



**IALSS 2003**  
**Literacy and Labour Force**  
***and HRSDC Implications of Findings***  
***Part II***

*Presented by*

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## Policy Research Questions

- What is the level of literacy proficiency in Canada across provinces and territories?
- How is literacy performance distributed in the labor force, occupations, industries and earning groups?
- Do Canadians at all proficiency levels train ?
- Is literacy proficiency associated with ICT use?
- Are health outcomes related to literacy proficiency?
- Is the degree of civic engagement affected by literacy proficiency?

# Measurement of adult competencies

## International Adult Literacy Survey (IALS)

- **Conducted in 1994**
- **Domains:**
  - Prose
  - Document
  - Quantitative
- **Participating regions:**  
Atlantic, Québec, Ontario, Western Canada (including British Columbia)
- **In Canada, 4500 respondents aged 16-65 representing 18,450,260 adults**

## International Adult Literacy and Skills Survey (IALSS)

- **Conducted in 2003**
- **Domains:**
  - Prose
  - Document
  - Numeracy (modified)\*
  - Problem solving\*
- **Participating provinces:**  
All provinces and territories
- **In Canada, 20,000 respondents age 16-65 representing 21,360,683 adults**

**Literacy proficiency: the ability to *understand* and *employ* printed information in daily activities, at home, at work and in the community. It is not about whether or not one can read but how well one reads.**

## 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. (Only four proficiency levels)

Prose, document and numeracy scale

- Level 1 0 - 225 points
- Level 2 226 -275 points
- Level 3 **276-325 points\***
- Level 4 326 -375 points
- Level 5 376 -500 points

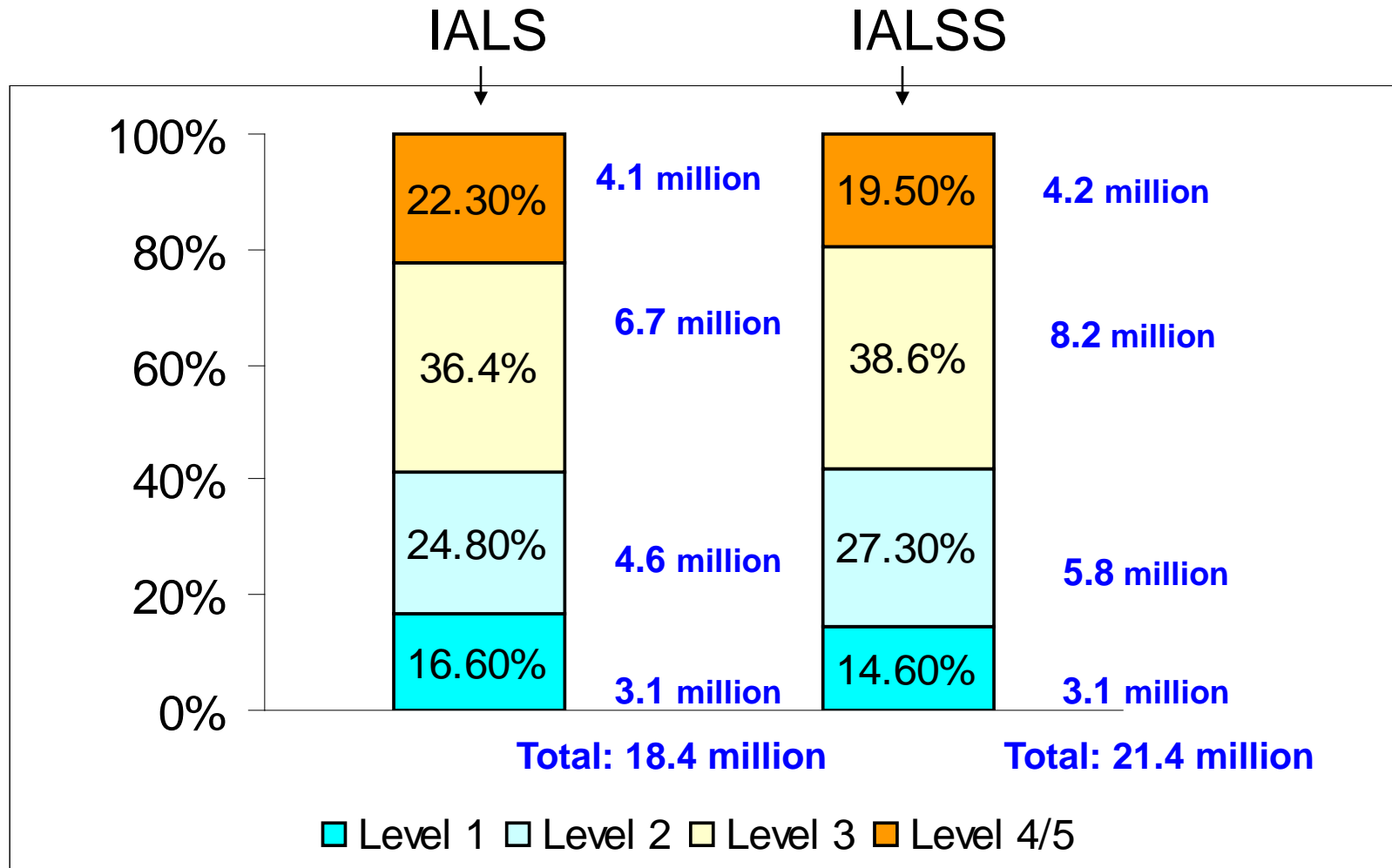
\* Proficiency level for modern economy and knowledge-based society



## Indicators of Canadian performance in national IALSS results

- Canadian and provincial standing
- Literacy performance in relation to:
  - Employment
  - Occupation
  - Industry
  - Earnings
  - Adult training participation
  - ICT
  - Civic engagement
  - Health

# 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



# Canadian proficiency varied across domains and population age

Average proficiency scores by labour force status, population 16 and older and population 16 to 65, Canada, 2003

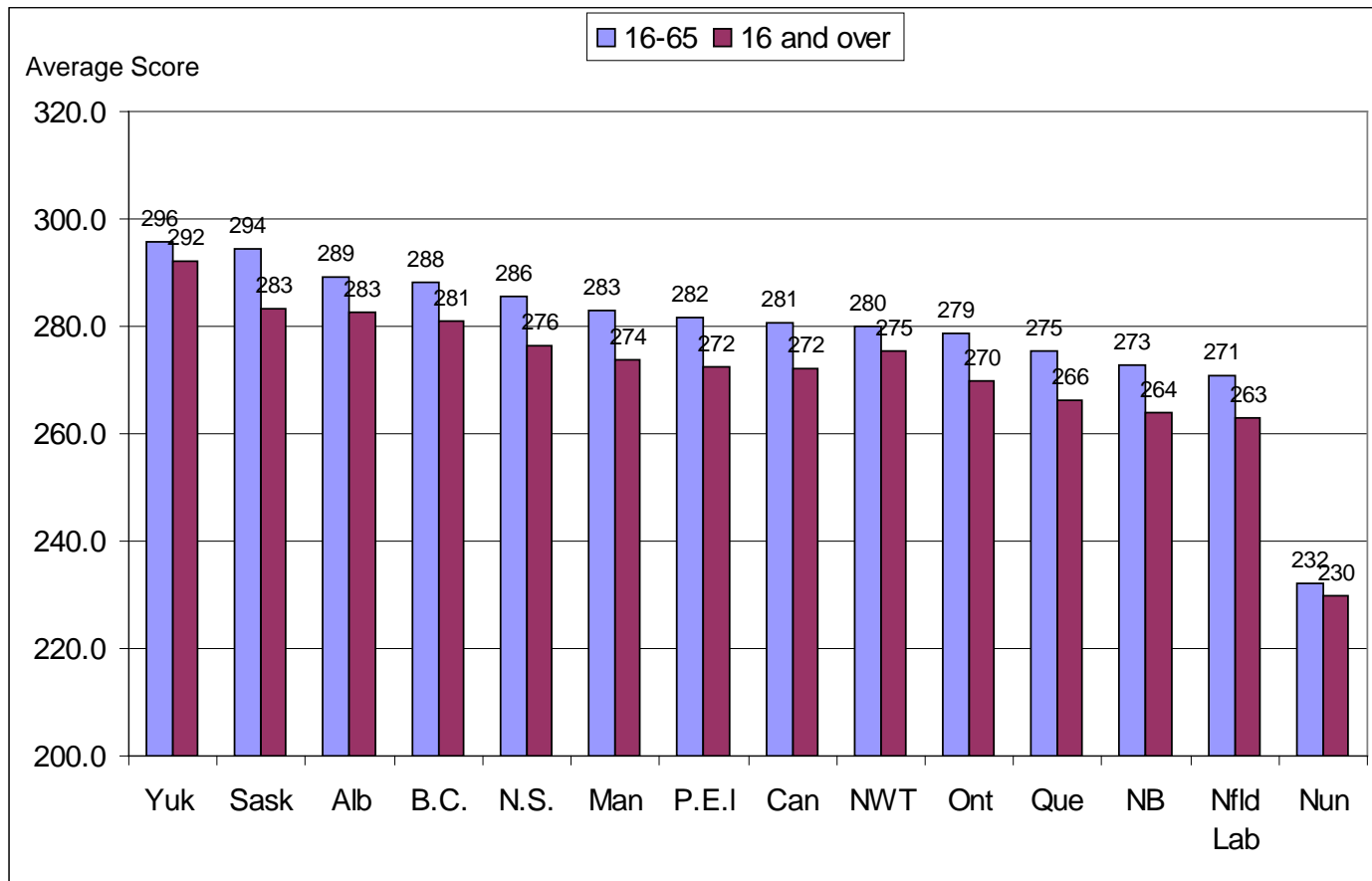
	Prose	Document	Numeracy	Problem Solving
16 and older	272	271	263	266
16 to 65 years of age	281	281	272	274

 - Below level 3

Source: IALSS, 2003

# The working age population (16-65) have higher average scores than the population 16 and over

Comparisons of provinces and territories average scores in prose by population age 16-65 and 16 and over, 2003



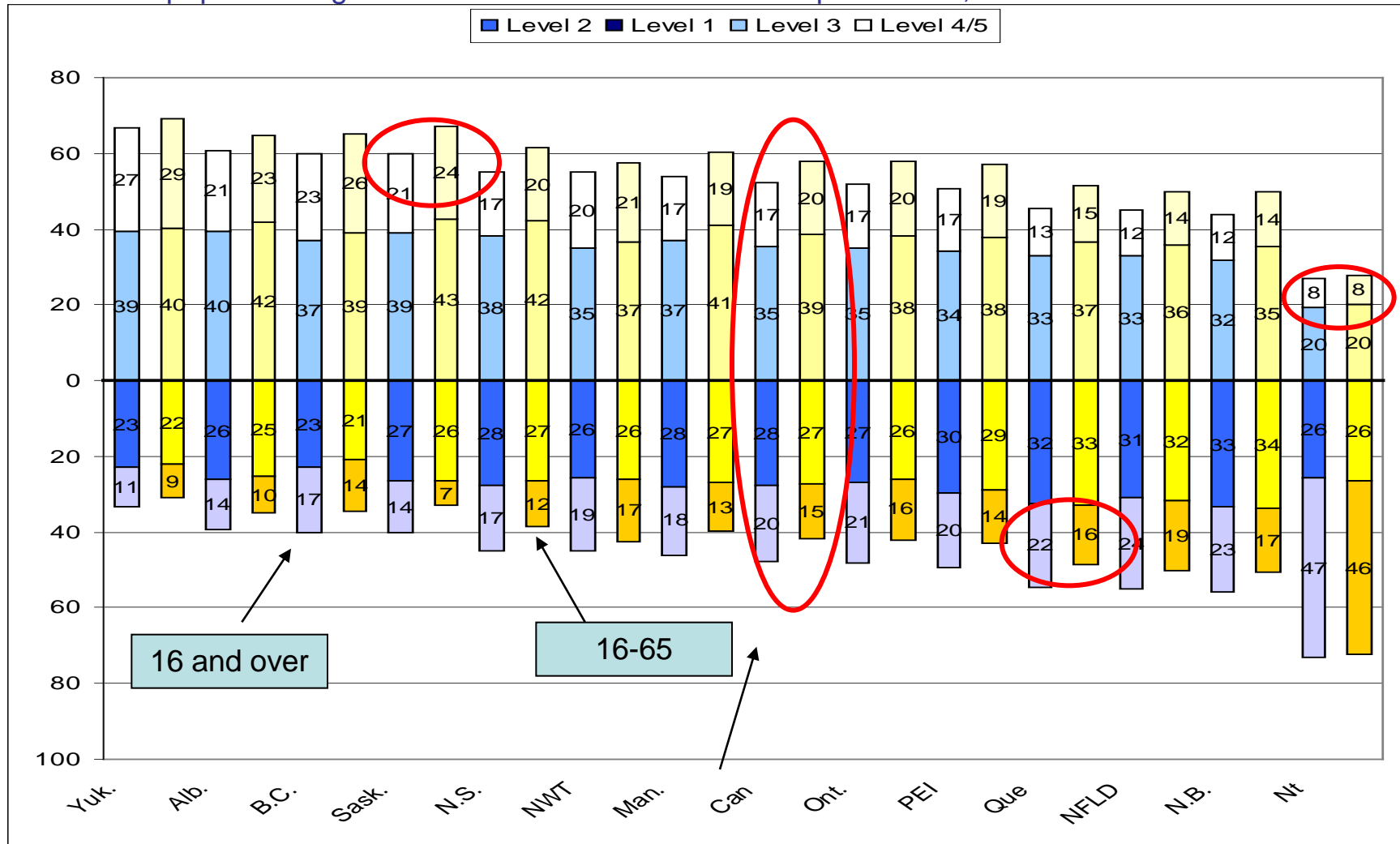
Source: IALSS, 2003





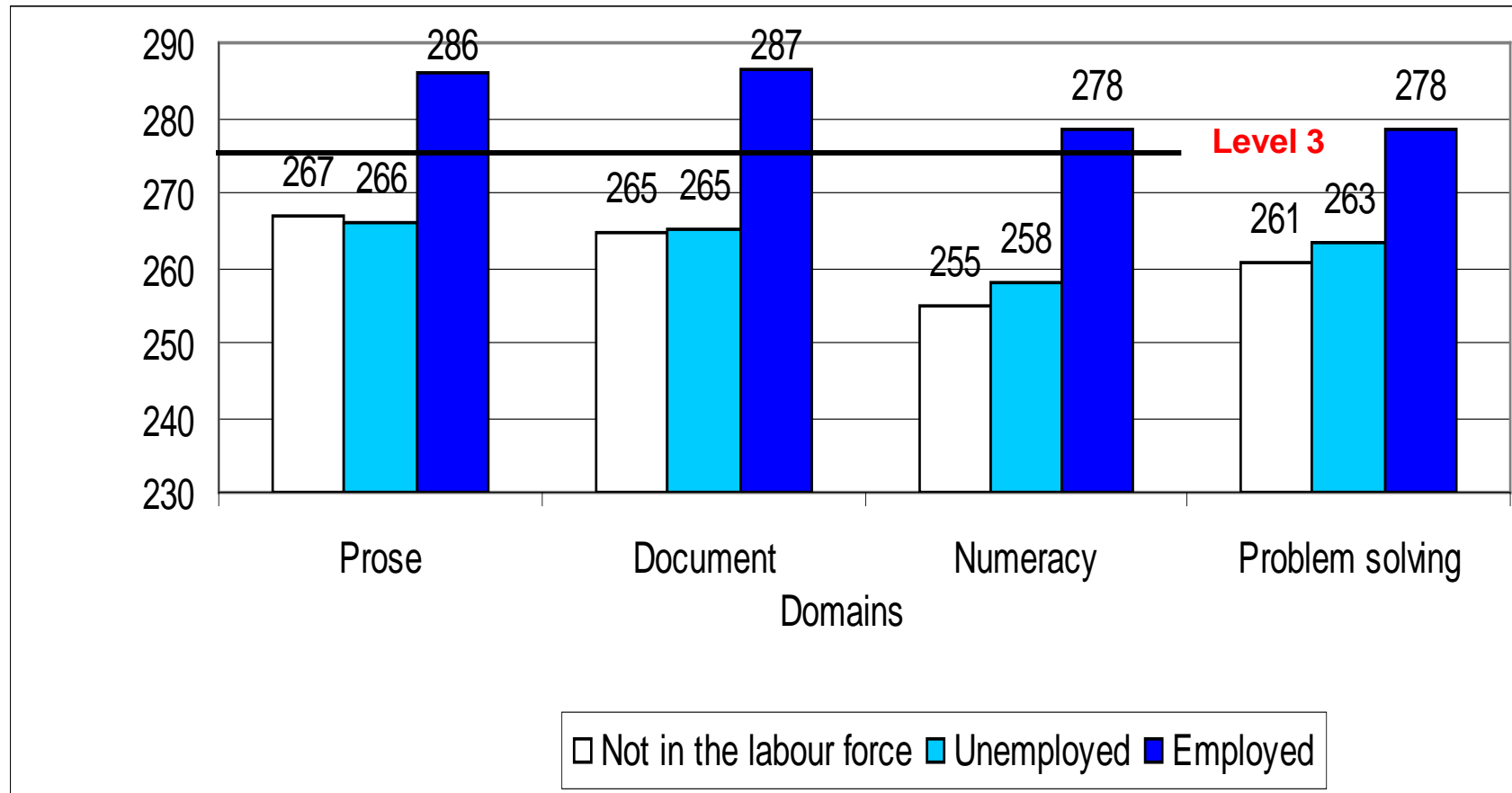
# The distribution of prose literacy proficiency differs by age of the population

Per cent of population aged 16 and older and 16-65 at each prose level, 2003



Among Canadians, those who are employed have higher average proficiency scores than those who are either unemployed or those who are not in the labour force

Average proficiency scores by labour force status, population 16 to 65, Canada, 2003

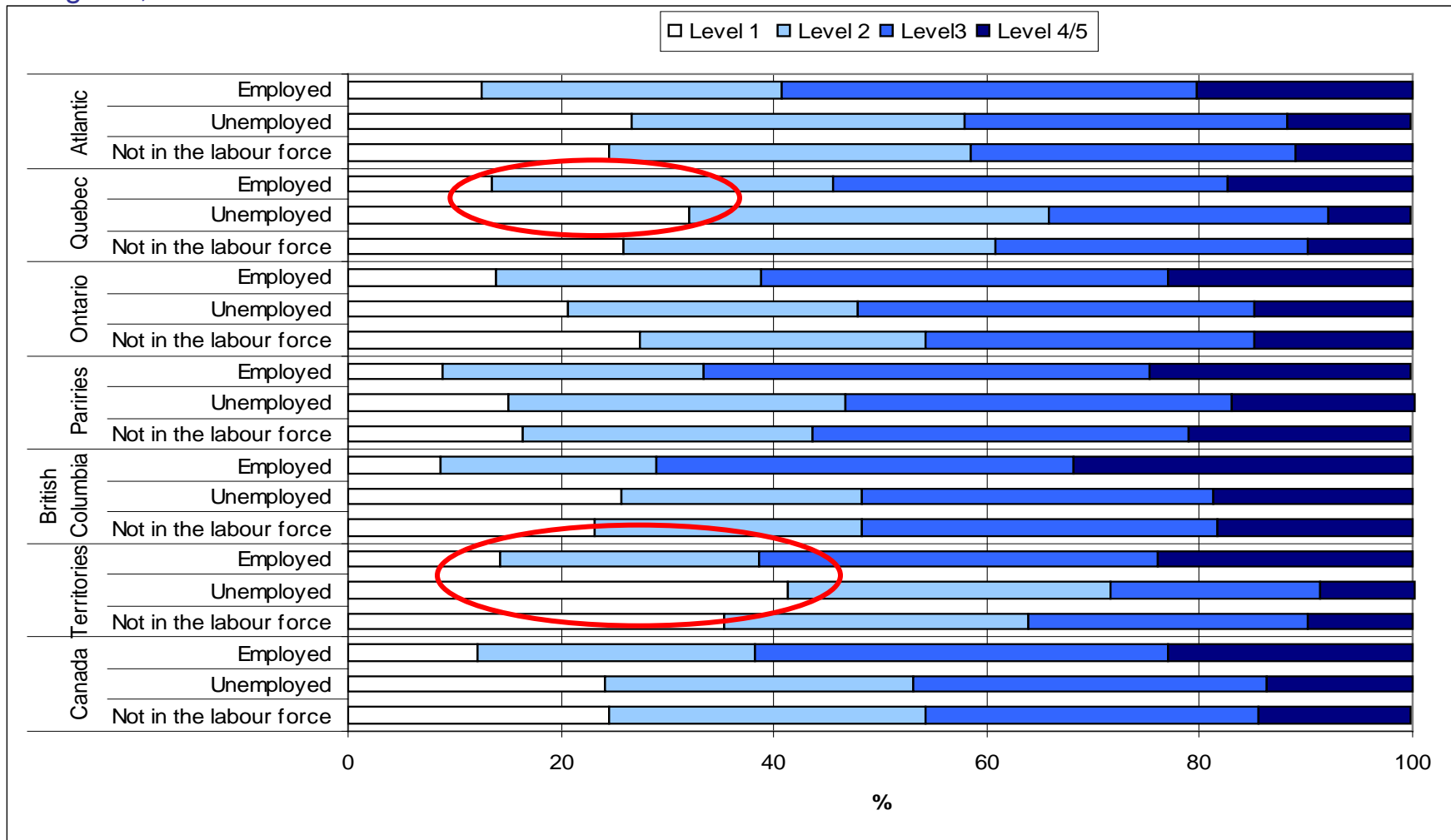


Source: IALSS, 2003



# About 62 per cent of employed Canadians have average document literacy scores at Level 3 or above

Per cent of labour force population by document literacy levels, population 16 to 65, Canada and Regions, 2003



Source: IALSS, 2003



# The average literacy scores of immigrants present in the labour force was below level 3

Mean of PROSE by immigrant status and labour force status, age 16-65

Immigrant status	Labour force status	Mean	s.e.
Canadian born	Not in labour force	275	1.9
Canadian born	Unemployed	272	4.1
Canadian born	Employed	293	0.9
Established immigrant	Not in labour force	236	6.0
Established immigrant	Unemployed	246	6.7
Established immigrant	Employed	257	3.0
Recent immigrant	Not in labour force	244	5.4
Recent immigrant	Unemployed	248	13.7
Recent immigrant	Employed	256	3.5
Immigrant (combined)	Not in labour force	239	4.0
Immigrant (combined)	Unemployed	247	6.4
Immigrant (combined)	Employed	257	2.4

Recent immigrant: 10 years or less since immigration

Source: IALSS, 2003

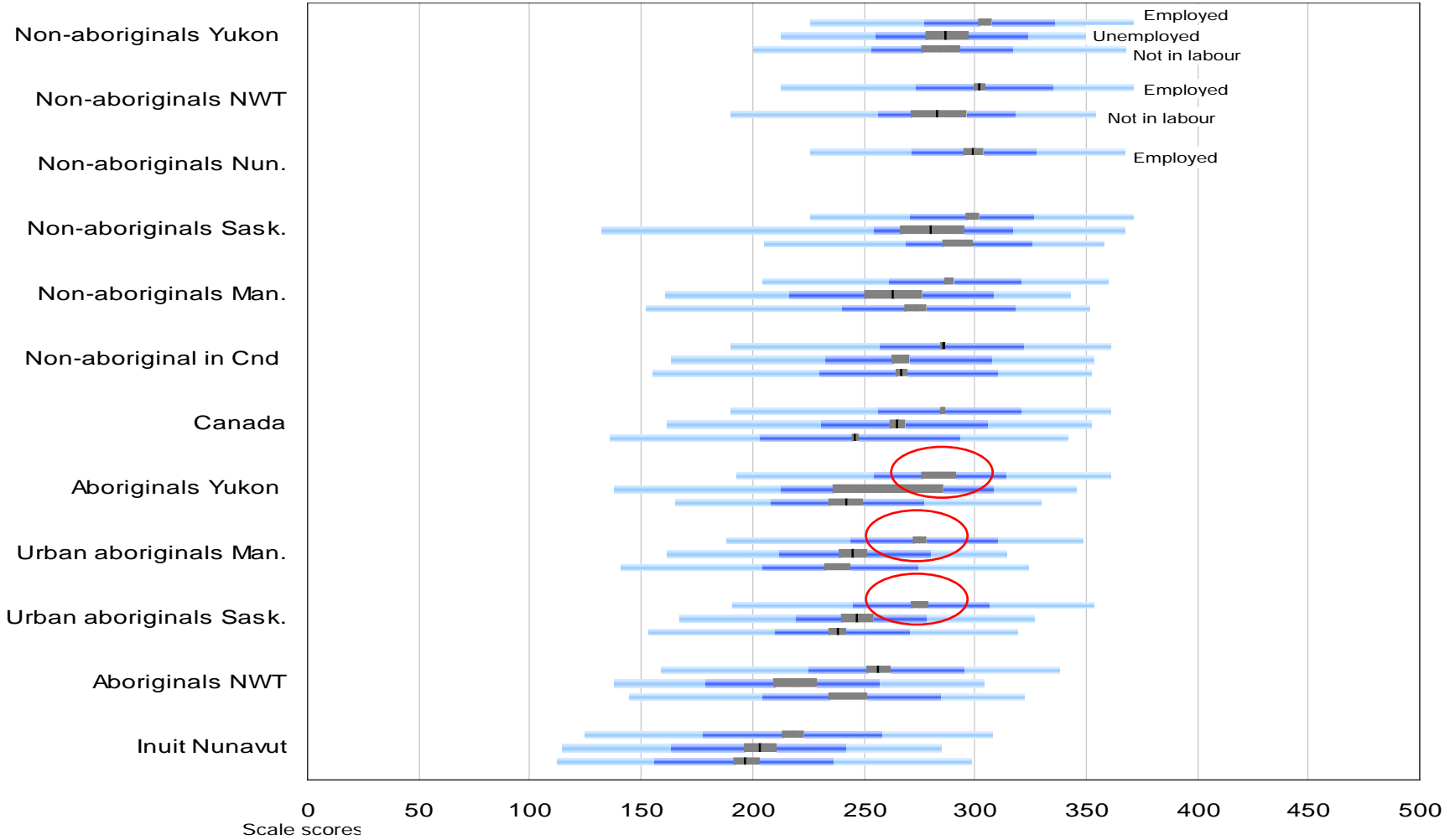




### Average score of employed urban

# Aboriginal people in Manitoba and Saskatchewan and employed Aboriginal people in Yukon was well above level 3 in prose literacy

Mean scores with .95 confidence interval and scores at the 5th, 25th, 75th and 95th centiles on prose skills scale, by labour force status, Aboriginal and non-Aboriginal populations aged 16 to 65, 2003



Source: IALSS, 2003



# Portrait of Canadians of working age (16-65)

	Not in labour force	Unemployed	Employed
	<b>21,361,000</b>	<b>4,250,000</b>	<b>1,589,000</b>
	<b>15,497,000</b>		
<b>Age group</b>	<b>16-25:</b> 30.7% <b>26-45:</b> 21.8% <b>46-65:</b> 47.5%	<b>16-25:</b> 28.5% <b>26-45:</b> 48.4% <b>46-65:</b> 23%	<b>16-25:</b> 15.7% <b>26-45:</b> 50.9% <b>46-65:</b> 33.5%
<b>Gender</b>	<b>Male:</b> 38.4% <b>Female:</b> 61.6%	<b>Male:</b> 48.2% <b>Female:</b> 51.8%	<b>Male:</b> 53.4% <b>Female:</b> 46.6%
<b>Educational attainment</b>	<b>Less high school:</b> 37.0% <b>High school:</b> 30.1% <b>Post-secondary:</b> 32.9%	<b>Less high school:</b> 32.5% <b>High school:</b> 31.9% <b>Post-secondary:</b> 35.6%	<b>Less high school:</b> 15.5% <b>High school:</b> 33.7% <b>Post-secondary:</b> 50.8%
<b>Immigrant status</b>	<b>Canadian born:</b> 77.7% <b>Established:</b> 15.2% <b>Recent:</b> 7.0%	<b>Canadian born:</b> 76.5% <b>Established:</b> 13.7% <b>Recent:</b> 9.7%	<b>Canadian born:</b> 80.2% <b>Established:</b> 14.5% <b>Recent:</b> 5.4%

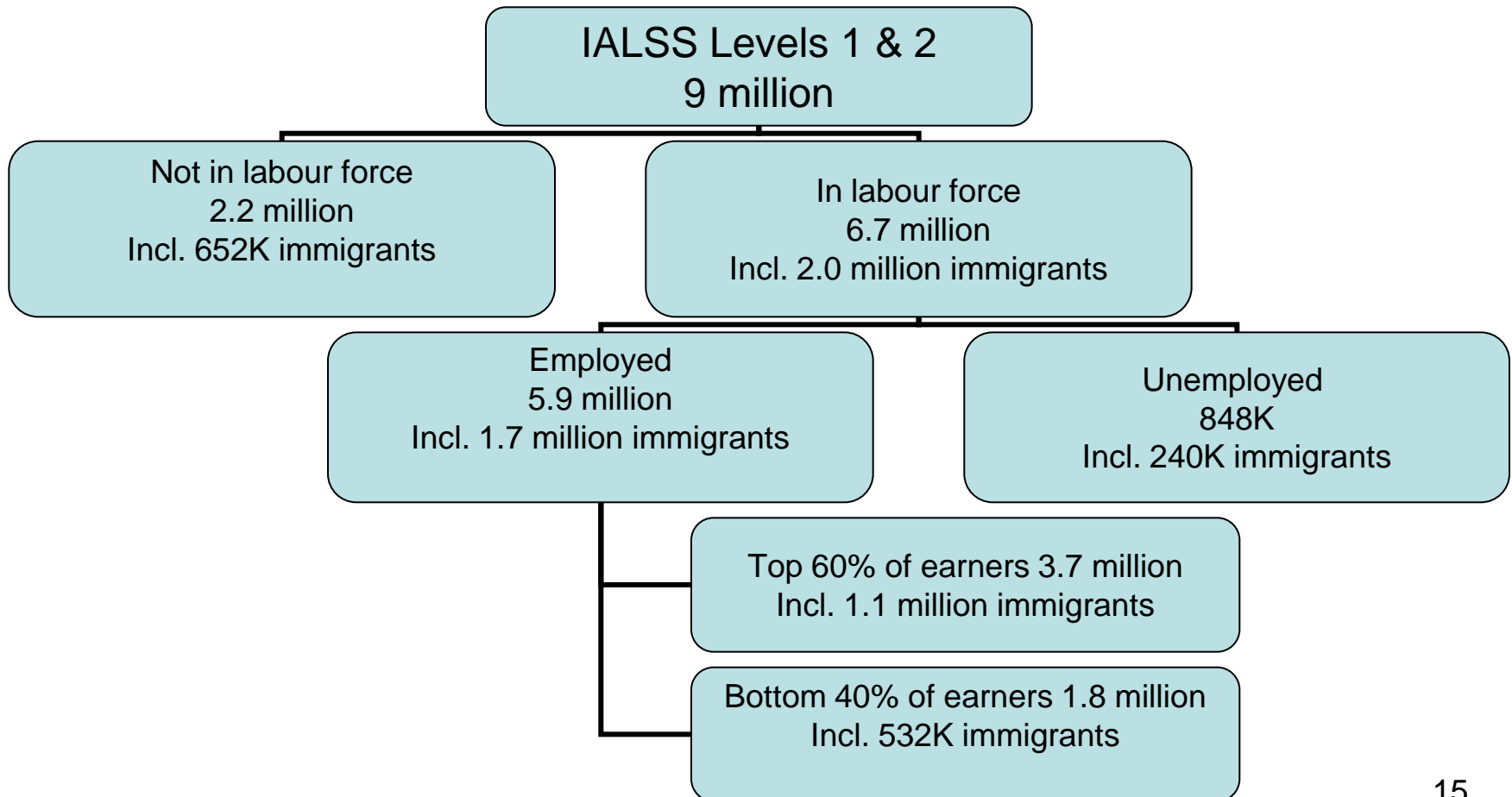
Recent immigrants: 5 years or less



# IALSS evidence can be used to make choices and set priorities

6.3 million Canadians at levels 1&2

2.6 million immigrants at levels 1&2



# Portrait of Canadians with prose literacy proficiency below level 3

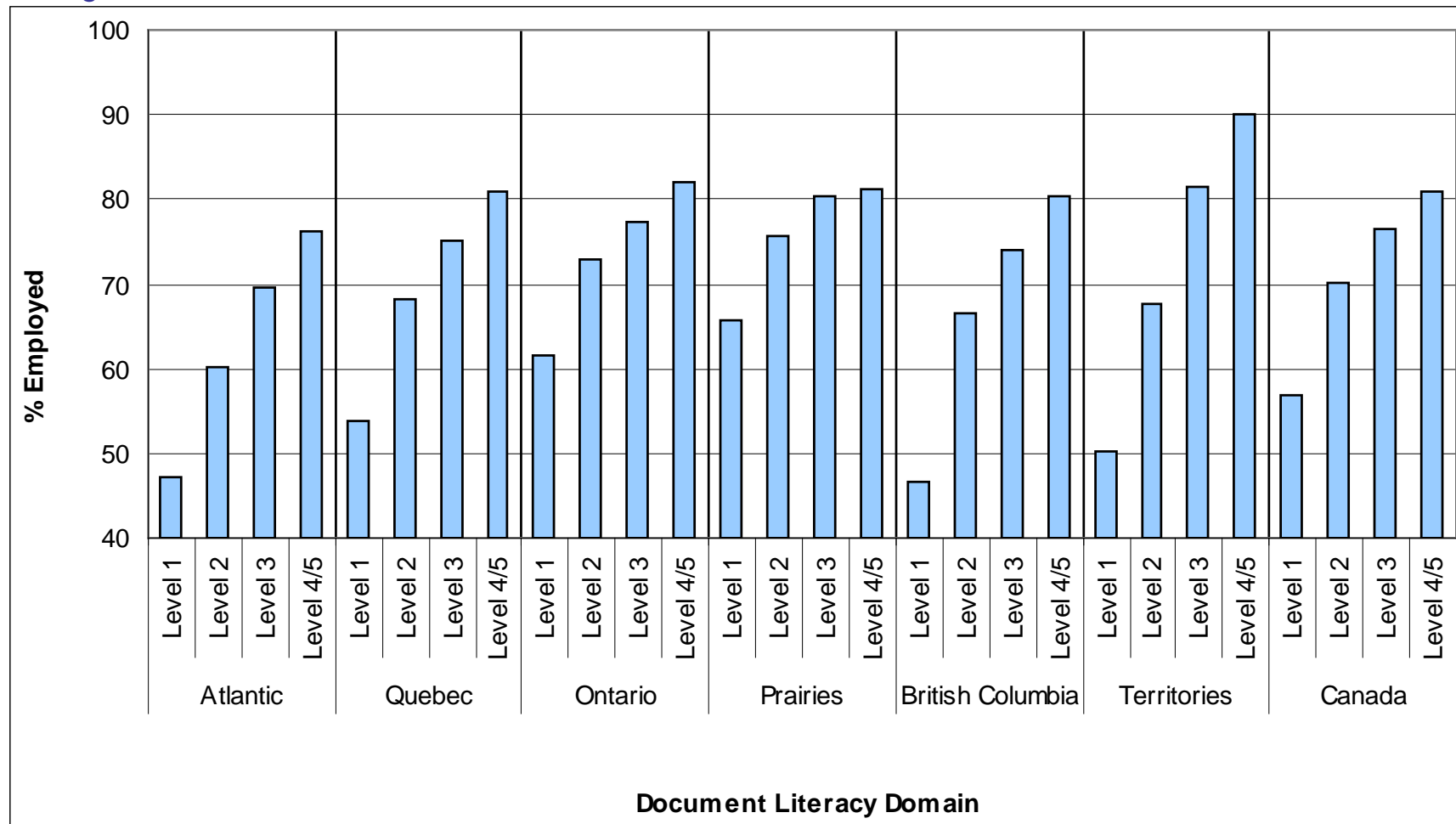
Below prose level 3	Not in labour force	Unemployed	Employed
<b>9 millions</b>	<b>2,207,000</b>	<b>864,000</b>	<b>7,139,000</b>
<b>Age group</b>	<b>16-25:</b> 22.4% <b>26-45:</b> 21.5% <b>46-65:</b> 56.1%	<b>16-25:</b> 24.2% <b>26-45:</b> 46.7% <b>46-65:</b> 29.1%	<b>16-25:</b> 14.9% <b>26-45:</b> 47% <b>46-65:</b> 38.1%
<b>Gender</b>	<b>Male:</b> 39.7% <b>Female:</b> 60.3%	<b>Male:</b> 48.7% <b>Female:</b> 51.3%	<b>Male:</b> 49% <b>Female:</b> 51%
<b>Educational attainment</b>	<b>Less high school:</b> 50.8% <b>High school:</b> 28% <b>Post-secondary:</b> 21.3%	<b>Less high school:</b> 43% <b>High school:</b> 30.7% <b>Post-secondary:</b> 26.3%	<b>Less high school:</b> 25.6% <b>High school:</b> 37.5% <b>Post-secondary:</b> 36.9%
<b>Immigrant status</b>	<b>Canadian born:</b> 70.4% <b>Established:</b> 20.4% <b>Recent:</b> 9.2%	<b>Canadian born:</b> 73% <b>Established:</b> 16.7% <b>Recent:</b> 10.4%	<b>Canadian born:</b> 74.1% <b>Established:</b> 19.2% <b>Recent:</b> 6.7%

Recent immigrants: 5 years or less



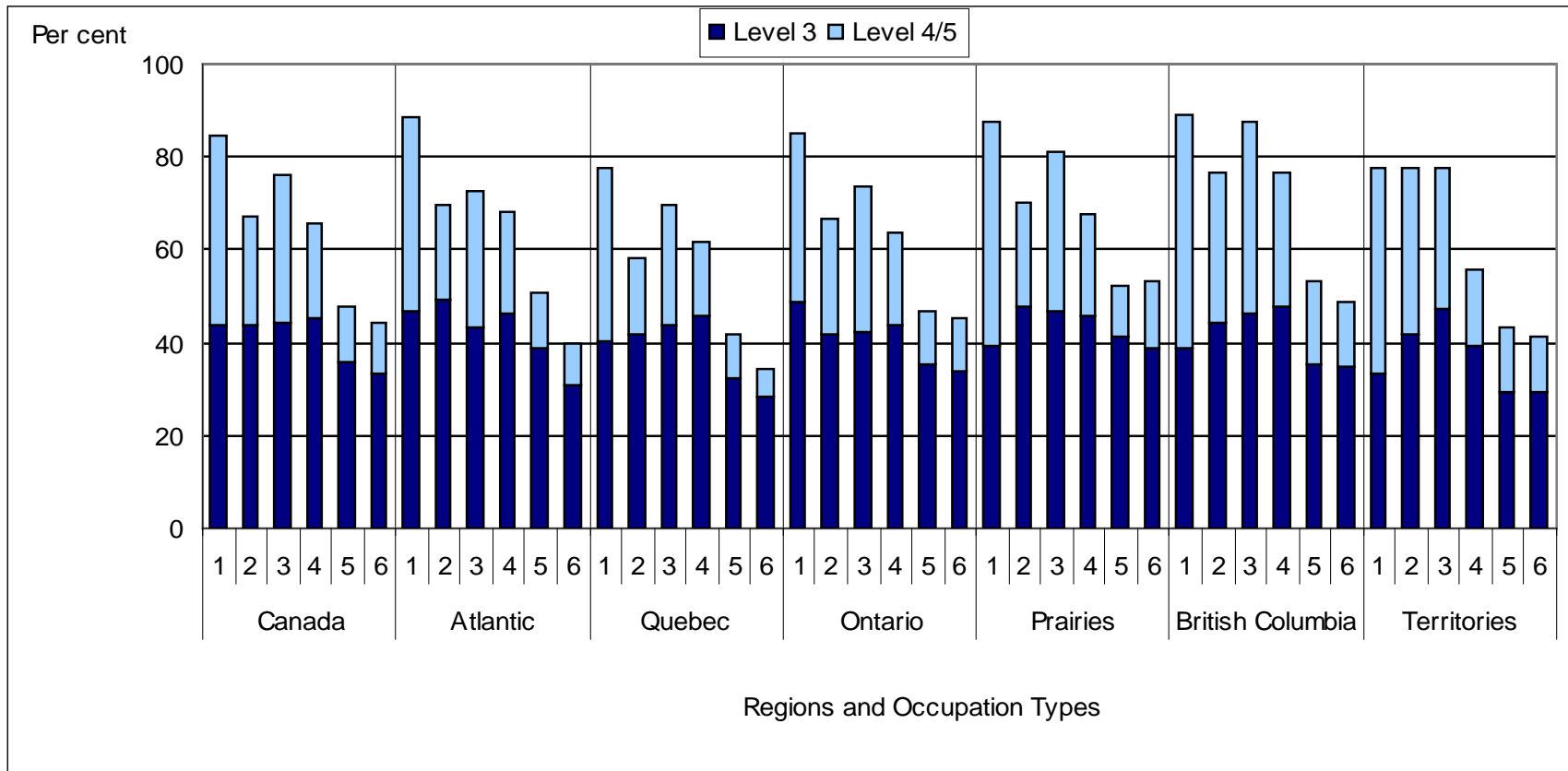
In Canada, about 57% of those at Level 1 are employed compared to over 80% of those who scored at Levels 4/5

Per cent of employed population in each document literacy level, population 16 to 65, Canada and Regions, 2003



For Canada and the six regions, the majority of knowledge experts score at Level 3 or above in prose literacy

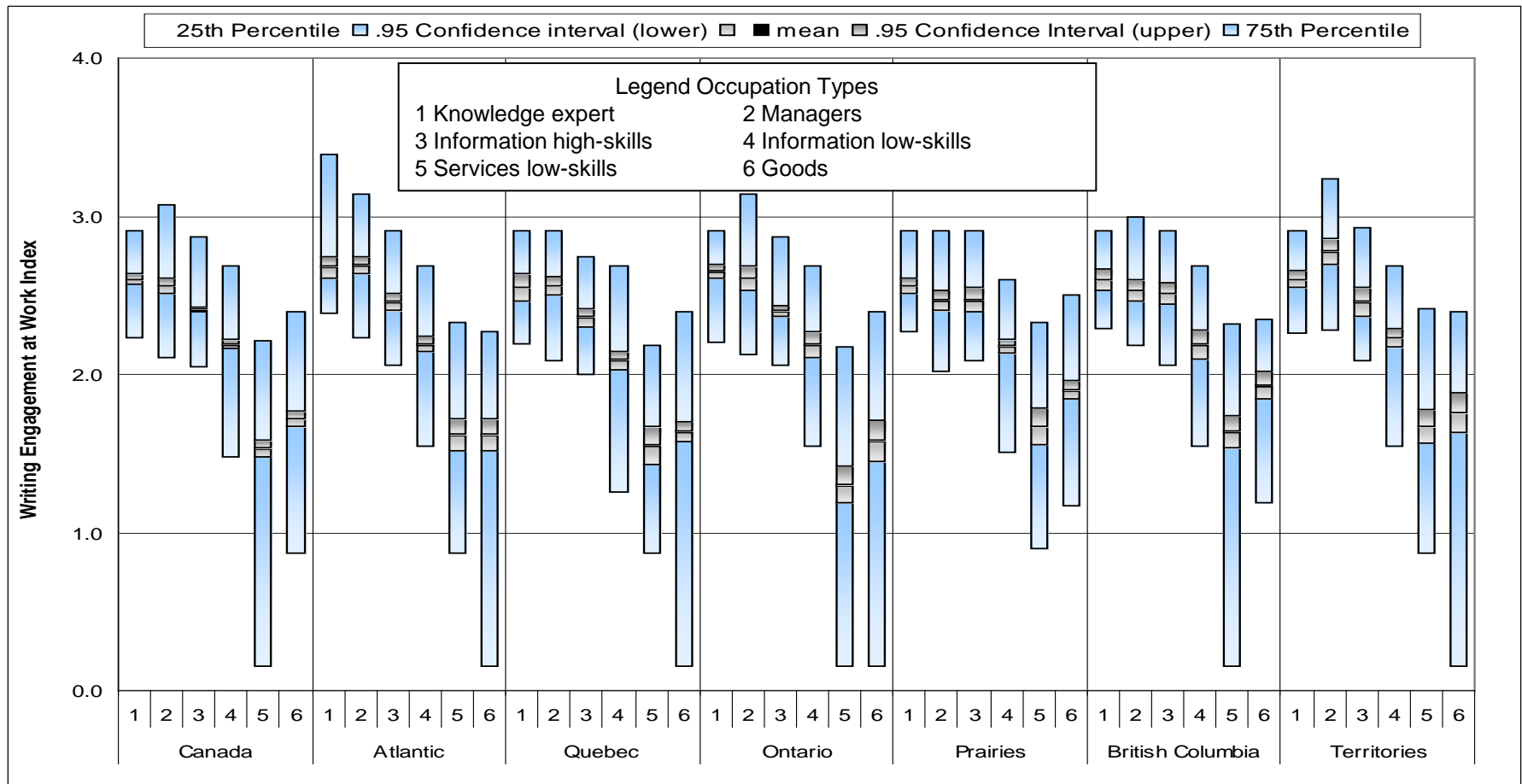
Per cent of Labour force population at prose levels 3 and 4/5 by type of occupations, population 16 to 65, Canada and regions, 2003



1	Knowledge expert	2	Managers	3	Information high-skills
4	Information low-skills	5	Services low-skills	6	Goods

## Workers in knowledge-related occupations tend to engage more often in writing at work than do low-skill information, services and goods production workers

Index scores of writing engagement at work on a standardized scale (centered on 2) by aggregated occupational types, labour force population, 16 to 65, 2003



Source: IALSS, 2003



In Canada, two industries stand out as having relatively high average proficiency scores: knowledge-intensive market service industries and public administration, defence, education and health

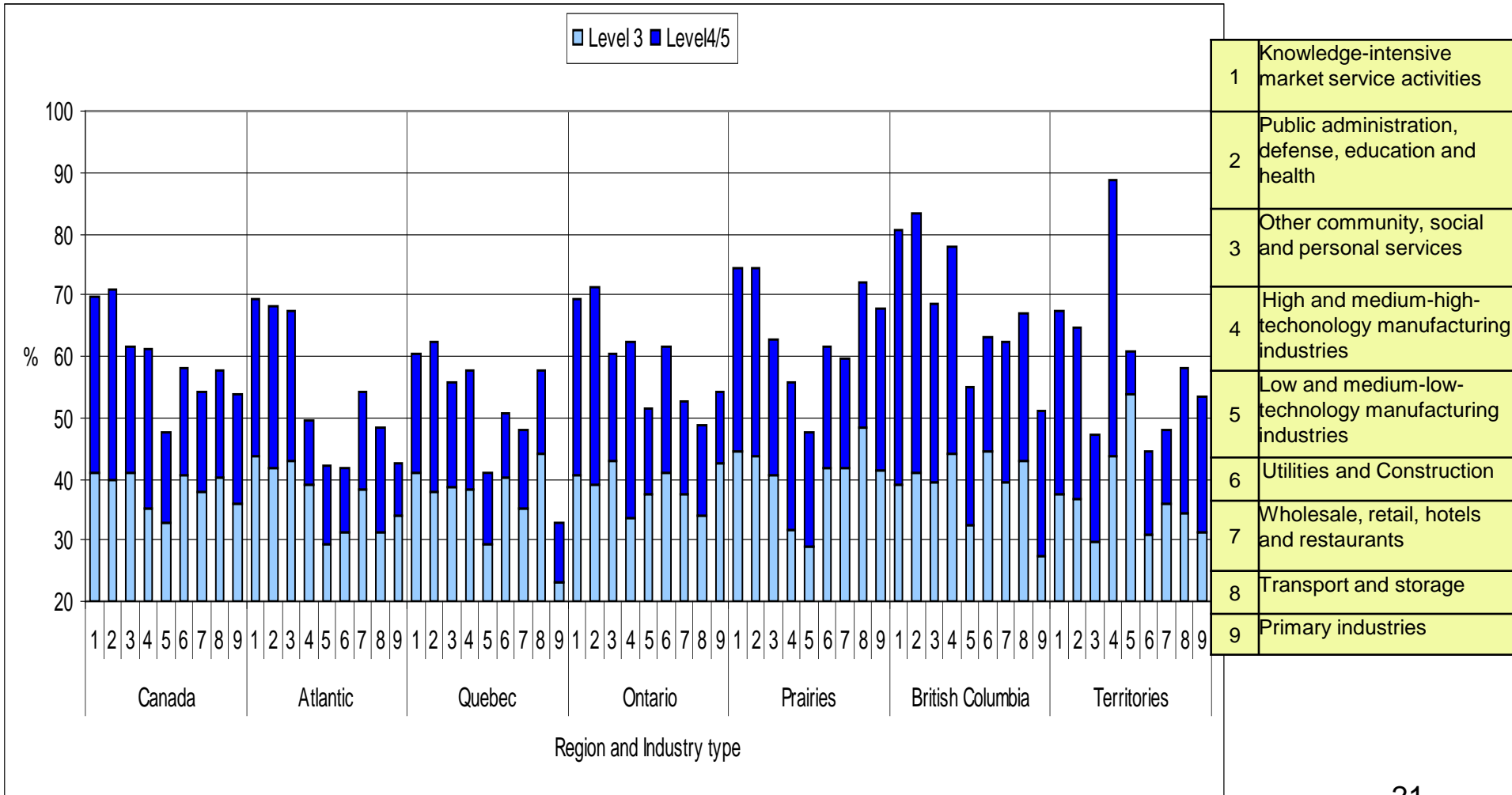
Average scores in prose, document, numeracy and problem solving, population 16 to 65, by industry, Canada, 2003

	Prose mean	Document mean	Numeracy mean	Problem solving mean
Knowledge-intensive market service activities	297	298	292	288
Public administration, defense, education and health	303	300	287	291
Other community, social and personal services	286	287	277	279
High and medium-high-technology manufacturing industries	283	287	285	277
Low and medium-low-technology manufacturing industries	265	267	262	261
Utilities and Construction	274	278	274	269
Wholesale, retail, hotels and restaurants	276	277	267	271
Transport and storage	281	282	277	274
Primary industries	271	273	269	267



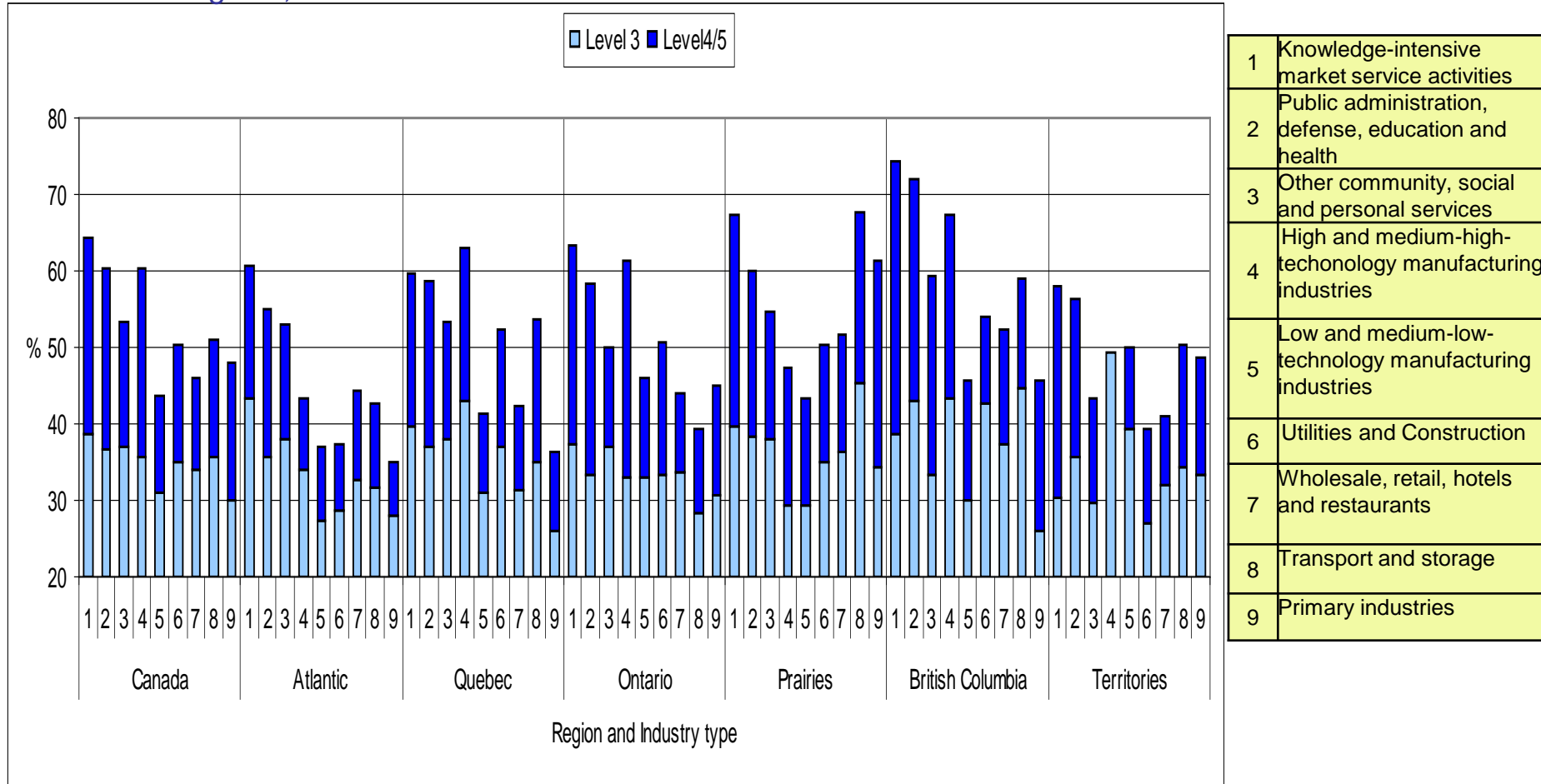
# In general, knowledge intensive sectors have higher proportions of adults with medium and high document literacy proficiency levels

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



The high and medium-high technology manufacturing sector also has more than one quarter of its workers scoring at Level 4/5 in numeracy

Per cent of labour force population at numeracy levels 3 and 4/5, by type of industry, population 16 to 65, Canada and regions, 2003



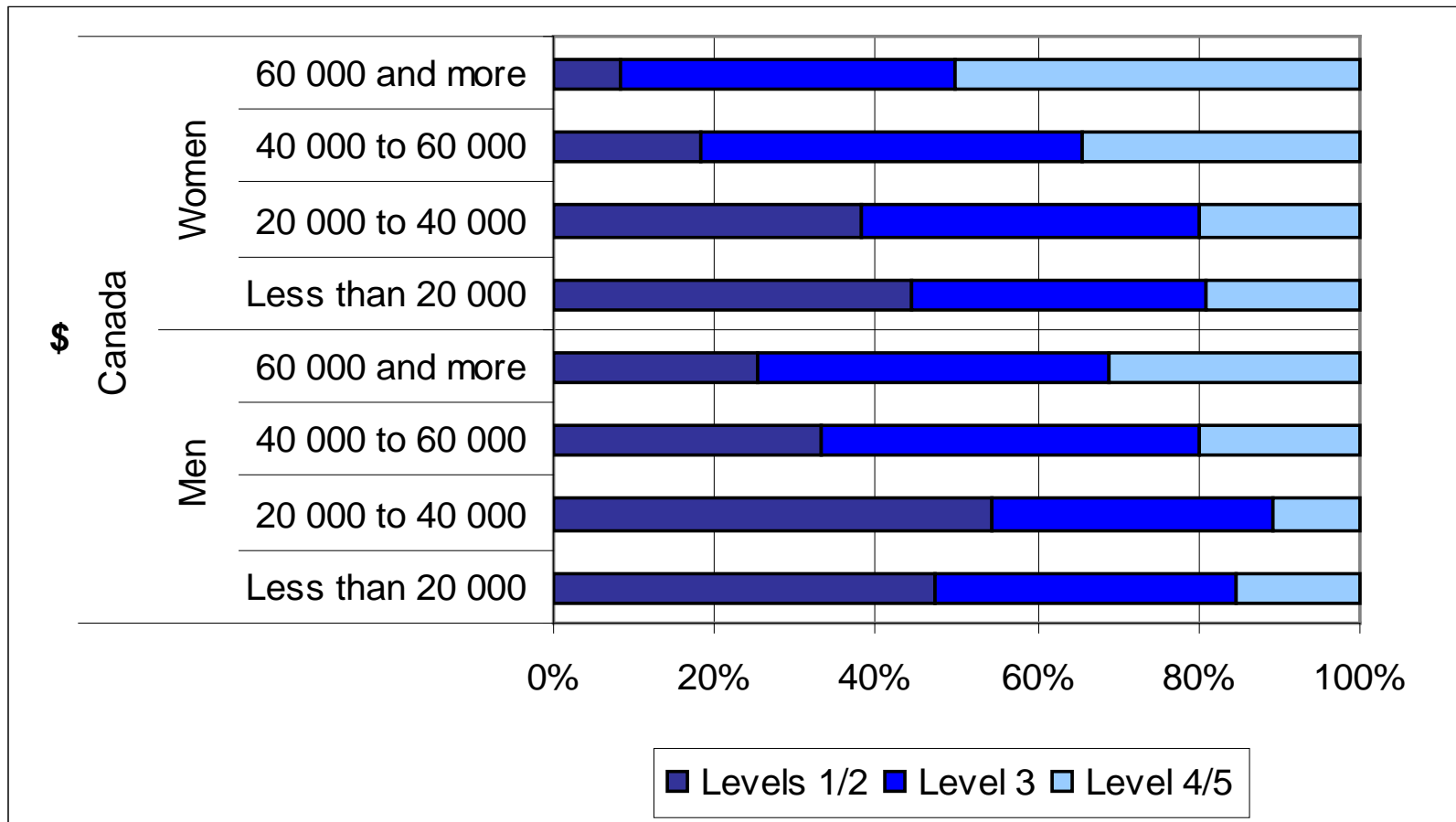
## Those with higher average scores earn more

		Prose	Document	Numeracy	Problem Solving
<b>Male</b>	Less than 20,000	<b>270</b>	<b>274</b>	<b>271</b>	<b>267</b>
	20,000 to 40,000	<b>266</b>	<b>270</b>	<b>267</b>	<b>262</b>
	40,000 to 60,000	<b>289</b>	<b>294</b>	<b>290</b>	<b>284</b>
	60,000 and more	<b>303</b>	<b>309</b>	<b>308</b>	<b>297</b>
		Prose	Document	Numeracy	Problem Solving
<b>Female</b>	Less than 20,000	<b>274</b>	<b>269</b>	<b>255</b>	<b>266</b>
	20,000 to 40,000	<b>286</b>	<b>280</b>	<b>266</b>	<b>275</b>
	40,000 to 60,000	<b>309</b>	<b>305</b>	<b>290</b>	<b>297</b>
	60,000 and more	<b>323</b>	<b>319</b>	<b>307</b>	<b>309</b>



There is a positive relationship between prose literacy proficiency for both men and women at the national and regional levels

Distribution of annual earnings by gender and prose literacy levels, population 16 to 65, Canada, 2003



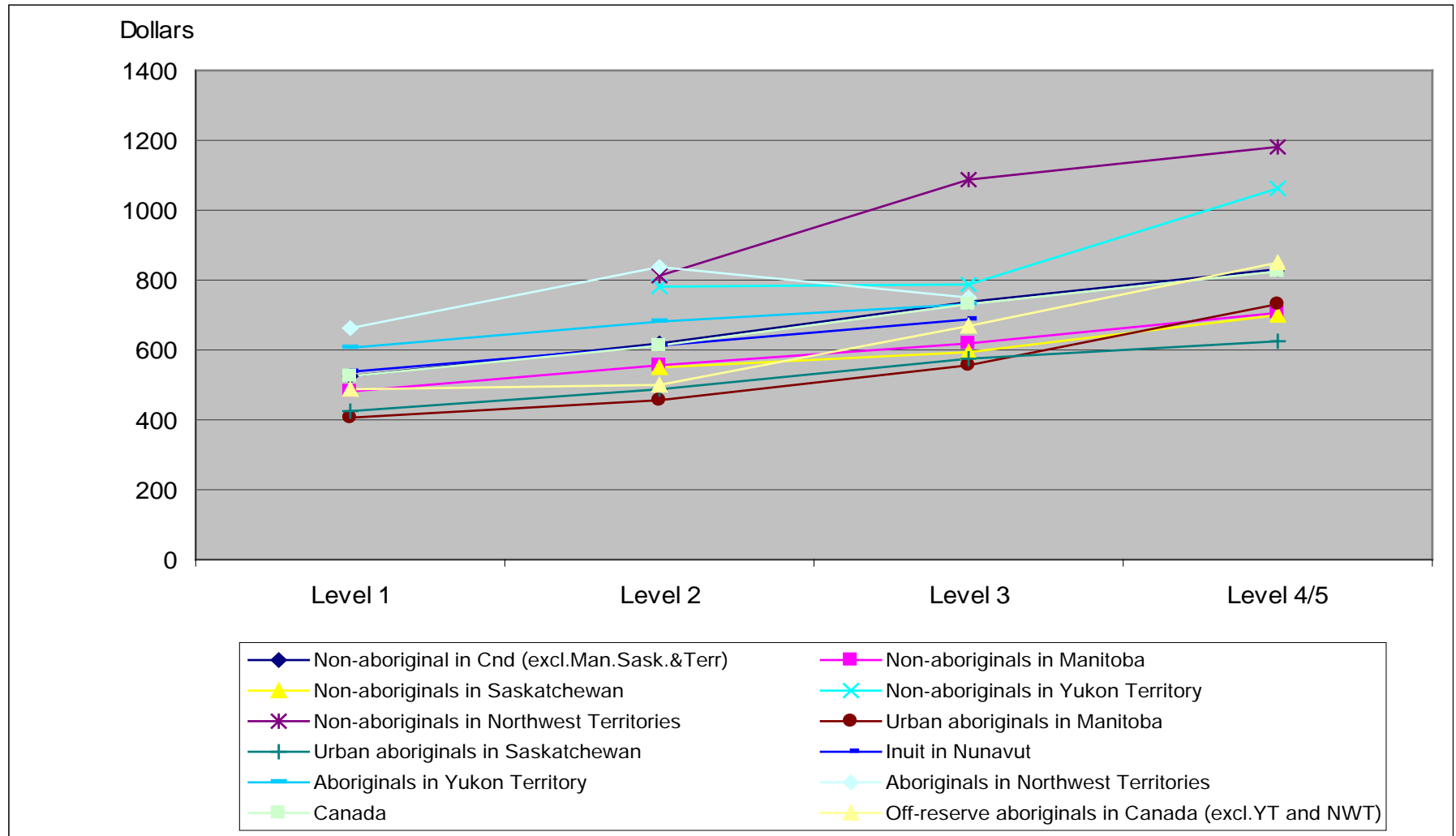
Source: IALSS, 2003





There is a positive relationship between weekly earnings and prose literacy proficiency for both aboriginal and non-aboriginal population

Mean weekly earnings by prose skills level, aboriginal and non-aboriginal populations aged 16 to 65, 2003

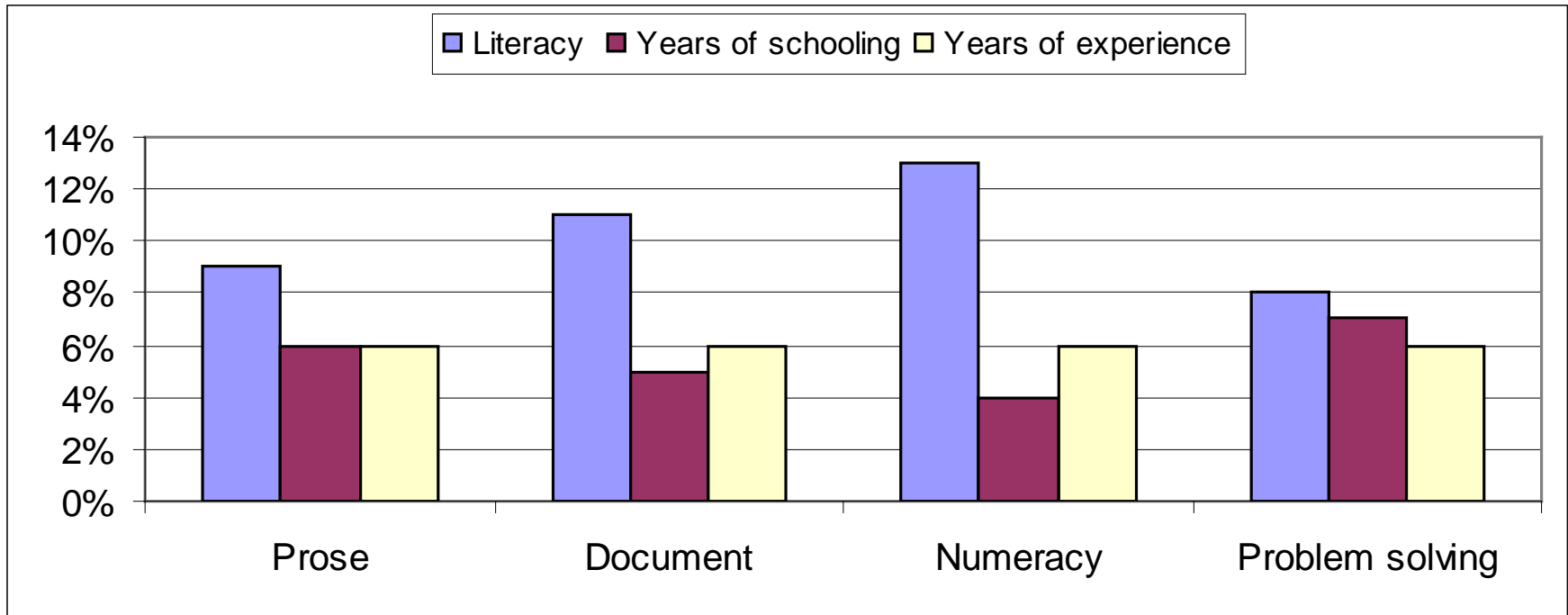


Source: IALSS, 2003



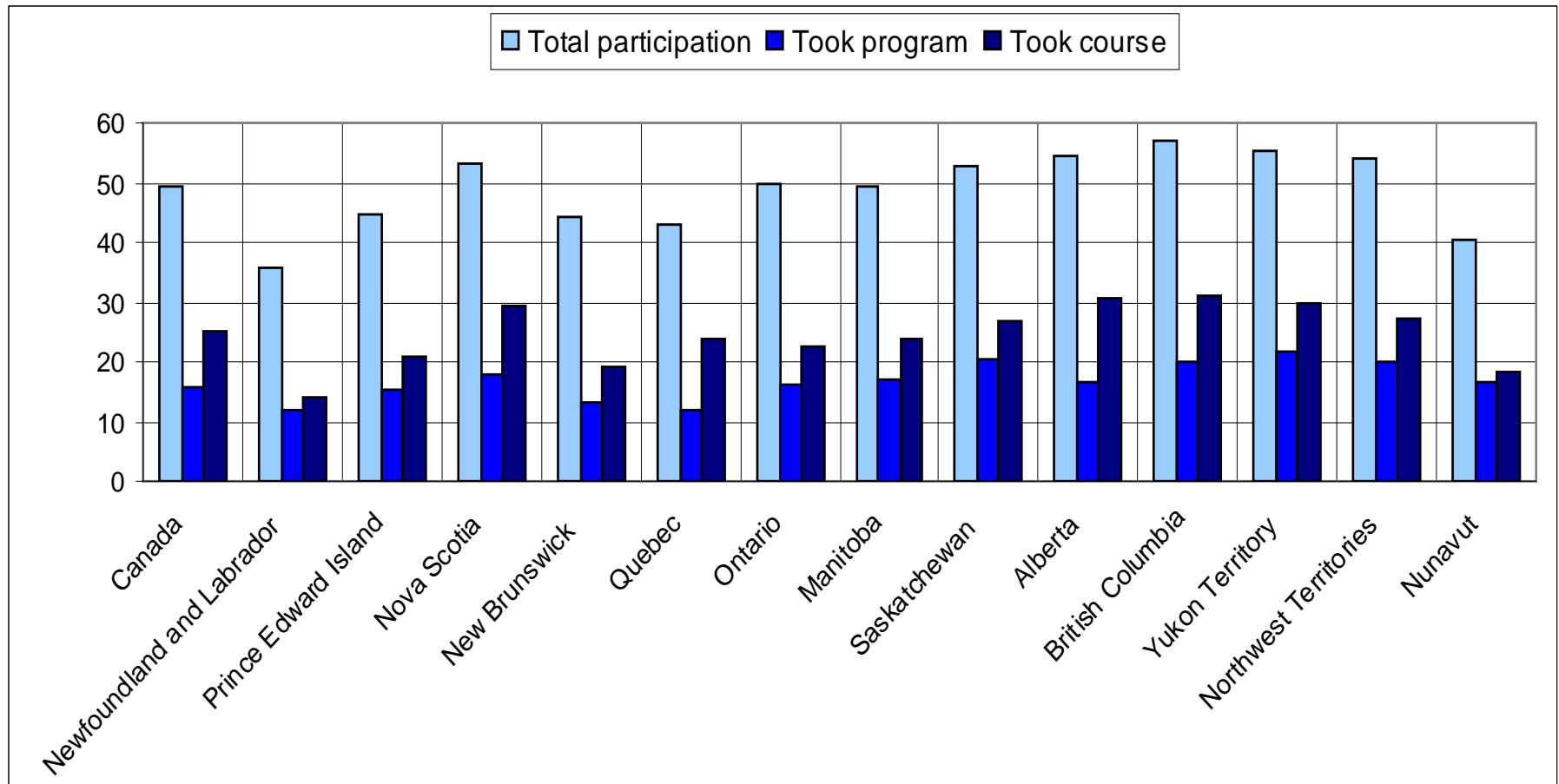
In Canada, the labour market directly rewards both the observed skills and other unobserved skills associated with schooling

Per cent increase in weekly earnings per increase of 10 percentiles on prose, document, numeracy and problem solving scales, and per increase of additional year of schooling and work experience, adjusted three least squares model, labour force population aged 16 to 65, 2003



## In Canada, almost 50 per cent of the population aged 16 to 65 participated in some form of adult education and learning activities.

Per cent of population receiving adult education and training the year preceding the interview, by type of participation, population 16 to 65, Canada and jurisdictions, 2003

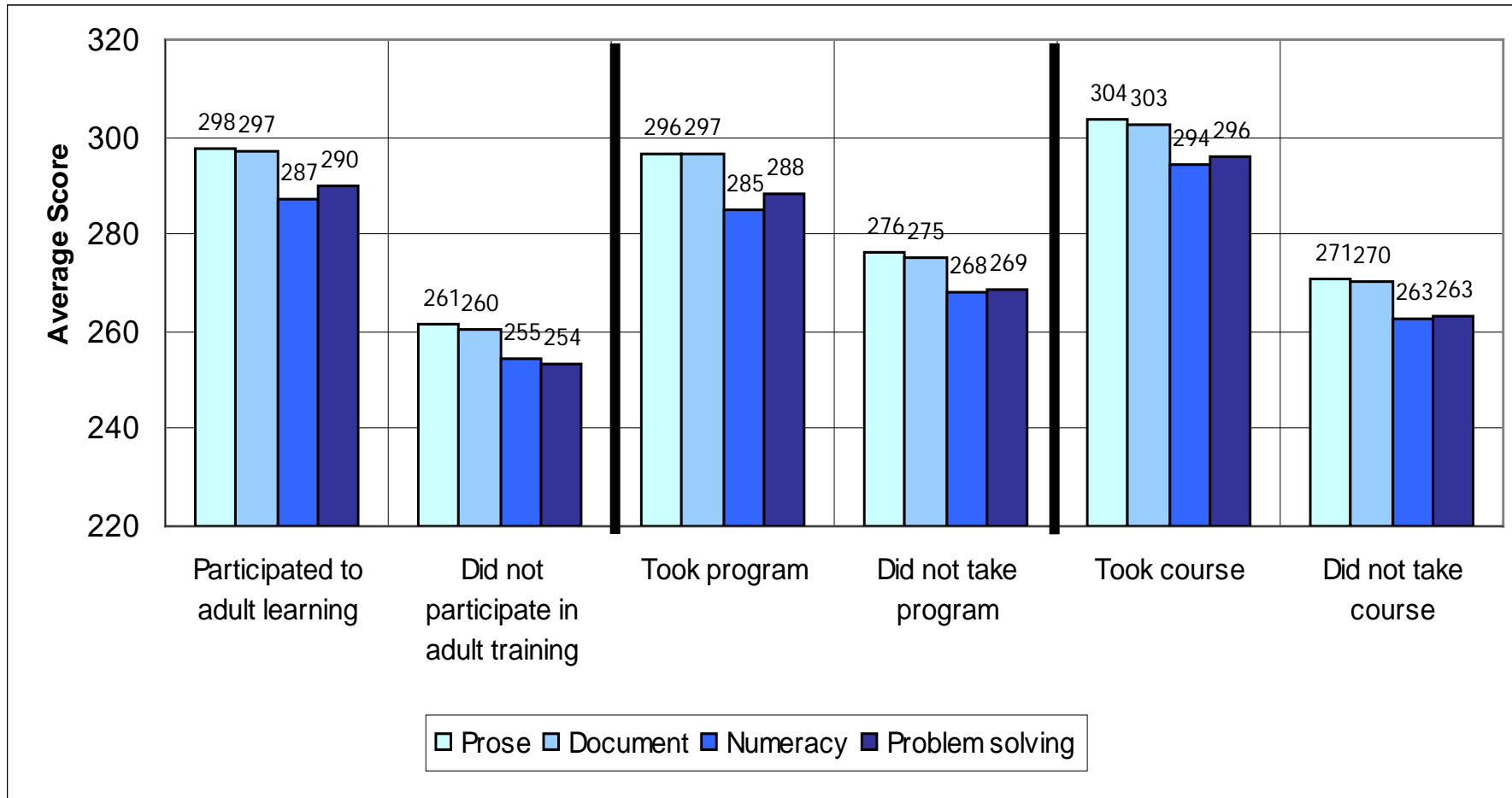


Source: IALSS, 2003



## In Canada, those who participate in adult learning activities have higher average scores in all domains

Average scores in the four skill domains, populations aged 16-65 receiving adult education and training, Canada, 2003

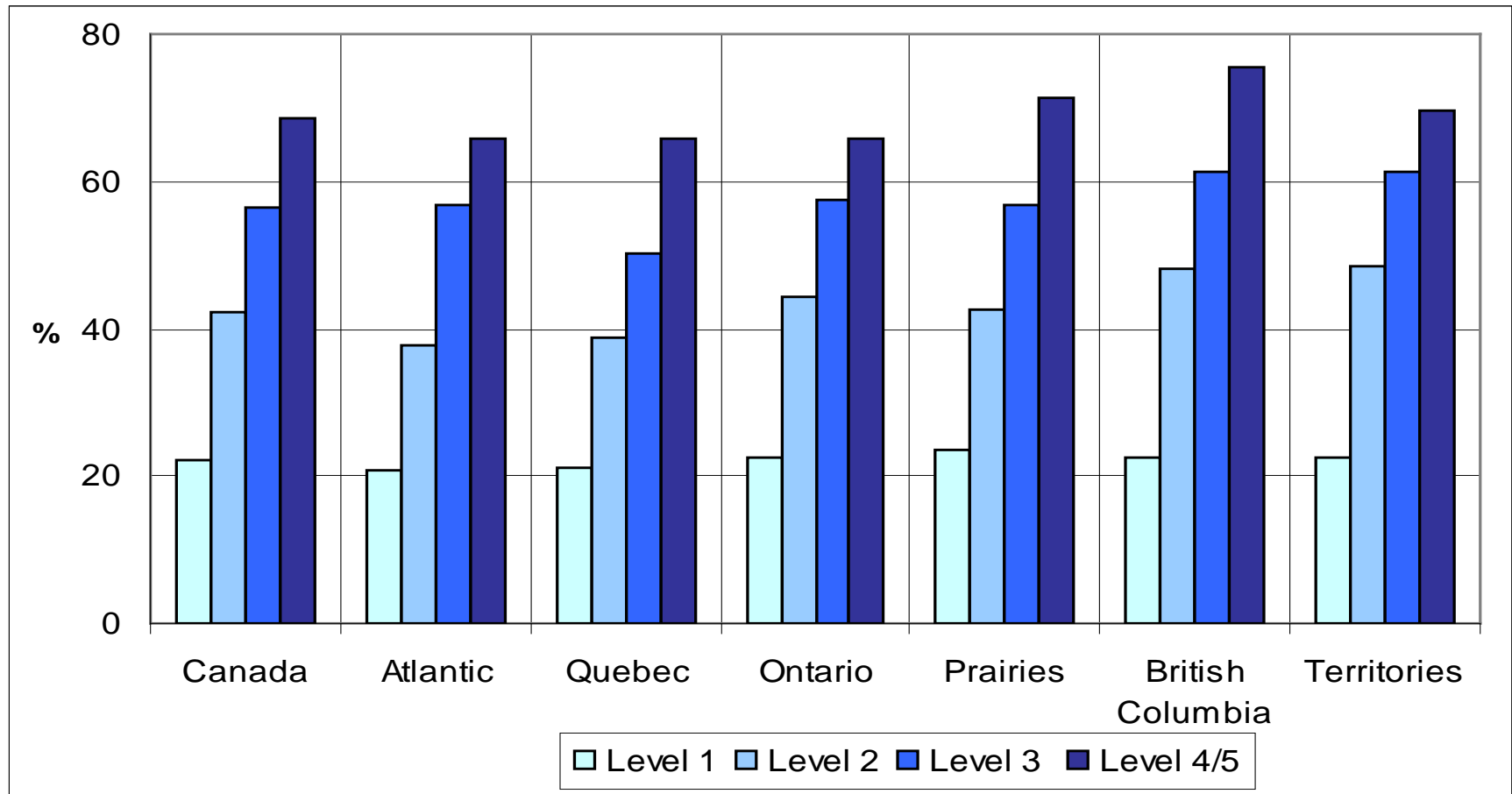


Source: IALSS, 2003



## In all provinces and territories there is a substantial difference between the participation rates of those with the lowest and highest levels of literacy

Per cent of population receiving adult education and training during the year preceding the interview, by document literacy levels, 16-65, Canada and regions, 2003

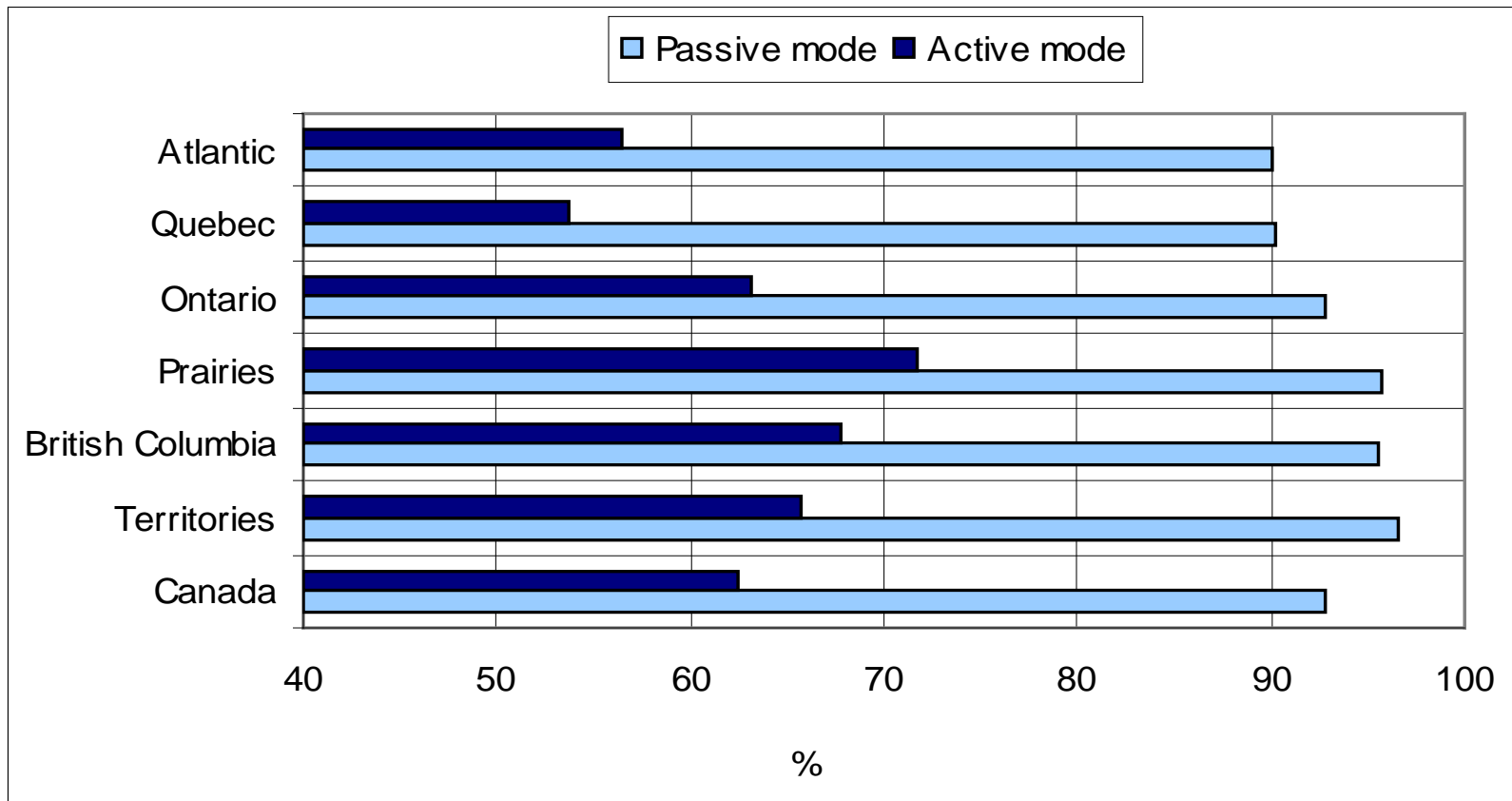


Source: IALSS, 2003



Informal learning is more or less an universal activity for Canadians.  
Engagement in active learning is far less frequent and also varies more  
among jurisdictions

Per cent of population aged 16-65 participating in active and passive modes of learning in the year preceding the interview, by education level, Canada and regions, 2003

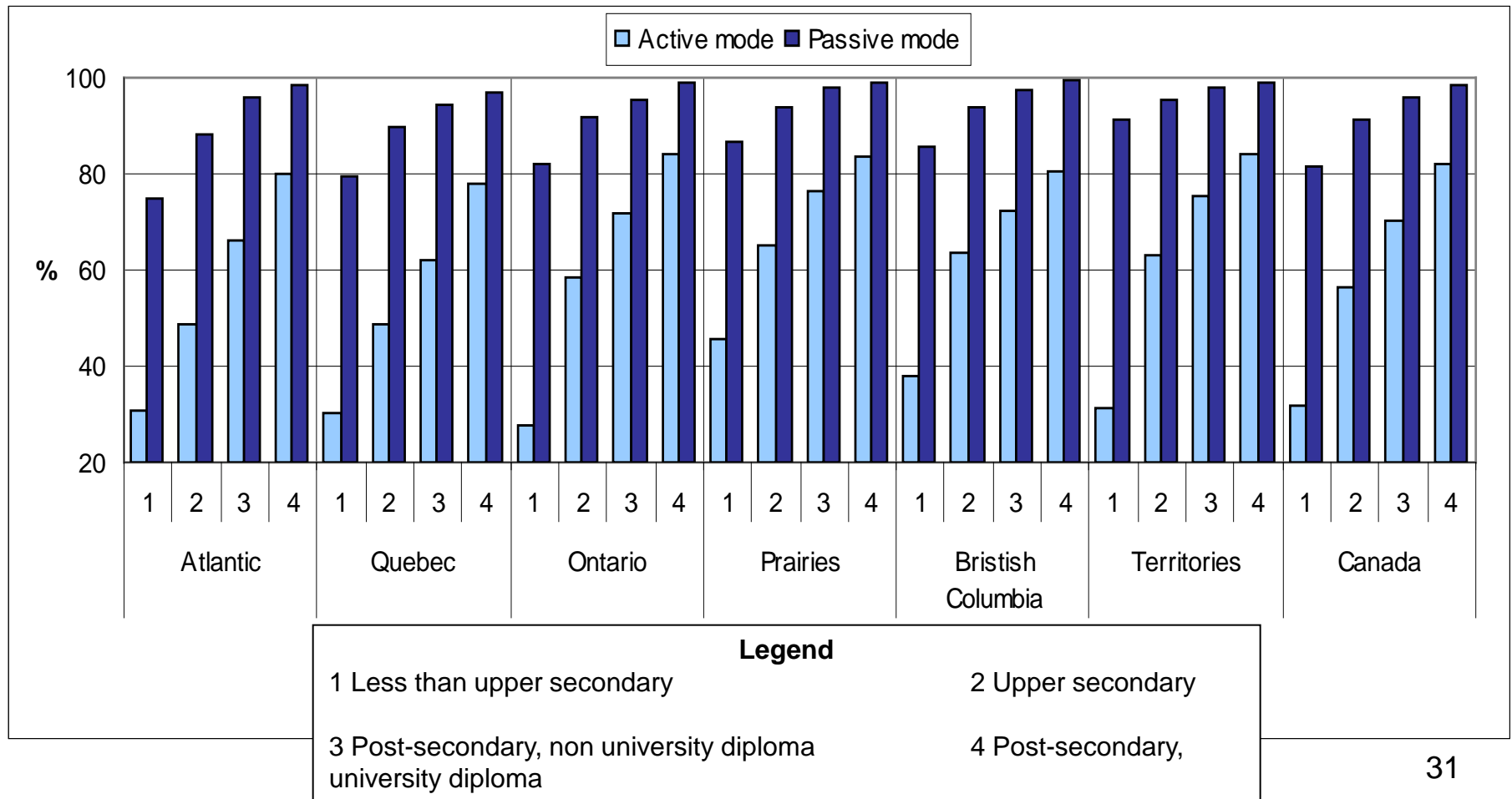


Source: IALSS, 2003



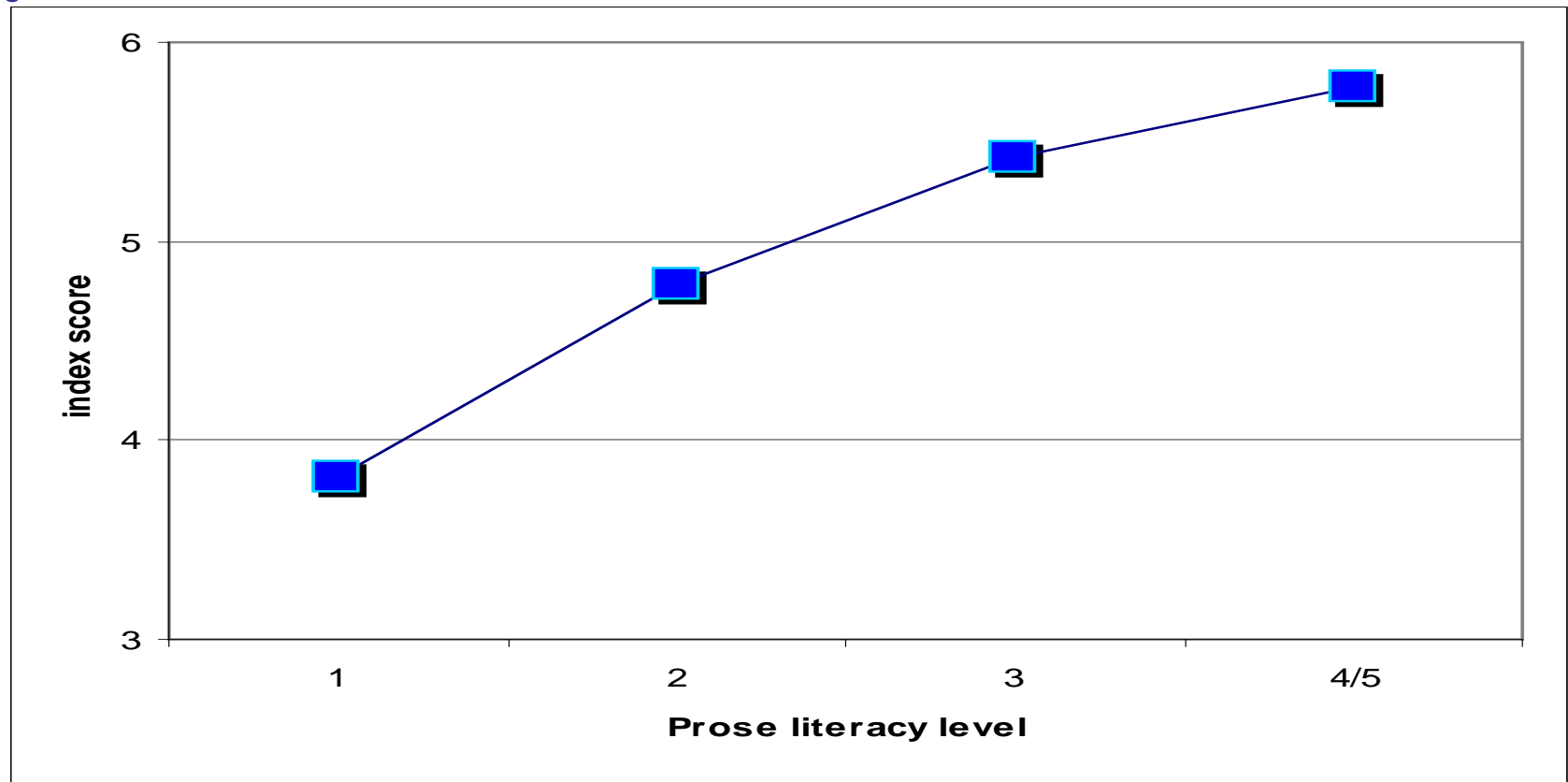
# Canadians with post-secondary education participate more in active modes of learning than do Canadians with a high school diploma or less

Per cent of population aged 16-65 participating in active and passive modes of learning in the year preceding the interview, by education level, Canada and regions, 2003



# Prose literacy proficiency is associated with the use of computers for task-oriented purposes

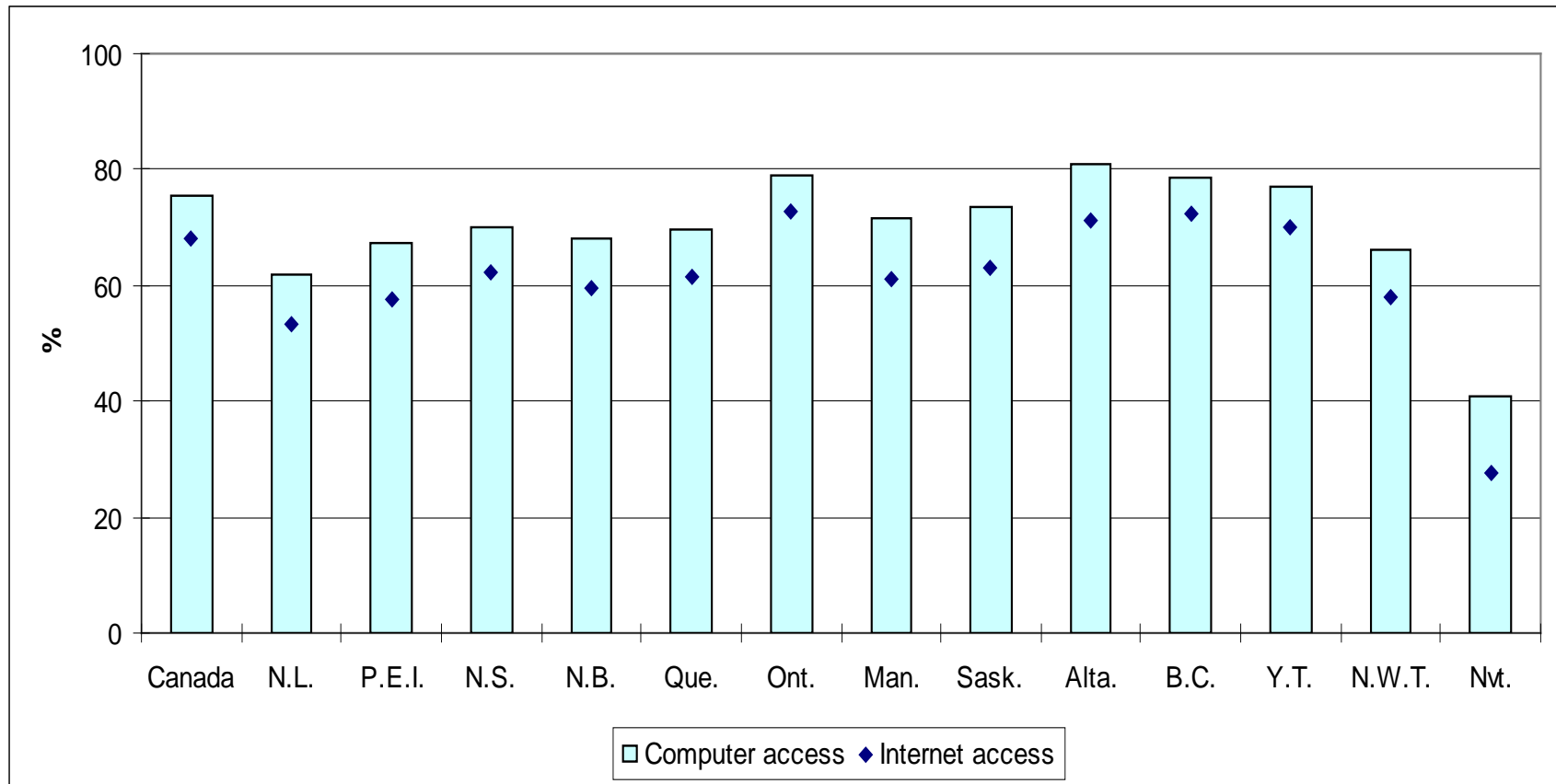
Use of computers for task-oriented purposes by prose literacy level, mean index scores on a scale measuring the intensity of use of computers for task-oriented purposes, by prose literacy levels, population aged 16 to 65, Canada, 2003



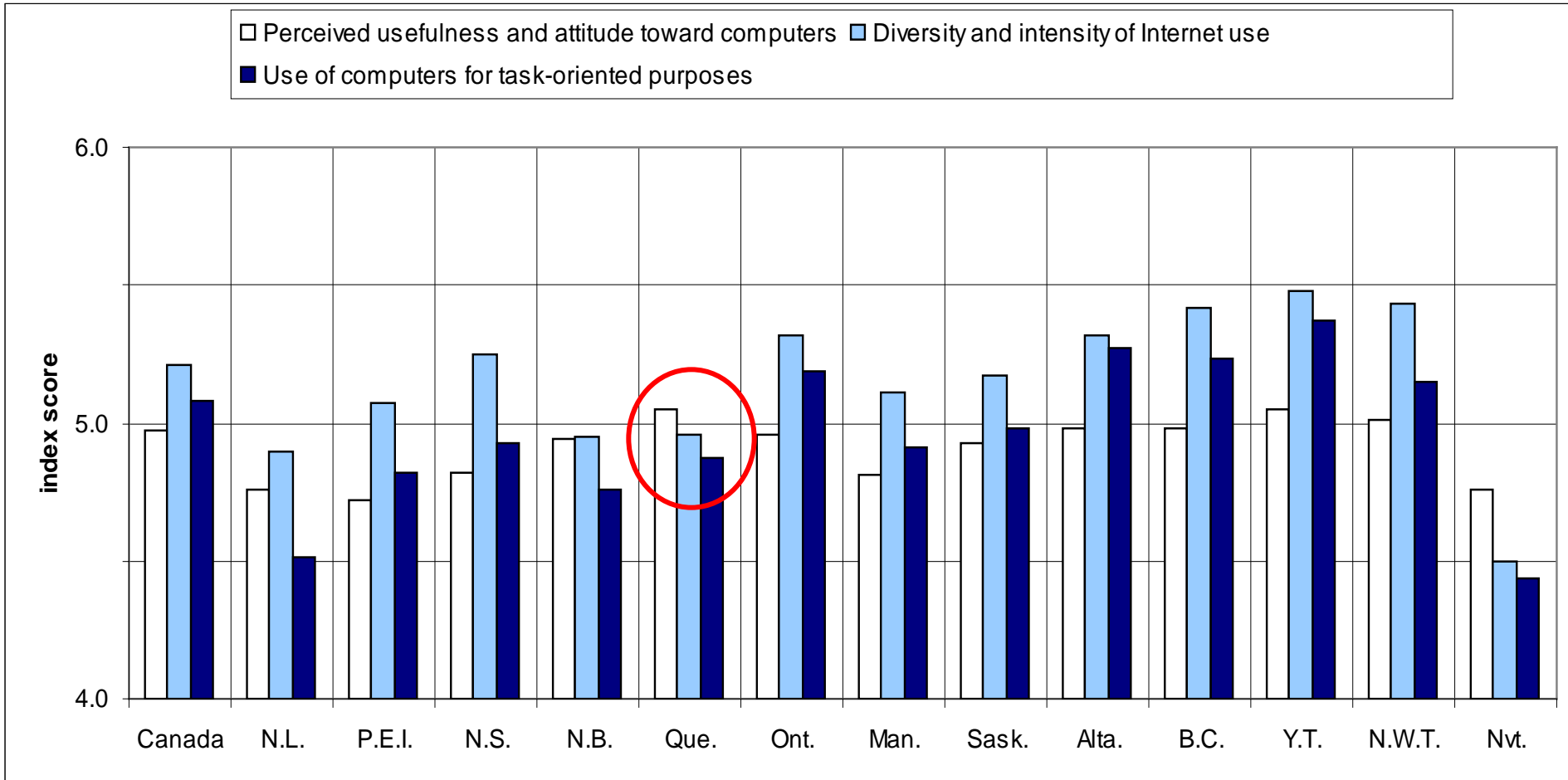


# Three in four Canadians (76%) aged 16 to 65 years have access to a computer at home

Computer and Internet access at home per cent of adults aged 16-65 who report having access to a computer and the Internet at home, Canada and jurisdictions, 2003

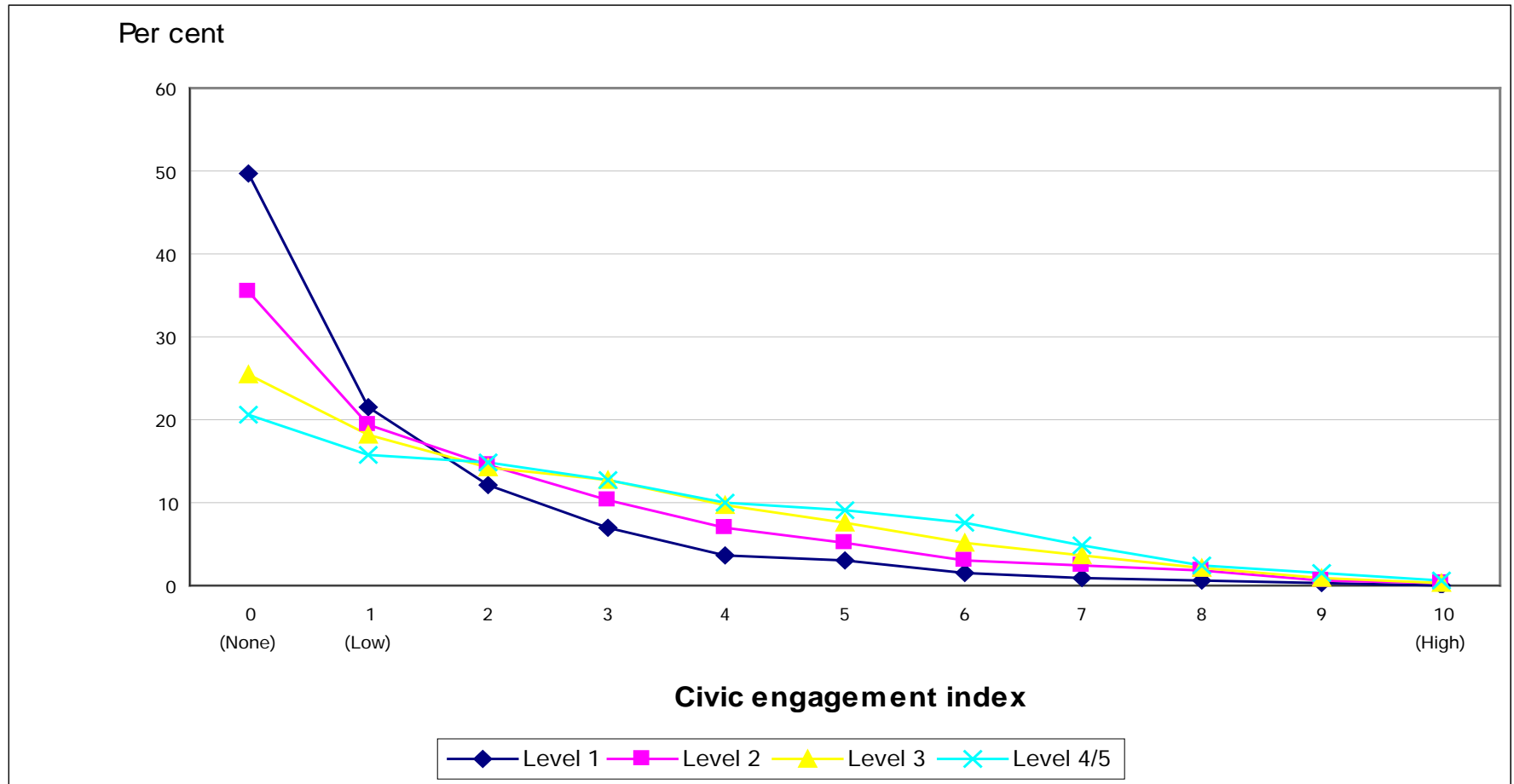


# Within Canada, attitudes toward computers and the intensity of ICT use vary by province and territory (population 16-65)



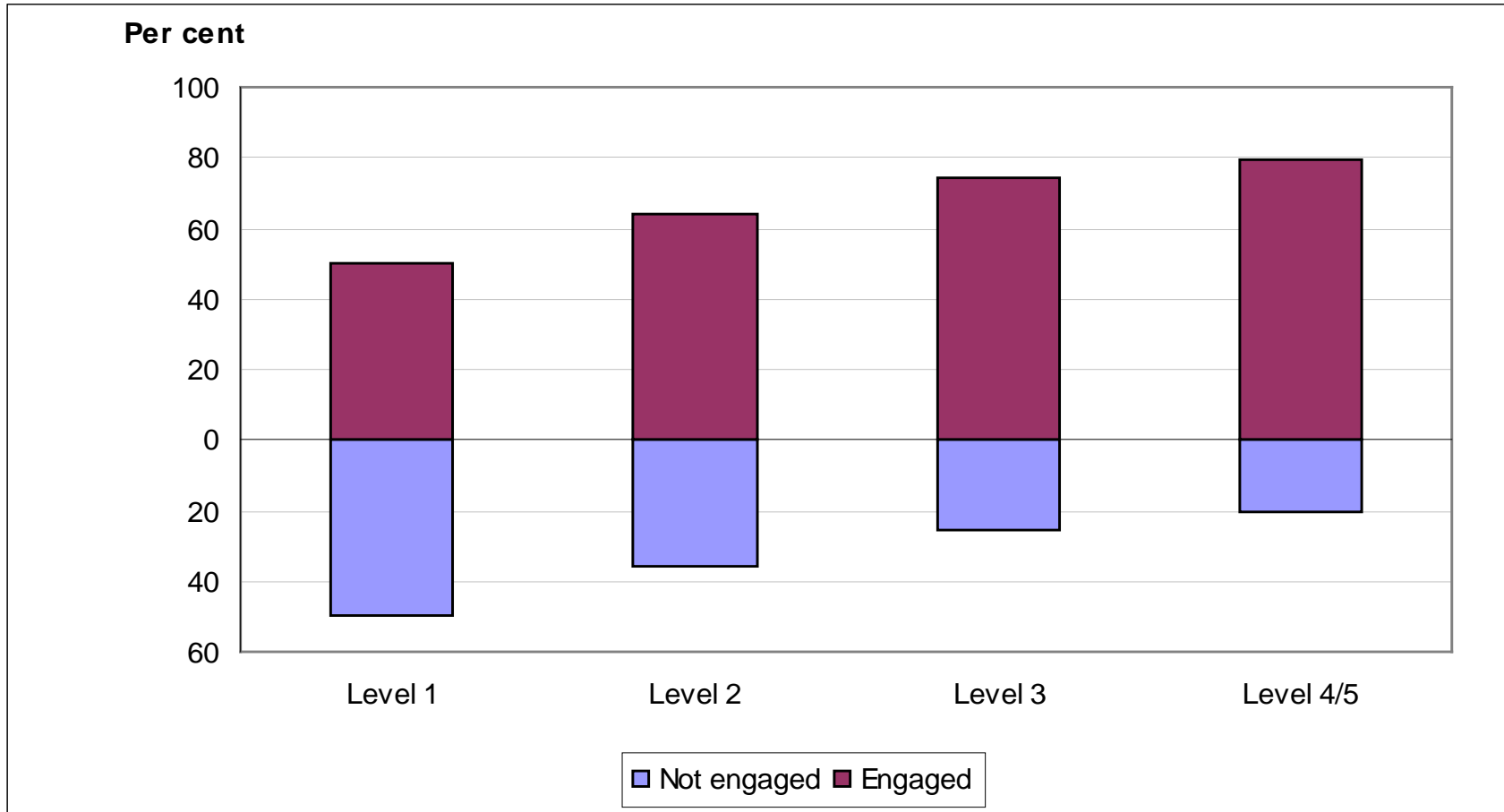
# The higher the prose literacy levels, the more likely a respondent is to engage in various forms of civic and social activities

Civic engagement index by prose literacy level, adults 16 and older, Canada, 2003



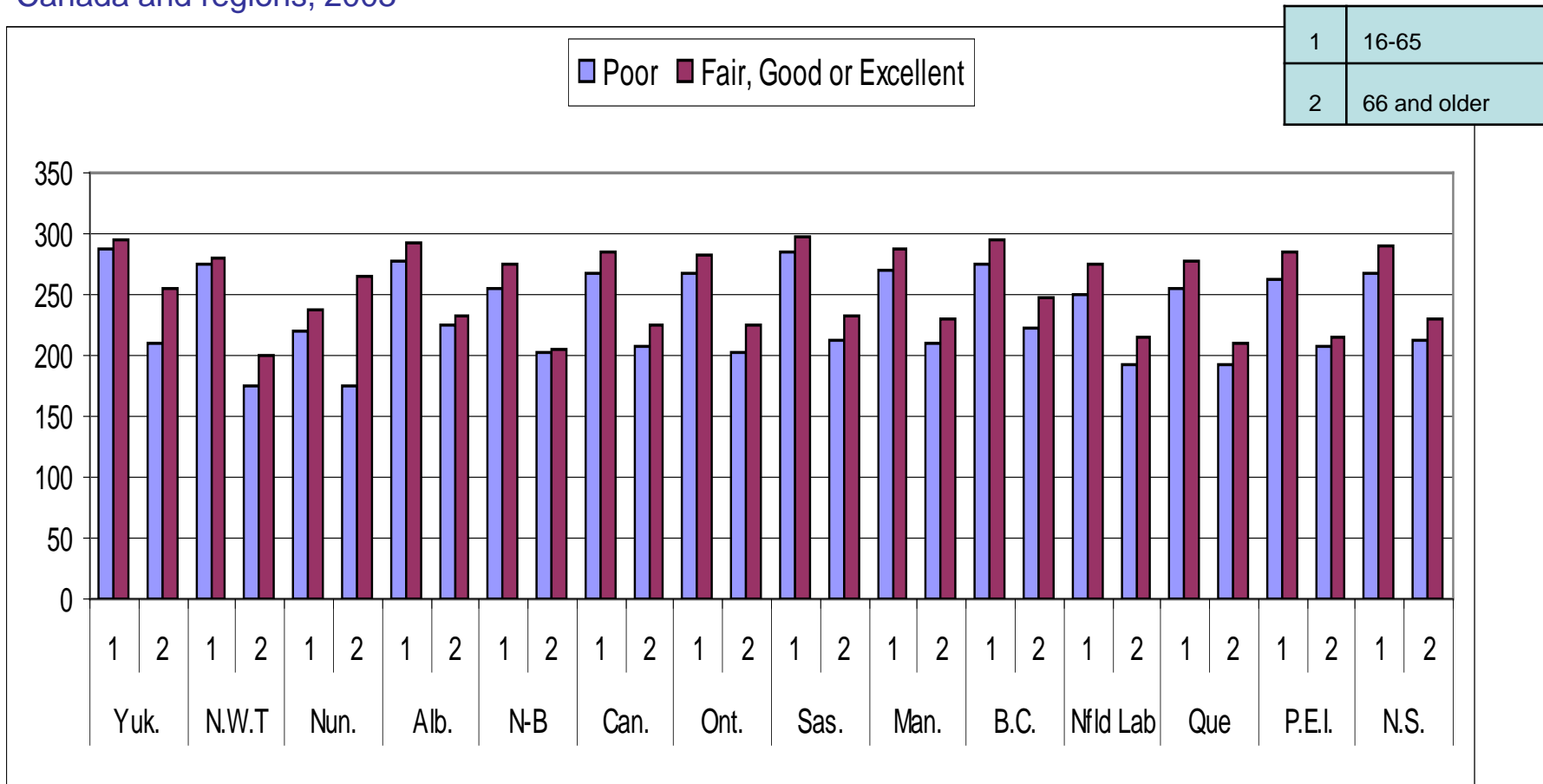
# There is a positive relationship between prose literacy and civic engagement

Civic engagement index by prose literacy level, population aged 16 and older, Canada, 2003



Generally, in most jurisdictions, 16 to 65 year-olds in poor health have the lowest average document literacy scores

Physical Component Summary (PCS) scores by mean document literacy proficiency by age groups, Canada and regions, 2003



Note : Orders the provinces and territories by the size of the difference in average document literacy between those in poor health and those in excellent health.

# Conclusions

- In Canada, irrespective of the domain assessed, those who are employed have average proficiency scores higher than those who are either unemployed or who are not in the labour force
- About 62 per cent of employed Canadians have average document literacy scores at Level 3 or above. In contrast, over half of unemployed Canadians have document literacy scores below Level 3
- Among those at levels 1 and 2 of prose literacy, about 850,000 are unemployed and 5.9 million are employed
- A majority of knowledge experts, over 80%, score at Level 3 or higher in literacy and numeracy compared to just over 40 % of those in services or goods production occupations
- Workers in knowledge-related occupations tend to engage more often in writing at work than do low-skill information, services and goods production workers
- In Canada and in all regions, in the nine industries analysed, at least 1 in 10 workers scored at level 4/5 in prose literacy, document literacy and numeracy



# Conclusions

- Knowledge intensive sectors hire workers with higher average scores in the four domains
- Two industries, knowledge-intensive market service and public administration, defence, education and health have 1 in 4 workers at the highest levels of prose literacy, document literacy and numeracy (Levels 4/5)
- Those with higher average scores earn more. Among workers earning less than \$20,000 annually roughly one in two men and women have Level 1 prose literacy proficiency. Among those earning \$60,000 or more, a significantly lower percentage of women (8.5%) have level 1 prose literacy proficiency compared to men (25.4%).
- In most jurisdictions, about 50% of the population 16-65 participated in adult learning activities in the preceding year
- The participation in adult education and learning activities varies by literacy proficiency levels in all provinces and territories. Participation rates among those with level 1 proficiency in prose literacy is 20.8% compared to about 70% among those at level 4/5.

# Conclusions

- Prose literacy proficiency increases with the use of computers for task-oriented purpose
- IALSS data suggest that the higher the prose literacy levels, the more likely a respondent is to engage in various forms of civic activities
- The average document literacy score of those aged 16 to 65 who reported poor health was 271 (corresponding to level 2) and for those in excellent health, the average score was 288 (corresponding to level 3)