

Literacy Skill Shortages in Alberta and The Ability of Aboriginal Peoples to Compete



**T. Scott Murray, President, DataAngel Policy Research
Incorporated**

Telephone: (613) 240-8433

e-mail addresses:

dataangel@mac.com

scott.murray@dataangel.ca

baboon@rogers.blackberry.net

Why We Care About Skills and Learning

People are the common denominator of progress. So... no improvement is possible with unimproved people, and advance is certain when people are liberated and educated. It would be wrong to dismiss the importance of roads, railroads, power plants, mills, and the other familiar furniture of economic development.... But we are coming to realize... that there is a certain sterility in economic monuments that stand alone in a sea of illiteracy. Conquest of illiteracy comes first.

**John Kenneth Galbraith, *The Affluent Society* (1958) US
(Canadian-born) administrator & economist (1908 - 2006)**

Why We Care About Skills and Learning

Sources of Policy Interest

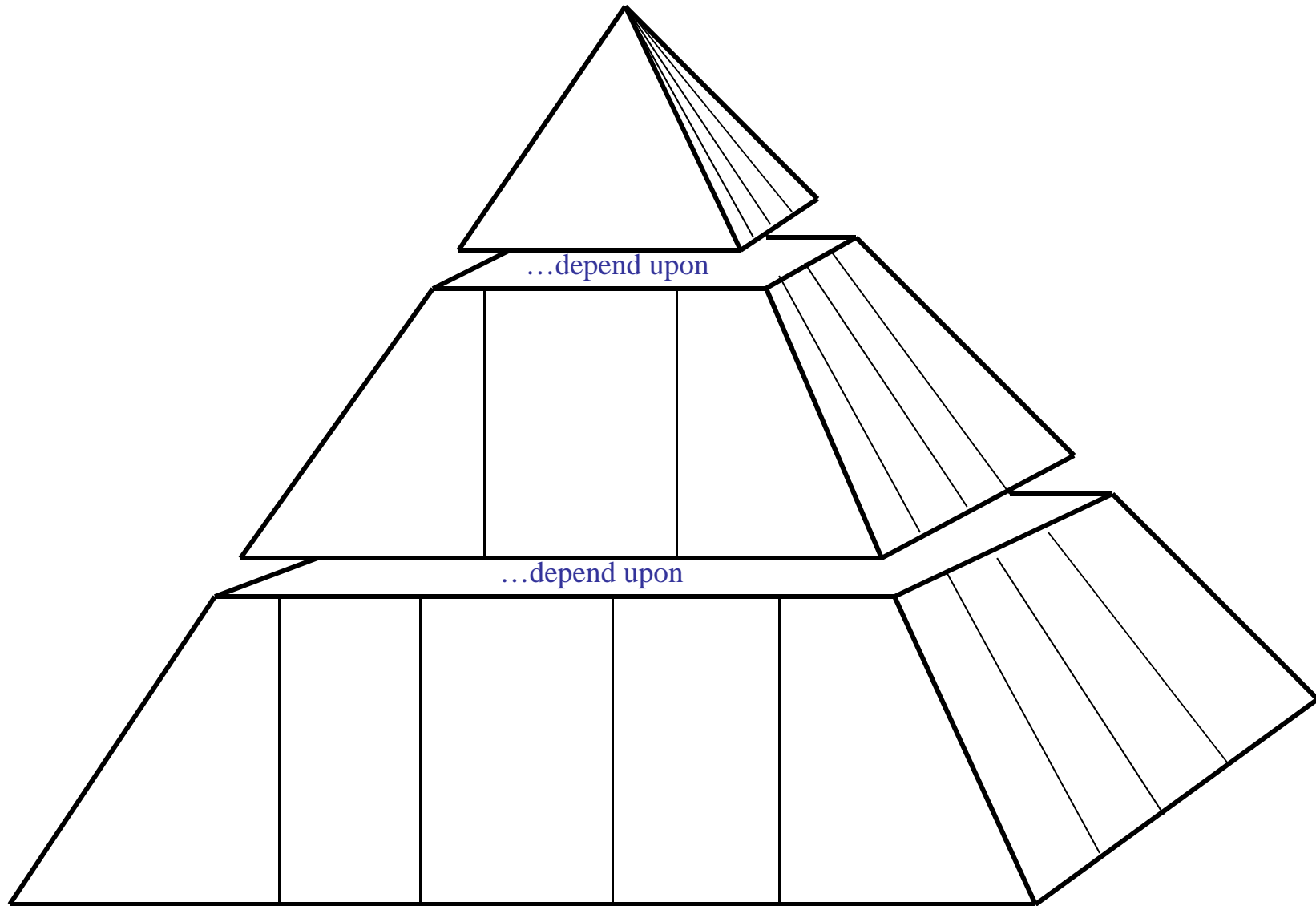
- **concerns about skill barriers to economic growth, productivity growth and rates of technological innovation (GREED)**
 - skill supply and demand balance**
 - high end skills vs essential skills**
- **concerns about the role of skill in creating social inequity in economic outcomes (FAIRNESS)**
- **concerns about the demand for and efficiency and effectiveness of investments in public goods and services such as education and health (PARSIMONY)**
- **concerns about linguistic and cultural preservation**

What Makes Skill More Important Now?

Key Policy Drivers

- **Demographics: not enough kids in Canada**
- **Globalization of markets for goods and services: huge opportunity**
- **Globalization of markets for capital and technology: everyone has access to the same inputs at the same costs**
- **Multinationals and outsourcing: job loss is inevitable**
- **diffusion of information and communication technologies: increases productivity, amplifies skill-based inequalities**
- **Rising skill supply in the developing world: they are able to compete**
- **Pending labour shortage in Canada**

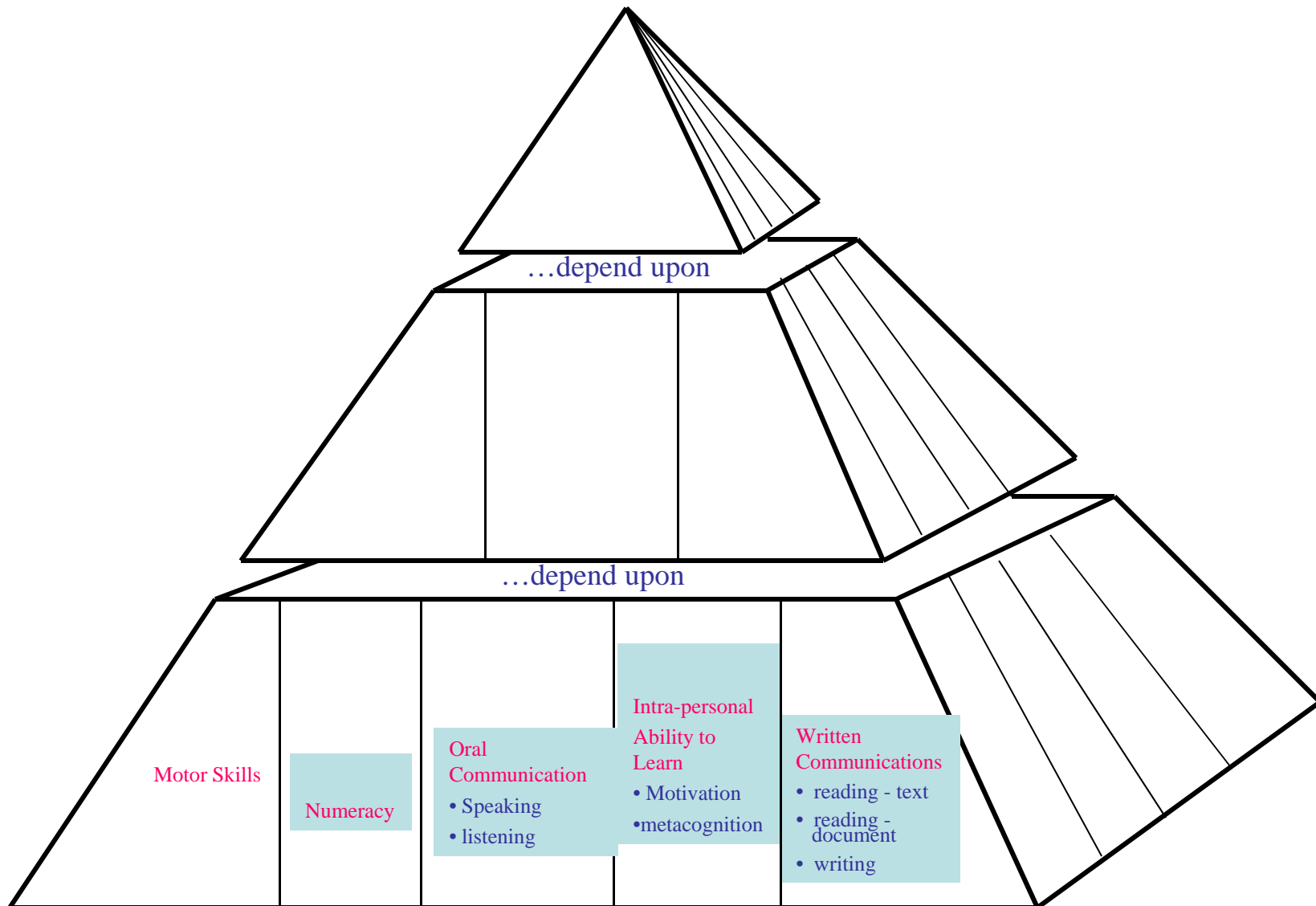
A Framework for Thinking About Essential Skills Profiles of Skill Supply and Demand



The World of Work

A Framework for Thinking About Essential Skills

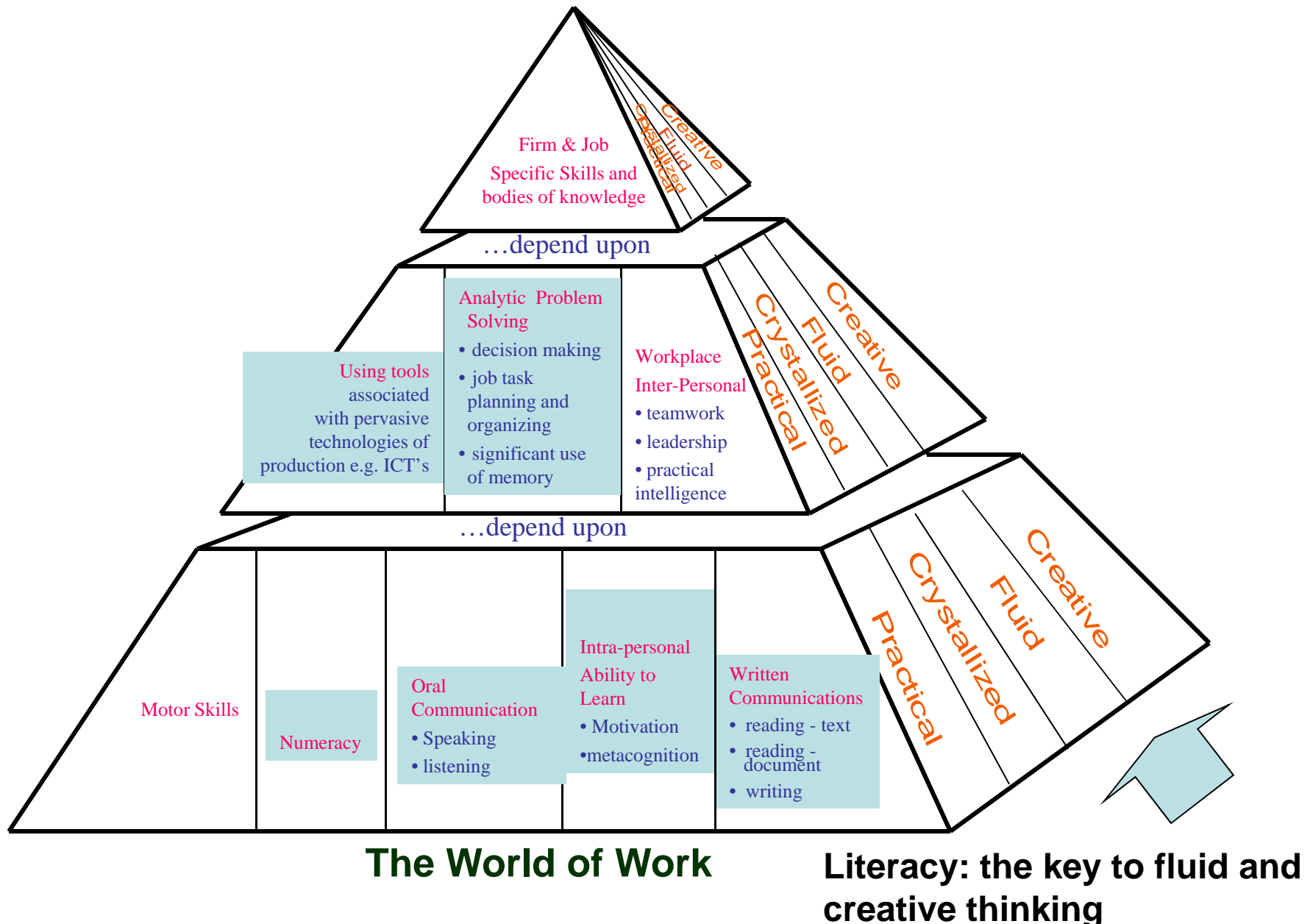
Profiles of Skill Supply and Demand



The World of Work

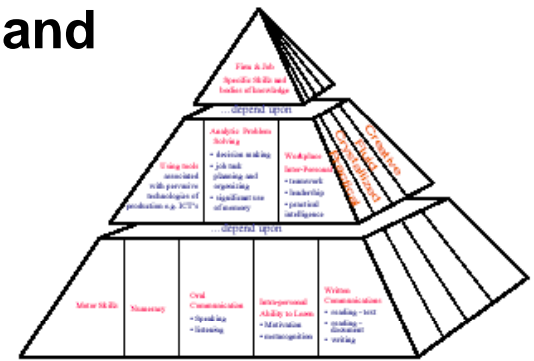
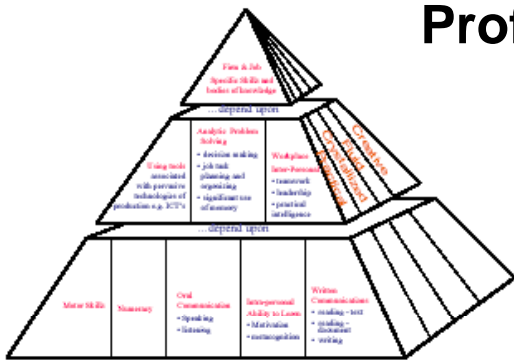
A Framework for Thinking About Essential Skills

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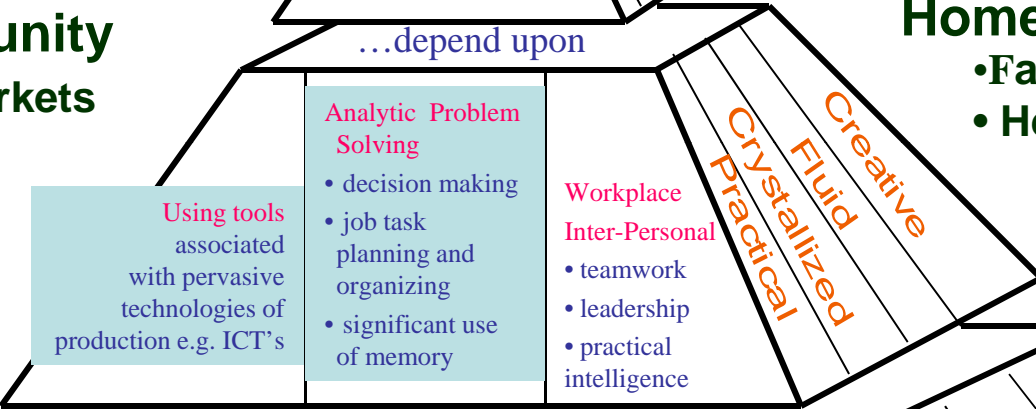
A Framework for Thinking About Essential Skills

Profiles of Skill Supply and Demand



Firm & Job
Specific Skills and
bodies of knowledge

...depend upon



Analytic Problem Solving

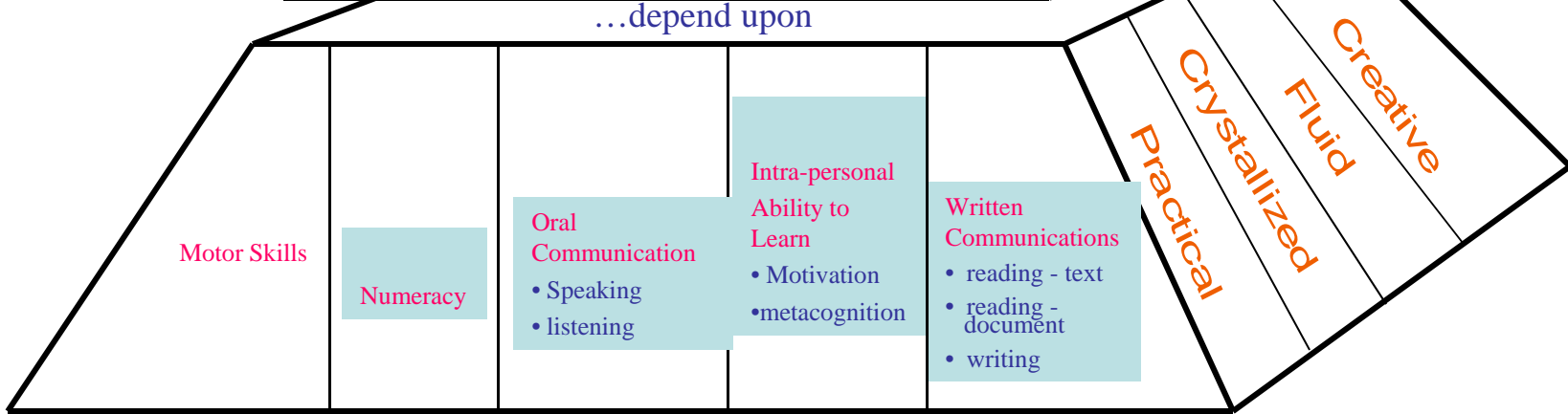
- decision making
- job task planning and organizing
- significant use of memory

Using tools associated with pervasive technologies of production e.g. ICT's

Workplace Inter-Personal

- teamwork
- leadership
- practical intelligence

...depend upon



Intra-personal Ability to Learn

- Motivation
- metacognition

Oral Communication

- Speaking
- listening

Written Communications

- reading - text
- reading - document
- writing

Motor Skills

Numeracy

The World of Work

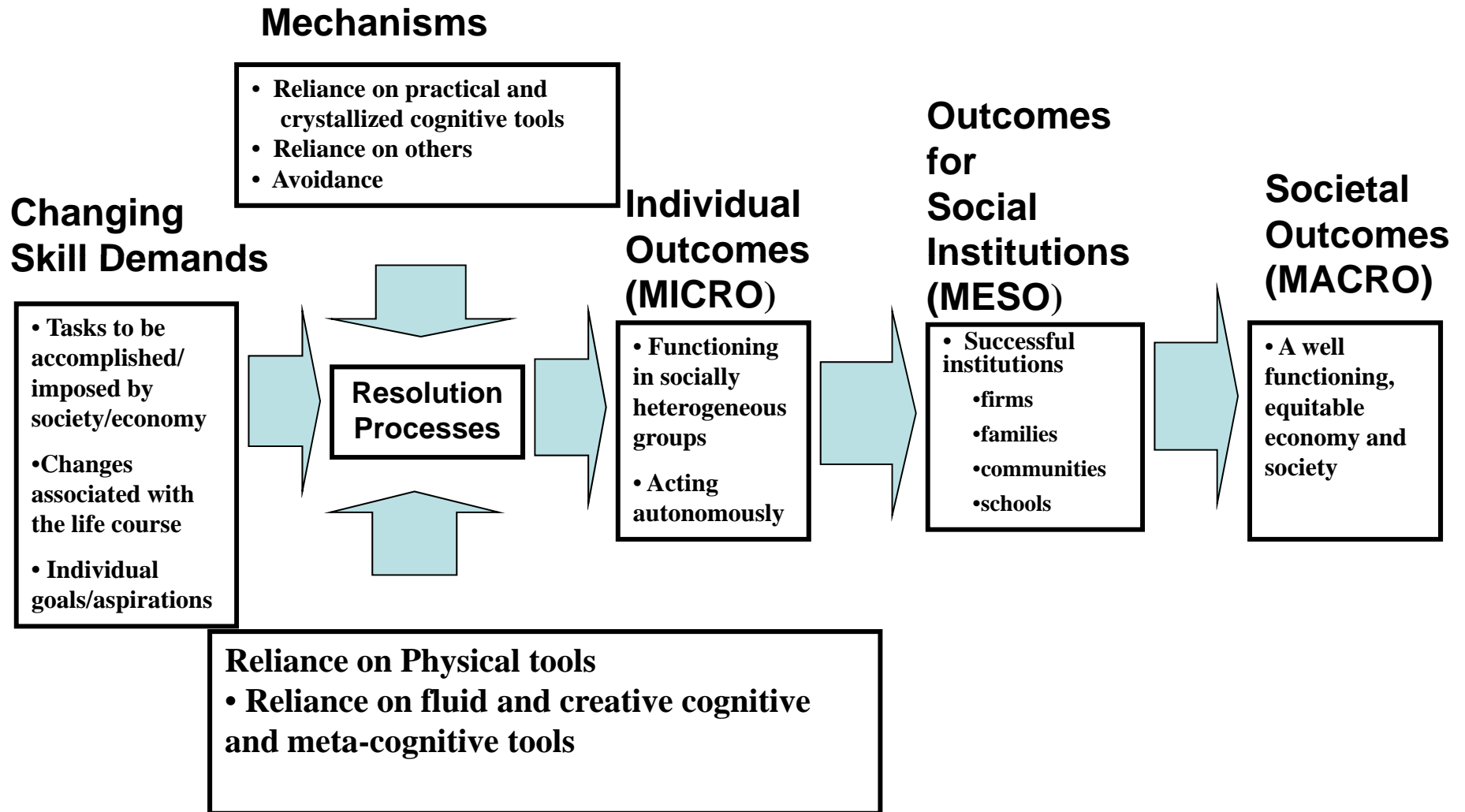
The Community

- Consumer markets
- Health
- Citizenship
- Culture
- Education

Home Environment

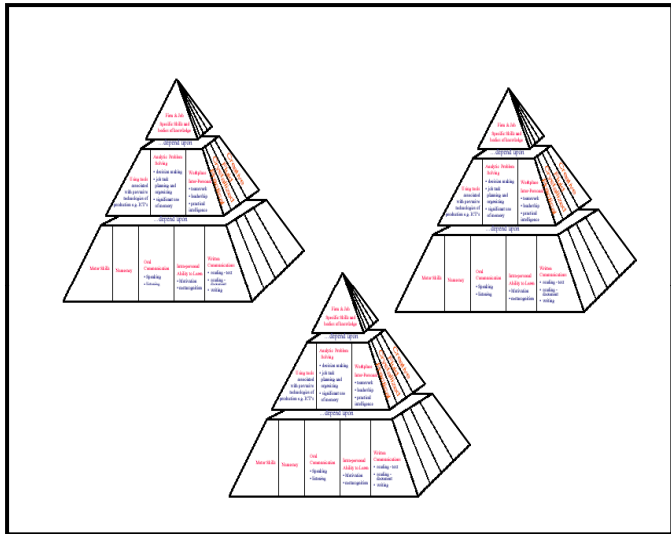
- Family
- Culture
- Health

A Framework for Thinking about Essential Skills at the Individual Level



Theoretical Framework: a “Markets” Model of Skill

Skill Demand



Markets for skill:

- Education
- Labour
- Health
- Social

Skill Supply = skill stock + net skill flow from lifelong, life-wide learning

- + quality of early childhood experience
- + quantity of primary and secondary education
- + quantity and quality of tertiary
- + quantity and quality of adult learning (formal, non-formal, informal)
- +/- immigration
- +/- emmigration
- skill loss associated with insufficient demand
- +/- social demand for skill
- +/- economic demand for skill

Context	Outcomes		
	MICRO (Individuals)	MESO (Social Institutions)	MACRO (Systems)
• Economic			
• Social			
• Educational			
• Health			

A balanced public policy response: increasing skill demand, increasing skill supply, better matching of workers to the demands of jobs

Skill Demand

Increase the knowledge and skill intensity of work

Better matching of worker skills to job demands through assessment

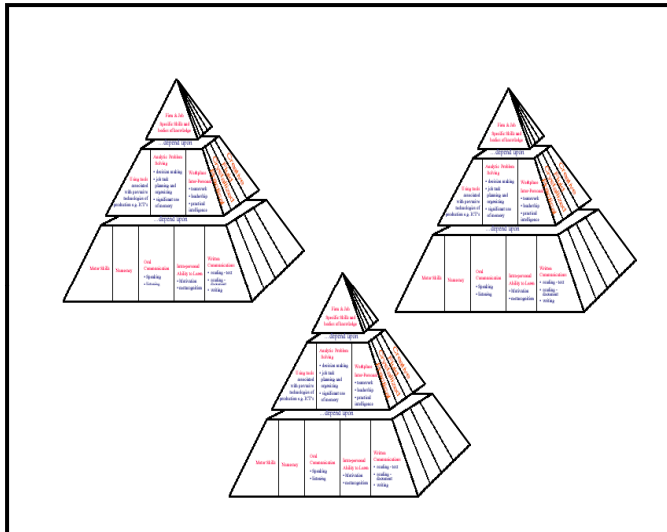
Markets for skill:

- Education
- Labour
- Health
- Social

Skill Supply = skill stock + net skill flow from lifelong, life-wide learning

Skill upgrading for youth and adults

- + quality of early childhood experience
- + quantity of primary and secondary education
- + quantity and quality of tertiary
- + quantity and quality of adult learning (formal, non-formal, informal)
- +/- immigration
- +/- emmigration
- skill loss associated with insufficient demand
- +/- social demand for skill
- +/- economic demand for skill

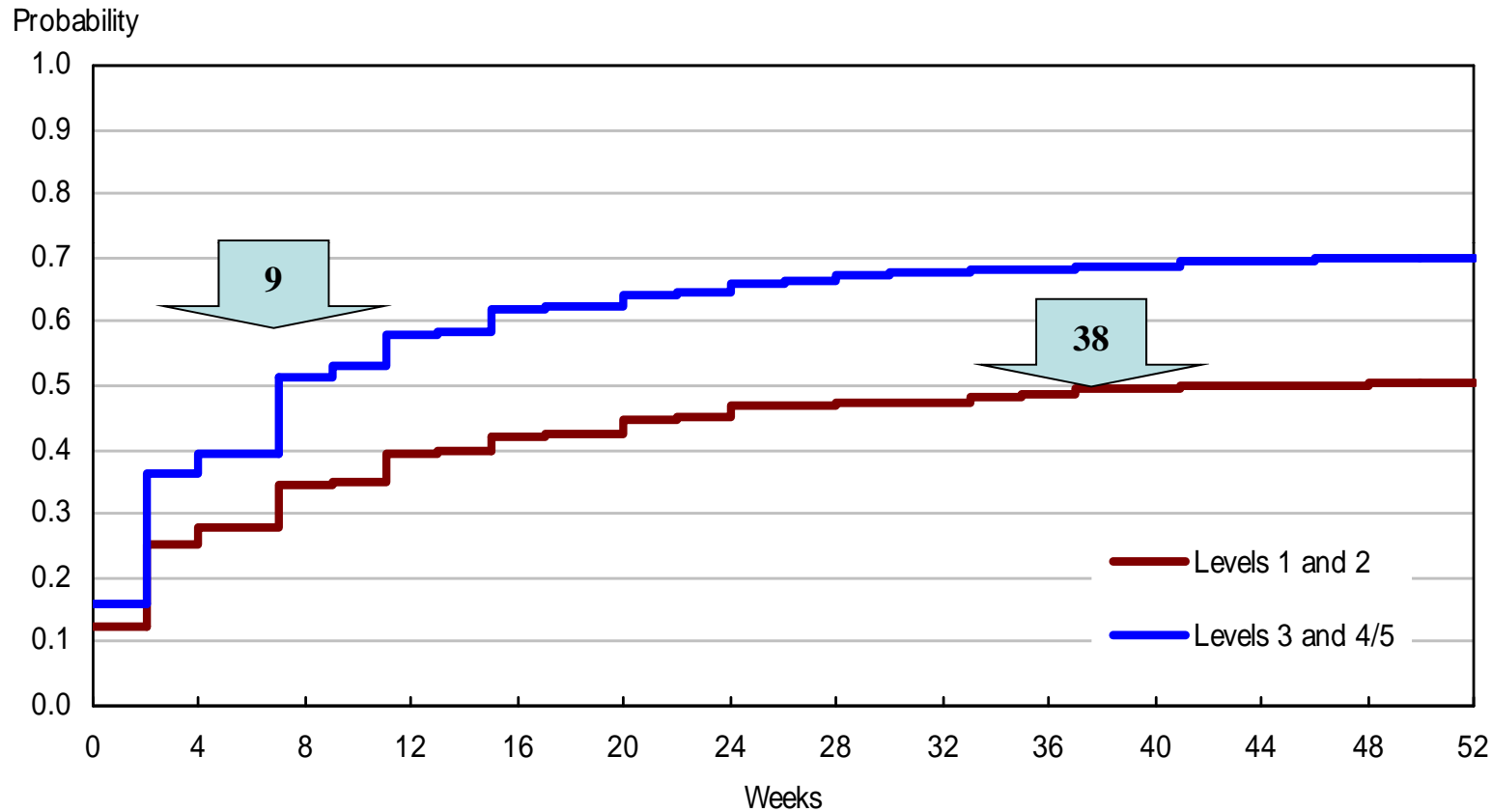


Context	Outcomes		
	MICRO (Individuals)	MESO (Social Institutions)	MACRO (Systems)
• Economic			
• Social			
• Educational			
• Health			

The Impact of Skill on Individual Outcomes

Unemployment Duration

The probabilities of unemployed adults aged 16 to 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



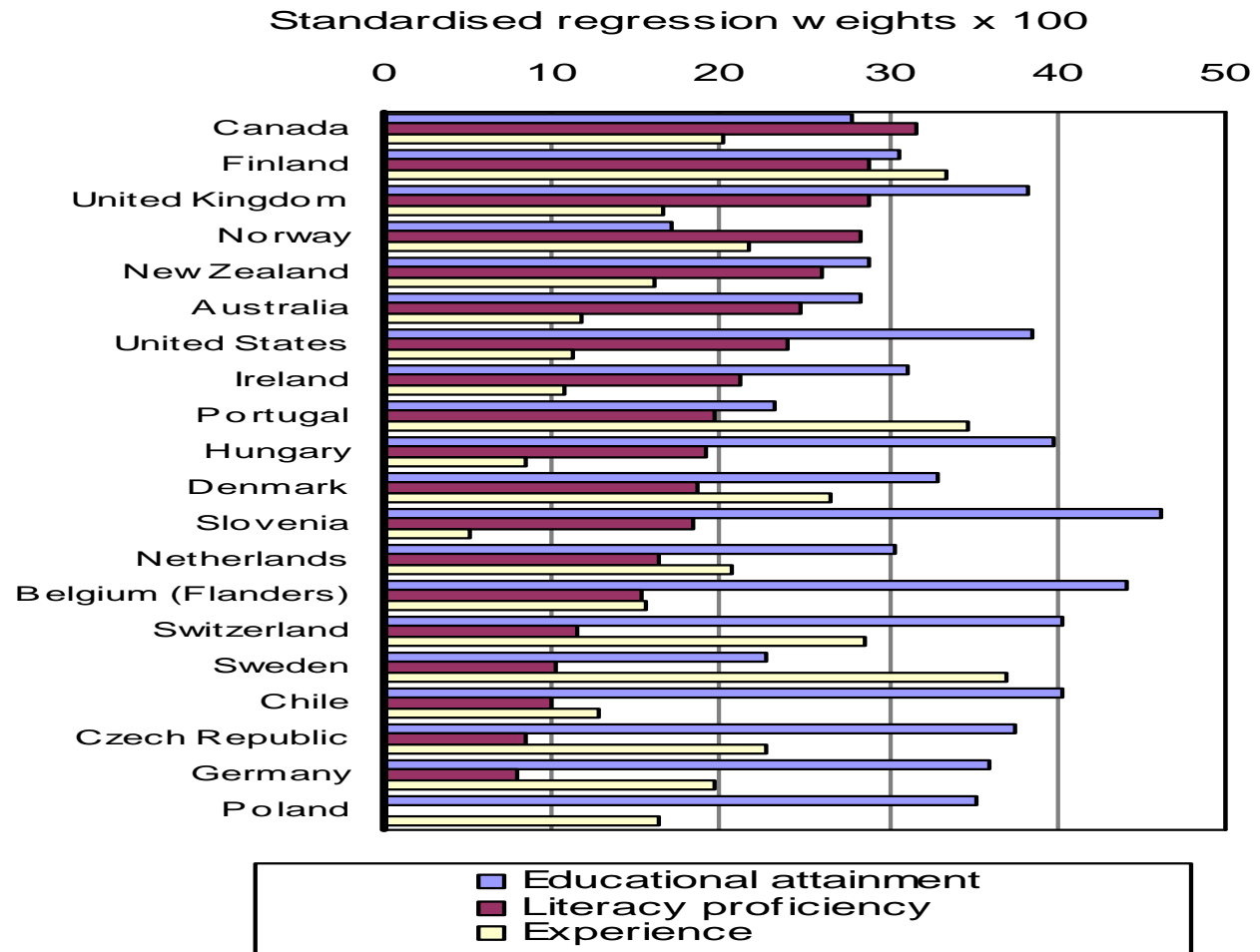
Source: Adult Literacy and Life Skills Survey, 2003.

The Impact of Skill on Individual Outcomes

Earnings and literacy proficiency, controlling for education and labour force experience

... literacy explains a significant fraction of wage variability in Canada, but not in Sweden...

Countries are ranked by the magnitude of the effect parameter associated with educational attainment

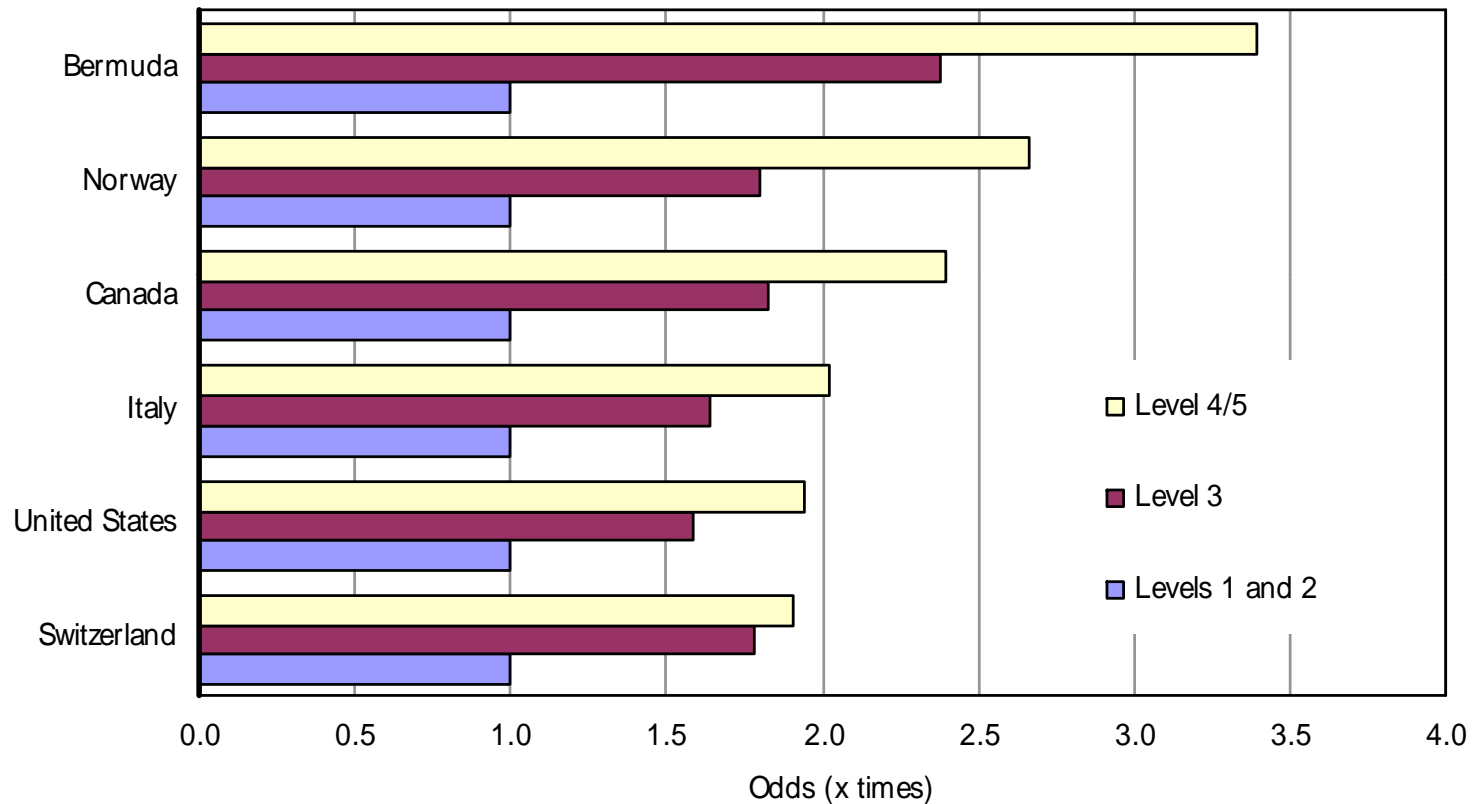


Source: *International Adult Literacy Survey, 1994-1998.*

The Impact of Skill on Individual Outcomes

Likelihood of being a high-intensity computer user by literacy skill levels

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



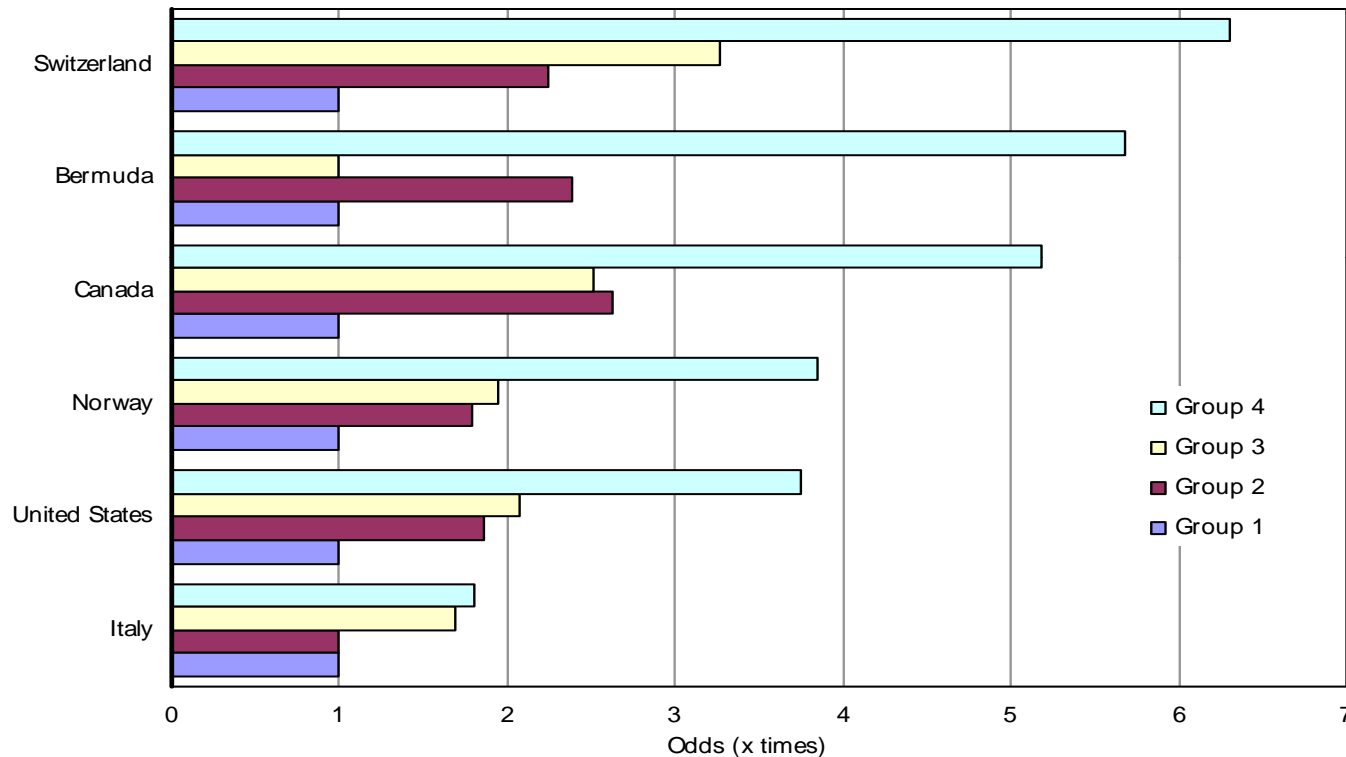
Countries are ranked by the odds of those who score at Level 4/5.

Source: Adult Literacy and Life Skills Survey, 2003.

The Impact of Skill on Individual Outcomes

Likelihood of being a top income quartile earner by combined skill and user profiles

Adjusted odds ratios¹ showing the likelihood of adults aged 16 to 65 of being a top income quartile earning, by combined literacy and computer user profiles, 2003



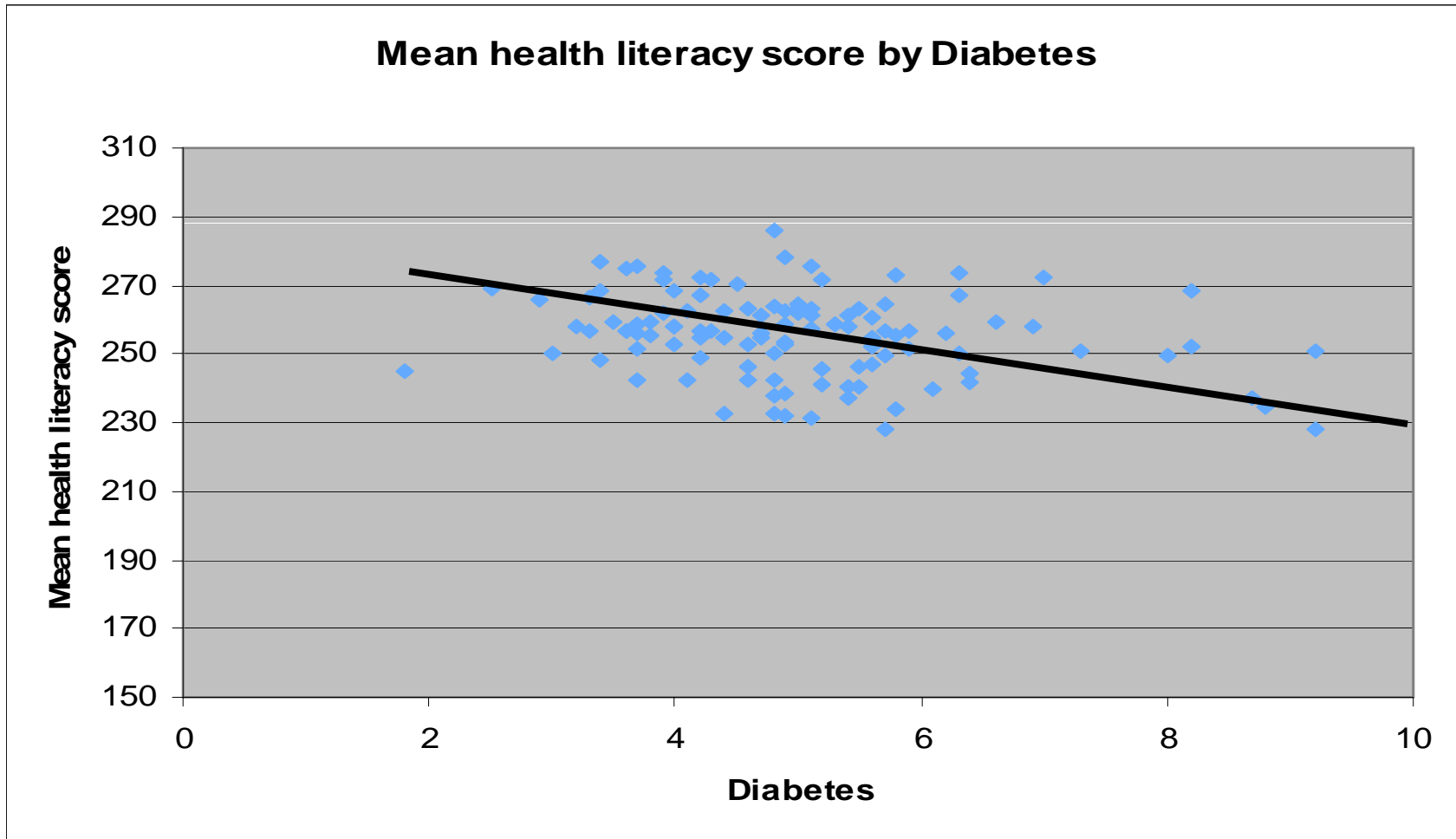
Countries are ranked by the odds of those in Group 4.

1. Odds estimates that are not statistically different from one at conventional levels of significance are reported as one in the figure.

For the actual estimate and its corresponding significance, see Table 8.12 in the annex to this chapter.

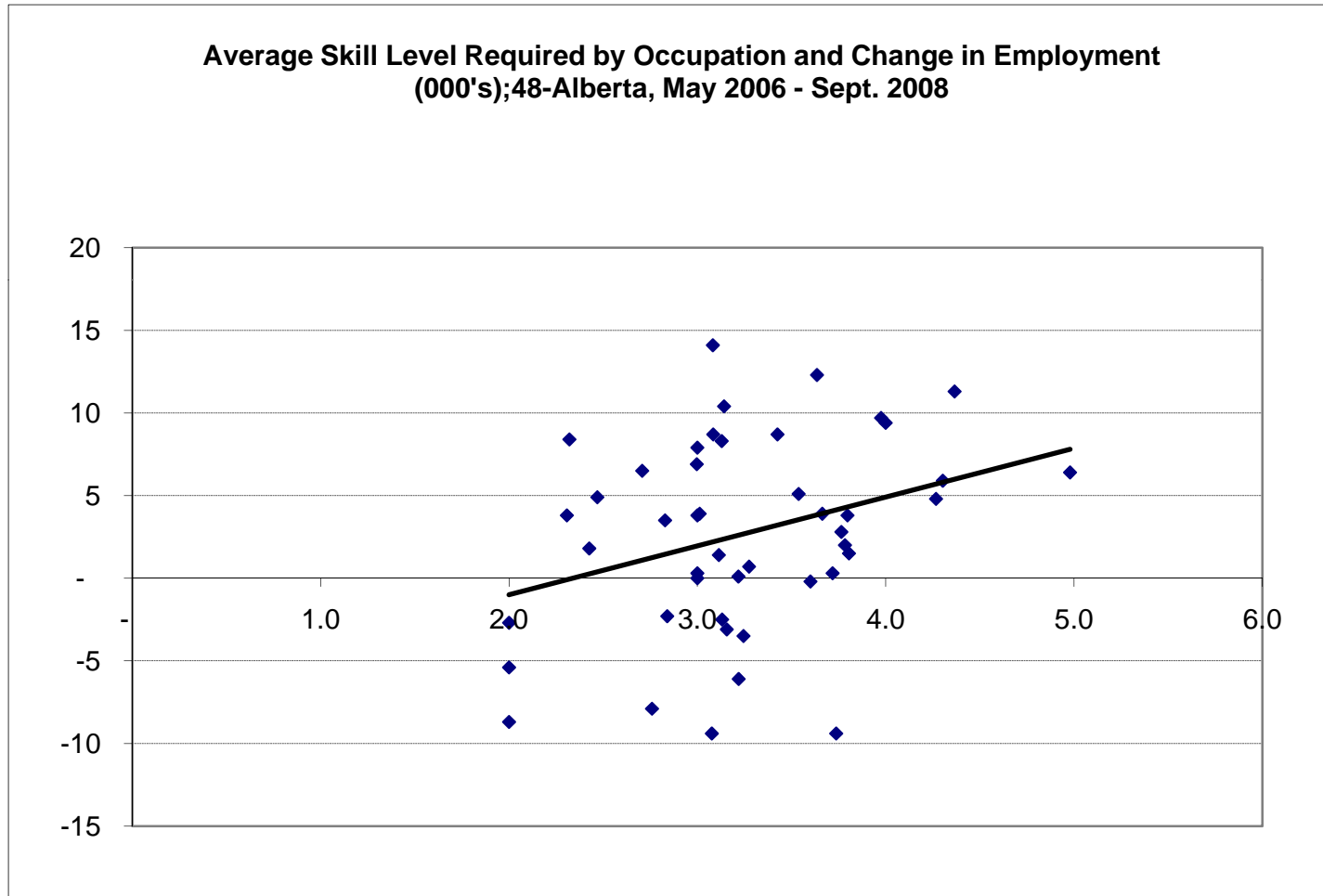
Source: Adult Literacy and Life Skills Survey, 2003.

The Relationship of Average Health Literacy to the Prevalence of Diabetes

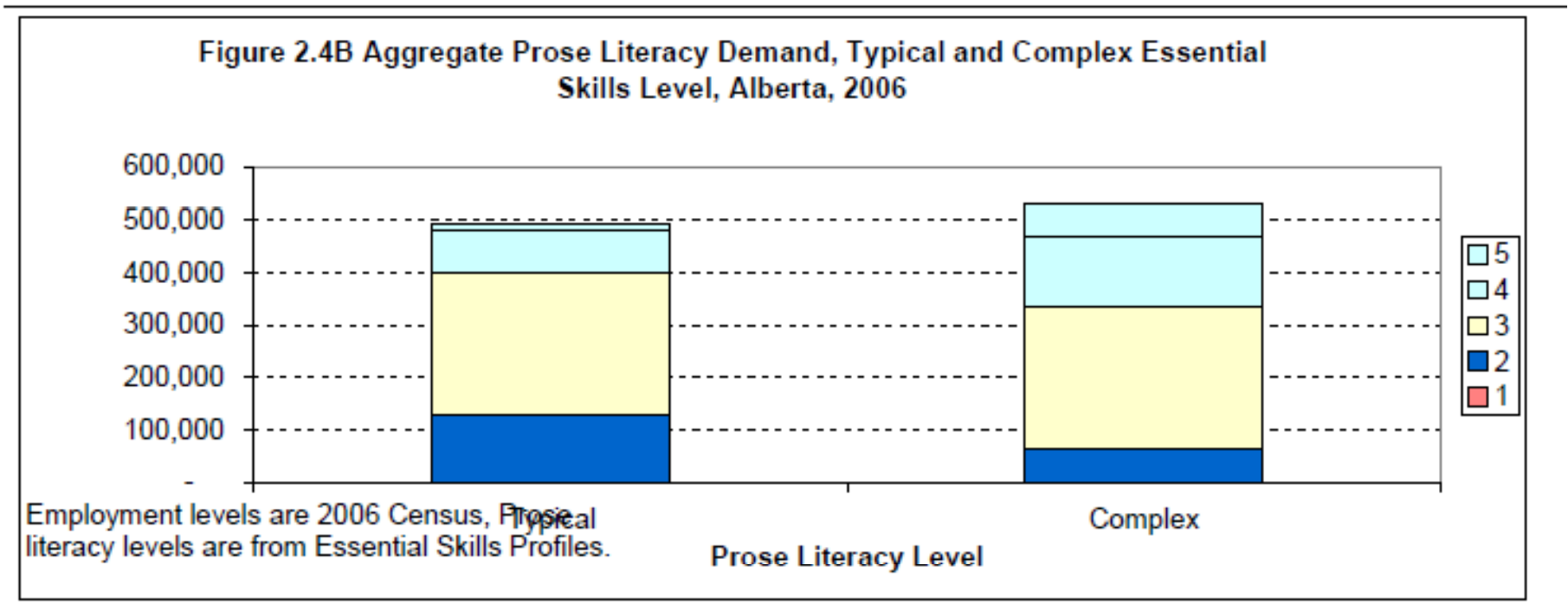


Demand for Literacy Skill is Projected to Grow Rapidly

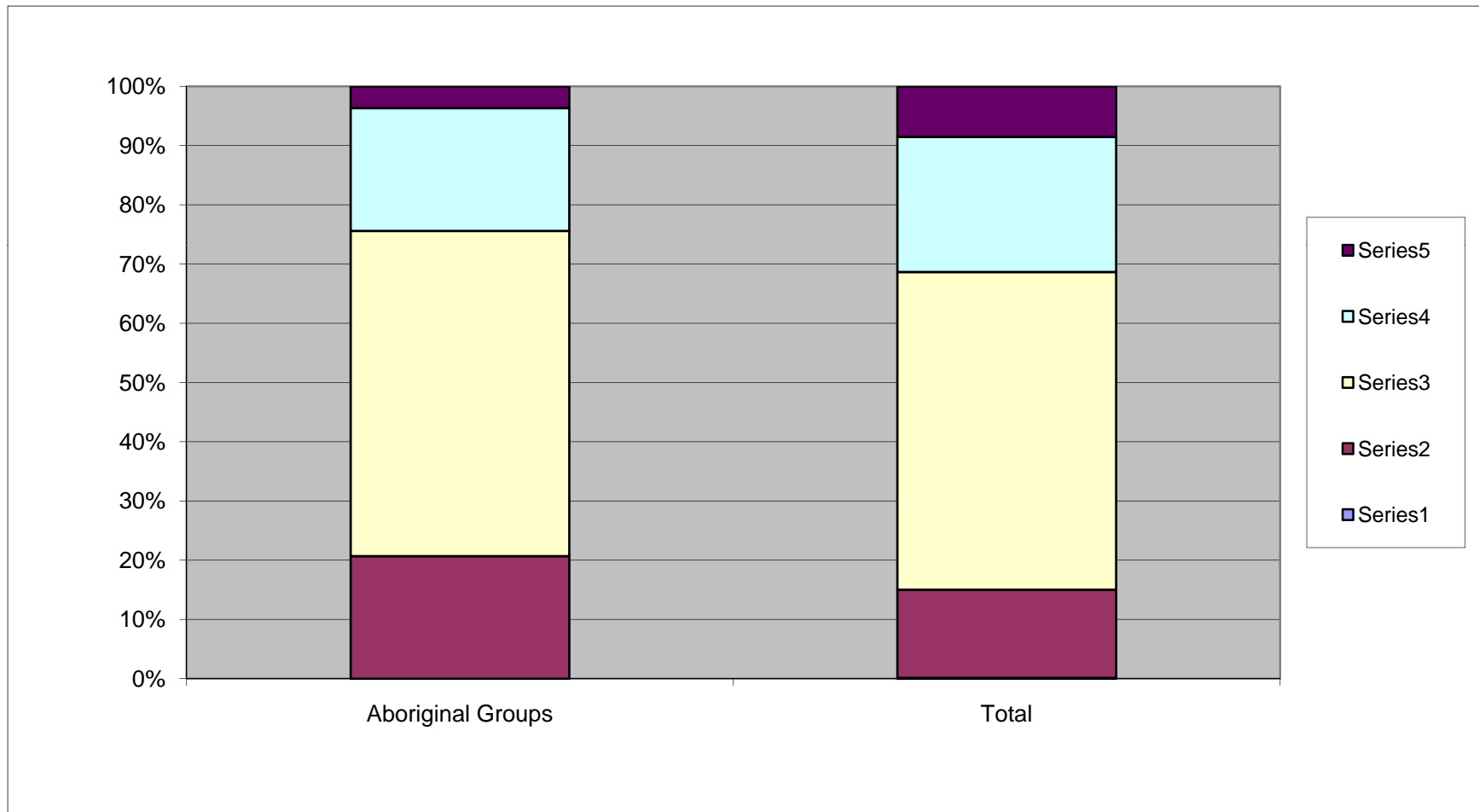
Where are the required skills going to come from?



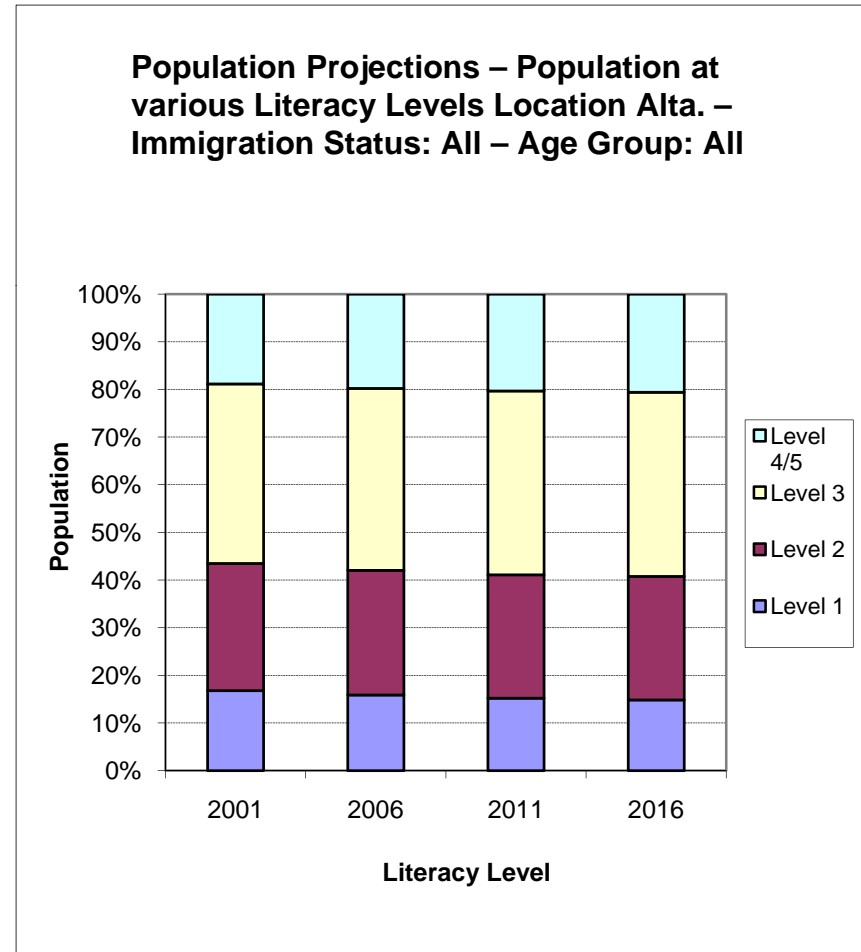
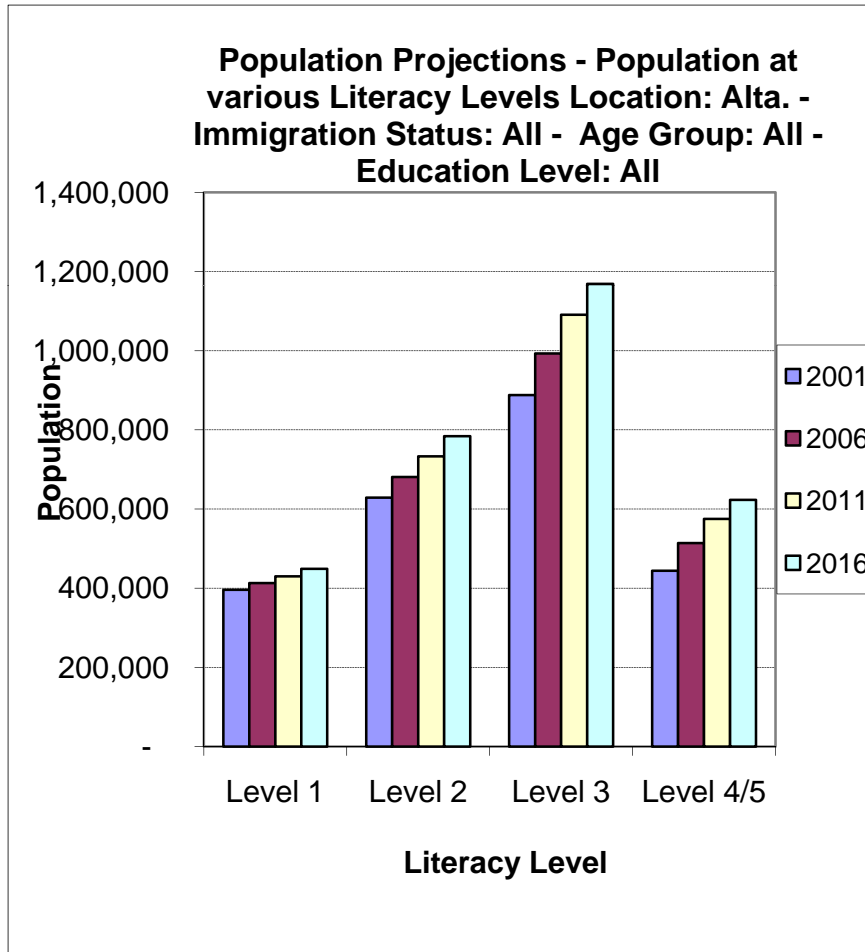
Distribution in AB of Skill Demand by ES Level



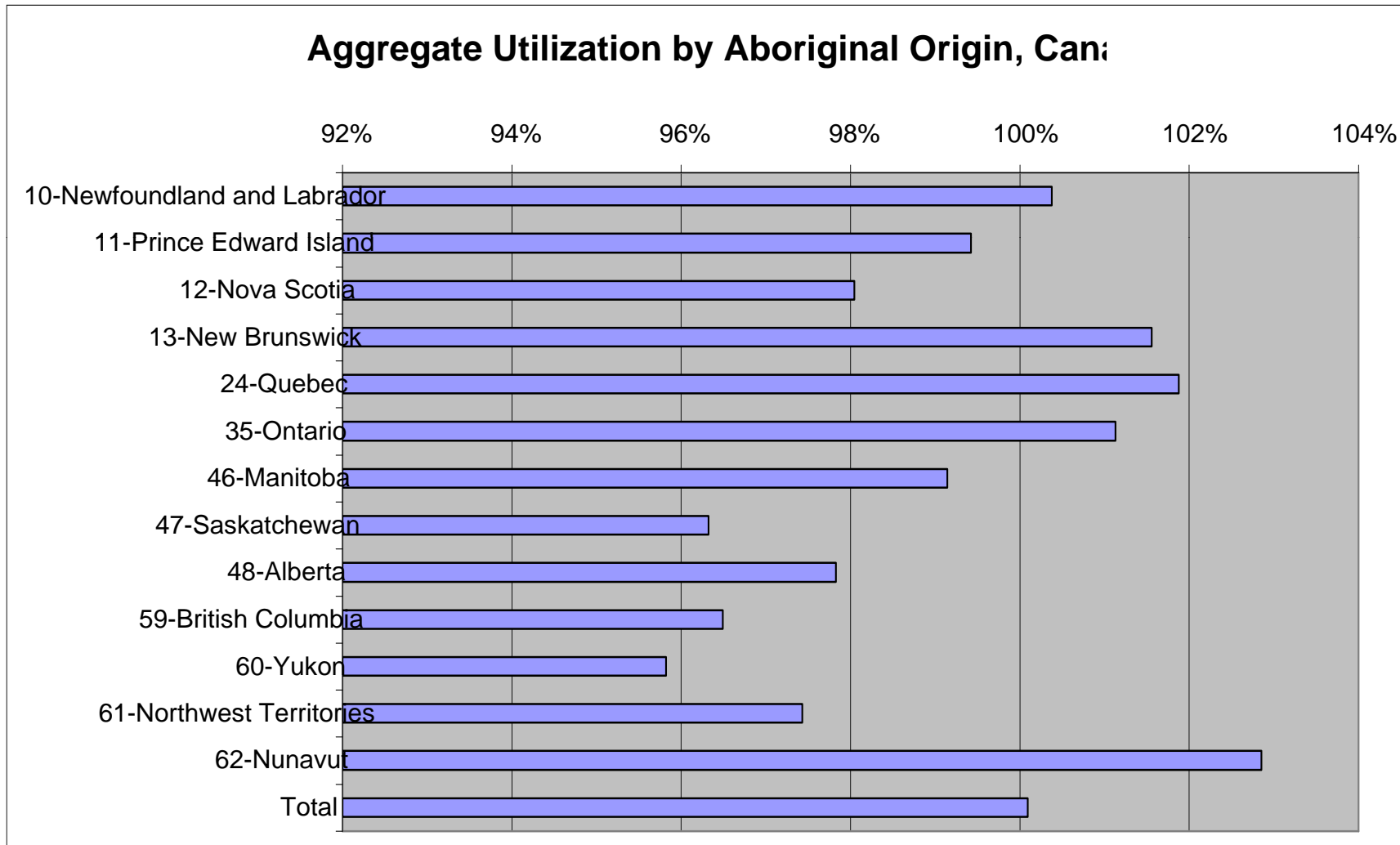
Of the jobs held by Aboriginals in AB, 55% require prose skills at Level 3 or above:



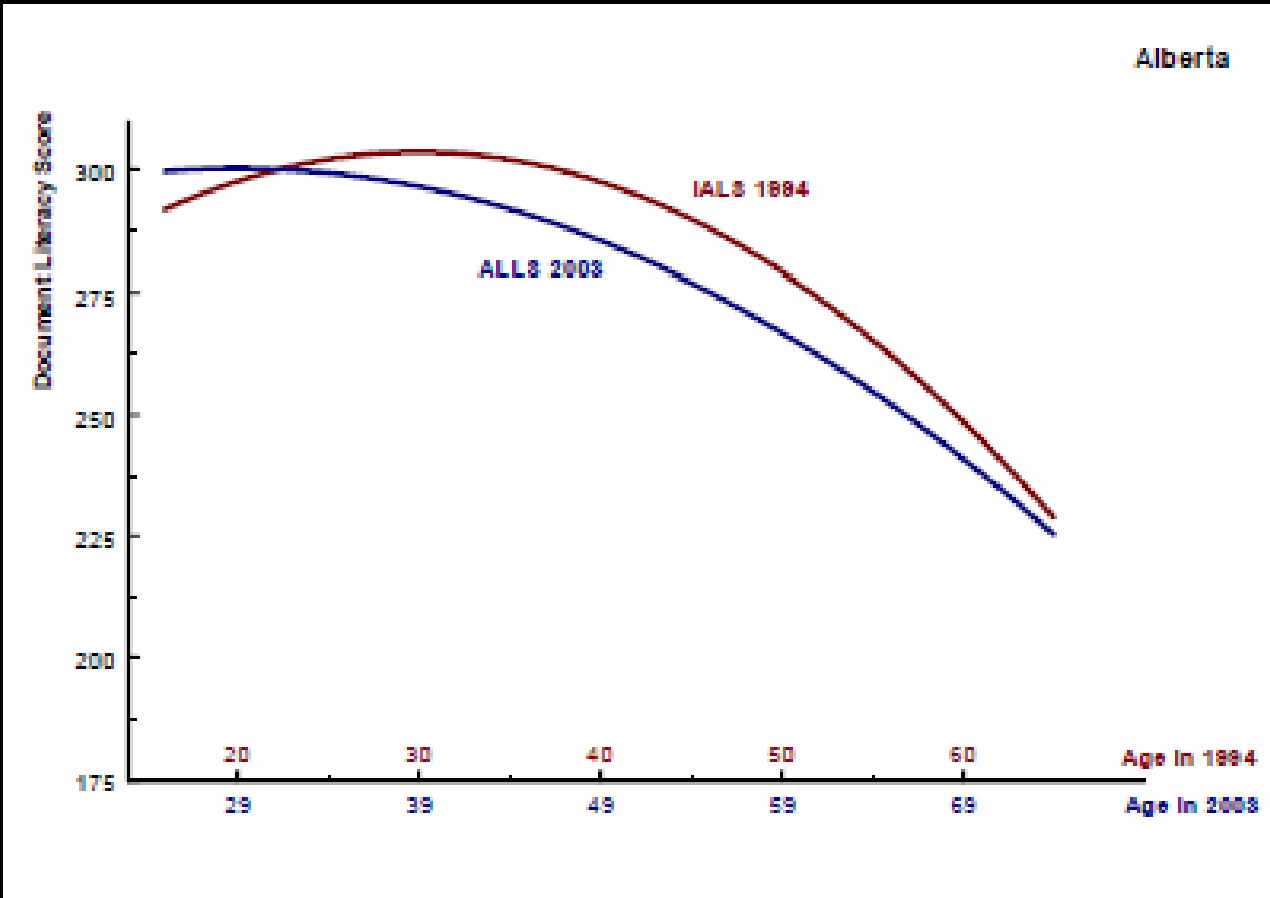
Proportion of Level 1 and 2 adults is projected to remain stable:



AB uses >98% of the available Aboriginal literacy supply:



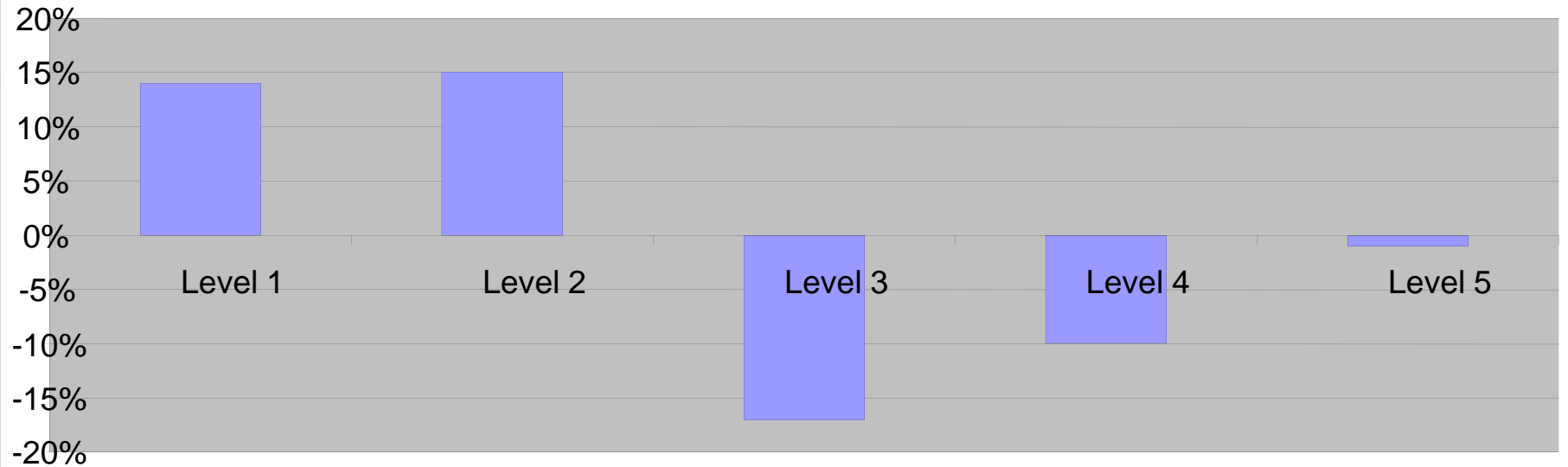
Skill Loss in Alberta



AB Surplus and Shortage by Skill Level

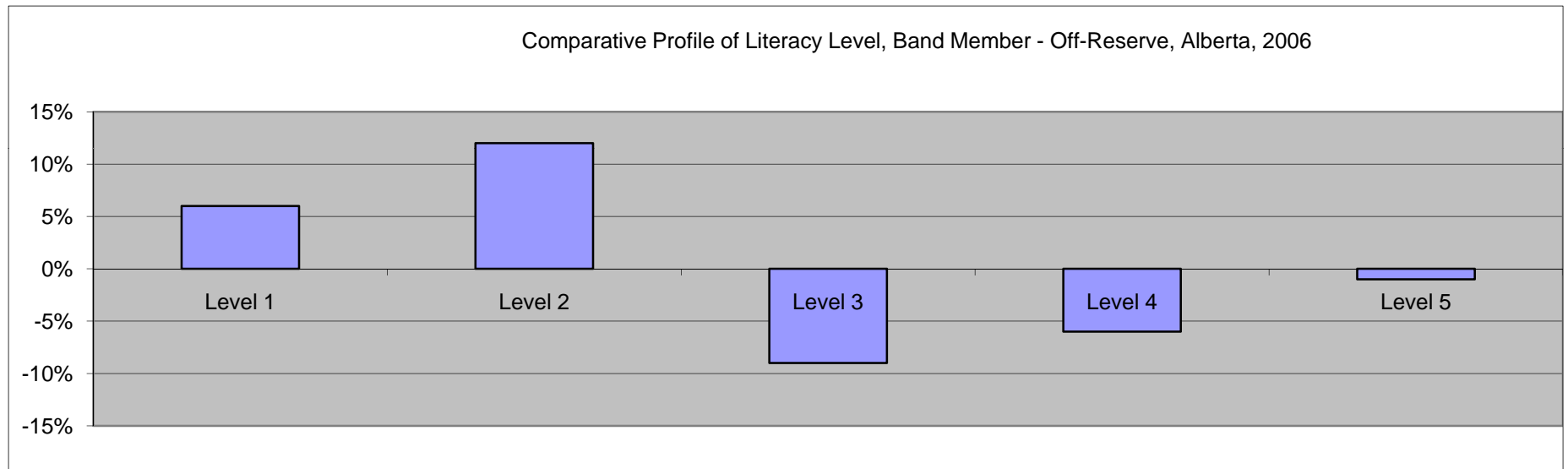
Band Member On-reserve

Comparative Profile of Literacy Level, Band Member - On-Reserve, 48-Alberta, 2006

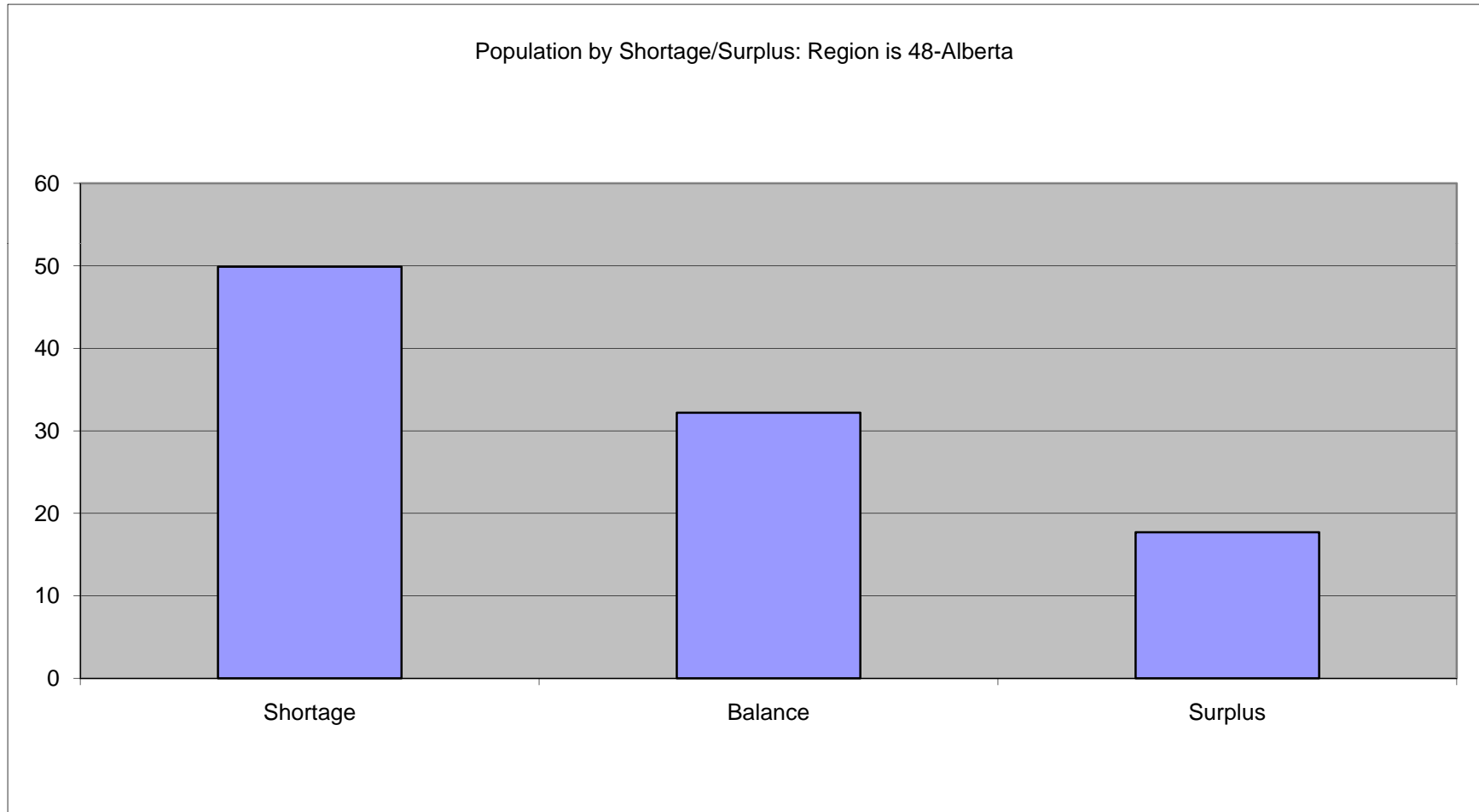


AB Surplus and Shortage by Skill Level

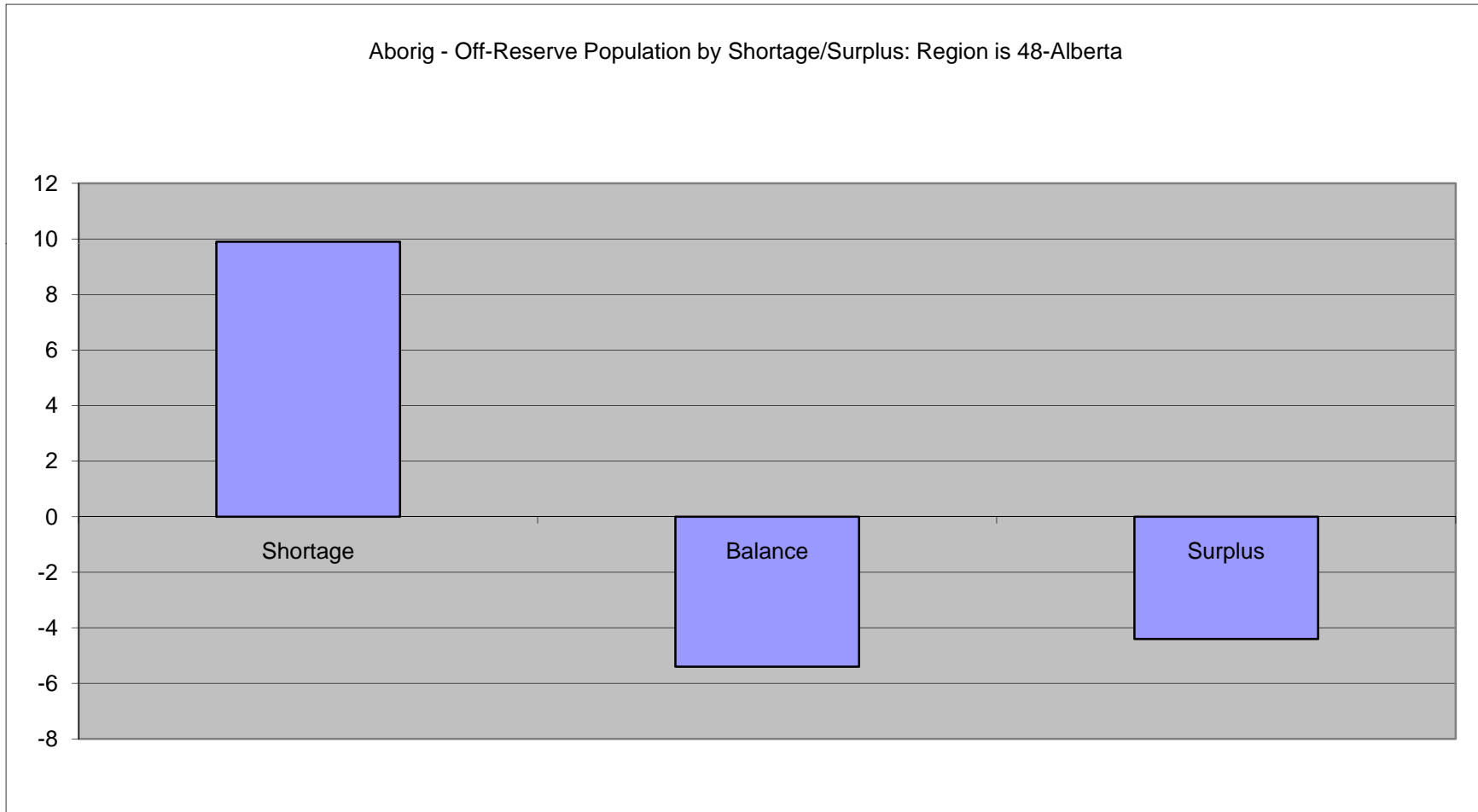
Band Member off-reserve



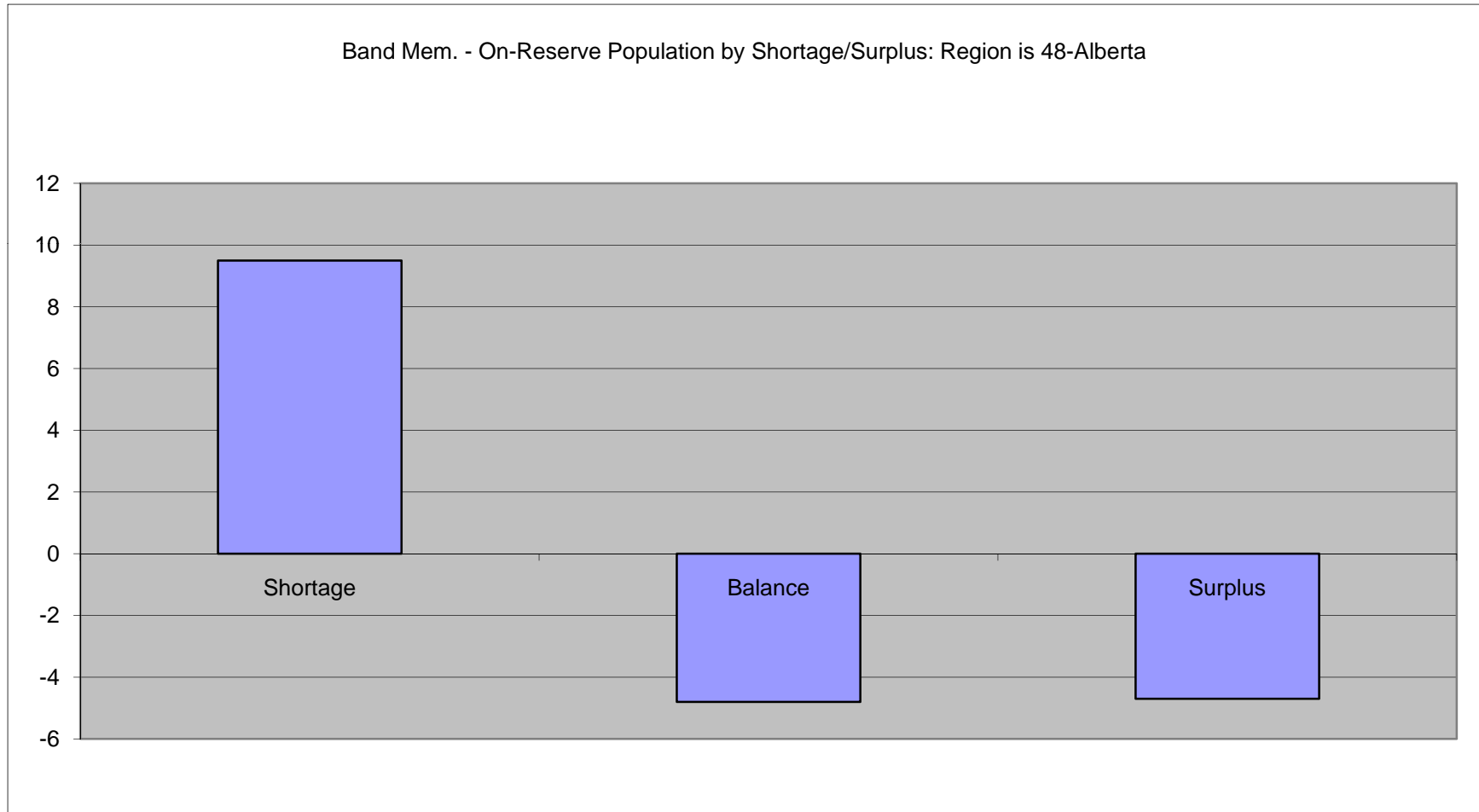
50% of all AB workers are in literacy skill shortage



An additional 10% of off reserve Aboriginal populations in AB are in literacy shortage



An additional 9.5% of on reserve Aboriginal populations in AB are in shortage

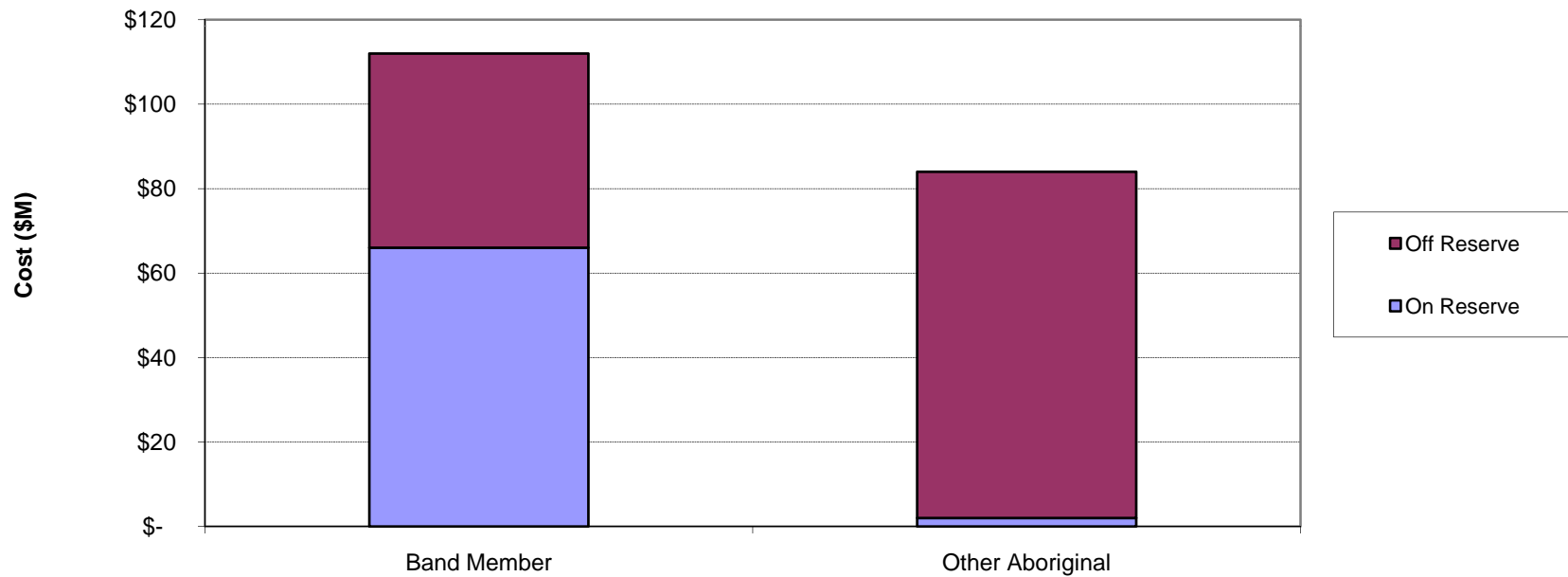


81,250 out of 125,550 of Aboriginal workers in Alberta are in literacy shortage - mostly in C and D segments

Latent Group	Band Mem. Off Reserve	Aborig. Off Reserve	Aborig. On Reserve	Band Mem On Reserve
-	11,050	25,200		6300
A1	1550	2950		1300
A2				
B1	1100	1200		1950
B2				
C	6700	12,500		6400
D	9450	20,250	250	7400
E	2150	5,150		950
F				
Total	32,200	68,100	850	24,400

Fixing Aboriginal skill shortages in AB will be expensive

Estimated cost of providing Aboriginal adults with competitive literacy skills, Alberta, 2006



Costs of instruction are high:

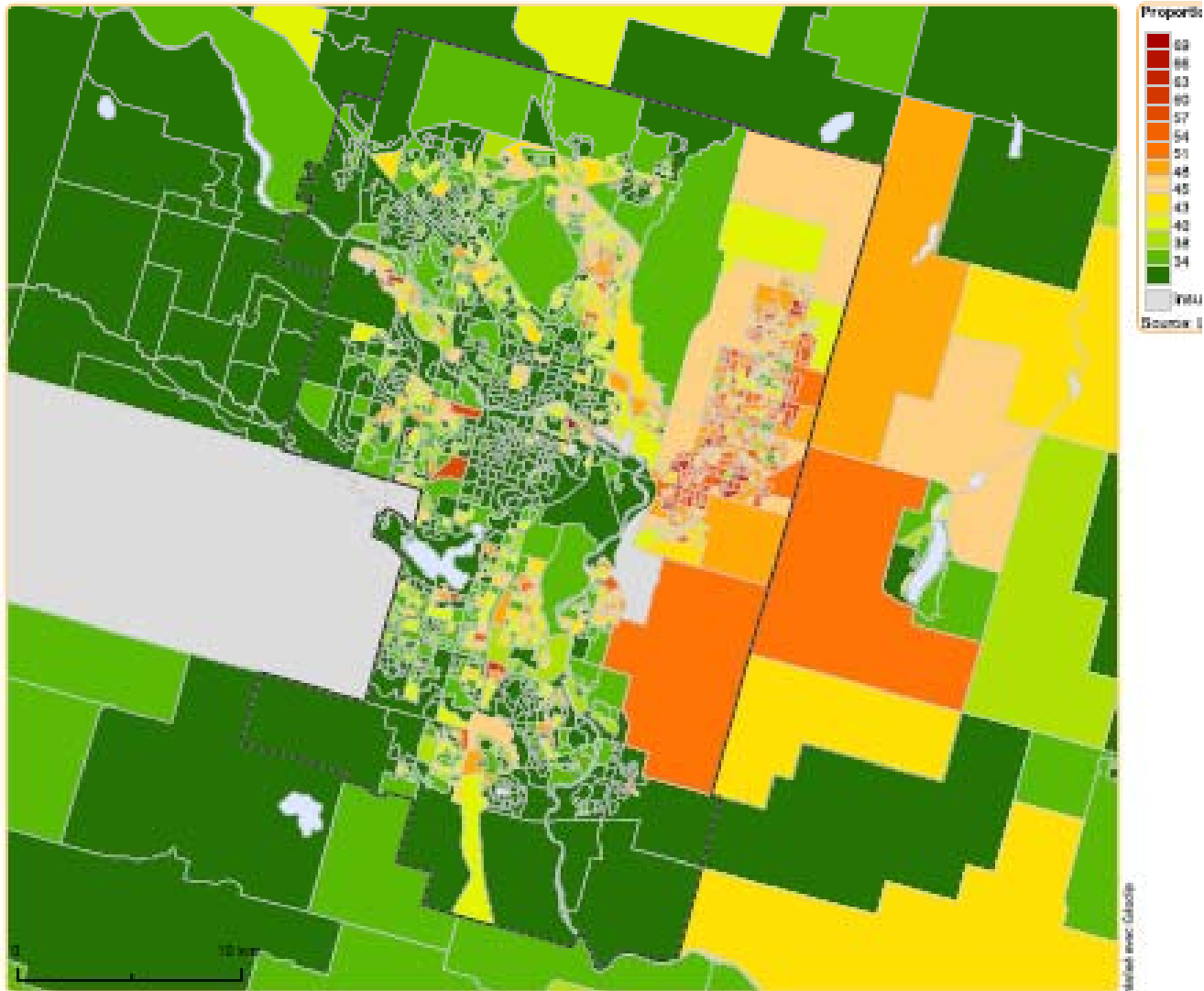
Cost of Increasing Literacy Levels: 48-Alberta							
Band_Reserve	LF_Category	Population	Cost of Closing Spread in Essential Skill	Cost of Moving to Level 3	Value of Literacy Surplus	Increase in Earnings (Essential Skill)	Increase in Earnings (Level 3)
Aborig - Off-Reserve	Employed	48,000	\$ 42,000,000	\$ 55,000,000	\$ -	\$ 170,000,000	\$ 201,000,000
	Not Recently Employed	11,000	\$ -	\$ 32,000,000	\$ -	\$ -	\$ 85,000,000
	Recently Employed	8,000	\$ 9,000,000	\$ 13,000,000	\$ -	\$ 27,000,000	\$ 42,000,000
	Total	68,000	\$ 50,000,000	\$ 100,000,000	\$ -	\$ 198,000,000	\$ 333,000,000
Aborig - On-Reserve	Employed	-	\$ 1,000,000	\$ 1,000,000	\$ -	\$ -	\$ -
	Not Recently Employed	-	\$ -	\$ 1,000,000	\$ -	\$ -	\$ -
	Recently Employed	-	\$ -	\$ -	\$ -	\$ -	\$ -
	Total	1,000	\$ 1,000,000	\$ 3,000,000	\$ -	\$ 3,000,000	\$ 7,000,000
Band Mem. - Off-Reserve	Employed	20,000	\$ 19,000,000	\$ 25,000,000	\$ -	\$ 69,000,000	\$ 89,000,000
	Not Recently Employed	7,000	\$ -	\$ 20,000,000	\$ -	\$ -	\$ 53,000,000
	Recently Employed	5,000	\$ 7,000,000	\$ 7,000,000	\$ -	\$ 19,000,000	\$ 22,000,000
	Total	32,000	\$ 26,000,000	\$ 53,000,000	\$ -	\$ 88,000,000	\$ 165,000,000
Band Mem. - On-Reserve	Employed	10,000	\$ 16,000,000	\$ 20,000,000	\$ -	\$ 42,000,000	\$ 53,000,000
	Not Recently Employed	10,000	\$ -	\$ 42,000,000	\$ -	\$ -	\$ 84,000,000
	Recently Employed	4,000	\$ 8,000,000	\$ 12,000,000	\$ -	\$ 16,000,000	\$ 26,000,000
	Total	24,000	\$ 24,000,000	\$ 73,000,000	\$ -	\$ 57,000,000	\$ 164,000,000
Non-Aborig. - Off-Reserve	Employed	1,762,000	\$ 962,000,000	\$ 919,000,000	\$ 12,000,000	\$ 4,946,000,000	\$ 4,379,000,000
	Not Recently Employed	504,000	\$ -	\$ 947,000,000	\$ -	\$ -	\$ 3,172,000,000
	Recently Employed	214,000	\$ 140,000,000	\$ 135,000,000	\$ 2,000,000	\$ 638,000,000	\$ 601,000,000
	Total	2,480,000	\$ 1,102,000,000	\$ 2,001,000,000	\$ 14,000,000	\$ 5,585,000,000	\$ 8,150,000,000
Non-Aborig. - On-Reserve	Employed	-	\$ -	\$ -	\$ -	\$ -	\$ -
	Not Recently Employed	-	\$ -	\$ -	\$ -	\$ -	\$ -
	Recently Employed	-	\$ -	\$ -	\$ -	\$ -	\$ -
	Total	1,000	\$ -	\$ 1,000,000	\$ -	\$ 2,000,000	\$ 3,000,000
Total	Employed	1,840,000	\$ 1,039,000,000	\$ 1,019,000,000	\$ 13,000,000	\$ 5,226,000,000	\$ 4,721,000,000
	Not Recently Employed	533,000	\$ -	\$ 1,043,000,000	\$ -	\$ -	\$ 3,403,000,000
	Recently Employed	233,000	\$ 165,000,000	\$ 168,000,000	\$ 2,000,000	\$ 707,000,000	\$ 700,000,000
	Total	2,606,000	\$ 1,204,000,000	\$ 2,230,000,000	\$ 14,000,000	\$ 5,933,000,000	\$ 8,824,000,000

Rates of return are high

Band_Reserve	LF_Category	Return on Investment (Essential Skill)	Return on Investment (Level 3)
Aborig - Off-Reserve	Employed	305%	265%
	Not Recently Em	-	166%
	Recently Employ	200%	223%
	Total	296%	233%
Aborig - On-Reserve	Employed	-100%	-100%
	Not Recently Em	-	-100%
	Recently Employ	-	-
	Total	200%	133%
Band Mem. - Off-Reserve	Employed	263%	256%
	Not Recently Em	-	165%
	Recently Employ	171%	214%
	Total	238%	211%
Band Mem. - On-Reserve	Employed	163%	165%
	Not Recently Em	-	100%
	Recently Employ	100%	117%
	Total	138%	125%
Non-Aborig. - Off-Reserve	Employed	414%	376%
	Not Recently Em	-	235%
	Recently Employ	356%	345%
	Total	407%	307%
Non-Aborig. - On-Reserve	Employed	-	-
	Not Recently Em	-	-
	Recently Employ	-	-
	Total	-	200%
Total	Employed	403%	363%
	Not Recently Em	-	226%
	Recently Employ	328%	317%
	Total	393%	296%

Literacy in Calgary Neighbourhoods

Document Literacy in Canada



Literacy Report Card for the Census Metropolitan Area of Calgary

Literacy Report Card for Calgary, Alberta		
Indicator	Grade	Rank
The economic demand for literacy	A	28 / 328
The supply of literacy skill (in points)	250,200,000	-
The employed supply (in points per worker)	298	-
Literacy utilization rate	75%	-
Costs and benefits	Millions of \$	\$ per learner
Aggregate cost of eliminating literacy skill shortages	347	1,197
Aggregate benefit from eliminating literacy skill shortages	2 B	6,400
Aggregate benefit from using literacy skill surpluses	636	-

Online Project

- Funded by HRSDC, AACTI, Nexen, Bow Valley College
- Developing an online literacy assessment and instructional system
- Scores linked to the IALSS scales
- Available in English and French
- Validation testing to begin spring of 2011
- Field testing fall of 2011

For more information, or to indicate interest in participating in the development testing, contact:

Melissa Gardner

mgardner@bowvalleycollege.ca

403 410 3195

Additional Information:

- Learning a Living: First Results of the Adult Literacy and Life Skills Survey (www.statcan.ca)
- Literacy scores, human capital and growth across fourteen OECD countries (www.statcan.ca)
- Human capital and Canadian Provincial Standards of Living (www.statcan.ca) (forthcoming)
- The Adult Literacy and Life Skills Survey: New Frameworks for Assessment (www.statcan.ca)
- IALS and ALL data (www.statcan.ca)
- Information: T. Scott Murray dataangel@mac.com