

Distr.  
GENERAL

CES/SEM.41/14  
26 April 2000

ENGLISH ONLY

---

STATISTICAL COMMISSION and  
COMMISSION FOR EUROPE

STATISTICAL OFFICE OF THE ECONOMIC  
EUROPEAN COMMUNITIES (EUROSTAT)

CONFERENCE OF EUROPEAN

INTERNATIONAL LABOUR STATISTICIANS  
ORGANIZATION

Joint ECE-Eurostat-ILO Seminar  
on Measurement of the Quality of Employment  
(Geneva, 3-5 May 2000)

Topic 4

**Training of Adult Workers in OECD Countries: lessons from “HARMONISED” SURVEYS**

Invited paper submitted by OECD

1. The critical importance of a highly skilled workforce in an increasingly “globalised” and “computerised” economy has become a commonplace. At the individual level, a good education is increasingly decisive for employment prospects and earnings levels. Human capital formation also appears to be an important precondition for the economic success of firms and national economies, although these links are more difficult to verify. The skills and competences of the workforce are the product of a large variety of learning activities that take place in diverse institutional contexts. While good initial education provides an essential foundation, learning continues through the working years. In that sense participation in training and its outcomes are fully part of quality of job.

2. This contribution presents an extract of the main findings of a recent publication by Paul SWAIN, from the Directorate for Education, Employment, Labour and Social Affairs of the OECD. [Employment Outlook, OECD, June 1999<sup>1</sup>].

The main findings are:

- The level of training differs significantly across OECD countries. Although it is not possible to make precise comparisons, the evidence is quite robust that formal, continuing training is relatively low in southern European countries such as Greece, Italy, Portugal and Spain,

---

1. See definitions, graphs, annexes and bibliography in chapter 3.

and relatively high in the United Kingdom, France and most Nordic countries. There also appears to be some trade-off between the extensive and intensive margins of training, with the average duration of training being higher in countries with lower participation rates.

- Overall, men and women appear to participate in job-related training at fairly equal rates, although men may receive more financial support from their employers. When expected hours of training are calculated over the 40-year period between the ages of 25 and 64, women have significantly lower training expectancies than men, due to less continuous employment. Lower training rates for part-time and temporary workers may also lower relative training access for women.
- The extent to which training falls off with age varies strongly across countries, suggesting that progress in reaching the goal of life-long learning has been uneven. Workers aged 50-54 years receive almost as much training as those aged 25-29 in the United States and the Nordic countries (except Finland), while the older group receives much less training than the younger in France, Greece, Portugal and Spain.
- Training tends to reinforce skill differences resulting from unequal participation in schooling in all countries, although the strength of this relationship varies significantly between countries. Training appears to be most evenly distributed across educational levels in Ireland, Japan, New Zealand, the Netherlands and several Nordic countries, and least equally in Belgium, Hungary and southern Europe. The positive association between more schooling and training remains strong even after controlling for other characteristics affecting the probability of training.
- Workers tend to receive more training in countries with higher overall average levels of educational attainment and achievement, as well as in countries devoting a larger share of GDP to research and development and achieving a strong trade performance in “high tech” industries. A higher overall training rate is also associated with more equal age and educational distributions of training. These patterns suggest that education and greater training are mutually reinforcing due, at least in part, to an associated tendency for firms to specialise in economic activities requiring a highly skilled workforce.
- Workers reporting recent training are paid more than other workers, but the strength of this relationship varies across countries. The pay “premium” associated with training differs between educational and gender groups within all of the countries, with the most common pattern being higher training premiums for the least educated workers.
- The strong link between national levels of educational attainment and achievement, on the one hand, and the level of workforce training, on the other, suggests that an indirect strategy of strengthening schooling is a potent -- if slow -- means of encouraging continuing training. Since a key distinguishing feature of high-training economies is that participation in training is more evenly distributed, policies enhancing the incentives and resources for

investing in the continuing training of workers typically receiving little training are of particular importance. However, the theoretical and empirical analysis of the determinants and consequences of continuing training are not yet sufficiently developed to provide policy makers with reliable estimates of the economic returns that would accrue to specific policy approaches. Further harmonisation of training statistics could make a useful contribution to filling that gap.

3. This contribution analyses only one type of job training, namely, continuing and more or less formal training received by incumbent workers. Most of the analysis is limited to workers between the ages of 25 and 54 years, since this restriction avoids complications related to international differences in initial education and retirement patterns. Because most continuing training of employees is sponsored -- at least in part -- by employers, employer-provided training is emphasised.

### **Sources and definitions**

4. Several recent initiatives have collected "harmonised" data on the continuing training of the adult workforce. The OECD has co-ordinated two of these efforts, while two others have been co-ordinated by EUROSTAT. In all four cases, national statistical offices collected the underlying survey data, which was then reported in a common format. Although the intent is to assemble internationally comparable data on training, the four initiatives differ in the extent to which the survey questionnaire and data collection process were harmonised among the participating countries. They also differ in terms of the precise definitions of training activity, the population sampled and the countries and years for which data were collected.

5. These four sources of training statistics are: the International Adult Literacy Survey (IALS); the European Labour Force Survey (ELFS); the OECD/INES (Indicators of Education Systems); and EUROSTAT's Continuing Vocational Training Survey (CVTS). Two characteristics are especially salient for making international comparisons. The first is differences in the degree of cross-country harmonisation that has been achieved. The second is differences in the way in which training is defined and measured in the surveys.

6. The IALS comes the closest to the ideal of fully harmonised data collection. A common questionnaire and survey interview protocol were used in all countries, although there was some discretion concerning the use of certain supplementary questions. The two Eurostat surveys are intermediate in terms of harmonisation. Statistical authorities in EU Member States make considerable efforts to comply with common guidelines for questionnaire content and data collection, yet considerable variation remains in both domains -- particularly in the ELFS. Finally, the OECD/INES data appear to be the least harmonised overall. Under this programme, participating countries report data estimates from pre-existing national surveys that match, as closely as possible, a common set of definitions.

7. All four surveys provide measures of the level of continuing vocational training among the adult workforce. However, there are important differences in how the training questions are phrased. Most mechanically, the ELFS asks about training over the prior 4 weeks, whereas the other three surveys use

a 12-month reference period. A second difference is that the CVTS poses the training questions to employers and not workers. There are likely to be systematic differences in how these two groups report training activities. A third difference is that respondents in the ELFS and the CVTS are asked to distinguish between initial and continuing vocational training, so that the former can be explicitly omitted from the training estimates. This information is not available in the other two surveys and some initial vocational training undoubtedly contaminates these data, although the adoption of a minimum age threshold of 25 years reduces this problem.

8. More subtle differences occur in the precise phrases used to characterise training activities. For example, the surveys included in the OECD/INES typically ask about participation in training “courses” or “programmes,” while the IALS question also refers to “on-the-job training.” The latter formulation may result in greater reporting of less structured forms of training -- such as coaching provided by more experienced colleagues -- and, hence, result in higher estimates of training. There is some evidence, however, that formal and informal training are positively correlated. Such an association suggests that relative levels of training for different groups or countries might not be as greatly affected by cross-survey differences in the extent to which informal training is recorded, as are absolute levels. The cross-survey indices of training developed below combine exclusively relative measures from the underlying surveys.

9. These four sources also differ with respect to how much employer involvement is required for a training episode to be reported. Data from the IALS confirm that international comparisons of training participation can be affected by these noncomparabilities, although the effect may be relatively minor. For the 25-54 age group, most education and training activities reported by employed respondents are characterised by them as being career or job-related, and most of this job-related training received direct employer support. The comparison between all job-related training and employer-supported, job-related training is most critical for assessing the comparability of the four harmonised surveys, since the CVTS only records employer-supported training while the household surveys should also record job-related training not supported by the employer. The IALS data suggest that the resulting difference in the range of training activities that are reported is fairly small in most countries. Although the magnitude of cross-country differences in training participation rates varies, depending on whether comparisons are made for all job-related training or only the subset supported by employers, the only significant change in country rankings is that Germany moves from approximate parity with Belgium and Poland to being somewhat lower -- apparently because German employers provide financial support for an unusually low share of continuing formal vocational training, in marked contrast to their investment in initial training.

10. The population sampled also differs between some of the four surveys. Dependent and salaried employees between the ages of 25 and 54 years, which are the target population of most of the following analysis, can be exactly identified only in the IALS and the ELFS. The OECD/INES training statistics are for the age range 25 and 64 years, while the CVTS data cover employees of all ages in the surveyed enterprises. The CVTS sample also excludes workers in enterprises with fewer than ten employees and all workers in certain sectors. The exclusion of workers in the smallest enterprises

biases upward the training participation rates calculated using CVTS data, since training rates rise with enterprise size over the observed range.

## **The level of training**

### Participation rates

11. Training participation rates are shown in Table 1. Looking first at the unweighted column means (calculated over all countries for which data are available), the average participation rates in the IALS and the OECD/INES (both 37 per cent) are much higher than that for the ELFS (9 per cent). This is in line with expectations since the four-week reference period used by the latter will miss many of the episodes of training occurring during the previous twelve months. The average participation rate from the CVTS (26 per cent) is somewhat lower than the rates for the IALS and OECD/INES, consistent with employers not reporting some vocational training activities reported by workers, such as training undertaken on their own initiative outside of work or less formal activities at the work site. These data confirm that differences in survey design are likely to lead to significantly different estimates of the absolute level of training.

12. Simple inspection of Table 1 reveals that there is considerable consistency across the surveys concerning international differences in participation rates. Denmark, Finland, Sweden and the United Kingdom consistently show above-average training participation, while Greece, Italy, Portugal and Spain have below-average rates of participation. However, Ireland illustrates a more mixed pattern, with below-average participation in the IALS and ELFS, but the highest rate in the CVTS. Despite a few such anomalies, it appears that most of these countries can be characterised, with some confidence, as being low, near average or high in the OECD hierarchy of training rates.

### The volume of training

13. A simple “head count,” such as a participation rate, provides an incomplete measure of the level of training. It is best to utilise both participation and volume measures to gauge the level of training, rather than relying solely on one or the other, since they have different strengths and weaknesses.

14. The primary measure of training volume examined here is hours of training averaged over all workers, whether they received any training or not. The four sources of harmonised training statistics yield quite different estimates of the average hours of training (Table 2). The major difference is the much lower level reported in the CVTS, which probably can be explained by the fact that the CVTS only reports hours spent in employer-provided “courses,” which is narrower than the range of training activities covered by the other three surveys. Similarly, the use of a shorter reference period accounts for lower average hours in the ELFS than in the other two household surveys.<sup>2</sup> It is unclear, however,

---

<sup>2</sup> The use of a 4-week -- rather than 12-month -- reference period in the ELFS underestimates training volume less strongly than participation for two reasons. First, the *full* length of any training courses that were on-going during the reference period is recorded. Second, a short reference period

why training volume in the IALS is so much higher than in OECD/INES (42 versus 28 hours per worker). This difference may reflect a greater tendency of the IALS to capture relatively unstructured training.

15. All four surveys confirm that training volume differs between countries, but this variation ranges from quite modest in the CVTS to quite high in the IALS (standard deviations of 4 and 18 hours, respectively).

16. Another question related to the consistency of international comparisons of training levels is whether the training participation and volume measures produce similar country rankings. These two measures provide somewhat different assessments of which countries invest most in continuing training. The second highest rated country, in terms of participation, is below average on training volume (Sweden), while the lowest participation country has average training volume (Greece). However, there is some positive association between the two measures for the larger number of countries in the middle ranges of the two distributions, resulting in an overall correlation of 0.50.

17. The absence of a closer association between a country's relative positions in training participation and volume could reflect a trade-off between the extensive and intensive margins of training investments. A country that provides a little training for many workers is emphasising the extensive margin and will tend to score higher on the participation index than on the volume index. These data suggest that this pattern may characterise the Nordic countries, Switzerland and the United Kingdom. By contrast, there is evidence that countries such as Australia, France, Germany, Greece, the Netherlands, New Zealand and Portugal emphasise the intensive margin, providing relatively intensive training to the average, or even below-average, share of workers who receive any training. It is striking that several of the countries that appear to emphasise the intensive margin also have (or recently had) a training levy: Australia, France and New Zealand.<sup>3</sup> This pattern may reflect the tendency of a training levy to encourage a mix of training that favours easily documented forms of spending, such as employer-sponsored courses, which are heavily weighted by the volume measures in these surveys.

18. The magnitude of this trade-off can be roughly estimated. If trainees received the same hours of training on average, independent of the participation rate, then the correlation between participation and volume should be 1.0 in the absence of measurement error. This correlation is 0.50 for the cross-survey indices, but the 0.66 value for the IALS data alone is a better indication of the extent to which training intensity tends to fall as participation rises, since it is less affected by measurement problems. The IALS correlation implies that a 10 per cent increase in the training participation rate is associated with approximately a 3 per cent fall in hours per trainee.

19. The CVTS provides an alternative measure of training volume, namely, employers' costs for training courses as a share of total labour costs. By this measure, Portuguese and Italian employers rank last, spending less than one per cent of total labour costs on training, while United Kingdom employers

---

disproportionately "captures" long training episodes (a statistical phenomenon known as "length bias").

<sup>3</sup> The Australian data are for 1995, the year that the training levy was abolished.

invest most, at 2.7 per cent. Overall, this measure of volume accords quite closely with the earlier analysis of participation rates, but less closely with the hours measures of training volume. In particular, the southern European countries with relatively low participation rates (i.e. Greece, Italy, Portugal and Spain) also have the lowest cost shares among the EU Member states, while the two countries with the highest participation rates (the United Kingdom and France) also rate highest in employer spending.

### **The distribution of training**

20. Earnings levels and employment security are increasingly tied to a worker's skills. If certain groups receive little training, this could significantly restrict their labour market opportunities and result in greater economic inequality. An uneven distribution of training may also lower economic efficiency. There is some evidence that recent trends in technology and work organisation have increased the importance of broad and continuing participation of a firm's workforce in training. Despite these equity and efficiency concerns, little is known about whether there are significant international differences in the distribution of training. This section uses the four sources of harmonised training data to assess international differences in training participation rates across workers grouped by gender, age and education.<sup>4</sup> Qualitatively similar results were obtained when this analysis was repeated for hours of training, but those results are not reported in detail, due to the lower quality of the underlying data.

#### Gender distribution of training

21. Equalising the labour market opportunities of women with men is an important policy goal and the upward trend in the labour market premium on skill suggests that equal access to education and training is of some importance in meeting this goal. Overall efficiency is also likely to suffer if a large segment of the labour force, such as women, have inadequate access to training.

22. Table 3 presents ratios of the training participation rate for women to that for men, for the four harmonised surveys. Averaging these gender ratios over all of the countries covered by a given survey always results in a mean ratio relatively close to 1.0 (the values range from 0.91 for the CVTS to 1.12 for the ELFS), suggesting that women and men participate in training to a roughly comparable extent. The moderately lower CVTS estimate suggests, however, that women participate somewhat less than men when attention is restricted to employer-provided training courses. Consistent with this interpretation, the IALS data indicate that women less often receive financial support from their employers for job-related training than do men. It was argued earlier that the IALS training measures may tend to pick up more of the relatively unstructured forms of training than measures from the other two household surveys. The average relative training rate for women is lower in the IALS than in the ELFS, consistent with men having greater access to informal training.

23. There is significant cross-country variation in the gender ratios for each of the surveys. For example, the relative participation of women ranges from 0.75 (the Netherlands) to 1.32 (Ireland) in the IALS. By casual inspection, there appears to be moderate cross-survey consistency in the share of

---

<sup>4</sup> CVTS data are used only for analysing gender differences in participation rates, because it lacks data on training rates by age and education.

training received by women in a specific country and how it compares to the international average. For example, the gender ratio in Ireland is always greater than 1.0 and frequently among the higher values. Similarly, the Netherlands values are consistently below 1.0 for participation. However, there are also examples of rather striking inconsistencies. The IALS participation data for Germany indicate women participating at 1.15 times the rate of men (substantially above the average level for the 12 countries with these data), but at only 0.96, 0.87 and 0.63 times the rate of men in the other three surveys.

#### Age distribution of training

24. The logic of human capital theory, as well as simple observation of life courses, suggest that skill investments are likely to be concentrated in the early portions of an individual's life and career. While basic schooling and initial vocational training are everywhere concentrated in the pre- or early-career years, there may be considerable variation in the extent to which workers continue to receive training in the middle and later portions of their working lives. Too rapid a "tailing off" of training with age could lead to skill obsolescence and create severe employment difficulties for some older workers, while also reducing the adaptive capacity of the economy as the workforce ages in coming decades.

25. Table 4 compares training participation for relatively young workers (i.e. ages 25-29 years) to that for older workers (i.e. ages 50-54 years). The greater the value of the age ratio, the more strongly continuing training is concentrated in the early stages of the prime working years. Since values in excess of 1.0 predominate, these four sources of harmonised training data confirm a tendency for training to be "front-loaded".

26. The cross-country averages of these age ratios vary considerably across the different surveys, from 1.10 for the OECD/INES to 2.76 for the ELFS. The lower values for the OECD/INES could be a simple artefact of having calculated the age ratio using broader age bands. Omitting this survey reduces the cross-survey difference in mean ratios, but large differences remain. This variation suggests that changes in survey design that affect the types of training captured are not age-neutral and can have a large effect on estimates of the age concentration of training.

27. There is considerable cross-country variation in the age concentration of training. For example, the age ratio calculated from IALS data on participation ranges from 0.93 for Sweden to 1.96 in Canada.<sup>5</sup> This variation suggests that countries differ significantly in the extent to which their training practices realise the goal of "life-long learning".

28. There appears to be considerable consistency across the three data sources and two measures in terms of which countries provide older workers with the greatest relative access to training. Most of the Nordic countries (with Finland as a notable exception) and the United States have consistently among the lowest age ratios, indicating no or only a weak tendency to concentrate training on younger workers.

---

<sup>5</sup> It is striking that the concentration of training on younger workers appears to be much stronger in Canada than in the United States (1.96 versus 0.97 for participation in the IALS).

By contrast, the ratio tends to be well above average in France, Luxembourg and most southern European countries, indicating a steep fall off in training with age.

### Education, literacy and the distribution of training

29. Extensive initial schooling might be complementary with subsequent participation in continuing training, if the knowledge base and learning skills acquired in school facilitate the later acquisition of more specific vocational skills through training. Alternatively, schooling and initial vocational preparation could be substitutes. Since the overall efficiency of the skill development system requires that continuing training mesh well with other forms of human capital investment, it would be valuable to know whether complementary or substitution links predominate and if there are important international differences in these relationships. International differences in the association of prior human capital investments and training could also have important implications for equity, since a strong complementarity between education and schooling would tend to reinforce the labour market disadvantages of the least educated workers.

30. In order to gauge the strength of the association between education and training, Table 5 presents the ratio of the training participation rate for workers with a university degree to that for workers who did not complete upper secondary schooling. These ratios are always in excess of 1.0. Averaged across countries for a given survey, the mean values range from 3.2 (IALS) to 8.4 (ELFS), confirming that training reinforces the skill differences resulting from unequal initial schooling. These education ratios are consistently larger for the hours measure (not shown), suggesting that the concentration of training on the most educated workers, like that on younger workers, operates on both the extensive and the intensive margins.

31. The extent of concentration varies considerably across countries for any given survey. For example, the education ratio varies from 1.6 for Sweden to 8.7 for Switzerland, using IALS participation data. However, there is considerable consistency in the relative position of different countries. Training appears to be most evenly distributed across educational attainment levels in Australia, Austria, Ireland, New Zealand, the Netherlands and the Nordic countries. Training is most reinforcing of school-based differences in human capital in southern European countries, Belgium and Hungary.

### Life-cycle perspective

32. New insights can be gained by adapting a life-cycle view of training that follows workers from age 25 until 64, taken to be the conventional retirement age. Since many individuals are not continuously employed throughout this forty-year period, realism requires that periods of unemployment and inactivity be incorporated into the analysis, even though training while employed is the focus of this chapter.

33. Table 6 presents estimates of training expectancies, defined as the total hours of training received by a “typical” individual between the ages of 25 and 64 years. Using the IALS data, age, gender and education-specific rates were calculated for the three labour force states, as were mean annual training hours conditional on labour force status. These rates are then used to cumulate expected training time

for individuals over this forty-year time span on the assumption that current conditions continue to prevail.<sup>6</sup>

34. Averaging over the 11 countries with the necessary data, these training expectancies imply that a typical individual devotes 1 288 hours, or the equivalent of over thirty weeks of full-time employment, to training after the period of initial vocational training has concluded. While this reflects a considerable investment of time, it is much smaller than that made to initial schooling.<sup>7</sup> Such a comparison probably greatly understates the relative importance of continuing training and on-the-job experience to the development of workforce skills and productivity, because a large share of informal training and experiential learning are not captured by this calculation.

35. When the life-cycle perspective is adopted, the volume of training received by women is significantly lower relative to that received by men than is indicated by single-year calculations: using the IALS data for employed individuals between the ages of 25 and 54 years, average annual training hours were 92 per cent as high for women as for men, but this falls to just 79 per cent for the forty-year training expectancies. This is due to the typical women being employed fewer years, than men, and when not employed being more likely to be out of the labour force. For the same reason, the concentration of training on the most educated individuals becomes more pronounced when the full working life is considered, a pattern that is very pronounced for women. It does not appear, however, that national comparisons of the level or distribution of training are much affected by the shift to a life-cycle perspective.

---

<sup>6</sup> This method is analogous to that used to calculate life expectancy based on the age-specific mortality rates observed in the population in a given year. Note that the results should not be understood as providing forecasts of individual training histories, rather they provide an alternative optic for viewing contemporaneous training patterns.

<sup>7</sup> These training expectancies are also moderately lower than 40 times the mean annual hours of training for all workers, which were examined in Table 2, due to training rates being lower for the years spent unemployed and out of the labour force. A second reason for this shortfall is that the cross-sectional averages for hours of training were calculated for the age span, 25 to 54 years, while these life-time calculations also include ages 55 through 64 years, during which training hours tend to be quite low.

Table 1. **Participation rate in career or job-related training**  
Employees aged 25 to 54 years in the 1990s<sup>a</sup>

	IALS		ELFS		OECD/INES		CVTS		Cross-survey Index of Participation rate (average=0) <sup>b</sup>	
	Partici- pation rate (%)	Rank	Partici- pation rate (%)	Rank	Partici- pation rate (%)	Rank	Partici- pation rate (%)	Rank	Mean	Rank
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
<b>European Union</b>										
Austria	..	..	7.9	8	..	..	..	..	-0.1	13
Belgium <sup>c</sup>	19.8	11	3.4	13	..	..	25	6	-0.7	17
Denmark	..	..	18.4	1	..	..	33	4	1.1	4
Finland	..	..	18.0	3	45.0	1	..	..	1.5	1
France <sup>d</sup>	..	..	<i>1.9</i>	NA	40.2	3	37	3	0.9	5
Germany	20.0	10	4.2	10	33.3	8	24	8	-0.7	16
Greece	..	..	0.7	17	..	..	13	11	-1.3	24
Ireland	24.6	9	6.6	9	..	..	43	1	0.1	11
Italy	..	..	3.8	12	..	..	15	10	-0.9	21
Luxembourg	..	..	2.5	16	..	..	25	6	-0.6	15
Netherlands	34.8	7	14.9	4	..	..	26	5	0.3	9
Portugal	..	..	3.2	14	..	..	13	11	-1.1	22
Spain	..	..	3.1	15	..	..	20	9	-0.7	19
Sweden	55.5	2	18.3	2	41.6	2	..	..	1.2	2
United Kingdom	58.0	1	14.2	5	..	..	39	2	1.2	3
<b>North America</b>										
Canada	37.7	6	..	..	28.4	9	..	..	-0.8	20
United States	48.8	4	..	..	33.5	7	..	..	0.1	12
<b>Pacific Area</b>										
Australia	44.6	5	..	..	38.1	4	..	..	0.4	8
New Zealand	49.1	3	..	..	..	..	..	..	0.8	6
<b>Other OECD countries</b>										
Hungary	..	..	4.2	11	..	..	..	..	-0.7	18
Iceland	..	..	14.0	6	..	..	..	..	0.8	7
Norway	..	..	11.7	7	37.0	5	..	..	0.2	10
Poland	19.0	12	..	..	..	..	..	..	-1.3	23
Switzerland <sup>e</sup>	33.0	8	..	..	35.0	6	..	..	-0.3	14
Switzerland (French)	29.2	NA	..	..	..	..	..	..	-0.6	NA
Switzerland (German)	34.2	NA	..	..	..	..	..	..	-0.2	NA
<b>Unweighted mean</b>	<b>37.1</b>	<b>NA</b>	<b>8.8</b>	<b>NA</b>	<b>36.9</b>	<b>NA</b>	<b>26.1</b>	<b>N</b>	<b>0.0</b>	<b>NA</b>
<b>Standard deviation</b>	<b>14.2</b>	<b>NA</b>	<b>6.3</b>	<b>NA</b>	<b>5.0</b>	<b>NA</b>	<b>10.1</b>	<b>N</b>	<b>0.9</b>	<b>NA</b>

.. Data not available.

NA: Not applicable.

a) Figures in *italics* are not used in the calculations of the cross-country statistics in Columns 3 and 4 or the cross-survey index in Column 9.

b) The national estimates of training participation rates in Columns 1, 3, 5 and 7 were standardized to have a zero mean and unit variance. Column 9 reports the unweighted means of these standardized values which are calculated using all surveys for which estimates are available for that country.

c) *The IALS data for Belgium only cover Flanders.*

d) The ELFS data for France measure only current training activity and are not fully comparable to those reported for the other countries. Accordingly, the French value is not used in the calculations of the cross-country statistics in Columns 3 and 4 or the cross-survey index in Column 9.

e) IALS values for Switzerland are a weighted average of the values for the French and German-speaking populations.  
Sources: See Oecd Employment Outlook 1999, Chapter 3.

Table 2. **Volume of career or job-related training**  
Average hours of training per employee aged 25 to 54 years in the 1990s<sup>a</sup>

	IALS		ELFS		OECD/INES		CVTS		Cross-survey index of volume (average=0) <sup>b</sup>	
	Volume (1)	Rank (2)	Volume (3)	Rank (4)	Volume (5)	Rank (6)	Volume (7)	Rank (8)	Mean (9)	Rank (10)
<b>European Union</b>										
Austria	..	..	19.8	6	..	..	..	..	0.3	9
Belgium <sup>f</sup>	17.3	10	8.4	12	..	..	10.2	8	-0.9	20
Denmark	..	..	34.9	1	..	..	12.9	5	0.9	4
Finland	..	..	31.8	2	18.8	6	..	..	0.3	8
France <sup>d</sup>	..	..	6.4	NA	..	..	20.1	1	1.8	1
Germany	40.5	8	31.6	3	34.9	2	8.2	11	0.2	10
Greece	..	..	4.1	15	..	..	18.0	2	0.0	11
Ireland	45.6	6	14.8	9	..	..	10.9	7	-0.1	14
Italy	..	..	8.0	13	..	..	6.1	12	-1.2	23
Luxembourg	..	..	3.4	16	..	..	10.0	10	-1.0	21
Netherlands <sup>e</sup>	51.0	4	<i>151.6</i>	NA	..	..	17.2	3	0.8	5
Portugal	..	..	30.5	4	..	..	11.0	6	0.5	7
Spain	..	..	16.2	7	..	..	10.0	9	-0.3	16
Sweden	..	..	11.6	11	20.2	5	..	..	-0.6	18
United Kingdom	52.1	3	21.6	5	..	..	15.8	4	0.6	6
<b>North America</b>										
Canada	41.1	7	..	..	21.9	3	..	..	-0.3	15
United States	46.6	5	..	..	21.9	4	..	..	-0.1	12
<b>Pacific Area</b>										
Australia	61.3	2	..	..	48.9	1	..	..	1.4	3
New Zealand	69.0	1	..	..	..	..	..	..	1.5	2
<b>Other OECD countries</b>										
Hungary	..	..	13.5	10	..	..	..	..	-0.4	17
Iceland	..	..	15.8	8	..	..	..	..	-0.1	13
Norway	..	..	7.8	14	..	..	..	..	-0.9	19
Poland	20.7	9	..	..	..	..	..	..	-1.1	22
Switzerland <sup>f</sup>	11.3	11	..	..	..	..	..	..	-1.7	24
Switzerland (French)	8.2	NA	..	..	..	..	..	..	-1.8	NA
Switzerland (German)	12.4	NA	..	..	..	..	..	..	-1.6	NA
<b>Unweighted mean</b>	<b>41.5</b>	<b>NA</b>	<b>17.1</b>	<b>NA</b>	<b>27.8</b>	<b>NA</b>	<b>12.5</b>	<b>NA</b>	<b>0.0</b>	<b>NA</b>
<b>Standard deviation</b>	<b>18.2</b>	<b>NA</b>	<b>10.3</b>	<b>NA</b>	<b>11.9</b>	<b>NA</b>	<b>4.3</b>	<b>NA</b>	<b>0.9</b>	<b>NA</b>

.. Data not available.

NA: Not applicable.

a) Figures in *italics* are not used in the calculations of the cross-country statistics in Columns 3 and 4 or the cross-survey index in Column 9.

b) The national estimates of training volume in Columns 1, 3, 5 and 7 were standardized to have a zero mean and unit variance. Column 9 reports the unweighted means of these standardized values which are calculated using all surveys for which estimates are available for that country.

c) The IALS data for Belgium only cover Flanders.

d) The ELFS data for France measure only current training activity and are not fully comparable to those reported for the other countries. Accordingly, the French value is not used in the calculations of the cross-country statistics in Columns 3 and 4 or the cross-survey index in Column 9.

e) The ELFS data for the Netherlands are not used in the calculations of the cross-country statistics in Columns 3 and 4 or the cross-survey index in Column 9, because they appear to be non-comparable (see text).

f) IALS values for Switzerland are a weighted average of the values for the French and German-speaking populations.  
Sources: See Oecd Employment Outlook 1999, Chapter 3

Table 3. **Differences in career or job-related training by gender**  
Ratios of the participation rates for women to those for men

	IALS		ELFS		OECD/INES		CVTS		Unweighted mean ratio <sup>a</sup>	Rank (10)
	Ratio (1)	Rank (2)	Ratio (3)	Rank (4)	Ratio (5)	Rank (6)	Ratio (7)	Rank (8)		
<b>European Union</b>										
Austria	..	..	0.97	14	..	..	..	..	0.97	17
Belgium <sup>b</sup>	0.83	11	0.93	16	..	..	1.12	1	0.96	18
Denmark	..	..	1.29	3	..	..	1.06	3	1.18	2
Finland	..	..	1.28	4	0.99	4	..	..	1.14	5
France	..	..	1.13	8	..	..	0.85	9	0.99	15
Germany	1.15	2	0.96	15	0.87	6	0.63	12	0.90	21
Greece	..	..	1.21	5	..	..	1.00	5	1.10	6
Ireland	1.32	1	1.12	9	..	..	1.05	4	1.16	3
Italy	..	..	1.46	2	..	..	0.69	11	1.07	9
Luxembourg	..	..	0.85	18	..	..	1.08	2	0.97	16
Netherlands	0.75	12	0.93	17	..	..	0.89	7	0.85	24
Portugal	..	..	1.03	11	..	..	0.73	10	0.88	22
Spain	..	..	1.58	1	..	..	0.86	8	1.22	1
Sweden	1.09	3	1.04	10	1.13	2	..	..	1.08	7
United Kingdom	1.00	6	1.16	6	..	..	0.93	6	1.03	12
<b>North America</b>										
Canada	0.94	7	..	..	1.11	3	..	..	1.02	13
United States	1.00	5	..	..	1.16	1	..	..	1.08	8
<b>Pacific Area</b>										
Australia	0.91	10	..	..	0.98	5	..	..	0.95	19
New Zealand	1.05	4	..	..	..	..	..	..	1.05	10
<b>Other OECD countries</b>										
Hungary	..	..	1.15	7	..	..	..	..	1.15	4
Iceland	..	..	1.03	12	..	..	..	..	1.03	11
Norway	..	..	1.00	13	..	..	..	..	1.00	14
Poland	0.92	9	..	..	..	..	..	..	0.92	20
Switzerland <sup>c</sup>	0.93	8	..	..	0.81	7	..	..	0.87	23
Switzerland (French)	0.79	NA	..	..	..	..	..	..	0.79	NA
Switzerland (German)	0.98	NA	..	..	..	..	..	..	0.98	NA
<b>Unweighted mean</b>	<b>0.99</b>	<b>NA</b>	<b>1.12</b>	<b>NA</b>	<b>1.01</b>	<b>NA</b>	<b>0.91</b>	<b>NA</b>	<b>1.02</b>	<b>NA</b>
<b>Standard deviation</b>	<b>0.15</b>	<b>NA</b>	<b>0.19</b>	<b>NA</b>	<b>0.13</b>	<b>NA</b>	<b>0.16</b>	<b>NA</b>	<b>0.10</b>	<b>NA</b>

.. Data not available.

NA: Not applicable.

a) Mean calculated using all surveys for which estimates are available for that country.

b) The IALS data for Belgium only cover Flanders.

c) IALS values for Switzerland are a weighted average of the values for the French and German-speaking populations.

Sources: See Oecd Employment Outlook 1999, Chapter 3

Table 4. **Differences in career or job-related training by age**  
Ratios of the participation rates for younger to those for older workers<sup>a</sup>

	IALS		ELFS		OECD/INES		Unweighted mean ratio <sup>b</sup>	Rank
	Ratio (1)	Rank (2)	Ratio (3)	Rank (4)	Ratio (5)	Rank (6)		
<b>European Union</b>								
Austria	..	..	1.60	11	..	..	1.60	11
Belgium <sup>c</sup>	1.25	7	2.19	10	..	..	1.72	10
Denmark	..	..	0.98	16	..	..	0.98	21
Finland	..	..	1.50	13	0.96	5	1.23	17
France	..	..	5.38	2	..	..	5.38	2
Germany	1.79	2	3.32	7	1.25	2	2.12	8
Greece	..	..	4.55	4	..	..	4.55	4
Ireland	1.20	8	2.51	9	..	..	1.86	9
Italy	..	..	1.14	14	..	..	1.14	18
Luxembourg	..	..	4.54	5	..	..	4.54	5
Netherlands	1.44	5	2.93	8	..	..	2.19	7
Portugal	..	..	6.13	1	..	..	6.13	1
Spain	..	..	4.87	3	..	..	4.87	3
Sweden	0.93	12	0.88	18	0.90	7	0.90	23
United Kingdom	1.56	3	1.55	12	..	..	1.56	12
<b>North America</b>								
Canada	1.96	1	..	..	1.14	3	1.55	13
United States	0.97	11	..	..	0.94	6	0.96	22
<b>Pacific Area</b>								
Australia	1.16	9	..	..	1.40	1	1.28	16
New Zealand	1.08	10	..	..	..	..	1.08	19
<b>Other OECD countries</b>								
Hungary	..	..	3.67	6	..	..	3.67	6
Iceland	..	..	1.01	15	..	..	1.01	20
Norway	..	..	0.89	17	..	..	0.89	24
Poland	1.42	6	..	..	..	..	1.42	14
Switzerland <sup>d</sup>	1.47	4	..	..	1.13	4	1.30	15
Switzerland (French)	1.70	NA	..	..	..	..	1.70	NA
Switzerland (German)	1.43	NA	..	..	..	..	1.43	NA
<b>Unweighted mean</b>	<b>1.35</b>	<b>NA</b>	<b>2.76</b>	<b>NA</b>	<b>1.10</b>	<b>NA</b>	<b>2.25</b>	<b>NA</b>
<b>Standard deviation</b>	<b>0.32</b>	<b>NA</b>	<b>1.73</b>	<b>NA</b>	<b>0.18</b>	<b>NA</b>	<b>1.63</b>	<b>NA</b>

.. Data not available.

NA: Not applicable.

a) Younger is defined as ages 25-29 in IALS and ELFS, and as 25-34 in OECD/INES; older is defined as ages 50-54 in IALS

and ELFS, and as 45-64 in OECD/INES.

b) Mean calculated using all surveys for which estimates are available for that country.

c) The IALS data for Belgium only cover Flanders.

d) IALS values for Switzerland are a weighted average of the values for the French and German-speaking populations.

Sources: See Oecd Employment Outlook 1999, Chapter 3



**Table 5. Differences in career or job-related training by education**  
Ratios of the participation rates for workers with a university degree to those for workers not having finished upper secondary schooling

	IALS		ELFS		OECD/INES		Unweighted mean ratio <sup>a</sup>	Rank (8)
	Ratio (1)	Rank (2)	Ratio (3)	Rank (4)	Ratio (5)	Rank (6)		
<b>European Union</b>								
Austria	..	..	2.89	15	..	..	2.89	18
Belgium <sup>b</sup>	5.70	2	14.93	3	..	..	10.32	5
Denmark	..	..	3.34	11	..	..	3.34	14
Finland	..	..	3.30	12	2.11	7	2.70	19
France	..	..	5.08	9	..	..	5.08	8
Germany	1.96	8	5.19	8	6.91	1	4.69	9
Greece	..	..	22.83	2	..	..	22.83	2
Ireland	2.62	5	3.25	13	..	..	2.93	17
Italy	..	..	8.29	6	..	..	8.29	6
Luxembourg	..	..	4.58	10	..	..	4.58	10
Netherlands	1.88	9	1.93	18	..	..	1.90	23
Portugal	..	..	37.29	1	..	..	37.29	1
Spain	..	..	13.80	4	..	..	13.80	3
Sweden	1.58	12	2.11	17	2.25	5	1.98	22
United Kingdom	1.70	11	5.55	7	..	..	3.63	13
<b>North America</b>								
Canada	2.34	6	..	..	4.21	3	3.28	15
United States	4.09	3	..	..	4.30	2	4.19	11
<b>Pacific Area</b>								
Australia	2.01	7	..	..	2.21	6	2.11	21
New Zealand	1.80	10	..	..	..	..	1.80	24
<b>Other OECD countries</b>								
Hungary	..	..	12.05	5	..	..	12.05	4
Iceland	..	..	2.26	16	..	..	2.26	20
Norway	..	..	3.02	14	..	..	3.02	16
Poland	3.72	4	..	..	..	..	3.72	12
Switzerland <sup>c</sup>	8.70	1	..	..	3.77	4	6.23	7
Switzerland (French)	4.80	NA	..	..	..	..	4.80	NA
Switzerland (German)	12.25	NA	..	..	..	..	12.25	NA
<b>Unweighted mean</b>	<b>3.18</b>	<b>NA</b>	<b>8.43</b>	<b>NA</b>	<b>3.68</b>	<b>NA</b>	<b>6.87</b>	<b>NA</b>
<b>Standard deviation</b>	<b>2.14</b>	<b>NA</b>	<b>9.17</b>	<b>NA</b>	<b>1.72</b>	<b>NA</b>	<b>8.12</b>	<b>NA</b>

.. Data not available.

NA: Not applicable.

a) Mean calculated using all surveys for which estimates are available for that country.

b) The IALS data for Belgium only cover Flanders.

c) IALS values for Switzerland are a weighted average of the values for the French and German-speaking populations.

Sources: See Oecd Employment Outlook 1999, Chapter 3

Table 6. **Training expectancy given current conditions<sup>a</sup>**

Cumulative hours of career or job-related training between the ages of 25 and 64 years

	Cumulative training hours	Ratio of training hours for:		
		Employed relative to all individuals	Women relative to men	University educated relative to less than upper secondary
Australia	1,605	..	0.73	3.16
Belgium (Flanders)	478	0.88	0.68	10.75
Canada	2,109	0.48	1.03	3.83
Germany	1,833	0.44	1.23	1.13
Ireland	1,261	0.64	1.19	1.14
Netherlands	1,512	0.66	0.58	1.18
New Zealand	2,627	0.62	0.81	2.73
Poland	391	0.95	0.80	2.58
Switzerland (French)	217	0.92	0.39	2.47
Switzerland (German)	353	0.96	0.50	3.36
United Kingdom	1,666	0.73	0.75	1.72
United States	1,403	0.80	0.80	2.26
<b>Unweighted mean</b>	<b>1,288</b>	<b>0.73</b>	<b>0.79</b>	<b>3.03</b>
<b>Standard deviation</b>	<b>739</b>	<b>0.17</b>	<b>0.24</b>	<b>2.48</b>

.. Data not available.

- a) Expected training hours are the *cumulation*, over five-year age intervals between the ages of 25 and 64, of age and gender-specific estimates of mean training hours. Mean training hours for a specific age and gender were calculated as weighted averages of the mean hours of training for each of three labour force states (employed, unemployed and out of the labour force), where population shares were used as weights.

Sources: International Adult Literacy Survey, 1994-1995.