Unclassified **CERI/WD(99)1**

Organisation de Coopération et de Développement Economiques
Organisation for Economic Co-operation and Development

OLIS : 07-Apr-1999
Dist. : 09-Apr-1999

English text only

CENTRE FOR EDUCATIONAL RESEARCH AND INNOVATION

CERI/WD(99)1
Unclassified

ADULTS IN TRAINING: AN INTERNATIONAL COMPARISON OF CONTINUING EDUCATION AND TRAINING

Philip J. O'Connell
The Economic and Social Research Institute, Dublin

English text only

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SUMMARY

In recent years there has been a resurgence of interest in the importance of education and training in furthering the goals of economic progress, fuller employment and social integration. While a good deal is known about initial education prior to entry to the labour market, internationally comparable data on continuing education and training beyond initial education are extremely limited.

This paper seeks to exploit the new opportunity offered by the *International Adult Literacy Survey*, which collected detailed information on participation in training in the twelve months prior to the survey, to compare continuing education and training of adults across countries. The main focus of the paper is on differences between countries in participation in education and training, the duration of courses, and financial sponsorship. The paper also examines cross-national similarities and differences in education and training by gender, age group, educational attainment, literacy levels, occupation, and the size and type of the organisations in which people work.

The survey reveals substantial cross-national differences in the incidence and volume of continuing education and training among adults. Notwithstanding these marked differences, however, the survey also suggests remarkable similarities across countries in the distribution of education and training *within* sub-populations:

- In all countries employed adults are more likely to participate in continuing education or training than the unemployed, who in turn have higher rates of participation than those not economically active.

- The incidence of participation in job-related training is substantially higher than that in education and training undertaken for personal interest and other reasons.

- There are no substantial gender differences in participation in education and training. However, when men participate in job-related training, they are more likely to receive financial sponsorship from their employers than are women.

- Adults who already possess higher level educational qualifications are a great deal more likely than those with lower educational attainments to participate in education or training, and when they do so the duration of their training is longer. Current patterns of education and training are thus likely to exacerbate rather than mitigate labour market inequalities and processes of social exclusion.

- Younger adults are more likely to participate in continuing education or training. The training undergone by younger adults is of longer duration than among older age groups, intensifying age-related discrepancies in education and training.

- Those working in large firms and organisations are more likely than those working in small organisations to participate in continuing education or training.

- Finally, the new data on the funding of training collected in the *IALS* shows that in all countries employers are by far the most common financial sponsors of training - particularly of job-related training. Where employers do not sponsor training, for example in small firms, employees themselves are more likely to provide funding for their own training.

The opinions expressed and arguments employed in this report are the responsibility of the author and do not necessarily represent those of the OECD.

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ADULTS IN TRAINING: AN INTERNATIONAL COMPARISON OF CONTINUING EDUCATION AND TRAINING[1]

Introduction

In recent years there has been a resurgence of interest in the importance of education and training. The importance of investment in skills and competencies in furthering the goals of economic progress, fuller employment and social integration is reflected in the recent OECD (1998) report, *Human Capital Investment: An International Comparison* which aims to clarify the current state of knowledge about human capital and its measurement[2]. This renewed interest in education and training can be seen as an expression of the changes in the occupational structure of the western labour market. Post-industrialisation has seen a movement from an industrial base towards a knowledge and services based industry. These developments have resulted in a reduced demand for non-skilled, semi-skilled and manual labour, a trend which was observed by Bell (1974) almost a quarter of a century ago.

In the past, education and training were regarded as fixed assets which did not need to be supplemented later in life. This view of training and education has changed however, with a reconceptualisation of learning as a lifelong process. This alternative learning path can be understood as reflecting changes in the organisation and technology of production which give rise to constant demand for new skills and new abilities.

While a good deal is known about initial education prior to entry to the labour market, internationally comparable data on continuing education and training beyond initial education are extremely limited. Up to now the main data sources on continuing education and training have mainly consisted of national labour force and other household surveys and occasional enterprise surveys, with significant cross-national differences in the definitions of training and the reference period in relation to which training is measured. In recognition of the uncertainties concerning the measurement and collection of data on post-school education and training data the OECD published its *Manual for Better Training Statistics: Conceptual, Measurement and Survey Issues* in 1997 in an effort to improve the availability and accuracy of information on training, with a particular emphasis on improving enterprise related training data.[3]

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[1] I would like to acknowledge the expertise and patience of Colleen Bolger and Richard Desjardins at Statistics Canada who extracted numerous tabulations from the *International Adult Literacy Survey* database at my request. I also wish to thank Mark Chapman at the Australian Bureau of Statistics, who provided additional information on the Australian data; Thomas Healy at the OECD, for his helpful comments on an earlier draft; Emmanuel Boudard for his careful checking of data; and Vanessa Gash for her usual competent and cheerful research assistance.

[2] The current study grew out of the attempt to compile internationally comparable data on work-related and other forms of continuing education and training in the preparation of that OECD report.

[3] In 1997 the OECD also initiated an electronic discussion group on the Internet to explore means to harmonise the collection of training statistics across OECD countries.

Hopefully such interventions will result in higher quality information on continuing education and training, and greater comparability of such statistics across countries, although it is likely that these initiatives will take some time to bear fruit. In the interim, the recent availability of information from the *International Adult Literacy Survey* (*IALS*) on the incidence, duration and nature of continuing adult education and training in 11 OECD countries represents a substantial step forward in the measurement of training.[4]

The *IALS* was designed as a comparative survey of demonstrated literacy skills among adults in different countries. Considerable efforts were devoted to ensuring measurement conformity across the countries participating in the study (Murray, Kirsch, and Jenkins, 1997), with the result that the *IALS* offers a unique and potentially rich source of international comparisons on a range of indicators which have not been previously available on a comparable basis. The *IALS* background questionnaire records any participation in education or training during the 12 months preceding the survey. The Canadian survey asks:

> 'During the past 12 months, that is since August 1993, did you receive any training or education including courses, private lessons, correspondence courses, workshops, on-the-job training, apprenticeship training, arts, crafts, recreation courses or any other training or education?'

This is a very broad definition of education and training, covering a rather wider category of training types than in other surveys, for example the European *Labour Force Survey*.

Subsequent questions identify the type of education or training, financial sponsorship, duration of training, and purpose of training. The latter question allows us to distinguish: (1) education or training taken for 'Career or job-related purposes' - which we hereafter designate as 'job-related training'; and (2) education or training taken for 'Personal interest' and 'Other' reasons.

It should be noted that the detailed data relating to the nature and purpose of education or training, as well as its duration and financial sponsorship, was collected in respect of up to three courses or programmes taken during the previous 12 months. The distribution of the number of courses is presented by country for various population and training categories in Appendix Table 1. Averaging across countries, over half of all adults who reported having participated in some form of education or training in the previous 12 months had taken a single course, and almost 90% had taken between 1 and 3 courses, in respect of which detailed data were recorded. This leaves a residual of, on average, over 11% of respondents who had taken more than three courses, although the percentage varies between 3% of adults in Poland to 22% in the United States. Among this residual group, the survey collected information only on the first three courses and we know nothing about the fourth or higher order courses. Recording details only of the first three courses mentioned in the interview has no impact on participation rates, but it does lead to an underestimation of the duration of training, since the duration of additional courses is not recorded, and this underestimation of duration is likely to be greatest in those countries with the highest proportion taking more than 3 courses. While it might be expected that respondents would first identify the three most significant courses, we cannot be certain of this, and it is not possible to estimate the extent of bias introduced to the international comparisons.

In most countries the achieved samples amounted to between 2,000-4,500 respondents, although the sample size exceeded 6,700 in the United States and 8,200 in Australia (see Appendix Table 2). These sample sizes are relatively small for nationally representative surveys, and this necessarily limits the extent to which it is possible to analyse sub-groups within populations without encountering cell-sizes too small to infer population parameters with confidence. This *caveat* aside the *IALS* provides an invaluable source

[4] The two IALS surveys have, to date, been conducted in 12 countries. In the case of Germany, however, the questions relating to education and training were judged to be sufficiently different from those in the other countries to preclude comparability, with the result that this study presents results for only 11 countries.

of internationally comparable data on patterns of participation in continuing education and training, including a number of measures which have not been previously available.

This paper seeks to exploit the new opportunity offered by the *IALS* to compare continuing education and training of adults across countries. The main focus of the paper is on differences between countries in participation in education and training, the duration of courses, and financial sponsorship. The paper also examines cross-national similarities and differences in education and training by gender, age group, educational attainment, literacy levels, occupation, and the size and type of the organisations in which people work.

The paper concentrates exclusively on continuing education and training among adults, aged 25-64[5]. Continuing adult education and training warrants attention in its own right, particularly in view of the renewed interest in learning over the entire life-course. Moreover, while the *IALS* also contains data on those aged 16-24, international differences in initial education systems, as well as in patterns of participation in both education and the labour force, are so great as to prevent a rigorous distinction between initial and continuing education and training, and to render international comparisons of participation in education and training among the younger age group extremely difficult to interpret.

THE INCIDENCE OF TRAINING IN THE ADULT POPULATION

Table 1 shows the incidence of education and training by type and labour force status for the adult population, aged 25-64 years in 11 countries. On average, just under 36% of adults engaged in some form of training over the previous year, although there was substantial variation around the country mean, from 14% of adults in Poland to 54% in Sweden. Over one quarter of adults participated in job-related training, and again there was substantial variation around the mean, with just over 10% of adults in Poland, and just under 40% of adults in the United Kingdom participating in job-related training. In most countries the incidence of participation in education or training was closely related to labour market status, with the employed showing substantially higher rates of participation than the unemployed[6], who in turn show higher rates of participation than those not economically active. In the case of job-related training, the participation gap between the employed and those in other labour market statuses is particularly marked: almost 35% of the employed participated in job related training, compared to less than 20% of the unemployed and only 7% of those not economically active.

[5] The selection of age-group 25-64 throughout this paper differs slightly from the standard presented in IALS publications which typically was for the 26-65 age-group.

[6] In Table 1 labour market status refers to principal economic status at the time of the survey, while participation in education or training refers to the previous twelve months, with the result that some individuals would have changed status in the period between the training event and the survey. However, even with non-random transitions between statuses, this is unlikely to substantially alter the pattern of marked differences in participation rates by labour market status shown in Table 1.

Table 1: Participation by adults aged 25-64 in continuing education and training by type of training and labour force status, 1994-1995

	All %	Employed %	Unemployed %	Inactive %
All education and training				
Australia	35.6	42.2	28.3	16.1
Belgium (Flanders)	21.6	27.0	16.6*	9.8
Canada	36.5	41.9	30.1	23.1
Ireland	22.0	29.5	8.5*	14.5
Netherlands	36.3	43.2	39.2	21.8
New Zealand	46.4	53.1	31.4	29.7
Poland	14.0	20.5	7.9*	2.8*
Sweden	54.3	60.2	46.0	28.9
Switzerland **	41.7	45.7	32.2*	27.8
United Kingdom	44.9	56.0	33.1	14.3
United States	41.9	49.0	30.2*	17.1
Unweighted Mean	35.9	42.6	27.6	18.7
Job-related training				
Australia	30.3	38.1	23.8	6.9
Belgium (Flanders)	14.0	20.0	8.6*	0.9*
Canada	29.5	37.5	22.0	9.9
Ireland	15.7	23.4	7.1*	6.6
Netherlands	24.1	32.5	29.7	5.9
New Zealand	38.4	46.9	24.1	16.3
Poland	10.6	16.5	2.4*	1.1*
Switzerland	26.5	31.7	27.0*	6.0
United Kingdom	39.7	51.9	24.0	7.0
United States	37.8	45.6	28.5*	10.1
Unweighted Mean	26.7	34.4	19.7	7.1

Notes:

1. * indicates less than 30 cases in the sample cell.
2. ** Data for Switzerland in this and other tables in this paper refers to German and French-speaking communities only (excluding Italian-speaking).
3. Data on job-related training in Sweden not available

Table 2 shows participation in education and training by gender for the adult population. In general men were somewhat more likely to participate in some form of education or training than women, although this pattern was reversed in Ireland and Sweden. When we focus exclusively on job-related training the male-female disparity widens; on average, over 30% of adult males received job-related training in the previous twelve months, compared to 23% of women.[7]

Table 2: Participation by adults aged 25-64 in continuing education and training by type of training and gender, 1994-1995

	All education and training			Job-related training		
	All %	Men %	Women %	All %	Men %	Women %
Australia	35.6	36.8	34.4	30.3	34.4	26.1
Belgium (Flanders)	21.6	24.0	19.3	14.0	18.3	10.0
Canada	36.5	37.0	36.0	29.5	33.4	25.8
Ireland	22.0	20.3	23.8	15.7	16.3	15.1
Netherlands	36.3	38.2	34.4	24.1	30.5	17.5
New Zealand	46.4	47.8	45.1	38.4	42.6	34.8
Poland	14.0	15.0	13.1	10.6	11.9	9.4
Sweden	54.3	52.6	56.0	n.a.	n.a.	n.a.
Switzerland	41.7	43.6	40.0	26.5	31.7	21.6
United Kingdom	44.9	45.7	44.2	39.7	42.6	36.8
United States	41.9	41.8	42.1	37.8	39.0	36.7
Unweighted Mean	35.9	36.6	35.3	26.7	30.1	23.4

The incidence of training declines with age (Table 3). Averaging across countries, about 42% of those aged 25-34 participated in some form of education or training, compared to 40% of those aged 35-44 and 28% of those aged 45-64. The sharp decline in training received by the older age group is repeated in all countries. Job-related training shows similar age-related patterns.

[7] In the Swedish survey the distinction between job-related and other training differs from that adopted in the other countries and job-related training appears to be substantially underestimated, so job-related training is not separately reported for Sweden in the present paper.

Table 3: Participation by adults aged 25-64 in continuing education and training by type of training and age group, 1994-1995

	All education and training			Job-related training		
	Age 25-34	Age 35-44	Age 45-64	Age 25-34	Age 35-44	Age 45-64
Australia	42.2	40.3	27.3	36.8	35.8	21.5
Belgium (Flanders)	25.2	22.2	18.5	18.7	13.8	10.8
Canada	43.6	41.9	26.6	35.3	32.3	22.8
Ireland	28.1	25.3	15.0	21.5	18.0	9.7
Netherlands	46.4	40.8	25.6	32.2	29.4	14.2
New Zealand	52.7	50.8	37.9	43.7	42.6	31.1
Poland	18.1	17.4	8.4	12.6	13.9	6.5
Sweden	55.7	61.1	49.2	n.a.	n.a.	n.a.
Switzerland	51.6	44.7	33.0	32.9	26.7	21.8
United Kingdom	53.7	53.7	33.6	49.2	49.0	27.5
United States	45.7	45.9	37.1	41.8	41.9	32.8
Unweighted Mean	42.1	40.4	28.4	32.5	30.3	19.9

In all countries continuing education and training is positively related to initial educational attainment with the result that those with the lowest educational qualifications are least likely to receive further training. In Table 4, averaging across countries, 21% of those with lower secondary education or below participated in some form of further education or training, compared with 38% of those with upper secondary and 55% of those with tertiary education. The educational discrepancy in further training is even greater in the case of job-related training, with less than 14% of those with lower secondary education or below receiving such training, compared to 28% of those with upper secondary and 44% of those with tertiary qualifications.

Table 4: Participation by adults aged 25-64 in continuing education and training by type of training and educational attainment, 1994-1995

	All education and training			Job related training		
	Below upper secondary	Upper secondary	Tertiary	Below upper secondary	Upper secondary	Tertiary
	%	%	%	%	%	%
Australia	23.2	35.5	55.6	18.5	30.4	49.0
Belgium (Flanders)	8.6	23.0	42.7	3.9	15.8	29.7
Canada	19.6	31.1	54.9	13.6	25.1	46.5
Ireland	12.6	26.2	46.2	8.7	18.6	34.3
Netherlands	23.9	42.1	52.1	13.7	27.3	40.0
New Zealand	36.1	48.8	64.0	28.8	38.6	56.3
Poland	6.2	20.6	34.8	4.8	17.0	23.8
Sweden	36.4	55.7	68.0	n.a.	n.a.	n.a.
Switzerland	17.7	44.9	58.1	6.5	28.9	41.1
United Kingdom	33.3	53.6	71.4	28.3	48.3	65.7
United States	13.3	32.6	62.4	10.5	28.9	57.2
Unweighted Mean	21.0	37.7	55.5	13.7	27.9	44.4

Participation in continuing education and training is also related to levels of literacy. In the *IALS* literacy levels refer to progressive increments in measured ability in relation to prose, document and quantitative skills. For each skill domain, a five-point scale was constructed to reflect increasing complexity of underlying literacy skill components. Thus, for example, Level 2 on the document literacy scale indicates an ability to locate pieces of information based on simple matching requiring a low level of inference, while literacy level 5 indicates an ability to draw high-level inferences from multiple and complex information sources.[8] In all countries participation in continuing education and training increases steadily with level of literacy. Table 5 shows that, averaging across countries, less than a quarter of adults with literacy levels of 2 or below on the document literacy scale participated in any education or training, compared to well over half of those with literacy levels of 4 or 5. The inequality in participation in job-related training is even greater with a participation rate of 44% among the higher literacy levels compared to a rate of less than 17% at the lower literacy levels.

Table 5: Participation by adults aged 25-64 in continuing education and training by type of training and literacy level, Document Scale, 1994-1995

	All Education and training			Job related training		
	Level1/2 %	Level 3 %	Level4/5 %	Level1/2 %	Level 3 %	Level4/5 %
Australia	21.3	41.1	56.5	16.4	34.5	52.7
Belgium (Flanders)	11.2	24.3	37.6	5.9	15.3	27.7
Canada	24.3	40.1	53.7	18.3	31.9	46.8
Ireland	14.5	28.5	36.5	9.2	20.0	30.3
Netherlands	23.9	39.6	52.1	13.9	26.5	37.6
New Zealand	35.1	53.5	64.1	28.5	44.8	54.2
Poland	9.8	22.6	30.9	7.6	16.4	22.9
Sweden	41.2	57.3	60.3			
Switzerland	28.4	45.0	62.0	16.2	28.2	44.0
United Kingdom	30.7	53.6	68.8	25.8	47.2	64.4
United States	26.3	49.0	59.2	23.8	43.5	53.9
Unweighted mean	24.3	41.3	52.9	16.6	30.8	43.5

This universal pattern, in which participation in continuing education and training is positively related to both initial educational attainment and literacy, is a matter of some concern. It is well-established that education is closely related to success in the labour market and the results from the *IALS* suggest that this pattern is true also of literacy (OECD and Human Resources Development Canada, 1998). Thus, the positive relationship between participation in continuing education and training and both educational

[8] The five levels of document literacy are defined as follows: Level 1 - locating a single piece of information based on a literal match from texts or tables that contain little distracting information; Level 2 - making some literal matches and drawing low-level inferences from material with some distracting information; Level 3 - making multiple literal or synonymous matches, taking account of conditional information, or matching on the basis of multiple features of information; Level 4 - similar to Level 3, but requiring higher order inferences; Level 5 - making high-level inferences, processing conditional information or using specialised knowledge to interpret complex displays of information that contain multiple distractions.

attainment and literacy suggests that participation is, in a sense, inversely related to need: current patterns of participation are likely to exacerbate rather than mitigate labour market inequalities and processes of social exclusion.

TRAINING IN THE EMPLOYED ADULT POPULATION

Table 6 shows training by gender for all adults who were in employment at the time of the surveys. The incidence of training among employed adults (43%) was higher than among the total adult population (35%). Among the employed, however, the gender difference in training we observed for the entire adult population is reversed: women in employment were more likely than men to participate in further education and training, and this is true of all countries in the survey with the single exception of Belgium (Flanders).

Employed adults were also more likely to receive job-related training than the total adult population: 34% compared to 27%. In most countries gender differences in the participation of the employed in job-related training were relatively slight, although in Ireland over 28% of employed women received job-related training compared to only 20% of men.

Table 6: Participation by employed adults aged 25-64 in continuing education and training by type of training and gender, 1994-1995

	All education and training			Job-related training		
	All %	Men %	Women %	All %	Men %	Women %
Australia	42.2	40.5	44.5	38.1	38.4	37.7
Belgium (Flanders)	27.0	27.4	26.4	20.0	21.3	17.9
Canada	41.9	40.8	43.4	37.5	37.6	37.3
Ireland	29.5	25.1	37.2	23.4	20.5	28.5
Netherlands	43.2	43.0	43.5	32.5	34.5	29.0
New Zealand	53.1	51.3	55.1	46.9	46.4	47.4
Poland	20.5	19.6	21.6	16.5	16.5	16.6
Sweden	60.2	57.0	63.6	n.a.	n.a.	n.a.
Switzerland	45.7	44.6	47.2	31.7	32.8	30.1
United Kingdom	56.0	53.6	59.0	51.9	50.9	53.1
United States	49.0	47.3	50.9	45.6	44.5	46.6
Unweighted Mean	42.6	40.9	44.8	34.4	34.3	34.4

We observed above, in relation to the entire adult population, that younger age groups are more likely to participate in education and training. This is also true of employed adults, although the age related discrepancy in participation is less marked among the employed: averaging across countries, 47% of those aged 25-34 years received some form of education or training, compared to 37% of those aged 45-64 (Table 7). The age discrepancy is even more muted in the case of job-related training: on average 38% of the 25-34 year age group, compared with 30% of the 45-64 year age group, received job-related training.

Table 7: Participation by employed adults aged 25-64 in continuing education and training by type of training and age group, 1994-1995

	All education and training			Job-related training		
	Age 25-34 %	Age 35-44 %	Age 45-64 %	Age 25-34 %	Age 35-44 %	Age 45-64 %
Australia	47.6	45.3	34.8	42.9	41.7	30.7
Belgium (Flanders)	27.3	24.7	29.2	21.4	17.0	21.6
Canada	46.6	44.5	35.2	41.4	39.7	31.6
Ireland	33.7	28.5	25.5	27.5	23.6	18.8
Netherlands	49.8	44.4	34.4	36.3	35.5	25.2
New Zealand	58.0	55.4	46.9	50.2	49.4	41.9
Poland	22.8	21.4	16.7	17.0	17.6	14.4
Sweden	60.6	63.7	57.5	n.a.	n.a.	n.a.
Switzerland	53.6	48.6	37.2	35.5	32.1	28.2
United Kingdom	62.2	61.9	46.4	59.1	58.0	41.3
United States	49.1	51.3	47.2	46.2	48.1	43.3
Unweighted Mean	46.5	44.5	37.4	37.7	36.3	29.7

The correlation of training with age is, at least in part, related to the strong correlation between training and level of educational attainment, since younger age groups tend to have higher average levels of educational attainment. Table 8 shows that among the employed, as in the case of the total adult population, participation in education and training is closely related to initial educational attainment. Across all countries those with higher levels of educational attainment receive substantially more education and training than those with lower qualifications. Averaging across the *IALS* countries, 27% of the employed whose educational attainments were less than upper secondary level received training, while the corresponding rate for those with tertiary education was 59%. A similar pattern is repeated in respect of job-related training.

Table 8: Participation by employed adults aged 25-64 in continuing education and training by type of training and educational attainment, 1994-1995

	All education and training			Job-related training		
	Below upper secondary %	Upper secondary %	Tertiary %	Below Upper secondary %	Upper Secondary %	Tertiary %
Australia	30.2	39.9	58.3	26.2	36.4	53.4
Belgium (Flanders)	10.8*	25.6	44.8	7.4*	20.2	32.7
Canada	24.0	33.5	57.5	20.8	28.9	52.7
Ireland	17.5	30.8	49.2	14.8	24.1	37.8
Netherlands	30.5	46.5	55.8	20.9	34.5	45.5
New Zealand	43.1	53.6	68.0	37.0	46.7	62.3
Poland	9.5	28.5	40.5	8.0	25.0	29.1
Sweden	45.2	59.7	71.6	n.a.	n.a.	n.a.
Switzerland	19.5	48.7	59.9	9.0	34.4	43.8
United Kingdom	45.1	59.9	76.7	40.8	55.4	73.2
United States	20.4	37.4	67.2	17.4	34.4	63.1
Unweighted Mean	26.9	42.2	59.0	20.2	34.0	49.4

Note: * indicates less than 30 cases in the sample cell

Table 9: Participation by employed adults aged 25-64 in continuing education and training by type of training and literacy level, Document Scale, 1994-1995

	All education and training			Job-related training		
Source of funding:	Level 1/2 %	Level 3 %	Level 4/5 %	Level 1/2 %	Level 3 %	Level 4/5 %
Australia	26.8	47.1	60.7	23.3	42.1	57.0
Belgium (Flanders)	13.4	30.4	40.9	11.2	21.2	31.2
Canada	26.4	43.3	59.8	23.0	37.4	55.6
Germany	12.6	25.6	35.8	11.5	22.2	30.1
Ireland	19.3	35.5	46.5	14.5	28.3	39.0
Netherlands	31.4	44.2	55.0	23.0	33.6	41.5
New Zealand	39.5	59.0	70.2	34.5	52.8	61.8
Poland	16.8	28.0	37.3	14.2	21.2	27.5
Sweden	47.8	62.6	64.7	n.a.	n.a.	n.a.
Switzerland	33.2	51.4	66.7	21.6	36.3	48.7
United Kingdom	40.6	62.9	74.5	36.7	59.0	69.7
United States	33.6	57.1	64.7	31.3	52.8	60.2
Unweighted Mean	28.5	45.6	56.4	20.7	34.3	43.9

Table 9 shows a very similar relationship for the employed adult population between levels of literacy and participation in training: those with high scores on the Documentary literacy scale participate in continuing education and training at greater frequency than do those with lower average scores.

Table 10: Participation by employed adults aged 25-64 in continuing education and training by type of training and firm-size, 1994-1995

All education and training	Less than 20 employees %	20-99 employees %	100-499 employees %	500 or more employees %
Australia	28.5	41.3	48.6	57.6
Belgium (Flanders)	24.5	20.2	32.4	32.2
Canada	37.4	44.3	28.8	50.4
Ireland	15.6	22.5	33.5	42.9
New Zealand	37.7	62.3	61.0	68.4
Poland	12.4	27.7	23.0	26.9
Switzerland	40.0	41.0	46.8	56.2
United Kingdom	32.9	48.4	56.4	67.0
United States	34.5	40.3	44.6	62.7
Unweighted Mean	29.3	38.7	41.7	51.6
Job-related training				
Australia	23.3	36.3	45.5	54.7
Belgium (Flanders)	15.2	15.9	25.4	25.0
Canada	30.8	40.8	24.5	46.7
Ireland	10.8*	17.4*	29.6	34.8
New Zealand	29.6	56.0	56.6	63.7
Poland	9.0	21.9	17.6	24.3
Switzerland	26.9	25.0	32.0	41.8
United Kingdom	27.7	46.4	52.0	63.8
United States	30.9	36.3	42.0	59.3
Unweighted Mean	22.7	32.9	36.1	46.0

Note: * indicates less than 30 cases in the sample cell

Most commentators on job-related training argue that small firms are less likely to provide training for their workers, mainly because of dis-economies of scale, whereby: (1) smaller firms may have higher training costs *per employee* than larger firms because of difficulties in spreading fixed training costs of training over a small group of employees; and (2) because the loss in production incurred by having even one employee in training may be higher for smaller than for larger firms. This expectation is confirmed by the *IALS* data. Table 10, which presents data on the incidence of education and training of individuals by the size of the firm in which they work, shows that, in general, those working in larger firms are more likely to participate in training than those in smaller firms. Thus, averaging across the *IALS* countries, 29% of those working in firms with less than 20 employees received some form of education or training, compared with 52% of those working in firms with 500 or more employees. The correlation between firm-size and participation is rather stronger in the case of job-related training, to which the theoretical arguments are most pertinent: the 46% participation rate of those in firms with 500 or more employees is double the rate among those in the smallest firm-size category (23%).

Table 11: Participation by employed adults aged 25-64 in continuing education and training by type of training and occupation, 1994-1995

All education and Training	Managers %	Technicians %	Clerical %	Sales %	Skilled workers %	Machine operatives %
Australia	57.2	49.5	47.4	36.7	30.5	30.3
Belgium (Flanders)	54.7	30.1	33.1	30.8	9.1*	
Canada	56.5	46.0	46.5	34.7	29.0	24.5
Ireland	49.0	42.3	42.3	25.7*	14.6*	17.6*
Netherlands	47.2	48.8	44.7	36.8	39.6	32.4
New Zealand	69.1	68.4	54.3	51.9	40.7	39.5
Poland	42.1	36.8	26.8	12.5*	15.2	13.0*
Sweden	69.8	70.4	54.7	53.2	41.6	46.5
Switzerland	55.4	57.5	43.3	45.0	37.4	26.7*
United Kingdom	70.7	66.6	60.0	51.5	37.1	40.3
United States	64.6	72.4	56.8	38.9	34.7	20.2
Unweighted Mean	55.2	49.7	43.8	35.9	28.1	28.6
Job-related Training						
Australia	54.0	45.6	40.4	31.5	27.1	27.5
Belgium (Flanders)	45.5	24.9*	25.6	21.4	7.8*	
Canada	53.1	41.5	38.7	28.8	25.6	21.9
Ireland	38.7	37.0	30.4	19.8*	13.9*	15.2*
Netherlands	37.4	37.4	32.2	22.4	31.5	24.5*
New Zealand	61.9	64.6	48.5	42.1	36.5	35.9
Poland	33.2	29.8	24.3*	4.4*	13.1	11.4*
Switzerland	42.0	41.0	27.6	27.5	23.7	19.5*
United Kingdom	67.1	63.2	52.0	49.4	34.0	33.5
United States	61.3	67.6	53.7	33.4	32.7	17.9
Unweighted Mean	49.4	45.3	37.3	28.1	24.6	23.0

Note: * indicates less than 30 cases in the sample cell

There are also substantial differences in the incidence of education and training by occupation (Table 11). Managerial occupations stand out as the occupation with the highest incidence of education and training, followed closely by technical occupations, and the extent of participation in job-related training was, on average, very similar for these two occupational groups. Intermediate non-manual occupations in clerical and sales areas occupied an intermediate position in both overall and job-related training. The lowest incidence of both overall and job-related training occurred in skilled manual occupations and machine operatives. Surprisingly, perhaps, the incidence of training among skilled workers was not in general markedly greater than among the less skilled machine operatives.

Table 12: Participation by employed adults aged 25-64 in continuing education and training by type of training and economic sector 1994-1995

All education and training	Agriculture %	Manufacturing %	Construction %	Trade %	Finance %	Personal services %
Australia	29.5	35.3	31.7	31.9	46.1	56.3
Belgium (Flanders)	12.3*	23.8	13.0*	15.4*	44.8	38.6
Canada	33.7	28.6	39.6	25.9	63.8	49.7
Ireland	7.0*	23.3	19.7*	17.9*	36.6*	47.0
Netherlands	24.6*	43.2	30.2	32.5	49.2	50.4
New Zealand	30.6	42.6	42.5	51.7	65.9	66.5
Poland	7.7*	18.0	19.0*	19.6*	57.5*	27.1
Sweden	44.9*	55.7	48.8	46.8	63.9	68.1
Switzerland	27.5*	37.7	42.4	36.4	58.8	55.6
United Kingdom	38.9*	52.5	46.4	47.7	68.3	64.4
United States	32.3*	37.5	41.9	36.7	54.1	60.2
Unweighted mean	26.3	36.2	34.1	32.9	55.4	51.4
Job-related training						
Australia	26.2	31.7	27.9	27.6	42.6	51.3
Belgium (Flanders)	7.9*	19.4	8.5*	12.3*	32.8	26.9
Canada	30.0	21.5	37.7	22.6	60.4	44.6
Ireland	5.8*	20.7*	15.6*	14.1*	27.4*	36.9
Netherlands	14.4*	31.9	24.4	23.2	40.4	37.5
New Zealand	24.1	37.7	38.7	42.6	59.3	60.3
Poland	6.7*	14.9	17.1*	10.5*	45.7*	21.9
Switzerland	16.4*	22.3	32.5	24.1	43.4	38.6
United Kingdom	33.3*	48.4	42.1	41.5	63.3	61.6
United States	30.8*	35.2	38.5	32.0	50.8	56.1
Unweighted mean	26.3	36.2	34.1	32.9	55.4	51.4

Note: * indicates less than 30 cases in the sample cell

Table 12 shows rates of participation by employed adults in continuing education and training by economic sector. In general workers in agriculture show the lowest participation rates, although in Canada participation rates among manufacturing workers were even lower than in agriculture. The highest participation rates occurred in the financial sector: averaging across countries, well over half of all financial sector workers participated in some form of continuing education, and only in Ireland did the participation rate fall below 40%.

THE DURATION OF TRAINING

Up to this point we have considered indicators of the incidence of training. Measures of incidence, however, offer an incomplete account of the volume or intensity of training, since the duration of training may vary independently of its incidence both between countries and between population sub-groups. One of the strengths of the *IALS* training data is that the Survey records information on the average (mean) duration of training in weeks, days and hours for 9 countries in respect of up to three education or training courses taken during the previous twelve months. This allows us to derive new internationally comparable data on the duration of training. The data, presented in Table 13, shows that, in general, there is less international variation in the average duration of training per trainee than in rates of participation.

Table 13: Average duration of training undertaken by employed adults aged 25-64 in continuing education and training by type of training, 1994-1995

	Rate of participation in training % of all employed*	Average duration in weeks per trainee	Average duration in days per trainee	Average duration in hours per trainee	Average duration in hours per employed person
	A	B	C	D	E=A*D/100
	%	Weeks	Days	Hours	Hours
All education and training					
Australia	42.2	13.3	31.0	150.8	63.7
Belgium (Flanders)	27.0	14.5	27.3	123.9	33.5
Canada	41.9	11.9	27.9	128.6	53.9
Ireland	29.5	16.0	35.6	193.6	57.0
Netherlands	43.2	21.9	35.8	146.8	63.4
New Zealand	53.1	14.3	31.9	151.3	80.3
Poland	20.5	11.6	33.4	161.5	33.1
Switzerland	45.7	13.9	23.3	104.6	47.8
United Kingdom	56.0	11.8	22.2	100.0	56.0
United States	49.0	9.0	21.0	100.6	49.3
Unweighted Mean	42.6	13.1	28.9	136.2	53.8
Job-related Training					
Australia	38.1	11.1	25.3	128.5	48.9
Belgium (Flanders)	20.0	12.5	23.5	126.2	25.2
Canada	37.5	11.1	26.4	119.8	44.9
Ireland	23.4	15.0	38.1	218.7	51.1
Netherlands	32.5	20.9	35.9	159.0	51.7
New Zealand	46.9	13.9	31.8	154.1	72.2
Poland	16.5	9.9	29.9	143.2	23.7
Switzerland	31.7	12.0	22.0	111.3	35.3
United Kingdom	51.9	11.0	20.9	99.5	51.6
United States	45.6	8.2	19.8	98.1	44.6
Unweighted Mean	34.4	12.5	27.3	135.8	44.9

Notes:

1. Average duration of job-related training is the total average amount in days, weeks or hours over the previous 12 months in respect of the three most important mentions of training by respondents in the *International Adult Literacy Survey*.

2. The average duration in hours of job-related training per person employed in column E is equivalent to the total number of hours of such training divided by the total number of employed persons aged 25-64.

Combining the indicators of both incidence and duration provides a more complete picture of the intensity or volume of training within a population, and the combined measure may alter the relative international rankings of training effort. Thus, for example, in the United Kingdom, which had the highest incidence of training, the average duration of training, whether measured in hours, days or weeks was lower than the overall (unweighted) average across the 9 countries shown. In Ireland, however, which had a relatively low incidence of training, the duration of training was above average.[9] The average duration of job-related training per employed person (including those who did not receive job-related training) was 45 hours per annum, by contrast with 136 hours per employed person in receipt of training. Ranking countries by the amount of training per employed person, New Zealand which combined above average incidence as well as duration of training showed the greatest intensity of training, while Belgium (Flanders) with relatively low incidence and duration, showed the lowest.

[9] It should, however be noted that the United Kingdom has a relatively large proportion of trainees reporting that they had undertaken more than 3 courses in the previous 12 months (18% of employed adults who had received some education or training), with the result that the duration data for the United Kingdom may be underestimated by a larger factor than Ireland, where only 6% of trainees had undertaken more than 3 courses (see the discussion on the measurement of training duration in the Introduction).

Table 14: Average duration of training undertaken by employed adults aged 25-64 in continuing education and training by type of training and gender, 1994-1995

	Rate of participation %		Average duration Hours		Duration per employee Hours	
	Men	Women	Men	Women	Men	Women
All education and training						
Australia	40.5	44.5	147.1	155.2	59.5	69.1
Belgium (Flanders)	27.4	26.4	123.7	124.3	33.9	32.8
Canada	40.8	43.4	130.8	125.9	53.4	54.7
Ireland	25.1	37.2	175.8	215.0	44.2	80.1
Netherlands	43.0	43.5	143.8	151.8	61.8	66.0
New Zealand	51.3	55.1	169.1	132.0	86.7	72.8
Poland	19.6	21.6	150.9	175.7	29.6	38.0
Switzerland	44.6	47.2	115.3	91.3	51.4	43.1
United Kingdom	53.6	59.0	107.8	91.3	57.8	53.9
United States	47.3	50.9	120.0	81.1	56.8	41.2
Unweighted Mean	39.3	42.9	138.4	134.4	53.5	55.2
Job-related training						
Australia	38.4	37.7	129.3	127.4	49.6	48.0
Belgium (Flanders)	21.3	17.9	129.2	121.1	27.5	21.7
Canada	37.6	37.3	133.3	101.5	50.1	37.9
Ireland	20.5	28.5	199.1	243.0	40.8	69.3
Netherlands	34.5	29.0	148.7	179.9	51.4	52.1
New Zealand	46.4	47.4	171.1	134.6	79.4	63.8
Poland	16.5	16.6	133.0	157.9	21.9	26.2
Switzerland	32.8	30.1	122.3	95.0	40.2	28.6
United Kingdom	50.9	53.1	110.1	87.0	56.1	46.1
United States	44.5	46.6	119.2	76.4	53.1	35.6
Unweighted Mean	34.3	34.4	139.5	132.4	47.0	43.0

We noted above that employed women are somewhat more likely to participate in some form of education or training than men, but that this gender differences disappears when we consider only job-related training. Table 14 shows that, when we consider all education and training, men receive training of longer average duration than women, although there is considerable cross-national variation in this. Combining the incidence and duration measures, we find that, averaging across countries, the male advantage in duration is not sufficient to outweigh the female advantage in incidence, with the result that men showed a lower average intensity, as measured in hours of training per employed person, than women. Much of the remaining discrepancy in the unweighted means can, however, be attributed to the Irish case, where women's training duration and intensity were very markedly higher than men's.

The gender comparison changes when we consider only job-related training, where, on average, there were no significant gender differences in participation in training, but where men showed longer average duration. Combining the two measures, men received almost 47 hours training per employed adult, compared with 43 hours in the case of women. Here again Ireland stands out as an exception, with men receiving 41 hours per employed person, compared to 69 hours among women.

Table 15 Average duration of training undertaken by employed adults aged 25-64 in continuing education and training by type of training and age group 1994-1995

	Rate of participation %			Average duration Hours			Duration per employee Hours		
All education and training	25-34	35-44	45-64	25-34	35-44	45-64	25-34	35-44	45-64
Australia	47.6	45.3	34.8	179.4	139.3	129.9	85.4	63.1	45.2
Belgium (Flanders)	27.3	24.7	29.2	127.1	137.0	106.1	34.7	33.9	31.0
Canada	46.6	44.5	35.2	159.7	114.8	108.4	74.4	51.1	38.1
Ireland	33.7	28.5	25.5	217.1	181.5	165.3	73.3	51.8	42.2
Netherlands	49.8	44.4	34.4	195.9	127.5	92.2	97.5	56.7	31.8
New Zealand	58.0	55.4	46.9	205.8	153.6	93.2	119.5	85.1	43.7
Poland	22.8	21.4	16.7	208.8	152.8	96.9	47.6	32.6	16.2
Switzerland	53.6	48.6	37.2	136.0	84.9	85.1	72.9	41.3	31.6
United Kingdom	62.2	61.9	46.4	121.9	105.6	71.4	75.9	65.3	33.1
United States	49.1	51.3	47.2	141.1	119.4	56.1	69.3	61.3	26.5
Mean	45.1	42.6	35.4	169.3	131.6	100.5	75.0	54.2	34.0
Job-related training									
Australia	42.9	41.7	30.7	164.4	119.5	95.6	70.5	49.8	29.3
Belgium (Flanders)	21.4	17.0	21.6	110.5	147.0	109.9	23.6	25.1	23.7
Canada	41.4	39.7	31.6	151.5	113.7	102.3	62.8	45.2	32.3
Ireland	27.5	23.6	18.8	252.0	185.7	191.7	69.3	43.7	36.1
Netherlands	36.3	35.5	25.2	223.3	138.1	91.5	81.1	49.0	23.1
New Zealand	50.2	49.4	41.9	203.3	148.8	107.2	102.1	73.5	45.0
Poland	17.0	17.6	14.4	189.6	133.2	106.4	32.3	23.4	15.3
Switzerland	35.5	32.1	28.2	147.6	96.8	83.4	52.5	31.0	23.6
United Kingdom	59.1	58.0	41.3	132.4	102.6	70.9	78.2	59.5	29.3
United States	46.2	48.1	43.3	154.2	111.3	65.4	71.2	53.5	28.3
Mean	37.7	36.3	29.7	173.0	129.6	102.4	64.4	45.4	28.6

We have seen that rates of participation in training decline almost universally with age. Table 15 shows that this pattern is even stronger in relation to the duration of training. Thus, considering international averages of job-related training, the rate of participation fell from 38% of those aged 25-34 to less than 30% of those aged 45-64, while the corresponding duration indicators fell from 173 to 102 hours. Thus, while the average volume of job-related training was 64 hours per employed person aged 25-34, this fell to less than 30 hours among those aged 45-64.

These age related patterns in the intensity of training may reflect economic rationality, since older workers may already possess a significant stock of skills and competencies, and investment in training of older workers will, on average, have a shorter time-span within which to recoup the cost of that investment. However, this near-universal pattern of a decline in training intensity over the life-cycle should be regarded as posing a weighty challenge to those seeking to promote life-long learning.

Table 16: Average duration of training undertaken by employed adults aged 25-64 in continuing education and training by type of training and educational attainment 1994-1995

	Rate of participation %			Average duration Hours			Duration per employee Hours		
All education and training	Below upper secondary	Upper secondary	Tertiary	Below upper secondary	Upper secondary	Tertiary	Below upper secondary	Upper secondary	Tertiary
Australia	30.2	39.9	58.3	121.6	128.9	183.7	36.7	51.5	107.1
Belgium (Flanders)	0.8*	25.6	44.8	102.7*	159.2	109.4	11.0*	40.8	49.0
Canada	24.0	33.5	57.5	92.3	105.7	149.7	22.2	35.4	86.1
Ireland	17.5	30.8	49.2	216.4	216.6	158.9	38.0	66.6	78.1
Netherlands	30.5	46.5	55.8	111.6	162.8	153.0	34.0	75.7	85.4
New Zealand	43.1	53.6	68.0	141.4	176.9	139.5	60.9	94.7	94.9
Poland	9.5	28.5	40.5	156.9	109.7	204.7	15.0	31.3	82.8
Switzerland	19.5	48.7	59.9	45.9*	93.5	142.4	9.0*	45.5	85.3
United Kingdom	45.1	59.9	76.7	83.0	103.2	119.8	37.5	61.8	91.9
United States	20.4	37.4	67.2	103.2	93.5	97.5	21.1	35.0	65.5
Mean	25.1	40.4	57.8	117.5	135.0	145.9	28.5	53.8	82.6
Job-related training									
Australia	26.2	36.4	53.4	103.6	109.9	155.7	27.1	40.0	83.1
Belgium (Flanders)	7.4*	20.2	32.7	74.8*	159.7	114.6	5.5*	32.3	37.5
Canada	20.8	28.9	52.7	97.7	99.9	134.5	20.3	28.8	70.9
Ireland	14.8	23.9	37.6	244.4	234.2	185.1	36.3	56.0	69.7
Netherlands	20.9	34.5	45.5	132.4	191.6	138.0	27.7	66.1	62.8
New Zealand	37.0	46.7	62.3	147.4	182.3	145.7	54.6	85.2	90.8
Poland	8.0	25.0	29.1	121.6	114.3	188.8	9.7	28.6	54.9
Switzerland	9.0	34.4	43.8	50.4*	97.6	144.8	4.5*	33.6	63.5
United Kingdom	40.8	55.4	73.2	82.4	100.6	119.5	33.6	55.7	87.5
United States	17.4	34.3	63.1	88.7	87.9	97.1	15.5	30.1	61.3
Mean	20.23	33.9	49.3	114.3	137.8	142.38	23.5	45.6	68.6

Note: * indicates less than 30 cases in the sample cell

Both the incidence and the duration of training are strongly and positively related to levels of educational attainment (Table 16). Those with higher qualification levels are more likely to participate in further education and training, and when they do, the duration of that training is longer. This gives rise to a marked discrepancy in the intensity of training by educational attainment, one that is far more pronounced than is revealed by simply looking at participation. Considering international averages, 20% of those with less than upper secondary level education participated in job-related training, compared to almost 50% of those with tertiary qualifications. When we take the duration of that training into account, the average duration of job-related training was 24 hours per employed person among those at the lower qualification level, compared to almost 70 hours per employed person among those with tertiary qualifications.

While there is a strong tendency for participation rates to increase with the size of the firm or organisation in which people are employed, Table 17 shows that there is much less variation in duration of training by firm size. Thus, for example, while participation of workers in job-related training increased from a country average of 23% in firms with less than 20 employees, to 46% in firms of 500 or more, average duration of that training in the smaller firms was 120 hours per trainee, and 126 hours in the largest firm-size category. Moreover, while there was some tendency for the duration of training to rise somewhat with firm size, the relationship between firm-size and the duration of training is not linear. The longest average duration, 144 hours per trainee was in the intermediate firm-size category (100-499 employees), and there are only two countries - the United Kingdom and the United States - in which the longest duration occurred in the largest firm-size category. Notwithstanding the limited variation in duration, however, when we combine the incidence and duration indicators, the strength of the relationship between training incidence and firm-size is sufficient to generate a positive relationship between our measure of training intensity and firm size. Thus, the average duration of training in firms with less than 20 employees was 26 hours per employed person, compared with 57 hours per employed person in firms with 500 or more employees, although in several countries - Ireland and New Zealand - the longest duration per employed person occurred in the intermediate firm-size category, 100-499 employees.

Table 17: Average duration of training undertaken by employed adults aged 25-64 in continuing education and training by type of training and firm size, 1994-1995

	Rate of participation %				Average duration Hours				Duration per employee Hours			
All education and training	Less than 20	20-99 employees	100-499 employees	500 or more	Less than 20	20-99 employees	100-499 employees	500 or more	Less than 20	20-99 employees	100-499 employees	500 or more
Australia	28.5	41.3	48.6	57.6	136.8	167.4	152.0	154.7	39.0	69.1	73.8	89.1
Belgium (Flanders)	24.5	20.2	32.4	32.2	123.0	81.9	153.4	108.2	30.1	16.5	49.8	34.9
Canada	37.4	44.3	28.8	50.4	151.0	109.4	78.4	136.6	56.5	48.4	22.6	68.8
Ireland	15.6	22.5*	33.5	42.9	178.6	159.8*	215.8	178.9	27.9	36.0*	72.3	76.8
New Zealand	37.7	62.3	61.0	68.4	139.6	130.5	181.6	146.8	52.6	81.4	110.8	100.4
Poland	12.4	27.7	23.0	26.9	147.6	215.9	147.1	109.9	18.3	59.8	33.8	29.6
Switzerland	40.0	41.0	46.8	56.2	109.6	112.6	109.2	100.9	43.9	46.1	51.1	56.7
United Kingdom	32.9	48.4	56.4	67.0	100.8	83.4	93.8	97.6	33.1	40.3	53.0	65.4
United States	34.5	40.3	44.6	62.7	94.5	92.0	93.7	124.4	32.6	37.1	41.8	78.0
Unweighted mean	29.3	38.6	41.7	51.8	131.3	128.1	136.1	128.6	37.1	48.3	56.5	66.6
Job-related training												
Australia	23.3	36.3	45.5	54.7	120.3	126.2	137.7	132.5	28.0	45.8	62.7	72.5
Belgium (Flanders)	15.2	15.9	25.4	25.0	96.8	86.0	202.0	119.1	14.7	13.7	51.3	29.8
Canada	30.8	40.8	24.5	46.7	141.9	140.5	72.1	118.0	43.7	57.3	17.7	55.1
Ireland	10.8*	17.4*	29.6	34.8	215.2*	121.8*	242.4	200.0	23.3*	21.2*	71.7	69.6
New Zealand	29.6	56.0	56.6	63.7	128.9	153.7	209.9	139.6	38.1	86.0	118.9	88.9
Poland	9.0	21.9	17.6	24.3	98.5	166.1	150.0*	120.0	8.9	36.4	26.4*	29.2
Switzerland	26.9	25.0	32.0	41.8	114.2	134.0	118.3	98.1	30.7	33.5	37.9	41.1
United Kingdom	27.7	46.4	52.0	63.8	89.9	85.7	87.5	98.2	24.9	39.8	45.5	62.7
United States	30.9	36.3	42.0	59.3	72.5	85.0	79.9	112.3	22.4	30.8	33.5	66.5
Unweighted mean	22.7	32.8	36.1	46.0	119.8	122.1	144.4	126.4	26.0	40.5	51.7	57.3

Note: * indicates less than 30 cases in the sample cell

FINANCING TRAINING

Up to now, there has been a dearth of information regarding the financing of training. The *IALS* collects information on financial sponsorship of up to three courses. Table 18 presents data on financial sponsorship of training aggregated across up to three courses in the case of each individual.[10] The most common financial sponsor of training is the employer: averaging across countries, employers provided funding for over two-thirds of those participating in some education or training and almost three-quarters of those taking job-related training courses. Almost 37% of individuals themselves contributed to the funding of education or training, and 30% contributed to job-related training. Governments provided financial sponsorship for about 11% of individuals who participated in job-related training[11]. While there is some cross-national variation in the degree to which the various actors contribute to the financing of training, the general pattern in which employers play the leading role, and governments provide support for the smallest proportion, is universal across the *IALS* countries.

Table 18: Sources of financing of continuing education and training among employed adults by type of training, 1994-1995

	All education and training			Job-related training		
	Self	Employer	Government	Self	Employer	Government
Source of funding:	%	%	%	%	%	%
Australia	42.6	62.4	8.2	37.6	68.4	8.5
Belgium (Flanders)	38.6	61.6	12.5	30.9	71.5	14.2
Canada	43.1	66.9	14.1	38.8	74.1	14.0
Ireland	34.5	54.2	11.3	23.4	66.0	12.5*
Netherlands	37.3	69.0	6.3	29.7	78.8	7.5
New Zealand	39.2	67.4	15.7	35.2	74.6	16.0
Poland	29.5	66.2	5.4*	18.7	77.1	4.5*
Switzerland	55.3	53.1	15.5	46.7	65.2	17.3
United Kingdom	19.1	81.6	9.2	15.3	86.5	9.0
United States	28.6	73.2	7.7	25.2	77.8	7.6
Unweighted Mean	36.8	67.8	10.6	30.1	74.0	11.1

Note: * indicates less than 30 cases in the sample cell

[10] The unit of analysis here is the individual: an individual is deemed to have self-funded his or her training if they indicated that any of the three courses were self-funded, and this method of aggregation was also followed in relation to employer and government funding. The data in Tables 18-22 may thus sum to greater than 100% because, in principle, any individual may have received funding from multiple sources in respect of up to three courses. It is also the case that any single training course may be funded from multiple sources.

[11] Although there may have been some tendency on the part of respondents in IALS to understate the total extent of public subvention for training courses due to its implicit or indirect nature.

Table 19 shows sources of financing of continuing education and training by gender. Considering all education and training, in every country a higher percentage of men than women, who participated in training, received financial support from employers, while a greater percentage of women provided funding for their own education and training. Averaging across countries, 70% of men participating in training received financial support from employers, compared to less than 60% of women. On the other hand, on average, over 44% of women, but only 31% of men, provided funding for their own education or training. As might be expected, these gender differences are less marked in respect of job-related training, although in all cases except Canada, employers provided funding for a greater proportion of male than female trainees. Women were somewhat more likely to benefit from Government funding than men.

Table 19: Sources of financing of continuing education and training among employed adults by type of training and gender, 1994-1995

	All Education and training			Job-related training		
	Self	Employer	Government	Self	Employer	Government
Source of funding:	%	%	%	%	%	%
Men						
Australia	33.7	69.3	9.0	31.3	72.6	8.9
Belgium (Flanders)	33.2	66.2	13.2	28.8	72.3	15.1*
Canada	40.5	67.4	10.1	36.6	72.9	10.8
Ireland	25.8	60.2	11.8*	14.9*	71.0	12.7*
Netherlands	26.8	77.1	6.5*	22.1	82.4	7.8*
New Zealand	35.0	69.5	13.9	31.8	75.4	13.4
Poland	23.8	70.9	4.0*	16.5*	78.2	2.3*
Switzerland	48.8	58.5	14.3	41.8	68.4	15.7
United Kingdom	15.9	84.7	7.6	14.0	87.3	7.5
United States	27.8	75.9	6.5*	25.0	80.0	6.5*
Unweighted mean	31.1	70.0	9.7	26.3	76.1	10.1
Women						
Australia	53.4	54.0	7.3	46.1	62.6	8.0
Belgium (Flanders)	47.8	53.7	11.2*	34.8	69.9	12.5*
Canada	46.3	66.2	19.1	41.7	75.8	18.2
Ireland	45.0	47.0	10.7*	34.3	59.4	12.1*
Netherlands	55.3	55.3	6.0*	45.1	71.5	7.0*
New Zealand	43.9	65.2	17.8	39.2	73.6	19.0
Poland	35.9	61.0	7.0*	21.4*	75.6	7.2*
Switzerland	63.6	46.3	16.9	53.8	60.5	19.7
United Kingdom	22.8	78.2	11.0	16.8	85.6	10.8
United States	29.4	70.5	9.0	25.5	75.7	8.7
Unweighted mean	44.3	59.7	11.6	35.9	71.0	12.3

Note: * indicates less than 30 cases in the sample cell

There was little variation in financial sponsorship of education and training by age group (Table 20), although younger age groups were somewhat more likely than older age groups to fund education or training themselves.

Table 21 shows sources of funding by educational attainment. While there was little variation in employer support across educational attainment categories, more highly qualified individuals had a greater tendency to provide funding for their own training, and governments appear to have funded training for a greater proportion of those with upper secondary level attainments.

Table 22 shows sources of funding by the size of the firm or organisation in which respondents were employed, and suggests a trade-off between self and employer provided funding. In general, those working in smaller organisations who received training were more likely to provide funding themselves than their counterparts in larger organisations: 57% of those in firms with less than 20 employees provided funding for their own education or training, compared to only 27% of those working in firms of 500 or more. In contrast, the incidence of employer support was greater in larger firms: only 37% of those working in small firms who received education or training received support from their employers, compared to 76% of those working in firms with 500 or more employees. These patterns are repeated in respect of job-related training, although the incidence of self funding was lower, and that of employer funding higher, in respect of job-related than all education and training.

Table 20: Sources of financing of continuing education and training among employed adults by type of training and age group, 1994-1995

	All education and training			Job-related training		
	Self	Employer	Government	Self	Employer	Government
Source of funding:	%	%	%	%	%	%
Age 25-34						
Australia	45.8	57.6	10.4	40.8	63.2	10.6
Belgium (Flanders)	34.5	59.7	12.3*	26.6*	65.3	14.0*
Canada	46.5	69.1	11.1	41.6	76.7	10.6
Ireland	33.3	58.3	10.4*	22.2*	69.2	13.0*
Netherlands	43.1	66.2	6.7*	36.6	75.8	8.4*
New Zealand	38.8	62.6	18.1	35.3	70.6	18.4
Poland	41.1	60.0	4.0*	24.1*	75.4	5.4*
Switzerland	61.7	51.4	12.3	53.1	66.0	12.6*
United Kingdom	18.0	84.4	8.9	15.1	87.9	8.9
United States	28.2	72.1	10.0	24.9	77.0	8.8*
Unweighted mean	39.1	64.2	10.4	32.0	72.7	11.1
Age 35-44						
Australia	43.0	65.8	6.3	39.1	70.7	6.8
Belgium (Flanders)	45.5	62.7	8.8*	43.1	71.1	10.8*
Canada	37.4	66.1	14.2	34.0	73.5	13.2
Ireland	31.6*	57.6	10.4*	20.2*	68.0	11.2*
Netherlands	38.8	70.7	4.3*	31.4	80.2	5.4*
New Zealand	40.7	70.2	15.9	36.7	77.3	15.6
Poland	24.2	67.5	8.8*	17.0*	76.2	6.3*
Switzerland	57.7	46.2	18.4	45.5	60.5	20.0
United Kingdom	18.6	82.5	10.1	15.3	86.7	9.8
United States	27.2	74.9	10.2*	23.1	79.2	10.4*
Unweighted mean	36.5	66.4	10.7	30.5	74.3	10.9
Age 45-64						
Australia	38.4	64.1	7.8	31.8	71.8	8.1
Belgium (Flanders)	36.9	62.7	16.1*	25.3*	79.6	17.4*
Canada	46.1	65.0	17.5	41.2	71.8	18.9
Ireland	39.6	44.3	13.5	29.2*	58.1	13.1*
Netherlands	26.0	71.3	8.2	16.1	81.7	9.1*
New Zealand	38.2	69.5	13.2	33.8	75.6	14.0
Poland	21.5*	73.4	1.2*	14.6*	80.8	n.a.
Switzerland	45.5	61.4	16.6	40.9	68.0	20.1
United Kingdom	20.9	77.8	8.4	15.4	84.9	8.3
United States	30.1	72.5	4.1	27.3	77.3	4.4*
Unweighted mean	34.3	66.2	10.7	27.6	74.9	12.6

Note: * indicates less than 30 cases in the sample cell

Table 21: Sources of financing of continuing education and training among employed adults by type of training and educational attainment, 1994-1995

	All education and training			Job-related training		
Source of funding:	Self	Employer	Government	Self	Employer	Government
Below upper secondary	%	%	%	%	%	%
Australia	38.0	61.6	8.0	30.2	69.9	8.6
Belgium (Flanders)	32.7*	56.8*	4.1*	7.8*	79.9*	5.9*
Canada	25.7	61.9	9.6	20.2	70.3	9.6*
Ireland	25.4*	58.0	10.5*	14.9*	68.5	12.5*
Netherlands	33.1	67.1	3.8	19.6*	80.1	4.4*
New Zealand	36.7	66.9	13.5	31.0	76.5	12.5
Poland	17.7*	69.3	5.3*	8.2*	78.6	4.1
Switzerland	71.8*	32.3*	12.1	42.4*	55.6*	18.0*
United Kingdom	15.6	82.3	7.4	10.7	88.6	6.9
United States	19.2*	64.1	6.8*	14.9*	72.7	5.3*
Unweighted mean	31.6	62.0	8.1	20.0	74.1	8.8
Upper secondary						
Australia	35.9	64.3	7.9	31.2	69.8	7.7
Belgium (Flanders)	34.6*	61.9	16.2*	32.6*	64.5	20.6*
Canada	34.1	69.0	19.0	27.9	79.5	19.0
Ireland	25.1*	55.7	14.3*	11.4*	67.8	15.0*
Netherlands	40.2	66.9	6.0	33.3	76.4	7.8*
New Zealand	41.3	60.1	15.1	36.8	67.5	16.6
Poland	21.9*	72.4	4.9*	15.5*	79.8	4.7*
Switzerland	56.0	54.2	17.1	47.6	66.9	18.7
United Kingdom	21.1	82.3	8.5	15.9	88.8	7.9
United States	22.8	70.3	5.6*	17.5	76.8	5.9*
Unweighted mean	33.3	65.7	11.5	27.0	73.8	12.4
Tertiary						
Australia	50.1	61.5	8.5	46.3	66.5	9.0
Belgium (Flanders)	43.0	63.3	11.0*	34.6	74.5	11.6*
Canada	51.2	66.9	12.7	47.3	72.3	12.9
Ireland	48.0	49.6	9.6*	38.3	61.6	10.4*
Netherlands	37.1	72.9	8.6*	32.2	80.6	9.2*
New Zealand	40.7	71.8	17.9	38.7	76.0	18.4
Poland	43.8	58.8	5.9*	30.1*	72.9	4.5*
Switzerland	50.9	56.2	12.4	46.2	63.8	12.9
United Kingdom	22.5	80.3	11.9	20.4	82.7	12.3
United States	32.2	75.6	8.6	29.8	78.9	8.3
Unweighted mean	42.0	65.7	10.7	36.4	73.0	11.0

Note: * indicates less than 30 cases in the sample cell

Table 22: Sources of financing of continuing education and training among employed adults by type of training and firm size, 1994-1995

Source of funding	All education and training			Job-related training		
	Self %	Employer %	Government %	Self %	Employer %	Government %
Less than 20 employees						
Australia	67.7	27.1	9.2	60.2	33.4	11.0
Belgium (Flanders)	63.3	27.8*	5.1	52.7*	41.2*	1.5
Canada	58.9	35.9	16.7	57.6	39.8	12.7
Ireland	53.8*	30.8*	10.3	39.9*	41.3*	15.7
New Zealand	64.5	39.5	13.0	58.3	49.4	10.7
Poland	45.5	39.4*	7.6	34.7*	49.8*	5.8
Switzerland	66.7	35.0	13.9	62.2	44.6	18.0
United Kingdom	36.5	52.2	16.9	24.5	69.0	23.3
United States	52.1	41.4	6.4	51.2	49.3	4.2
Unweighted mean	56.6	36.6	11.0	49.0	46.4	11.4
20-99 employees						
Australia	43.0	67.1	8.9*	33.2	72.0	10.0
Belgium (Flanders)	44.1*	67.8	10.2*	35.2*	75.4	10.5
Canada	37.6	62.4	12.9*	52.4*	77.6	21.5
Ireland	40.9*	59.1*	4.5*	27.2*	72.3*	5.7
New Zealand	33.9	71.1	20.0	35.0	72.3	21.6
Poland	35.9*	62.8	9.0	21.6*	77.5	10.0
Switzerland	55.7	55.7	14.8*	57.3*	69.5	18.4
United Kingdom	19.6	81.0	11.0*	13.3*	89.3	9.6
United States	42.0	62.9	5.7*	35.5*	71.0	4.3
Unweighted mean	44.1	67.8	10.2	35.2	75.4	10.5
100-499 employees						
Australia	37.8	72.2	9.3*	36.9	73.6	10.6
Belgium (Flanders)	37.0*	74.3	9.6*	35.6*	73.5	10.2*
Canada	37.4	72.4	15.4*	27.9	90.0	8.3*
Ireland	25.6*	70.5	7.0*	20.4*	76.5	5.0*
New Zealand	30.8	81.4	14.1*	25.3	89.0	11.9*
Poland	18.4*	81.6	4.1*	7.6*	93.7	3.6*
Switzerland	47.9	58.6	10.1*	39.8	70.5	10.5*
United Kingdom	12.8*	85.6	9.1*	7.2*	93.9	3.5*
United States	28.4	75.5	3.9*	23.5*	82.4	4.2*
Unweighted mean	31.7	73.5	9.3	26.0	81.6	8.0

500 or more employees						
Australia	32.8	77.6	6.6	29.0	82.1	6.3
Belgium (Flanders)	22.7*	76.5	19.3*	12.6*	85.0	24.9*
Canada	29.8	75.8	22.2	30.2	84.1	12.9
Ireland	33.3	57.6	11.3*	19.0*	71.5	12.8*
New Zealand	31.3	80.2	19.8	24.9	86.1	18.0
Poland	14.8*	80.2	1.2*	11.6*	83.5	n.a.
Switzerland	39.5	70.7	17.4	33.0	79.6	17.6
United Kingdom	13.1	89.5	8.0	11.0	94.5	7.5
United States	19.8	80.6	9.4	16.5	86.1	9.9
Unweighted mean	26.9	76.2	12.5	21.4	83.4	11.8

Note: * indicates less than 30 cases in the sample cell

Comparing the *IALS* Results

It is useful to compare the results of the *IALS* with other sources of information on training - i.e. from other national surveys which record the incidence of continuing education or training. This is necessarily a difficult and limited exercise. Given national differences in the scope of questions concerning continuing education and training which is other than job-related, it is difficult to compare consistent measures of such training across countries. National labour force and household surveys also differ in the period of reference, with some countries measuring training in the twelve months preceding the survey and others, for example in the *European Labour Force Survey*, measuring training only in the four weeks before the survey. Data for the two sets of countries are therefore not directly comparable with each other. Nevertheless, by limiting the comparison to the narrower category of job-related training, we can ask whether the *IALS* results are generally consistent with information from other sources.

Table 23: Participation of employed adults aged 25-64 in job-related training 1994-95

	International Adult Literacy Survey, 1994 [1]	Labour Force and other Household Surveys various years [2]		European Labour Force Survey 1995 [3]
Reference period:	12 months	12 months	year of survey	4 weeks
Australia	38.1	38	1995	
Belgium [4]	20.0			2.4
Canada	37.5	28	1993	
Ireland	23.4			4.8
Netherlands	32.5			14.1 [5]
Switzerland	31.7[6]	35	1996	
United Kingdom	51.9			12.4
United States	45.5	34	1995	

Notes:

1. The data derived from IALS refers to job-related training in the previous 12 months. Job-related training refers to all courses, workshops, on-the-job training or apprenticeship training undertaken for career or job-related purposes as distinct from personal or other interests.
2. Sources: *Education at a Glance, OECD Indicators* 1997, indicator C7.1a, page 195 and *Education at a Glance, OECD Indicators* 1996, indicator P8, page 133. The USA data are from the *National Household Education Survey*, 1995. Data for Canada are from the *Adult Education and Training Survey*.
3. Data taken from European and other LFS sources include all types of organised job-related training except for full-time studies at tertiary level. Source: *European Labour Force Survey*, 1995. The data derived from the *European Labour Force Survey* refer to vocational training in the previous 4 weeks.
4. Belgium: IALS data refer to Flanders only, European LFS data refer to entire country.
5. Netherlands: Training refers to current participation at the time of the survey rather than participation over the previous 4 weeks.
6. Switzerland: The result is for French and German-speaking parts of Switzerland combined but excludes the Italian speaking community which was not part of the first round of *IALS* .

Table 23 shows participation by the employed adult population in job-related training. For countries covered by both *IALS* and by a national or labour force survey, the table enables a comparison of the results from the different surveys; for some countries it is also possible to compare training rates on both a twelve-month and four-week reference period.

The *IALS* measure, which adopts a somewhat broader conception of training than that used in Labour Force or other Household surveys, yields a somewhat higher estimate of the incidence of training for at least two countries. In Canada and the United States, the *IALS* results suggest a training incidence about 10 percentage points higher than in the national surveys, a discrepancy which may be due to the broader definition of training and education adopted in the *IALS* survey. In Switzerland, however, the discrepancy is in the other direction, with the national survey indicating a higher incidence of about 3 percentage points.[12]

The comparison is more difficult in the case of the *European Labour Force Survey*, mainly because of the different time periods covered. For those European countries reporting on a four-week basis, Belgium, Ireland and the United Kingdom can be compared with *IALS* twelve-month data. Notwithstanding the differences in the overall rates of participation due to the difference in reporting period, the rank ordering of the countries is roughly preserved, with Belgium and Ireland relatively low providers of job-related training in both surveys, and the United Kingdom showing a high incidence of job-related training in both surveys. The data in Table 23 underscore both the shortcomings of existing sources of internationally comparable data on training as well as the difficulties of definition, methodology and coverage, that need to be overcome before such data can become available.

[12] The data for Switzerland relate to French and German-speaking regions only, excluding the Italian-speaking community which was not included in the IALS.

CONCLUSIONS

The *IALS* represents a rich source of new data on continuing education and training. Its principal strength is that it offers comparable data across a range of countries on a series of indicators which have, up to now, been poorly measured, if at all, in national surveys. The principle *caveat* which must attach to the data is the relatively small sample sizes in some countries, which militate against disaggregation by population sub-groups. This *caveat* notwithstanding, the IALS results are consistent with theoretical expectations regarding the relationships between participation in continuing training with age, education and firm size. The *IALS* results are also generally consistent with the empirical evidence from existing surveys, both in relation to cross-national comparisons of the incidence of training and in relation to the distribution of training across population sub-groups. The *IALS* thus represents a very promising start in the collection of internationally comparable data on continuing education and training and serves to demonstrate what can be done to fill a significant gap in our information on this crucial area of human resource investment.

The survey reveals substantial cross-national differences in the incidence of participation in continuing education and training. Comparisons between countries have, up to now, generally relied primarily on measures of rates of participation in education or training. The *IALS* allows us to combine indicators of the incidence of training with indicators of its duration, allowing us to produce a more adequate, comprehensive and internationally comparable measure of the intensity or volume of training undertaken in the countries covered. This combined measure of the intensity of training leads to some reduction in the differences between countries suggested by the incidence indicator alone. This combined measure also alters the international rankings of training effort.

Notwithstanding the differences between countries in the incidence and volume of education and training, the survey also suggests remarkable similarities across countries in the distribution of education and training *within* populations. This allows us to draw a number of important generalisations that characterise patterns of training in most, if not all, of the countries covered by the *IALS*. In all countries employed adults are more likely to participate in continuing education or training than the unemployed, who in turn have higher rates of participation than those not economically active. This pattern is even more pronounced when one considers only job-related training. In all countries, the incidence of participation in job-related training is substantially higher than that in education and training which is undertaken for personal interest and other reasons.

Among employed adults, women show a somewhat higher propensity than men to engage in education and training for purposes other than work, but in general, there is little evidence of substantial gender differences in participation in education and training, and average rates of participation in job-related training are very similar for employed men and women. However, when men participate in education or training, they are more likely to receive financial sponsorship from their employers than are women, also this tendency is stronger in respect of general education and training than job-related training.

Adults who already possess higher level educational qualifications are a great deal more likely than those with lower educational attainments to participate in education or training, and when they do so the duration of their training is longer. Combining the incidence and duration measures reveals very substantial education-related differences in the volume or intensity of continuing education, differences that are far more pronounced than would be suggested by simply looking at participation rates alone. Thus those who are already well-educated receive a substantially greater volume of further education and training than those with lower educational attainments, suggesting that both the incidence and duration of continuing education is distributed in inverse proportion to need, and that current patterns of education and training are likely to exacerbate rather than mitigate labour market inequalities and processes of social exclusion.

Younger adults are more likely to participate in continuing education or training. The training undergone by younger adults is of longer duration than among older age groups, intensifying age-related discrepancies in education and training.

Those working in large firms and organisations are more likely than those working in small organisations to participate in continuing education or training, and while there is little evidence of a relationship between duration and firm-size, the volume of training, as measured by the number of hours per employee spent in training, is substantially higher in large than small organisations. Finally, the new data on the funding of training collected in the *IALS* shows that in all countries employers are by far the most common financial sponsors of training - particularly of job-related training. There is, however, some evidence that where employers do not sponsor training, employees themselves are more likely to provide funding for their own training. Thus small employers are less likely than large firms to fund training, while employees working in small firms who do receive training are more likely than those in larger organisation to fund the training themselves.

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APPENDIX TABLE 1

Table 1. Distribution of number of education or training courses or events taken, by selected populations participating in any education or training, 1994-1995

All Adults	1 course %	2 courses %	3 courses %	More than 3 courses %
Australia	46.5	23.0	14.7	15.8
Belgium (Flanders)	52.6	20.7	16.5	10.2
Canada	51.5	19.5	14.6	14.4
Germany	59.3	22.4	8.2	10.2
Ireland	57.8	23.6	13.2	5.4
Netherlands	60.8	25.5	8.1	5.6
New Zealand	52.2	23.5	12.7	11.5
Poland	75.3	16.0	5.7	3.1
United Kingdom	44.1	25.2	14.1	16.6
United States	46.1	18.2	13.8	21.9
Unweighted mean	54.6	21.7	12.2	11.5
Employed Adults All education or training				
Australia	43.1	23.4	16.1	17.4
Belgium (Flanders)	49.1	21.4	17.2	12.3
Canada	45.2	22.4	17.3	15.1
Ireland	52.9	25.1	15.9	6.1
Netherlands	57.3	27.1	9.3	6.3
New Zealand	47.9	24.9	14.1	13.1
Poland	74.8	16.1	5.7	3.4
Switzerland	50.2	23.4	15.1	11.3
United Kingdom	40.9	26.5	14.9	17.7
United States	44.9	18.1	13.9	23.1
Unweighted mean	50.6	22.8	14.0	12.6
Employed Adults Job-related training				
Australia	39.7	24.1	17.3	19.0
Belgium (Flanders)	44.1	24.0	20.0	11.9
Canada	41.7	22.4	19.1	16.8
Ireland	48.2	26.9	18.3	6.7
Netherlands	51.9	29.0	11.8	7.3
New Zealand	44.5	26.2	15.4	13.9
Poland	69.4	19.2	7.0	4.3
Switzerland	44.0	23.8	17.8	14.4
United Kingdom	38.5	27.1	15.7	18.8
United States	43.4	18.9	14.7	23.1
Unweighted mean	46.5	24.1	15.7	13.6

APPENDIX TABLE 2

Target Populations, Number of Respondents and Response Rates in the IALS Survey

	Population aged 16-65	Survey respondents	Response rate
			%
Australia	11,900,000	8,204	96
Belgium (Flanders)	4,500,000	2,261	36
Canada	18,500,000	5,500	69
Ireland	2,200,000	2,423	60
Netherlands	10,500,000	2,837	45
New Zealand	2,100,000	4,223	74
Poland	24,500,000	3,000	75
Sweden	5,400,000	2,645	60
Switzerland	4,000,000	2,828	55
United Kingdom	37,000,000	6,718	63
United States	161,100,000	3,050	60

Source: OECD and Human Resources Development Canada, 1997, *Literacy Skills for the Knowledge Society: Further Results from the International Adult Literacy Survey*. Paris: OECD