



# **ALL 2003**

## ***Key Research Findings and HRSD Implications***

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## Policy Research Questions

- What is the level of literacy proficiency in the Canadian working age population?
- How do we compare internationally?
- How proficient are Canadians in different component skills ?
- How is literacy performance distributed in the Canadian population?
- What are the factors affecting literacy proficiency in the competencies?
- How have Canadians improved or not?

# Measurement of adult competencies

## IALS

- **Conducted in 1994-1998**
- **Domains:**
  - Prose
  - Document
  - Numeracy
- **Participating countries: 22**
- **In Canada, 4500 respondents aged 16-65 representing 18,450,260 adults**

## ALL

- **Conducted in 2003**
- **Domains:**
  - Prose
  - Document
  - Numeracy (modified)\*
  - Problem solving\*
- **Participating Countries: 6 (first round)**  
Canada, Bermuda, Italy, Norway, Switzerland, United States
- **Countries participating in the second round (2005) :**  
Australia, Netherlands, New Zealand, Hungary, South Korea
- **In Canada, 20,000 respondents age 16-65 representing 21,360,683 adults**

## Comparisons between IALS and ALL

- Limited international comparisons
- Limited over time comparisons:
  - Prose and document domains only
  - Modified numeracy instrument between the two surveys
  - Problem solving was added to ALL 2003
- Better population coverage:
  - Over sampling of immigrants, Canadian official language minorities. North was included.

# Literacy proficiency: the ability to *understand* and *employ* printed information in daily activities, at home, at work and in the community

## 4 Domains, measure skills at five levels :

- **Prose:** The knowledge and skills needed to understand and use information from texts including editorials, news stories, brochures and instruction manuals.
- **Document:** 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.
- **Numeracy:** The knowledge and skills required to apply arithmetic operations, either alone or sequentially, to numbers embedded in printed materials, such as balancing an account, figuring out a tip, completing an order form or determining the amount of interest on a loan from an advertisement .
- **Problem Solving:** Involves goal-directed thinking and action in situations for which no routine solution procedure is available. The understanding of the problem situation and its step-by-step transformation, based on planning and reasoning constitute the process of problem solving.

•Level 1	0 - 225 points
•Level 2	226 -275 points
•Level 3	<b>276-325 points*</b>
•Level 4	326 -375 points
•Level 5	376 -500 points

\* Proficiency level for modern economy and knowledge-based society

## Indicators of Canadian performance in international ALL results

- Average score and international standing
- Areas of improvement/decline since 1994
- Performance of sub-groups:
  - Youth
  - Immigrants
  - Men-Women
  - Labour force

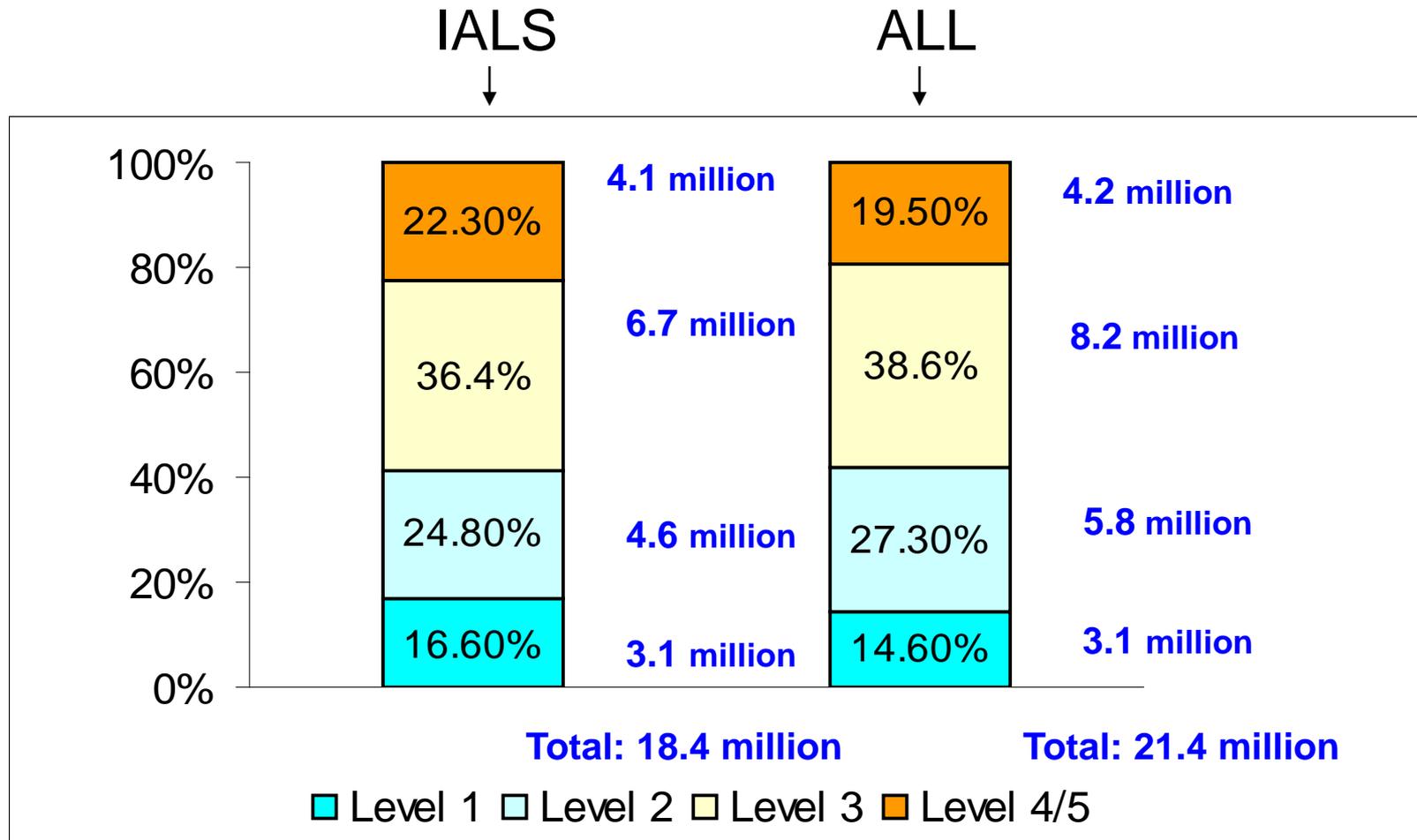
# No change in average prose or document scores of Canadians between 1994 and 2003

	Level 3 range in IALS & ALL	IALS 1994	ALL 2003
Prose	276 - 325	278.8	280.8*
Document	276 - 325	279.3	280.6*
Numeracy	276 - 325	---	272.3
Problem Solving	276 - 325	---	273.8

\* Change from 1994 is not statistically significant.

Source: ALL, 2003; IALS, 1994-1998

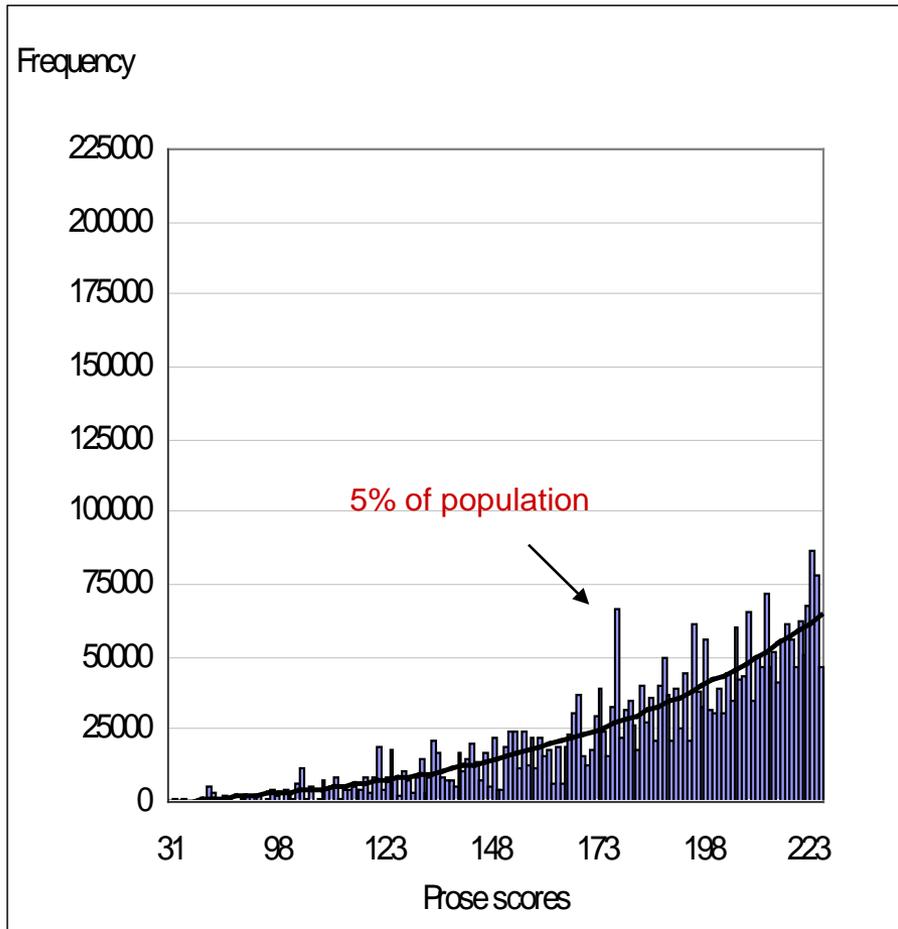
# Percent of Canadian population (16 to 65) at each prose literacy level, in IALS and ALL



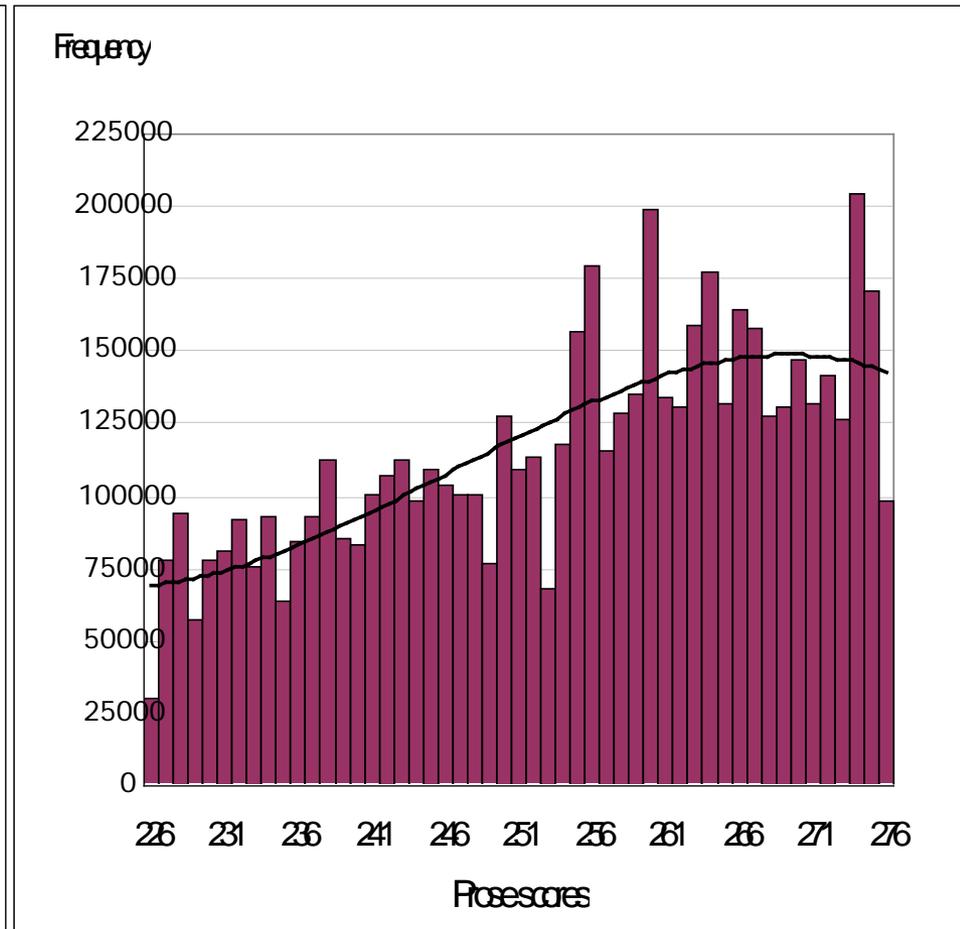
\* Differences at each level between IALS and ALL are not statistically significant

# About 9 million Canadians scored at levels 1 and 2

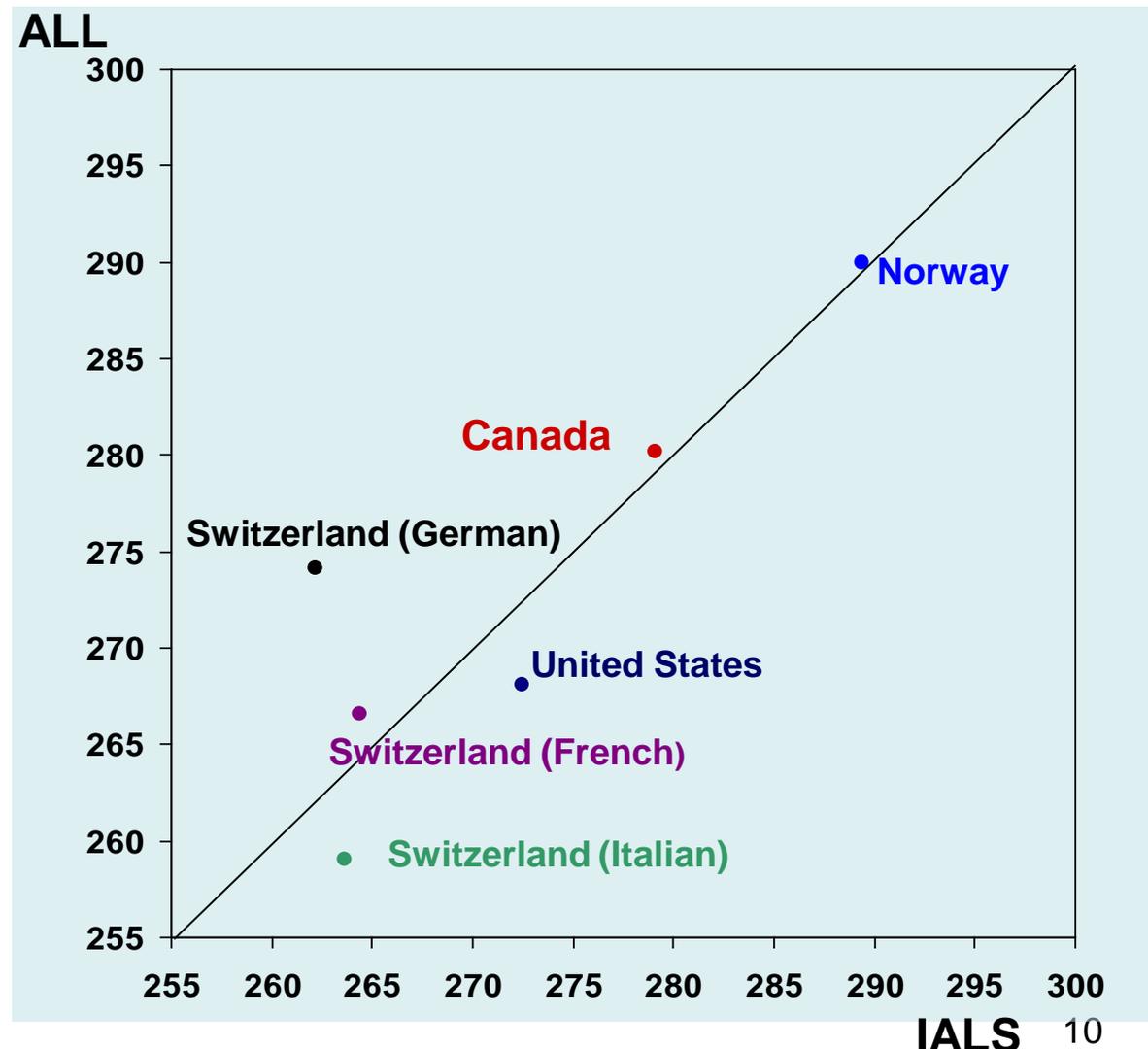
## Level 1



## Level 2



# Three countries did not change their prose literacy performance



- Similar trend also observed for document literacy
- Decline in U.S. and Italian speaking Switzerland
- Improvement in German speaking Switzerland

Standing of countries based on average literacy scores varies by literacy domain. Overall, Canada's position is in the middle.

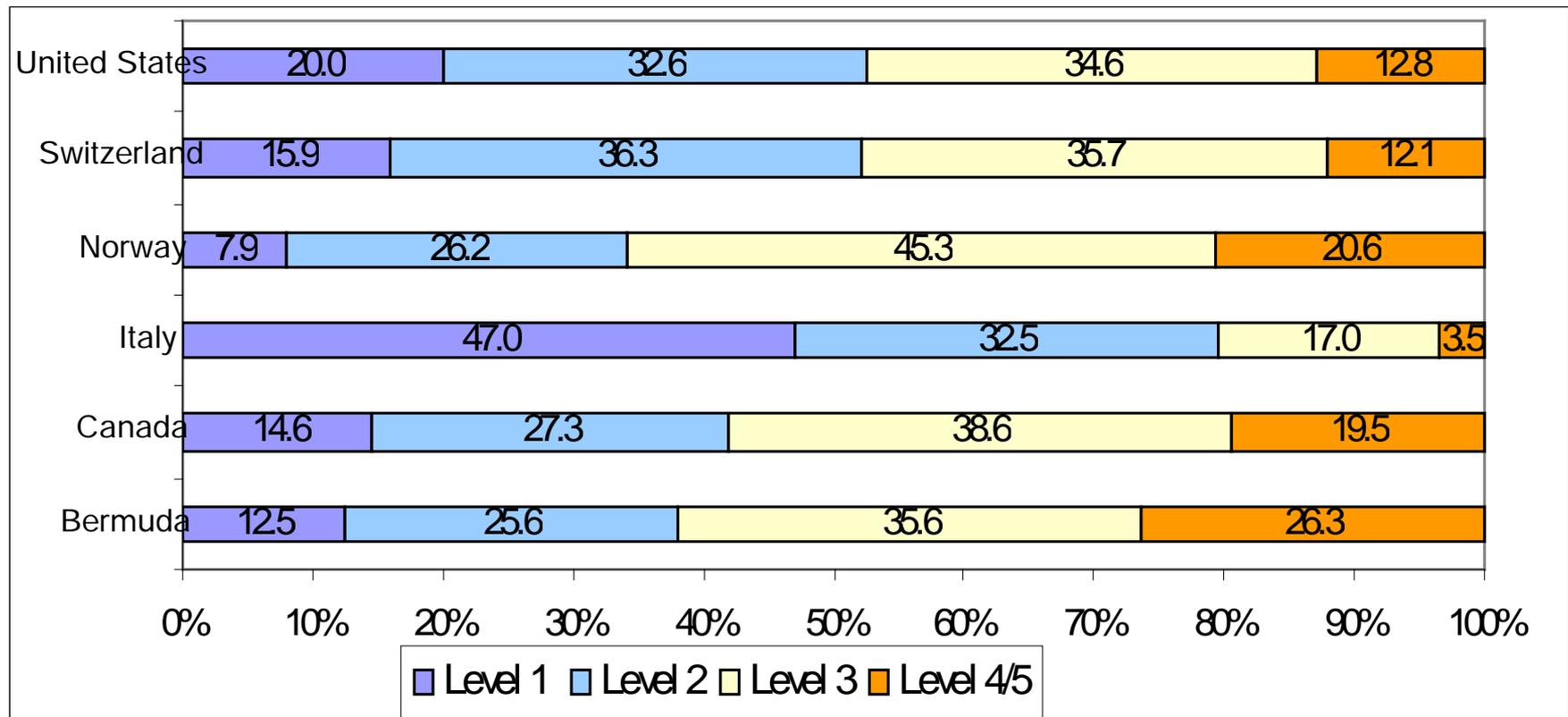
<i>Literacy Domains</i>				
	<b>Prose</b>	<b>Document</b>	<b>Numeracy</b>	<b>Problem Solving</b>
<b>Canadian average</b>	<b>280.8</b>	<b>280.6</b>	<b>272.3</b>	<b>273.8</b>
<b>Performed better</b>	<b>Norway (290.1)</b> <b>Bermuda (289.8)</b>	<b>Norway (295.1)</b>	<b>Switzerland (289.8)</b> <b>Norway (284.9)</b>	<b>Norway (284.2)</b> <b>Switzerland (279.0)</b>
<b>Same as Canada</b>		<b>Bermuda (280.0)</b>	<b>Bermuda (269.7)</b>	<b>Bermuda (272.8)</b>
<b>Lower than Canada</b>	<b>Switzerland (272.1)</b> <b>United States (268.6)</b> <b>Italy (229.1)</b>	<b>Switzerland (276.6)</b> <b>United States (269.8)</b> <b>Italy (225.8)</b>	<b>United States (260.9)</b> <b>Italy (233.3)</b>	<b>Italy (224.9)</b>

Figures in brackets: average scores

Source: ALL, 2003

# 42% of Canadians performed at prose levels 1 and 2 compared to 34% in Norway

Proportion of adults 16-65 performing at level 1,2 ,3 and 4/5 in each country at prose literacy



58% of Canadians performed at level 3 or higher

Source: ALL, 2003

## Increase in average document literacy scores among low scoring Canadians, and slight decline among high scorers

Mean scores at the 5th and 95th percentiles on document scale, population 16 to 65

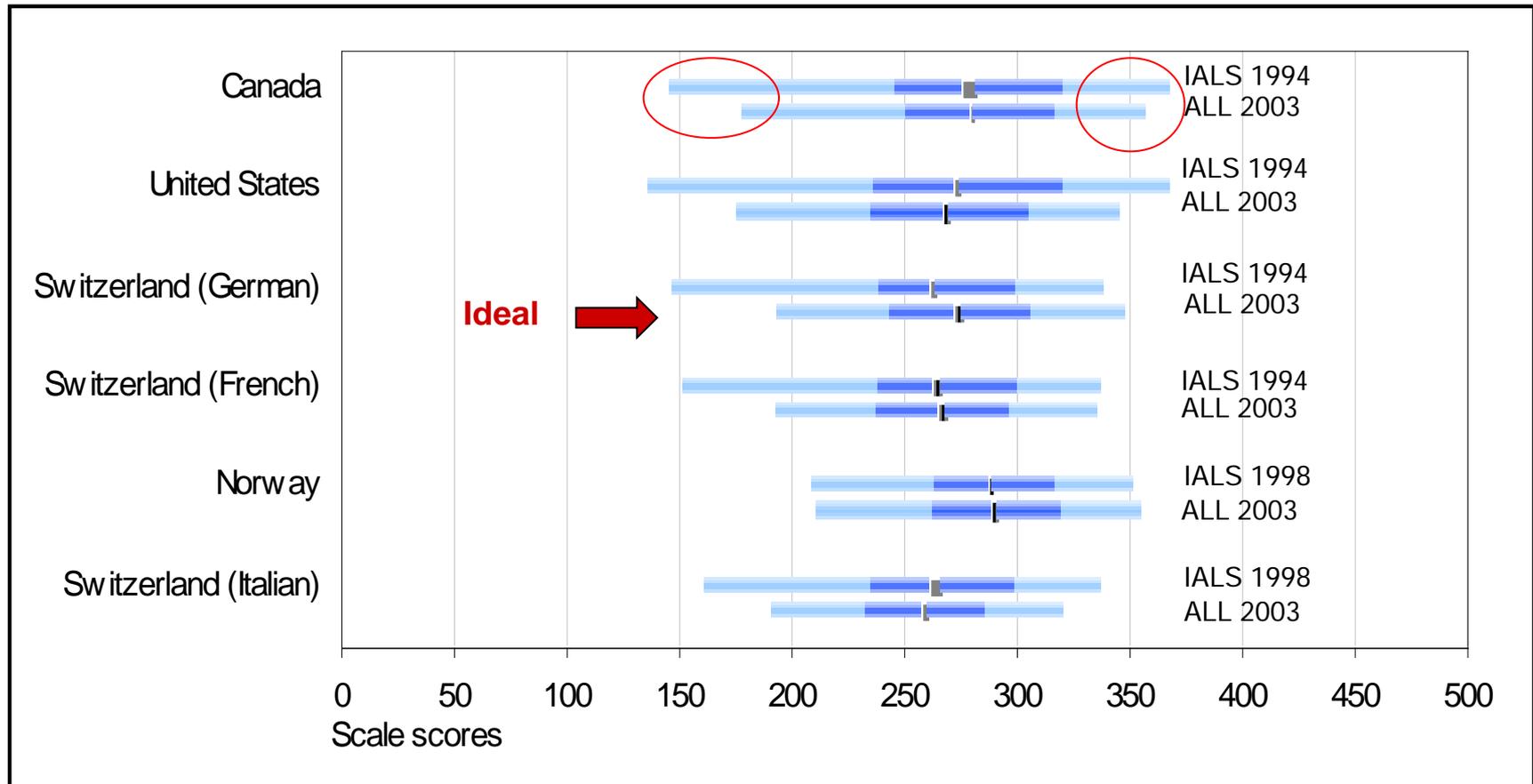
	Bottom 5 % Average Scores			Top 5 % Average Scores		
	IALS	ALL		IALS	ALL	
<b>Canada</b>	<b>127.4</b>	<b>178.3</b>	*	<b>379.6</b>	<b>361.5</b>	*
<b>United States</b>	124.0	174.3	*	367.9	352.5	*
<b>Switzerland (German)</b>	117.1	199.7	*	358.3	358.9	
<b>Switzerland (French)</b>	153.7	198.7	*	355.1	345.7	*
<b>Norway</b>	203.3	205.8		371.9	372.3	
<b>Switzerland (Italian)</b>	164.6	192.6	*	347.2	332.8	*

\* Significant change

Source: ALL, 2003; IALS, 1994-1998

# Equity improved in Canada through a change in distribution though the average prose literacy scores did not change

Mean prose scores with .95 confidence interval and scores at the 5<sup>th</sup>, 25<sup>th</sup>, 75<sup>th</sup> and 95<sup>th</sup> percentiles, 16- 65

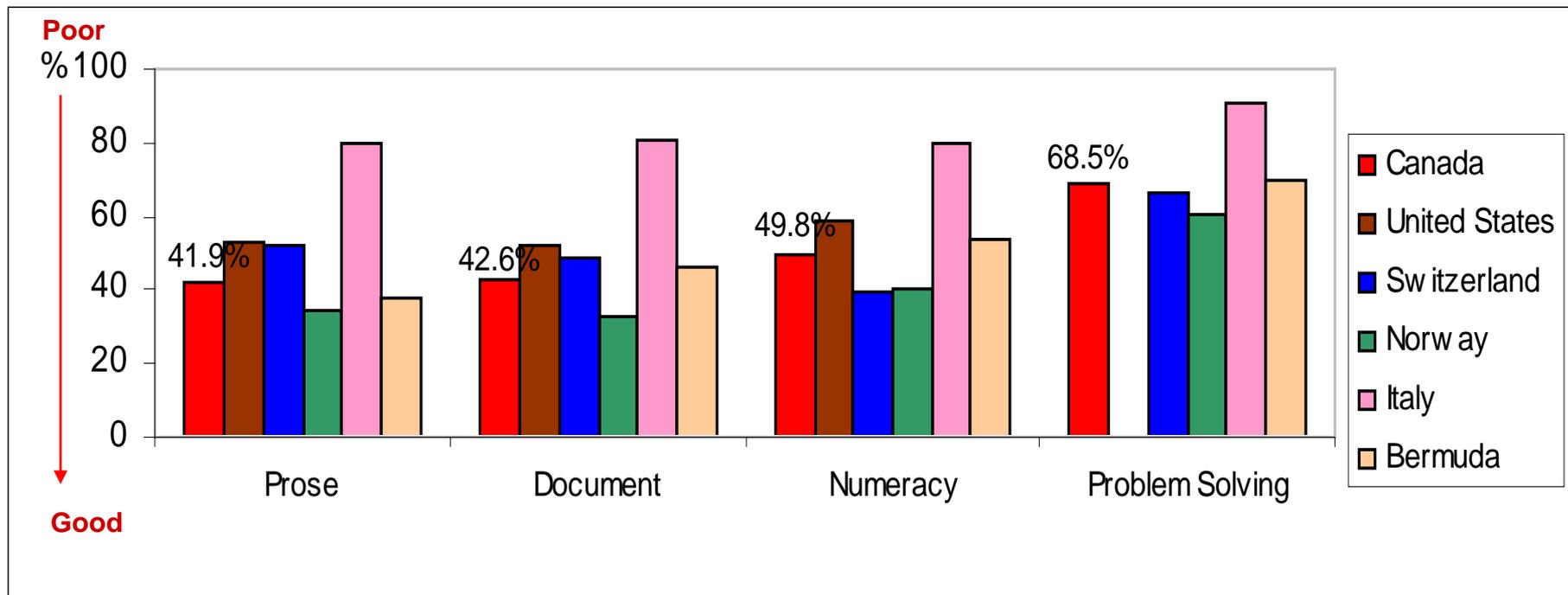


Source: ALL, 2003; IALS, 1994-1998



# The proportion of Canadians performing at levels 1 and 2 varied across literacy domains

Per cent of adult populations performing at levels 1 and 2 in ALL 2003

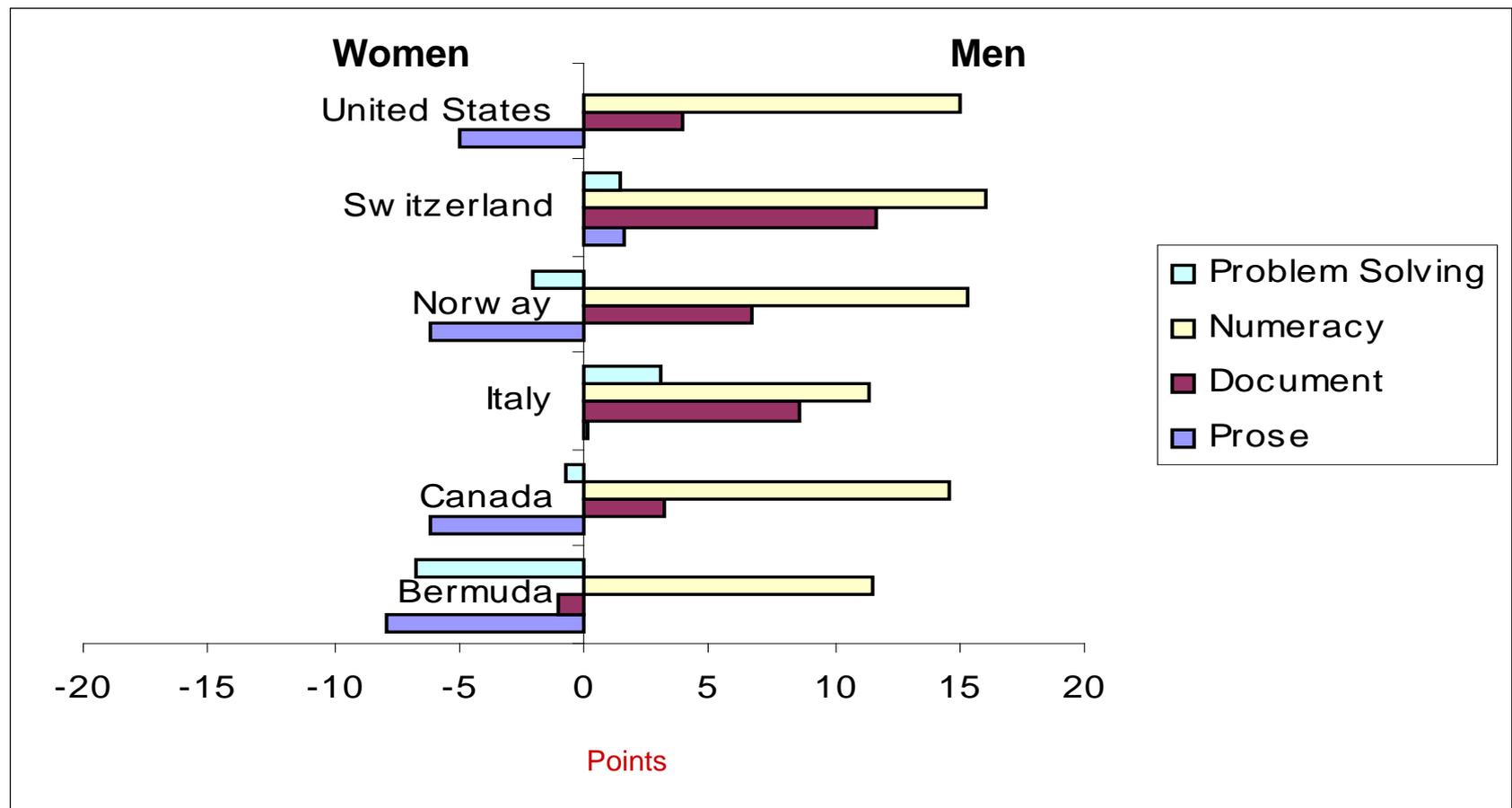


Source: ALL, 2003



# In most countries, men performed better than women in numeracy and in document literacy

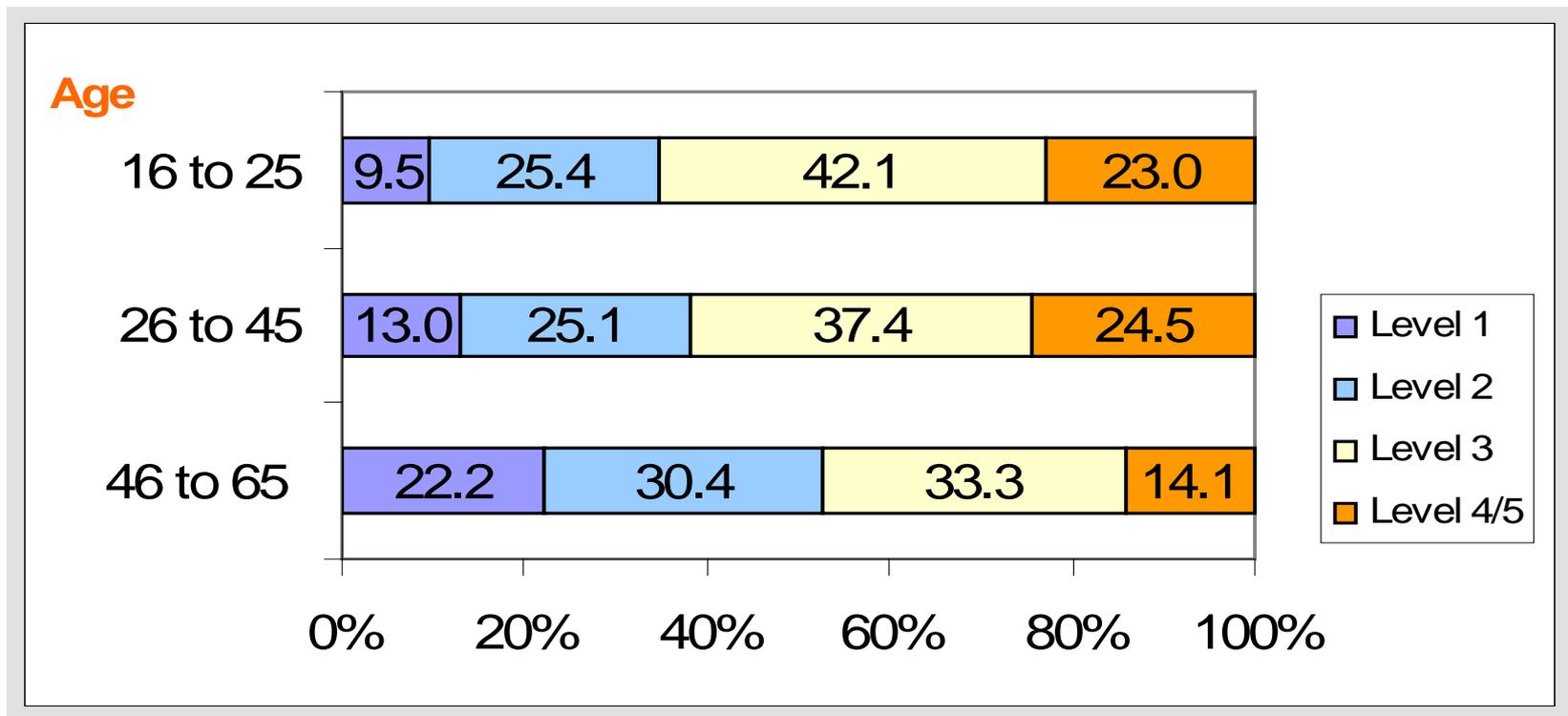
Standard score differences in mean skills proficiencies between men and women on the prose, document, numeracy and problem solving scales, 2003



Source: ALL, 2003

# Younger Canadians scored higher in document literacy and have larger proportions at levels 4 & 5

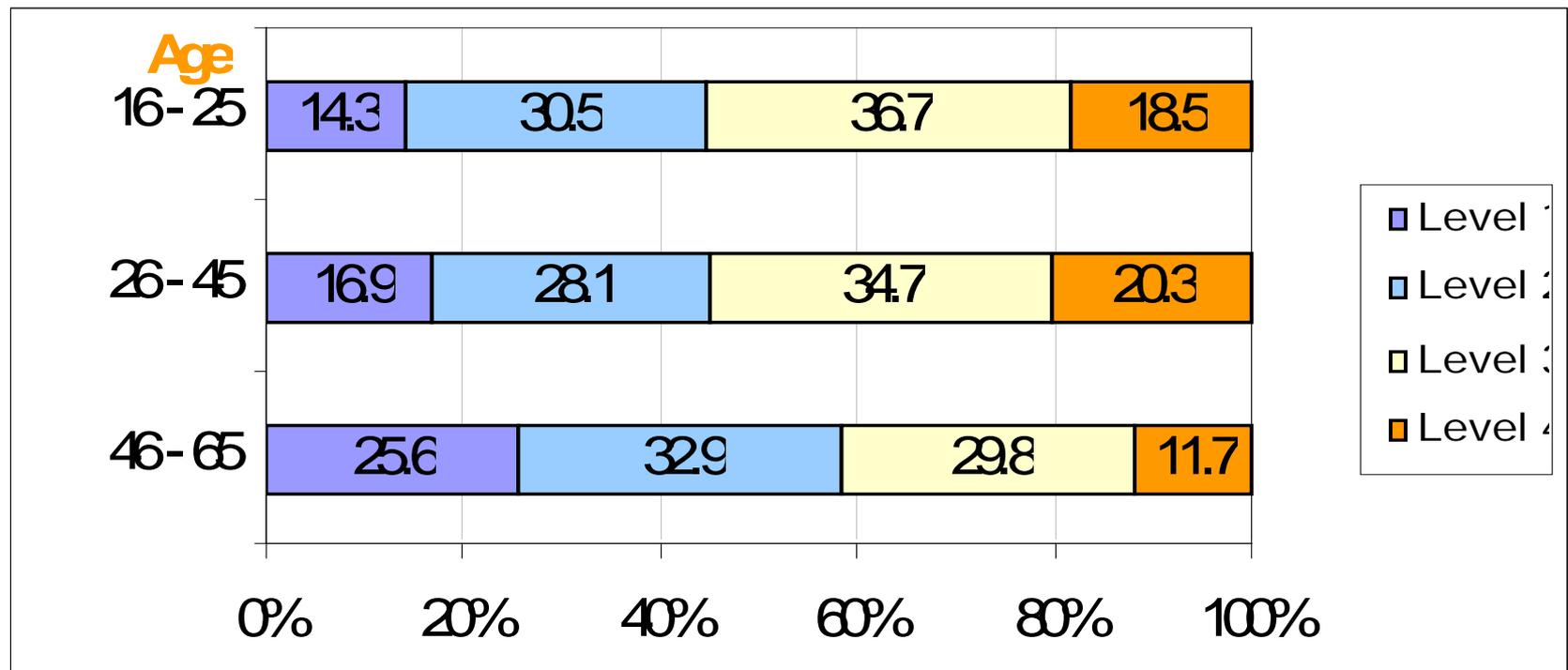
Per cent of populations aged 16 to 25, 26 to 45 and 45 to 65 at each level on the document scale



Source: ALL, 2003

# Younger Canadians performed well in numeracy and have larger proportions at levels 4 and 5

Per cent of populations aged 16 to 25, 26 to 45 and 45 to 65 at each level on the numeracy scale



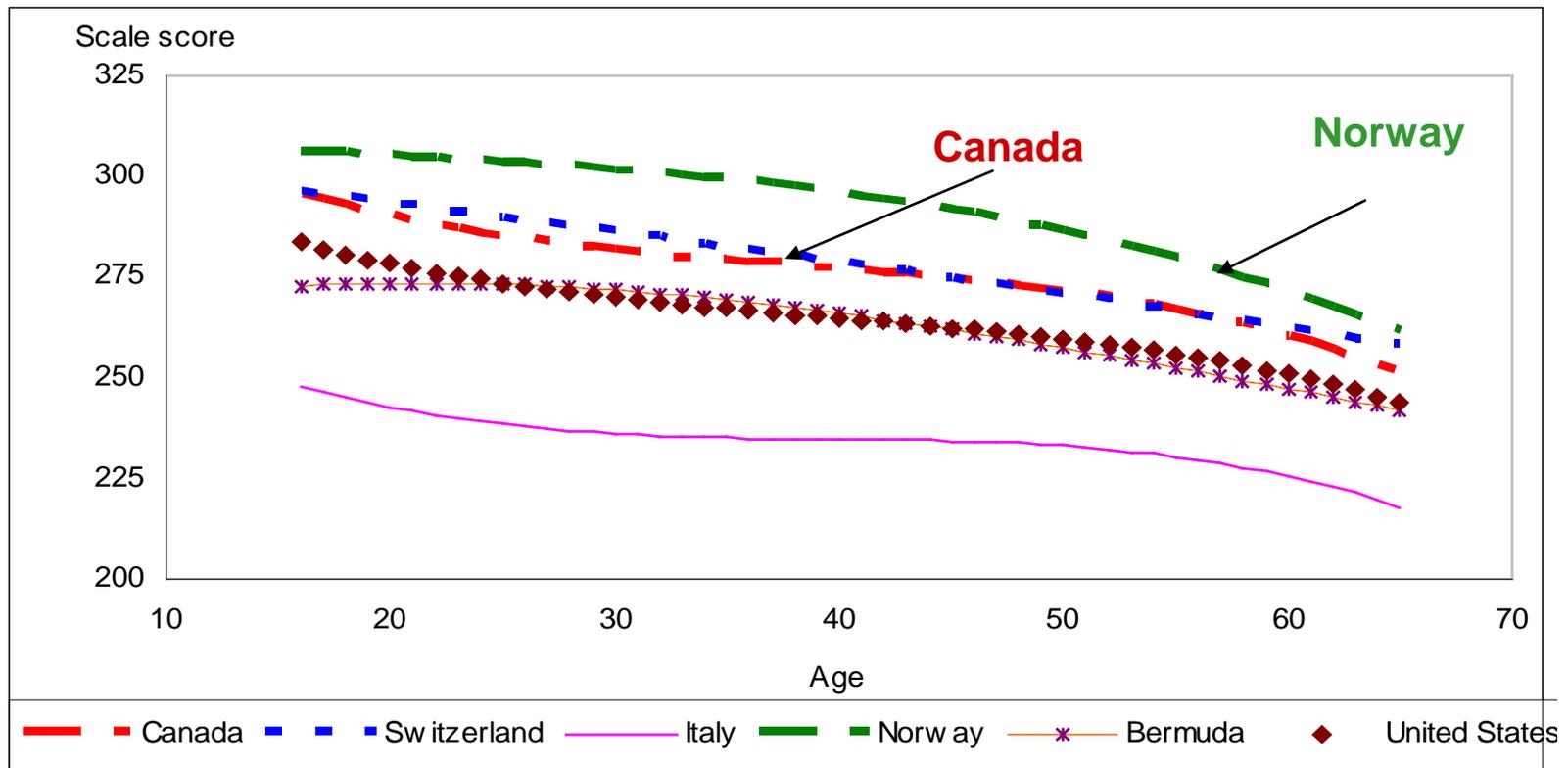
Source: ALL, 2003

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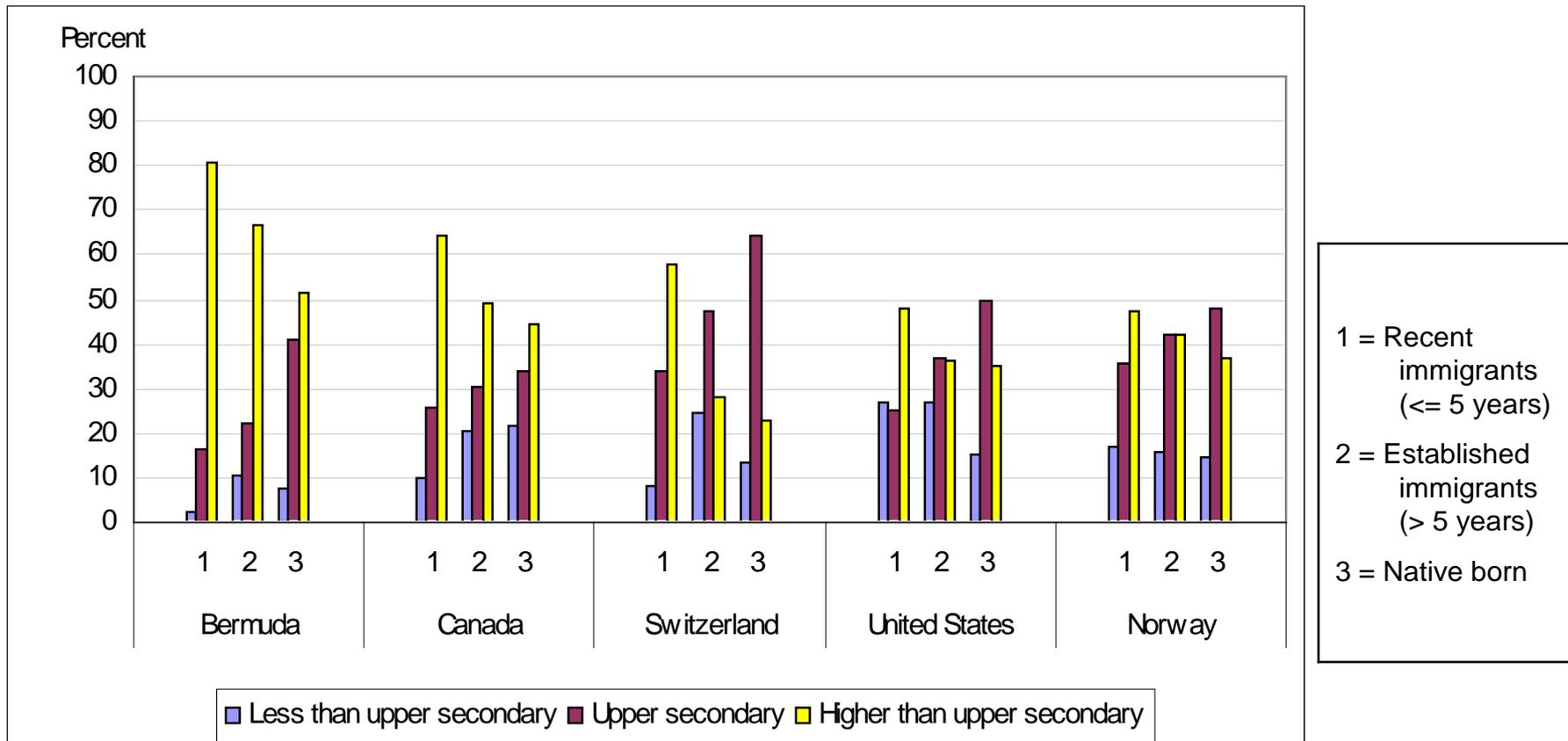
# There is an inverse relationship between age and literacy performance, even after controlling for educational attainment

Relationship between age and literacy scores on the document literacy scale, with adjustment for level education, 2003



# Recent immigrants have higher education in Bermuda and Canada

Per cent of populations aged 16-65 at each level of educational attainment, by recent vs established immigration status, 2003

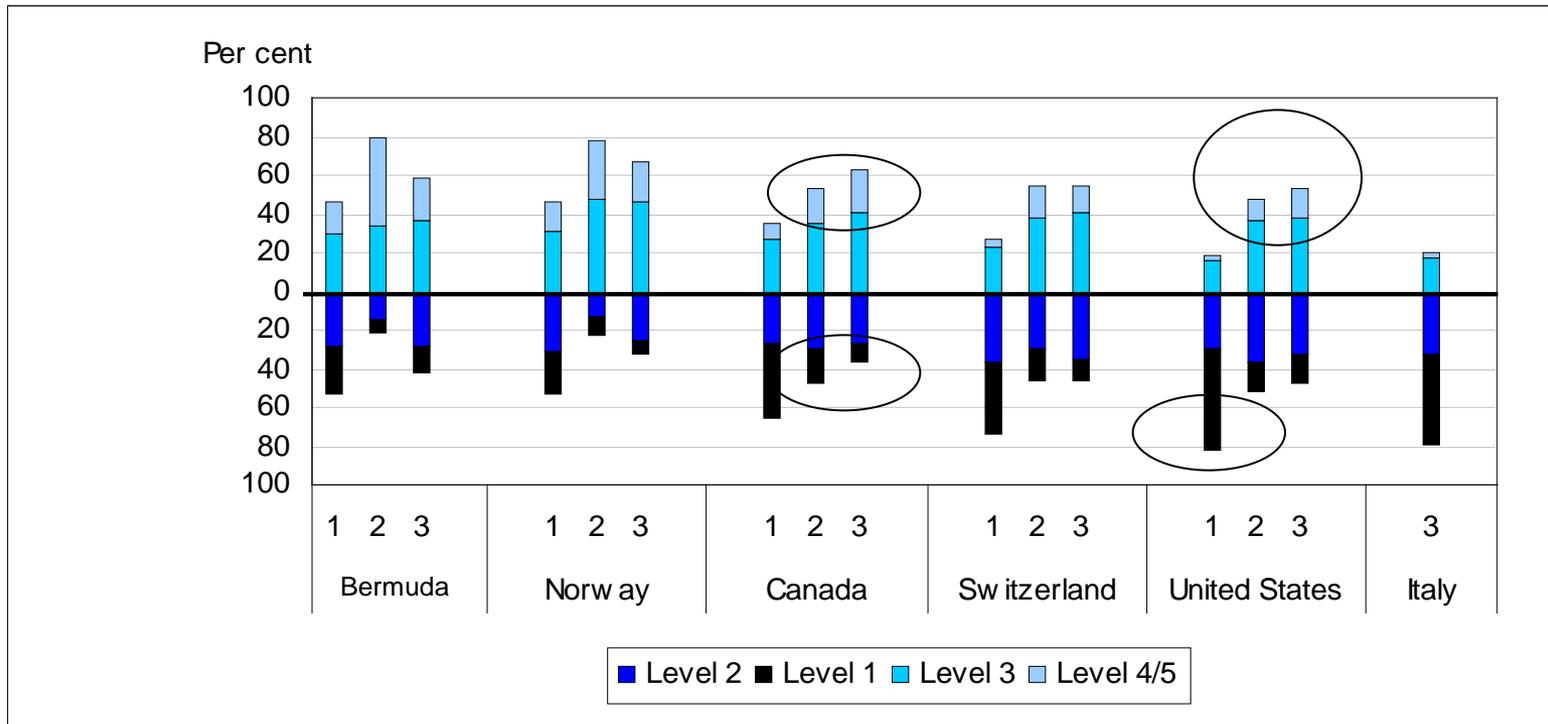


Source: ALL, 2003



# Higher proportion of immigrants scored at level 1 and 2 if their mother tongue was different from the language of test

Per cent of adults (16 to 65) at each level on the prose scale by their native tongue status, 2003



1= Immigrant whose mother tongue is different from the language of the test

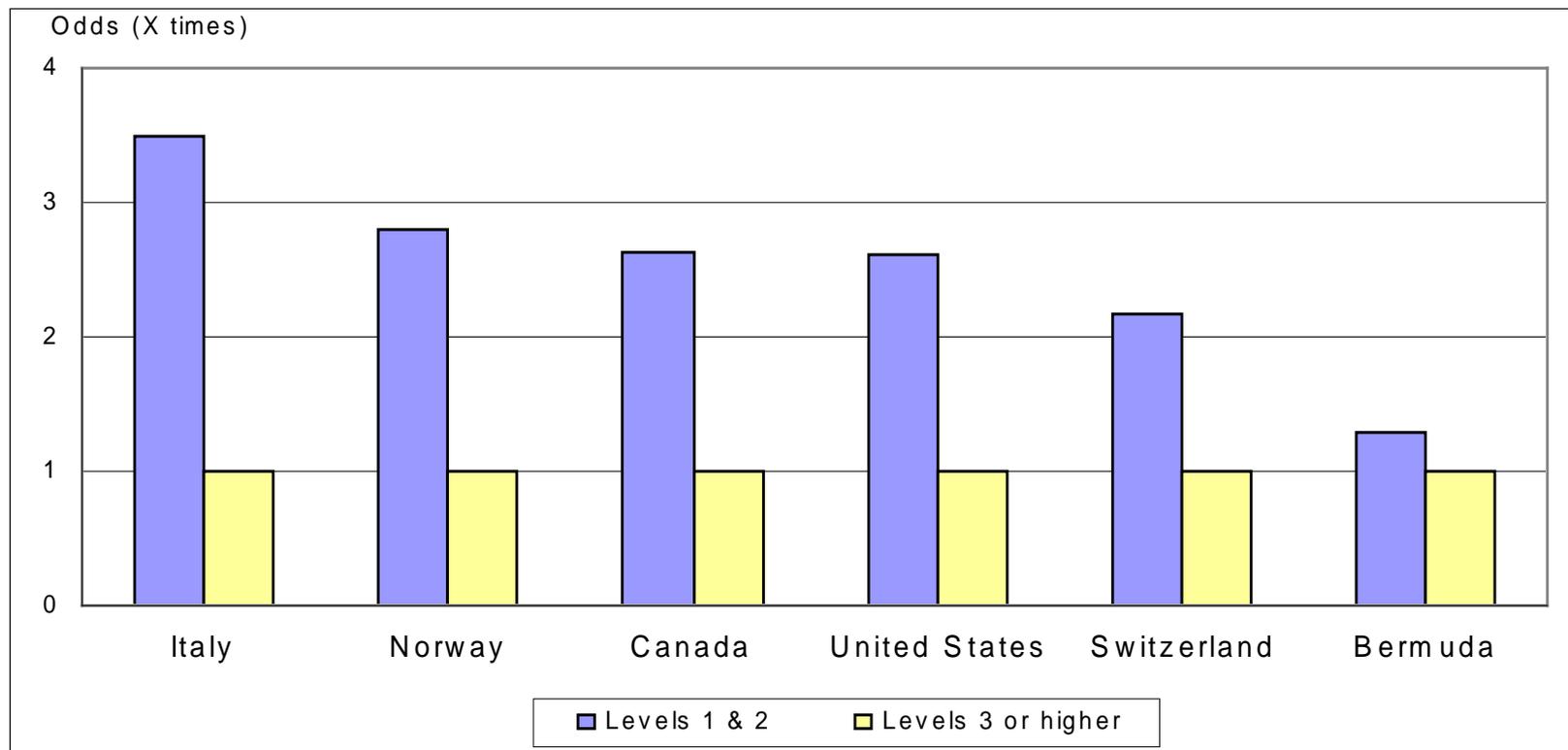
2= Immigrant whose mother tongue is the same as the language of the test

3=Native born



# In Canada, low scoring adults are 2.5 times more likely to experience six or more months of labour force inactivity compared to those scoring at level 3 or higher

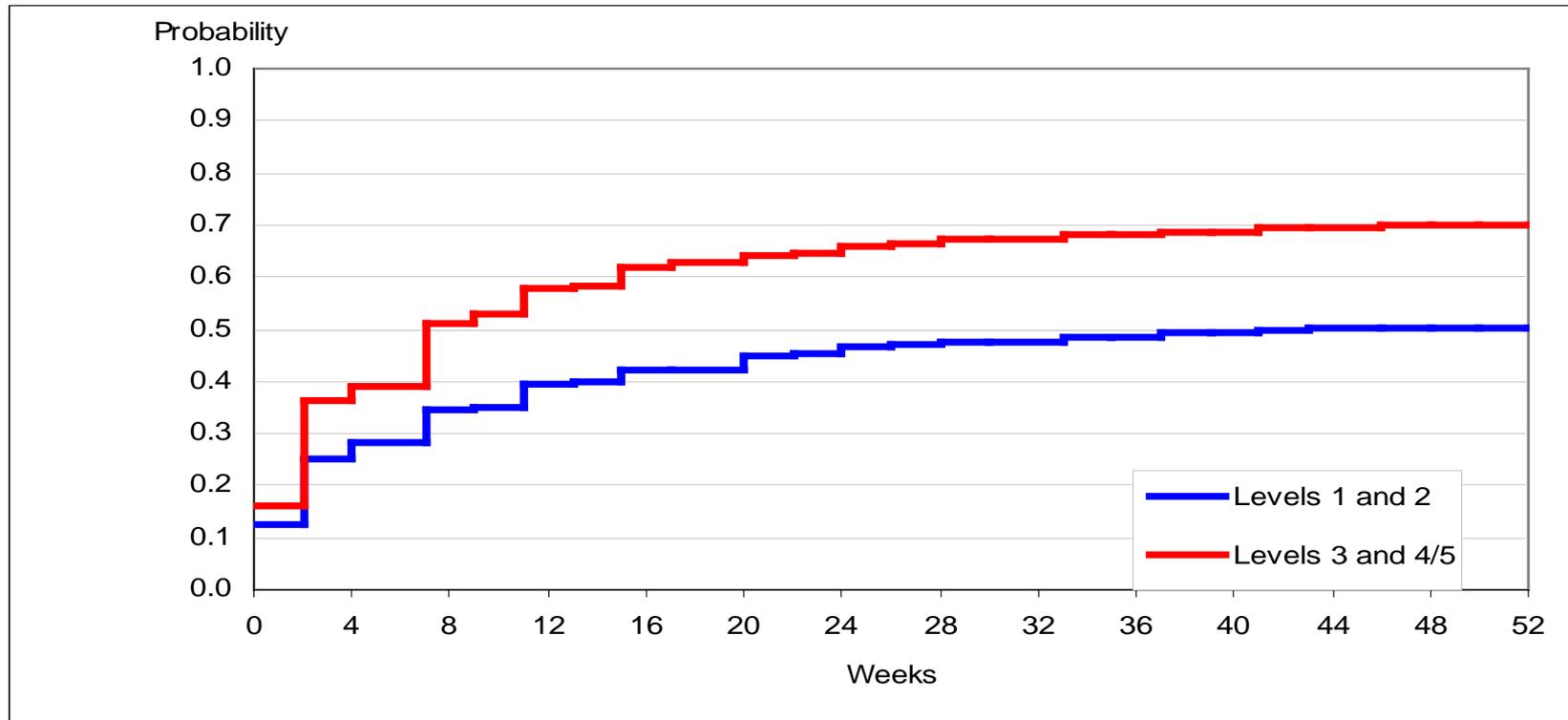
Odds ratios showing likelihood of experiencing labour force inactivity for 6 months or more in the last 12 months compared to being employed all year, by numeracy levels, (16-65), excluding students and retirees, 2003



Source: ALL, 2003 22

# In all countries, adults with high skills who experience unemployment have a higher likelihood of exiting unemployment

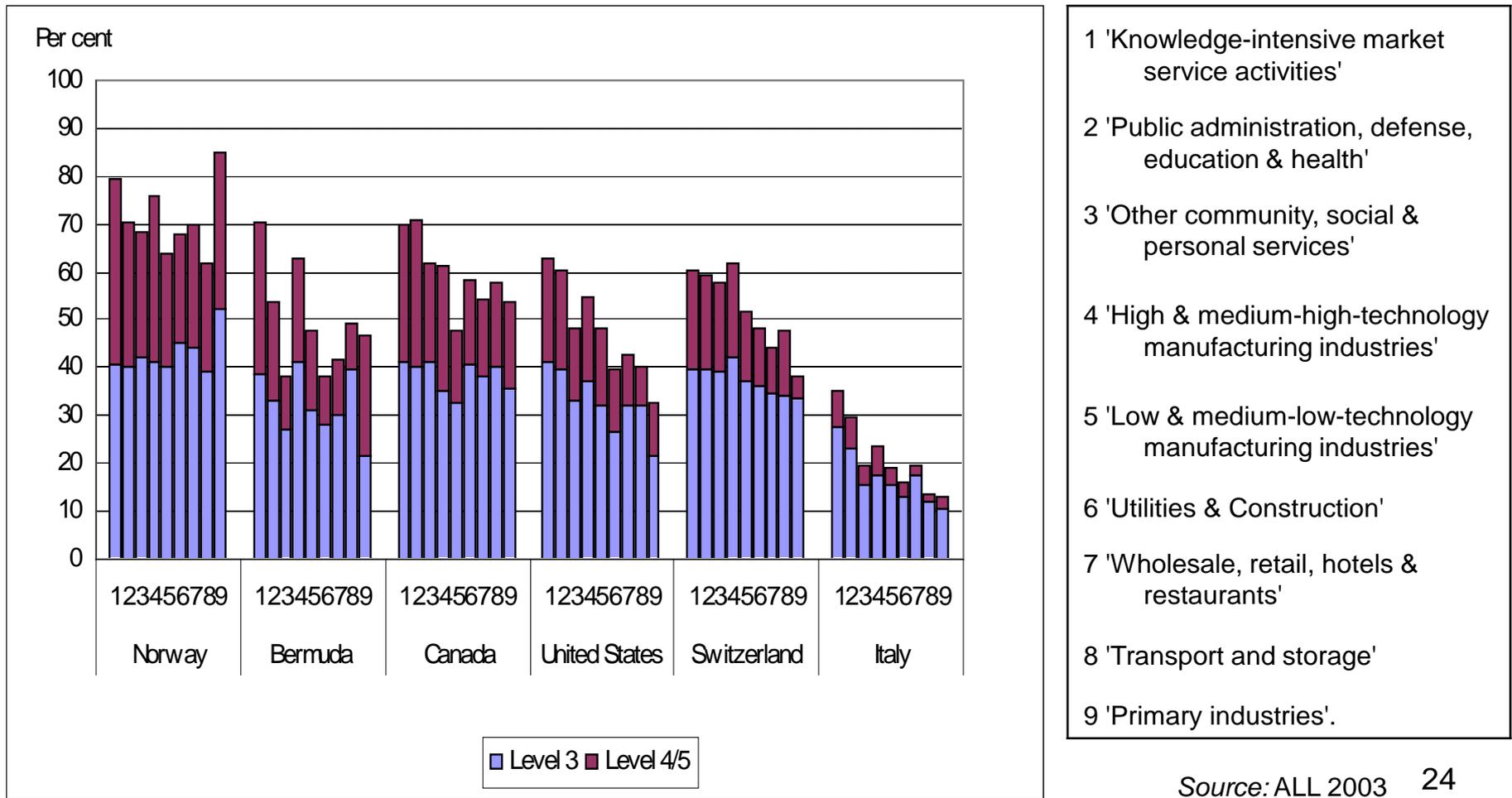
The probabilities of unemployed adults aged 16-65 to exit unemployment over a 52 week period, by low (Levels 1 and 2) and medium to high (Levels 3 and 4/5) skills, document scale, 2003



Source: ALL, 2003.

# In general, knowledge intensive sectors have higher proportions of adults with medium and high literacy proficiency levels

Per cent of labour force populations (16-65) at document literacy Levels 3 and 4/5, by type of industry, 2003

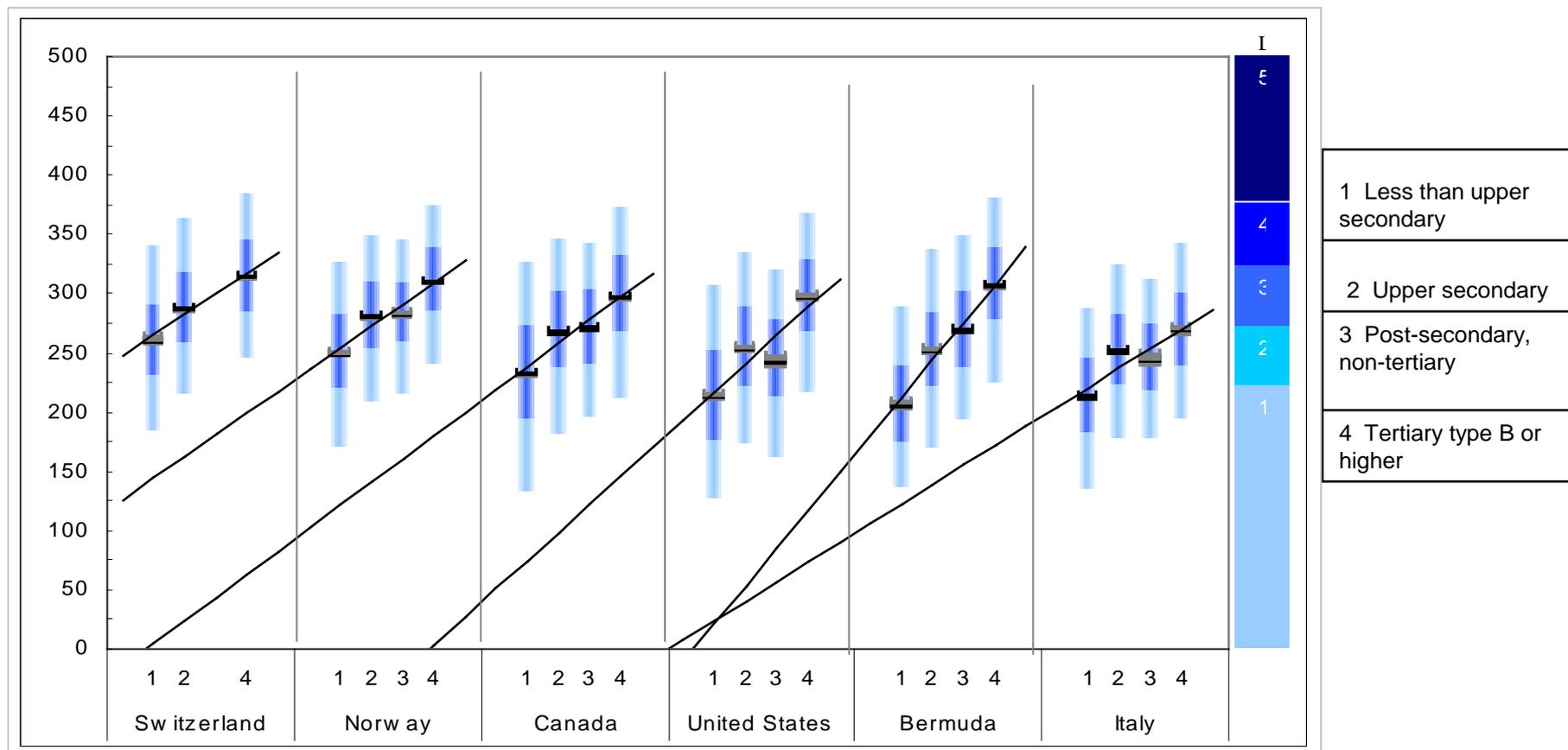


Source: ALL 2003 24



# Positive relationship between education and numeracy skills

Mean numeracy scores on a scale with range 0-500 points, by level of educational attainment, 16-65, 2003

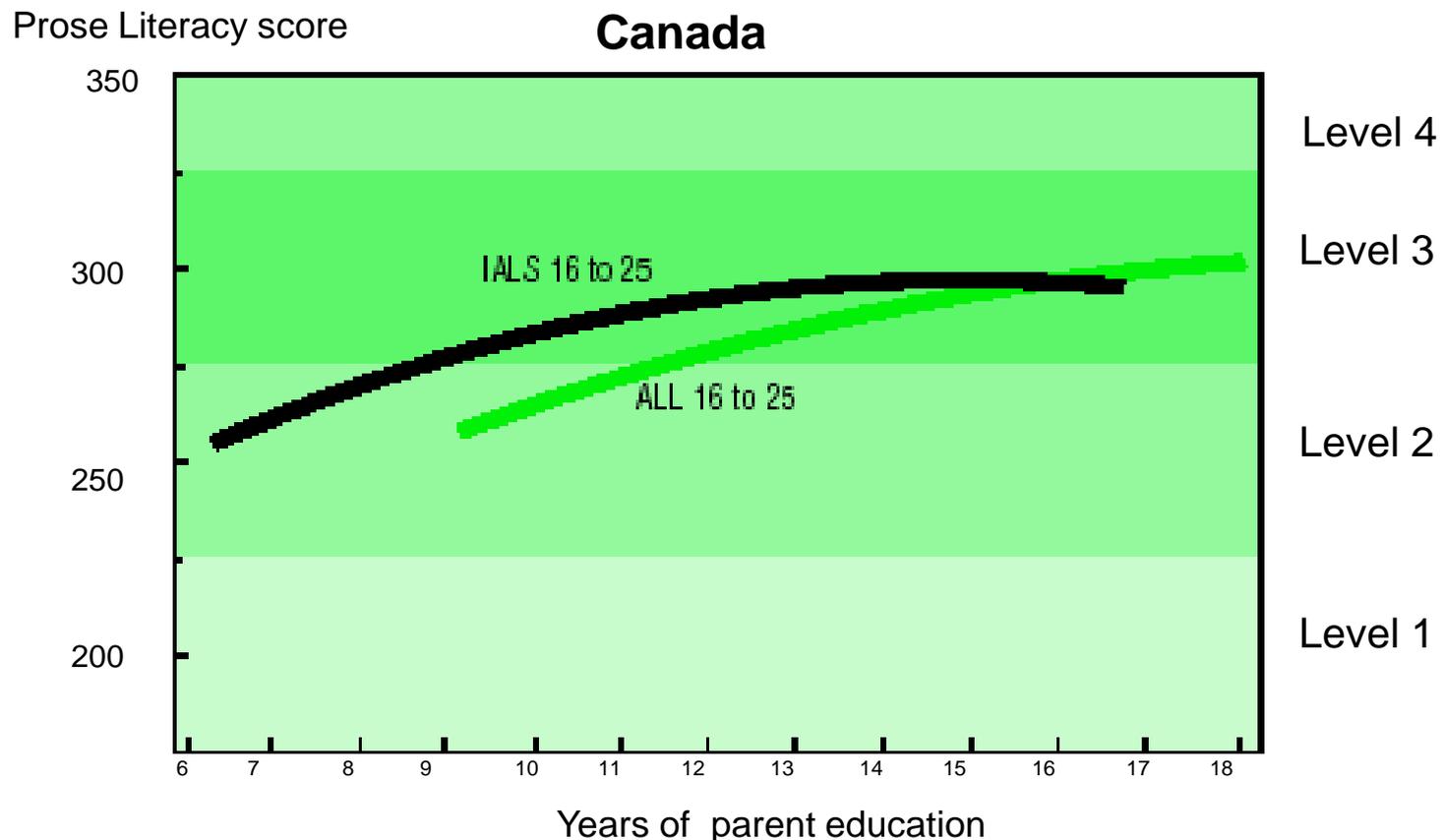


The countries are ranked by the mean of the numeracy score of those completed upper secondary



# The relationship between parental education and literacy skills in Canada changed among youth (16-25) over the nine year period

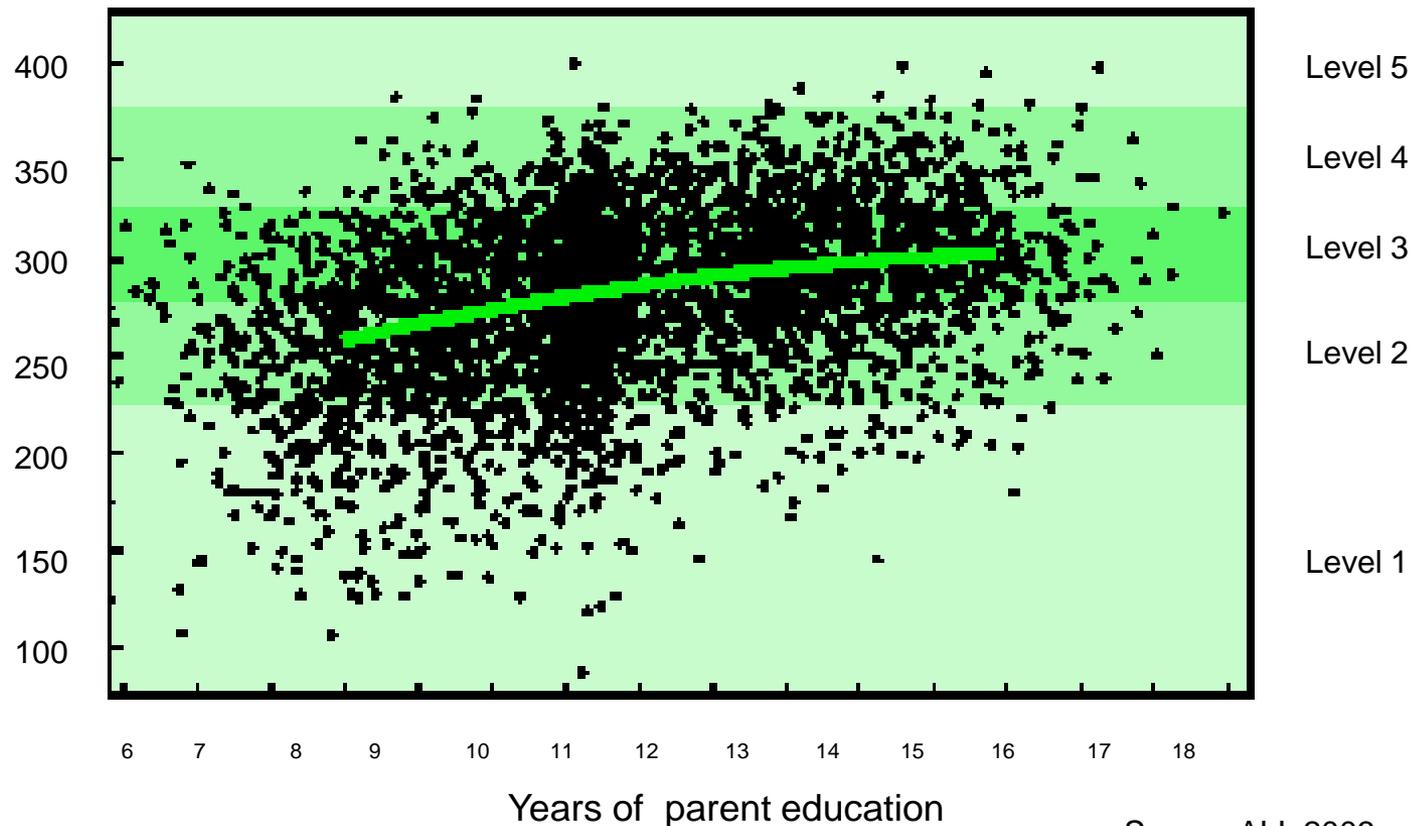
Relationship between respondent's prose literacy scores and parents' education in years, population 16-65, IALS 1994/1998 and ALL 2003



# Not all young people whose parents had low levels of education had low literacy scores

Relationship between respondent's prose literacy scores and parents' education in years, population 16-65, 2003

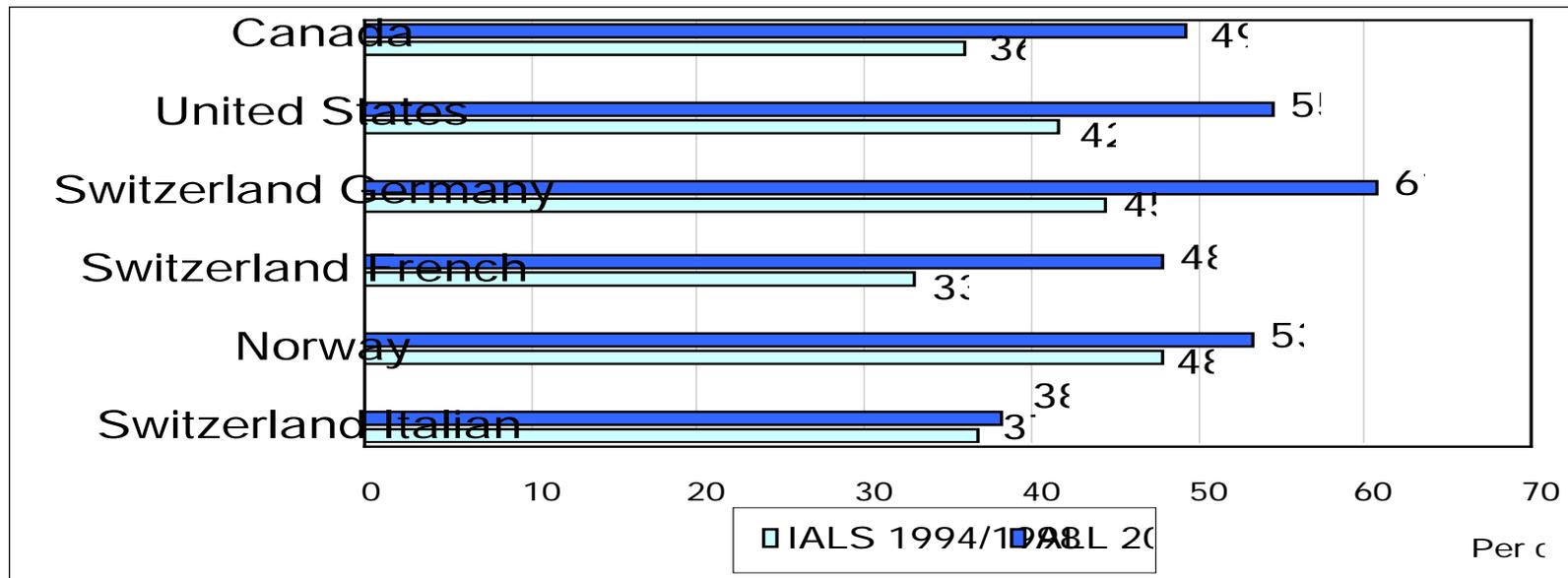
Canada



Source: ALL 2003

# 50% of Canadian adults participated in organized education and training in 2003, an increase of over one-third since 1994

Percent of populations (16-65) receiving adult education and training during the year preceding the interview, IALS 1994/1998 and ALL 2003

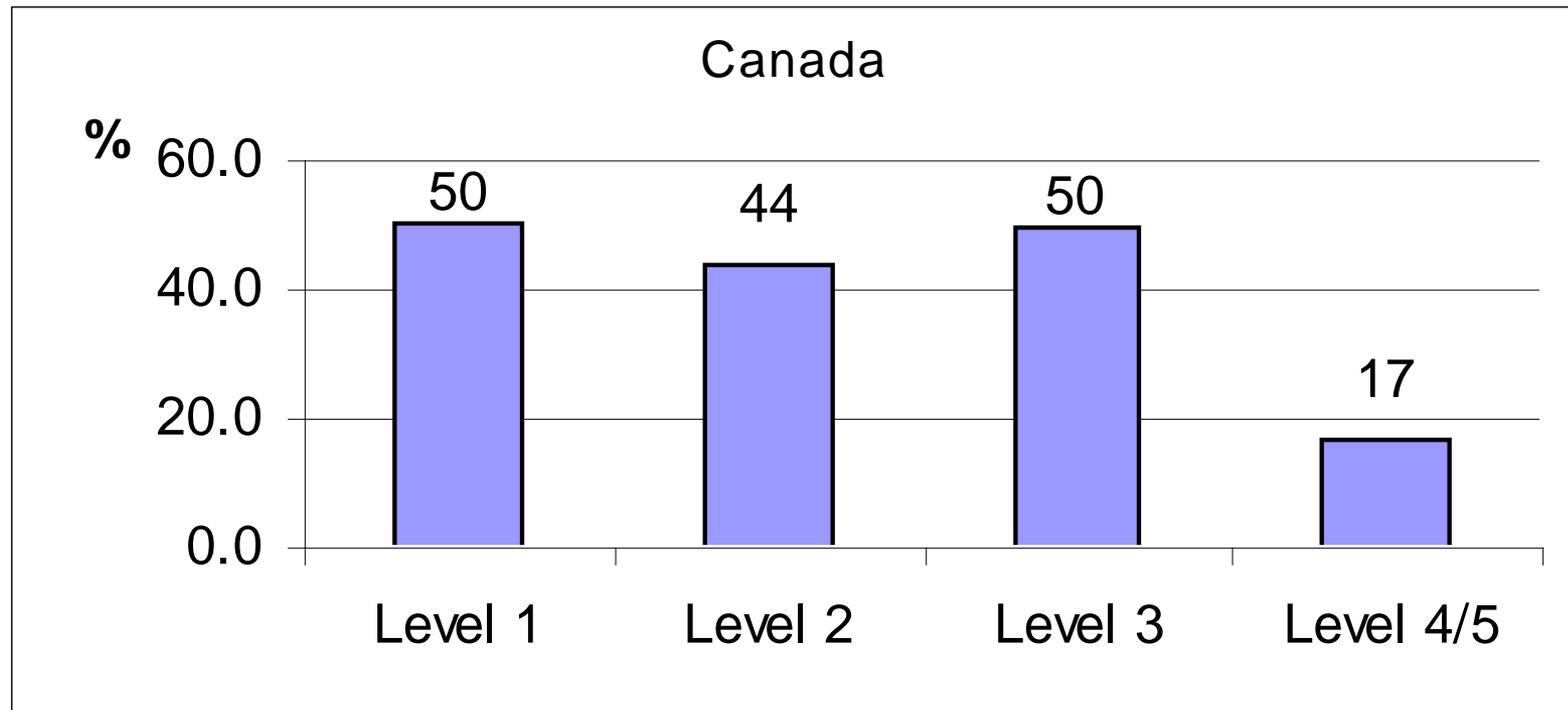


Around half of them were funded by employers.



# The increase in participation rate in Canada was evident across all proficiency levels particularly those at level 1, 2 and 3

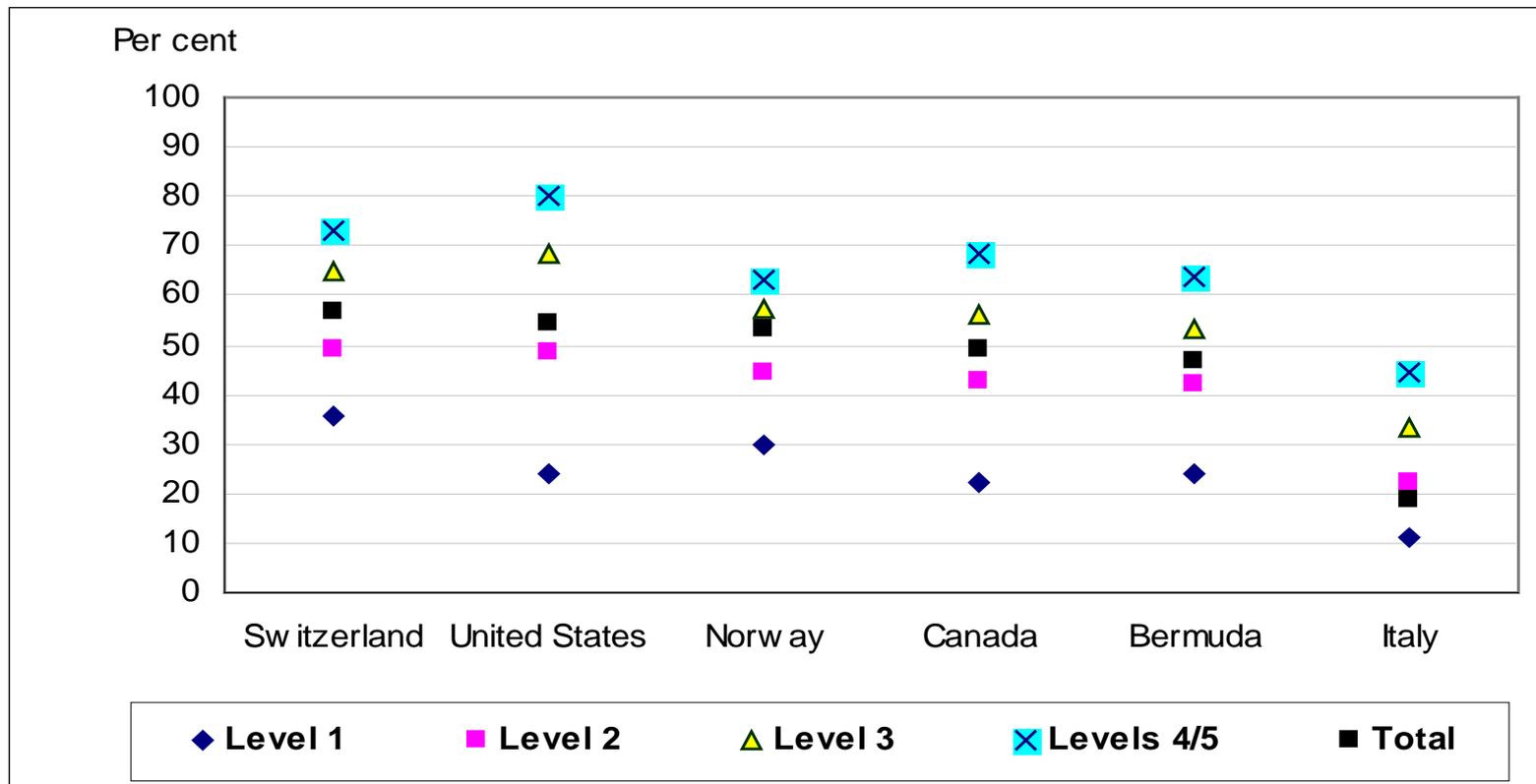
Percentage changes in the per cent of adults (16-65) in adult education and training between IALS 1994/1998 and ALL 2003, by document literacy levels



Source: ALL, 2003; IALS, 1994-1998

# However, participation rates in adult education and training continue to vary by skill level

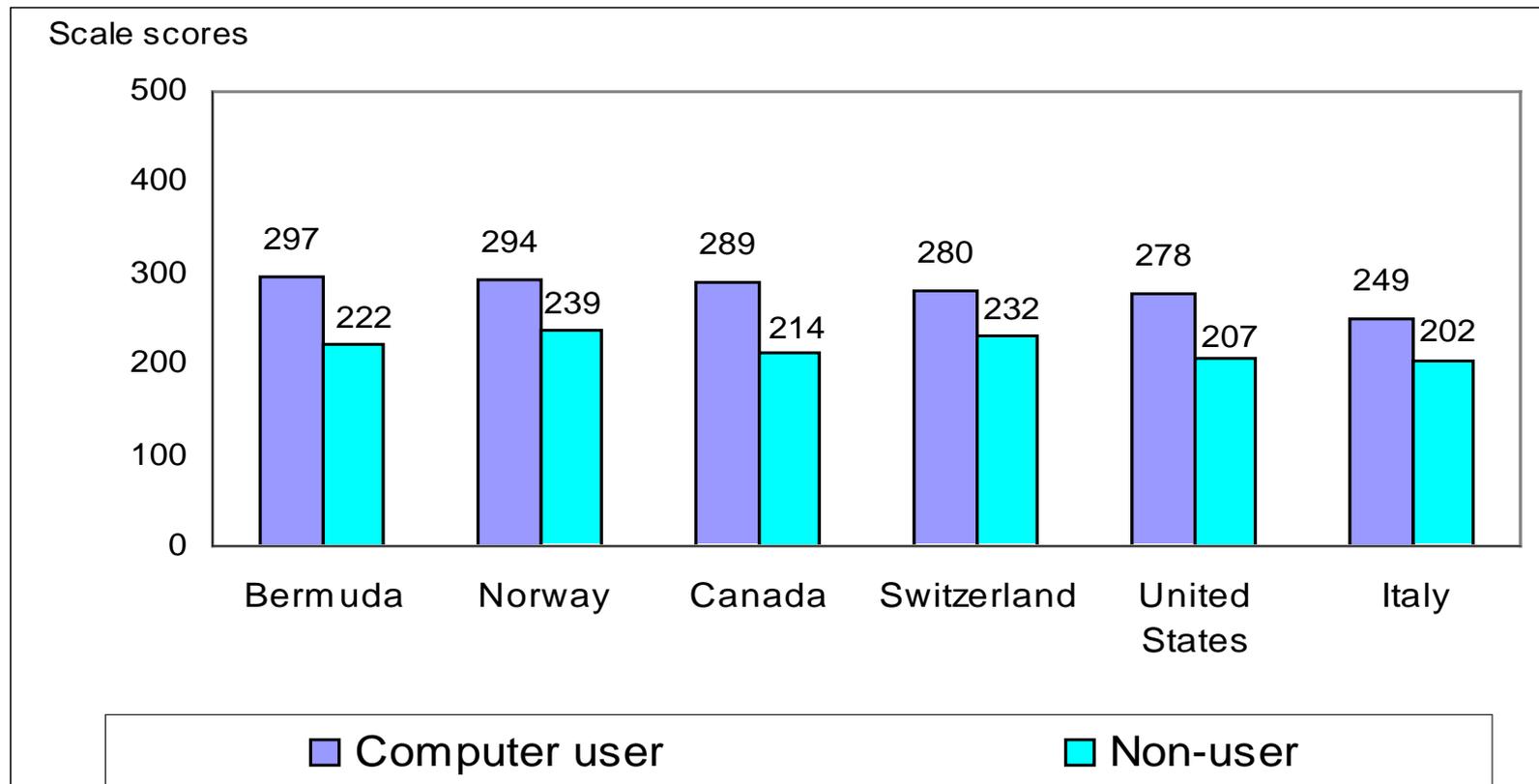
Per cent of population (16 to 65) receiving adult education and training during the year preceding the interview, by document literacy levels, 2003



Source: ALL, 2003

# Computer users have higher prose literacy scores compared to non-users in all countries

Mean scores on the prose literacy scale ranging from 0 to 500 points, by whether respondents are computer users or non-users, populations aged 16-65, 2003

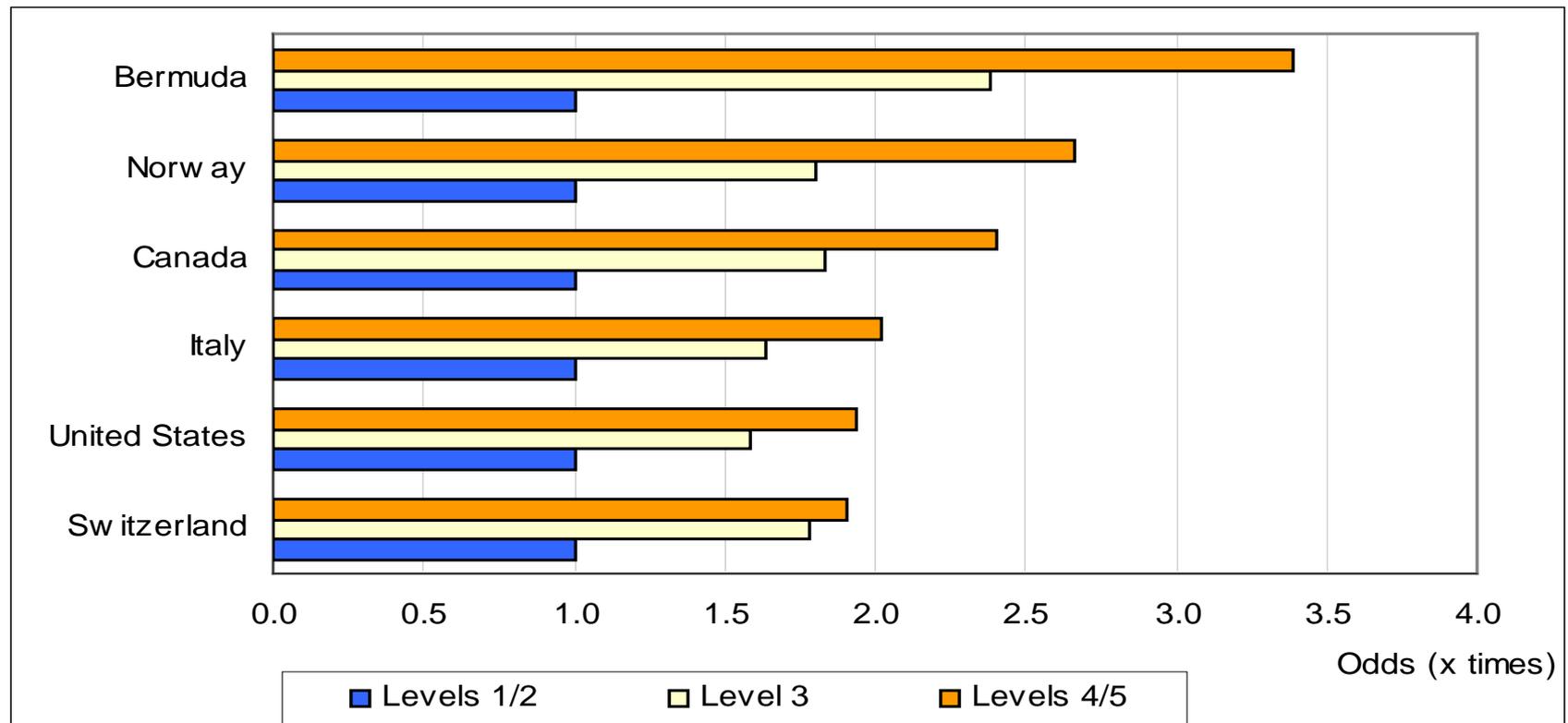


Source: ALL, 2003



# In all countries, adults at levels 4/5 are more than twice as likely to be high intensity computer users.

Adjusted odds ratios showing the likelihood of adults (16-65) of being high intensity computer users, by prose literacy levels, 2003



Source: ALL, 2003.



# Conclusion

- **What is the level of literacy proficiency in the Canadian working age population?**
  - 58% of Canadian adults (16-65) performed at level 3 or higher in ALL 2003.
  - The Canadian average in prose and document literacy was at level 3 which is required for the knowledge economy. The average for numeracy and problem solving was just below level 3.
- **How do we compare internationally?**
  - Among the six countries participating in the first round of ALL, Canada's performance was in the middle.
  - Canada did better than US in all literacy domains except problem solving in which the US did not participate.
- **How proficient are Canadians in different component skills?**
  - Canadians performed better in prose and document literacy than in numeracy or problem solving.
  - A similar trend was also observed in most other countries.

# Conclusion

- **How is literacy performance distributed in the Canadian population?**
  - Younger Canadians generally scored higher and have larger proportions at proficiency levels 4 and 5.
  - Immigrants, specially recent arrivals and those whose mother tongue is neither English nor French, achieved a lower level of proficiency than Canadian adults.
  - Adults with a high literacy proficiency level were more likely to work in knowledge intensive sectors and to exit unemployment, than those with low proficiency levels.
- **What are the factors affecting proficiency in the competencies?**
  - A positive relationship between education and literacy performance.
  - Computer users scored higher in prose literacy than non-users.
  - Participation in formal adult training varied by literacy level .

# Conclusion

- **How have Canadians improved or not?**

## Good News:

- Canada maintained its average literacy score between 1994 and 2003.
- Average score for prose and document literacy was at level 3.
- Average score for numeracy and problem solving was just below level 3.
- Half of the population increase of 3 million was in level 3 but it did not affect the average score.
- Improved equity.
- The lowest 5% (1 million) performed better in document literacy (50 points).
- 50% of Canadians participated in adult education and training; half were funded by employers.



# Conclusion

## Not so good news:

- Proportion of Canadians in levels 1 and 2 did not change but the number of people rose to 9 million; so any improvement was slower than population change
- Of the 9 million Canadians, only those with very low literacy (1 million) have improved. Since there was no improvement in the remaining 8 million, there was no change in the proportion of Canadians in levels 1 and 2.
- The average literacy scores for level 4 and 5 were lower in 2003, contributing to equity.
- Immigrants, particularly recent immigrants and immigrants whose mother tongue is neither English nor French, did poorly.
- Performance in problem solving was the worst among the 4 literacy domains.

