%

# Proportion at highest proficiency levels

Literacy		Numeracy		PS-TRE	
	Level 4 or 5 (%)		Level 4 or 5 (%)		Level 3 (%)
Japan	23	Finland	19	Sweden	9
Finland	22	Japan	19	Finland	8
Netherlands	19	Sweden	19	Japan	8
Australia	17	Flanders (Belgium)	18	Netherlands	7
Sweden	16	Norway	18	<b>Canada</b>	<b>7</b>
Norway	14	Netherlands	17	Germany	7
<b>Canada</b>	<b>14</b>	Denmark	17	Czech Republic	7
England/N. Ireland (UK)	13	Germany	14	Denmark	6
Flanders (Belgium)	13	Austria	14	Australia	6
United States	12	Australia	14	Norway	6
<b>OECD average</b>	<b>12</b>	Slovak Republic	13	<b>OECD average</b>	<b>6</b>
Estonia	12	<b>Canada</b>	<b>13</b>	Flanders (Belgium)	6
Germany	11	<b>OECD average</b>	<b>13</b>	England/N. Ireland (UK)	6
Denmark	10	Czech Republic	12	United States	5
Poland	10	England/N. Ireland (UK)	11	Austria	4
Czech Republic	9	Estonia	11	Estonia	4
Austria	9	United States	9	Poland	4
Ireland	9	Poland	8	Korea	4
Korea	8	France	8	Ireland	3
France	8	Cyprus	8	Slovak Republic	3
Slovak Republic	7	Ireland	8	Cyprus	—
Cyprus	7	Korea	7	France	—
Spain	5	Italy	5	Italy	—
Italy	3	Spain	4	Spain	—



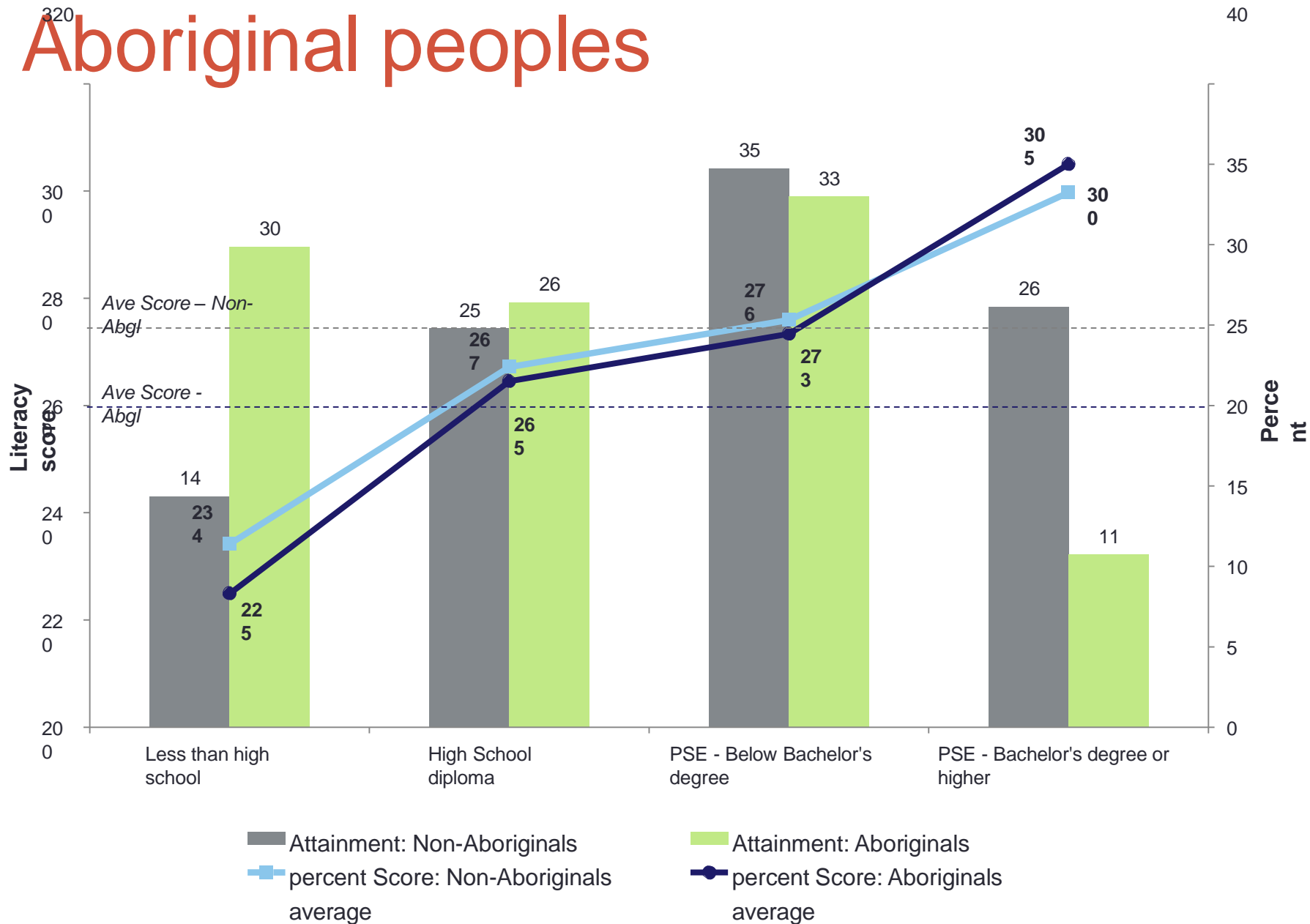
# Proportion at lowest proficiency levels

Literacy		Numeracy		PS-TRE	
	Level 1 or below (%)		Level 1 or below (%)		Below level 1 (%)
Italy	28	Italy	32	United States	16
Spain	28	Spain	31	England/N. Ireland (UK)	15
France	22	United States	30	Flanders (Belgium)	15
Poland	19	France	28	<b>Canada</b>	<b>15</b>
United States	18	Ireland	25	Germany	14
Germany	18	England/N. Ireland (UK)	24	Denmark	14
Ireland	18	Poland	23	Estonia	14
England/N. Ireland (UK)	17	<b>Canada</b>	<b>23</b>	Sweden	13
<b>Canada</b>	<b>17</b>	Australia	20	Czech Republic	13
Denmark	16	<b>OECD average</b>	<b>19</b>	Ireland	13
<b>OECD average</b>	<b>16</b>	Korea	19	Netherlands	12
Austria	16	Cyprus	19	<b>OECD average</b>	<b>12</b>
Flanders (Belgium)	15	Germany	19	Poland	12
Cyprus	14	Norway	15	Norway	11
Sweden	13	Sweden	15	Finland	11
Estonia	13	Austria	15	Austria	10
Korea	13	Estonia	14	Korea	10
Australia	13	Denmark	14	Australia	9
Norway	13	Flanders (Belgium)	14	Slovak Republic	9
Netherlands	12	Slovak Republic	14	Japan	8
Czech Republic	12	Netherlands	14	Cyprus	—
Slovak Republic	12	Czech Republic	13	France	—
Finland	11	Finland	13	Italy	—
Japan	5	Japan	8	Spain	—

# The skills of young adults

Difference in literacy (points) between young and all adults		Difference in numeracy (points) between young and all adults		Difference in PS-TRE (Level 2 and above, %) between young and all adults	
Korea	20	Korea	18	Korea	33
Poland	15	Spain	9	Estonia	23
France	13	France	9	Flanders (Belgium)	23
Spain	12	Poland	9	Czech Republic	22
Estonia	11	Estonia	5	Finland	20
Netherlands	11	Netherlands	5	Poland	19
Italy	10	Austria	4	Austria	18
Flanders (Belgium)	10	Italy	4	Germany	18
Finland	9	Germany	3	Sweden	18
Germany	9	<b>Canada</b>	<b>3</b>	Netherlands	17
Austria	8	<b>OECD Average</b>	<b>3</b>	<b>OECD Average</b>	<b>17</b>
<b>OECD Average</b>	<b>7</b>	Finland	3	Ireland	15
Czech Republic	7	Flanders (Belgium)	2	Slovak Republic	15
Denmark	5	Australia	2	<b>Canada</b>	<b>14</b>
Ireland	4	Ireland	2	Norway	14
Australia	4	Czech Republic	2	Australia	13
Sweden	4	Slovak Republic	2	Denmark	12
Japan	3	Cyprus	0	Japan	11
<b>Canada</b>	<b>2</b>	Sweden	-1	England/N. Ireland (UK)	8
Slovak Republic	2	United States	-3	United States	6
United States	2	Japan	-5	Cyprus	–
Cyprus	-2	Denmark	-5	France	–
Norway	-3	England/N. Ireland (UK)	-5	Italy	–
England/N. Ireland (UK)	-7	Norway	-7	Spain	–

# Aboriginal peoples



# PIAAC



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# Forthcoming Canadian thematic reports

- Early 2015
  - Skills and the Labour Market
  - Skills of Immigrants
- Spring 2015
  - Official Language Minorities
  - Skills of Aboriginal people
- Fall 2015
  - Health and Social Outcomes
- PSE and Skills (TBC)

# PIAAC



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# PIAAC resources

- OECD – background, international reports, data explorer  
<http://www.oecd.org/site/piaac/>
- Statistics Canada – Canadian report  
<http://www.statcan.gc.ca/daily-quotidien/131008/dq131008b-eng.htm>
- Council of Ministers of Education Canada (CMEC)  
<http://www.piaac.ca/471/PIAAC/index.html>
- Centre for Literacy – PIAAC Institutes  
<http://www.centreforliteracy.qc.ca/learningevents>

# Thank you!

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