Working Party on Employment and Unemployment Statistics

HARMONISATION OF TRAINING STATISTICS

SUMMARY

1. The importance of knowledge and skill acquisition is growing in the context of structural change and of the passage to a knowledge-based economy, which the OECD countries are currently undergoing. In this context, during the last decade there has been a shift of attention from the formal education system as provider of knowledge and skills, towards the role of training in enterprises; the latter is increasingly recognised as already having a significant contribution to knowledge and skill formation.

2. In order to design efficient policies, a clearer and richer picture of the flow of knowledge- and skills-acquisition by individuals is needed. While statistics describing the formal education system exist and are rapidly evolving, this is not the case with respect to enterprise-based training: existing statistics suffer from limited information and from a low degree of cross-country comparability. International comparability of training statistics is necessary in order to be able to generalise national experiences and to compare the impact of training and education and the effectiveness of policies.

3. An empirical comparison of existing training statistics and of national survey questionnaires confirms that, despite existing harmonisation efforts and progress in data-collection, conceptual and analytic work, important discrepancies across countries remain. The main areas where comparability is at stake are: *a)* the reference period, *b)* the population coverage, *c)* the coverage of the types of training, *d)* the exact definition of further statistics (as e.g. volume, costs) and the available break down.

4. In 1997 the OECD published the "Manual for Better Training Statistics", which clarifies conceptual issues and deals with measurement and data-collection issues. It constitutes a first indispensable step in the process of cross-country harmonisation of statistics.

5. With this report the Secretariat proposes to take the harmonisation process one step further by specifying an agreed upon set of core definitions and statistics or "international guidelines" on training. Such a specification and the possibilities of its implementation should be the subject of a broad discussion among national experts in training statistics and users of such statistics. This discussion could take the form of an electronic discussion group.

6. The harmonisation issues which would be discussed in this electronic group are: *a)* the reference period, *b)* the population coverage, *c)* the exact definition of training activities to be included, *d)* the specification and exact definition of further core statistics as the volume and costs of training, and *e)* additional information on the training activity, the trainee and the employer. A final issue , which is seen as a medium term perspective, is the measurement of the stock of human capital -- as opposed to the flow of training and education.

TABLE OF CONTENTS

HARMONISATION OF TRAINING STATISTICS

Introduction

Economic performance depends on knowledge and skills of the workforce

1. The importance of knowledge and skill acquisition is growing in the context of structural change and of the passage to a knowledge-based economy, which the OECD economies are currently undergoing. There is lots of evidence that the impact of human capital formation -- of which knowledge and skills acquisition by the workforce are an important component-- on the economic performance of individuals but also on the performance of firms, industries and economies as a whole (see Box), as well as on social cohesion of societies is important.

2. Particularly as far as individuals are concerned the evidence is striking:

- employability and incomes are shown to depend strongly on the level of knowledge and skills acquired: individuals with low educational attainment are most at risk to drop out into low-pay and social exclusion (see Charts 1 and 2);

- white-collar high-skilled occupations grow in all OECD economies faster than total employment (see Chart 3);

- the structural shift towards services and high-technology industries is re-enforcing such tendencies.

3. Intangible investment is repeatedly shown to increase the productivity and competitiveness of firms and enhance an economy's economic performance. Globalisation and higher exposure to competition create a continuous pressure in this direction. These factors are recognised in economic theory to be one of the most important driving forces of economic growth in post-industrial economies. The up-skilling of the workforce together with innovation, technological and organisational change as well as investments in research and development are the major components of this accelerating process. Synergies between these components might play an important role: the productivity paradox --slower productivity growth in the '80s and '90s as compared to the '60s, despite increased use of information technologies-- may be related to difficulties experienced by the workforce and firms in general in using the full capacity of new technologies.

Investments in training and education are rising, but so do pressures to justify them

4. For these reasons individuals and firms have significantly increased their efforts and investments in education and training during the past decades. In parallel, and in order to maintain social cohesion,

governments have taken measures to help those most at risk to acquire a minimum level of employability through training and, more generally, active labour market programmes (see Table 1). But pressures on governments and firms to reduce expenditures is increasing. This reinforces the discussion on whether there is over- or under- investment in training and education. In order to better deal with such issues, measurement of inputs and outcomes of the educational and training process are needed. In the current context the quantitative analysis of outcomes of training and education, and particularly the issue of the efficiency of expenditures on them, gains in importance.

Attention shifts to the contribution of "enterprise based training"

5. During the last decade, or so, there has been a shift of attention from the formal education system as provider of knowledge and skills, towards the role of training in enterprises (see Chart 4 and Table 2). Enterprise training is more closely tailored to the specific needs of enterprises than is initial education. It is provided in response to immediate occupational skill shortages resulting from technological and organisational restructuring. It therefore may be more efficient in overcoming skill-shortages and avoiding over-supply and may also have more direct outcomes in terms of productivity and competitiveness. As a provider of knowledge and skills, training given in enterprises may be particularly important for individuals at the intermediate and low levels of educational attainment. The distribution of job-related skills acquired in the enterprise by individuals with, say, less than upper secondary education may be decisive for the performance of an economy. Although the incidence of training is higher for individuals with a high level of education, the volume of training absorbed by individuals in intermediate educational levels is also important (Chart 5 and 6); 20 to 50 per cent of training is absorbed by individuals with secondary education or less.

6. The shift described here has implications for the formal education system itself. A reorientation has occurred which has mainly taken the form of the creation of vocational programmes or the introduction of vocational elements in general or academic programmes. Moreover, the links to the world of the enterprise have tended to be reinforced, in terms of both redefining the content of education as well as the nature of provision.

7. The refocusing of attention towards enterprise-based training is also related to the development of a new approach to knowledge and skill formation, which consists in underlining the importance of life-long-learning -- an approach according to which skills and knowledge are expanded and updated throughout a person's working-career --, as opposed to the traditional front-end approach of the formal education system. Its justification, namely the fact that skills and knowledge previously acquired depreciate in the context of rapid technological change and an ageing structure of the workforce, points to the role of enterprises in providing the necessary update of shortages there they occur, in the production process.

8. From the point of view of policy making, these developments complicate the task, in part because more players are involved. While initial basic education is treated as a public good, this is not generally the case for enterprise-based training. There is a multitude of questions arising, as e.g., whether there is room for government intervention or not (imperfect information, market failure), and which measures (incentives, legal obligation, institutional framework, information diffusion) are likely to be most effective.

Existing data show that this contribution might already be quite significant

9. Existing data on job-related continuous education and training show that the order of magnitude of its contribution in terms of participation, volume and costs is quite important. For example, the International Adult Literacy Survey (IALS) indicates that the average volume of job-related training per employee per year reaches 50 hours for most sampled countries (see Chart 7). Employer surveys indicate that in EU countries, employer-provided training is, on average, about 12 hours per employee per year in enterprises with more than 10 employees. The wage costs of this training alone reach 1.6 per cent of the labour costs (Continuing Vocational Training Survey, 1994 [CVTS]). A Bureau of Labor Statistics-survey (BLS) of employer provided training indicates that in a 6 month reference period employees in enterprises with more than 50 employees received on average 13.4 hours of formal training and 31.1 hours of informal training (see Table 2).

Governments are realising its importance and are investing in training

10. At their 1996 meeting of the Education Committee at Ministerial level OECD member country Ministers agreed to "strengthen the foundations for learning throughout life, [...], promote coherent links between learning and work, [...], rethink the roles and responsibilities of all partners, [...], create incentives [...] to invest more in lifelong learning." Ministers invited the OECD to "monitor progress towards the realisation of lifelong learning [...] through thematic reviews of aspects such as [...] vocational and technical education, including training in enterprises" and to "identify the benefits of increased investment in lifelong learning". They further reaffirmed "the value of international co-operation and the exchange of information and comparative country experiences in developing national policies". As a follow-up to the Ministers request to the OECD, the Human Capital Indicators Project was established; it proposed definitions of indicators based on existing data and identified gaps in data availability for further indicators. Among these, training provision in enterprises was one of the areas identified as being a major gap in terms of availability of appropriate data. In 1997 Ministers re-enforced this orientation by agreeing "[...] on the urgent need to implement effective strategies for lifelong learning for all, to strengthen the capacity of individuals to adapt and acquire new skills and competencies".

11. In 1994 the Council of Ministers of the European Union adopted the Leonardo da Vinci programme for the implementation of a Community Vocational Training Policy. This programme, which was adopted for a period of five years (1995-1999) and has a total budget of 620 million ECU, "seeks to prepare for the 21st century by improving the quality of vocational training systems and their capacity for innovation which are key factors for mastering technological and industrial change and its impact upon work organisation and the competitiveness of enterprises".

A clearer and richer picture is indispensable for understanding outcomes and designing policies

12. Measurement of the amount and the costs of skills and knowledge acquired by individuals or provided by governments, firms or educational institutions is an indispensable step in the direction of designing appropriate policies. Statistics describing the functioning, the costs and the outcomes of the formal education system exist and are rapidly evolving. This is not the case neither with respect to enterprise based training or with respect to educational and training activities provided by commercial firms, which are not adequately covered in educational data. In particular, existing statistics suffer -- to a different degree from country to country -- from limited information and from a low degree of cross-country comparability (see below).

- The information which would be needed is, at the very least, a *measure of the flow* of knowledge and skill formation in a given year, in terms of value and volume.

- But this alone is not sufficient; its *structure* in terms of subjects, of orientation by occupation, of vocational versus academic education, and any other dimension which could differentiate the returns, play a crucial role.

  a) For example, detailed data on employment by occupation and industry show that in most countries the employment in high-skilled blue-collar occupations increases less (or decreases faster) than blue-collar low-skilled ones (see Chart 3). This counterintuitive result suggests that a one dimensional measure of the type "volume of skills and knowledge acquired" is insufficient to describe employability.

  b) Empirical research confirms that different types of education, for example combinations of vocational and academic education at the secondary and post-secondary level, as well as more active involvement of employers in educational and training programmes enhance the efficiency of the system and produce better labour-market outcomes (see Box).

- A final issue in this context, which will be discussed below, is the need for data on the stock of knowledge and skills and its distribution across individuals, within firms and economies. Contrary to the analogy of investment in physical capital, the stock of knowledge and skills cannot be calculated on the basis of a "perpetual inventory method"; shifts in the stock generated by hiring high-skilled workers and laying off low-skilled ones may be much more important than the shifts induced by training. This stock should rather be directly measured, that is, as a sort of summation of time spent in educational and training activities by individuals.

Statistics and policy objectives

13. What is needed is more information which would provide a better basis for analysis and design of policy relevant measures and strategies by:

a) contributing to a better cross-country analysis of the relation of human-capital-stock distribution and economic performance and by facilitating a better understanding of the return to education and training and its potential impact on society,

b) enabling the comparisons of policies aiming at enhancing the provision of enterprise-based and of *continuous education and training,*

c) facilitating the analysis of eventual or upcoming mismatches between supply and demand of knowledge and skills by occupation and enabling the design of adequate policy response measures,

d) facilitating the analysis and cross-country comparison of the returns and efficiency of different types of training and education, for example general versus vocational education, institution-led versus employer-led training, etc.,

e) enabling a cross-country comparison of the contribution to human capital formation of *enterprise-based-training* with that of other education and training providers or with initial education.

Comparability of training statistics

Some empirical results

14. There are already many diverse data-sources on training statistics. They can be found either in modules on education and training of labour force surveys, in specialised surveys on training for individuals or in enterprise / employer surveys. Table 4, although not exhaustive, gives a general picture of the availability of statistics on training. It is interesting to note that the individual surveys (LFS or specialised surveys) are more geared to participation, while the employer surveys are more focused on costs.

15. A comparison of "participation rates at training" and "hours of training per person" between data from three individual surveys and an employer survey reveals the extent to which differences across surveys (with respect to the inclusion of various forms of training activities) can induce comparability problems. In these comparisons we use the following sources:

- The International Adult Literacy Survey (IALS) for which data were collected on the basis of a common questionnaire. The reference period is 12 months. Its disadvantage with respect to LFS is the relatively small sample sizes (e.g. for the United States, there are only 3 045 individuals in IALS).

- Labour force survey (LFS) data from EUROSTAT which consist of a mapping of national LFS data items into a common file structure. Although national questionnaires have been adapted to a certain extent to the EUROSTAT standard, some differences remain in the way the questions are posed, inducing cross-country differences in the types of training covered (see Table 5 for more detail). The reference period here is 4 weeks.

- OECD/INES (Indicators of Education Systems, published in Education at a Glance, 1997) results are mostly based on countries' labour force surveys but some data are provided by other surveys --for example Adult Education and Training Surveys. Notes of Table 3 give some examples of comparability issues. The reference period is either 4 weeks or 12 months depending on the sources.

- Finally there is the EUROSTAT Continuing Vocational Training Survey (CVTS, 1994), which is an employer survey of enterprises with more than 10 employees in the European Union. Its reference period is 12 months. This survey is also based on common specifications.

Table 3 gives an overall picture of participation rates in continuous job-related training for the employed population aged 25-64.

16. When comparing the results between IALS and OECD/INES it may be observed that for Canada and the United States the IALS-figures are about 30-40 per cent higher than those published by OECD/INES. The main reason seems to be that IALS uses a broader definition of training by including "on-the-job[1]" training (without further specification), private lessons and recreation courses; therefore

"informal[2]" or "unstructured" training will tend to be included. The household training surveys for these two countries, on the contrary, ask for "courses" or "programmes", which tends to capture predominantly "formal" or "structured" training activities. On the other hand, Switzerland for which the LFS also poses a "broad" training question ends up with similar figures for LFS and IALS.

17. The main point which can be made here is that*: the way training questions are posed is important*; it can lead to the inclusion or exclusion of one or other form of training activity, resulting in a serious distortion of the results.

18. As might be expected, given that sources are the same, participation rate figures from EUROSTAT and OECD/INES are similar. However, there are differences, the reasons for which are not clear. Although these differences may be small in an absolute sense, for some countries (Italy, Luxembourg, Spain) they are relatively large. In addition, a comparison of results based on 4 week/12 month reference period for countries for which data are available on both bases also raises a number of questions. Thus, for example, Germany's 4-week participation rate is almost twice that of France according to labour force surveys, while France has a higher 12-month participation rate than Germany according to OECD/INES.

19. A joint comparison of average hours of training in EUROSTAT's LFS, EUROSTAT's CVTS and IALS is revealing (Chart 8). Although reference periods and types of training differ across surveys, some facts may be observed:

- While in CVTS, as well as in IALS, the volume of training received does not differ a lot across countries, the variations are much more important for EUROSTAT's LFS. Thus, while in IALS average hours of training for European countries range from 35 h to 50 h yearly and in CVTS they range from 5 h to 20 h yearly, in LFS they range from 3 h to 120 h monthly.

- While the ranking of the countries with respect to CVTS and IALS coincide (where available), this is not the case for the ranking induced by EUROSTAT's LFS.

20. In fact, a finer break down of the EUROSTAT's LFS figures by type of study gives some indications about the possible reasons for these discrepancies:

- While the average training hours according to CVTS on the one side, and those of LFS which concern training that at least partially takes place "at work" on the other, have a similar order of magnitude for some countries (Netherlands, Denmark, United Kingdom, Ireland, Germany), they differ completely for others (particularly for France, Greece, Portugal and Spain).

- It is the category "other training" which is responsible for the enormous figure of "all training" in the Netherlands. The same category is relatively important also for Germany.

- Ireland's LFS figures are not capturing any "students".

Sources of non-comparability

21. The definitions and questions on training, the reference period, population coverage, the type of training covered can largely differ from one country to the other and within countries from one survey to the other.

Reference period

22. The most important source of incomparability is linked to differences in the reference period. Several surveys have adopted a 12-month reference period (IALS, Australia, Canada's "Adult Education and Training Survey", Finland's "Adult Education and Training Survey", New Zealand's Household LFS, Education and training supplement, Switzerland). The European Union labour force survey and most of the national labour force surveys on which it is based use a 4-week reference period. France, the Netherlands and Portugal are an exception, as they ask whether a person is "currently" at training. Sweden is the only country having a 6-month reference period.

Population coverage

23. A second major source of incomparability can be explained by the population covered which can be different from one survey to the next. Some surveys do not include apprentice trainees, non-employed population (Australia). Some surveys only take into account training sponsored (or financed) by the employers (Finland, Sweden), etc.

Types of training covered

24. The types of training covered are also a major source of comparability problems. Including the one or other form of training may alter the results significantly, as the following example shows: the participation rate at training in Australia in 1993 was 85.8 per cent including informal on-the-job-training, but only 47 per cent when only courses and studies are taken into account (Training Education and Experience, 1993, Australian Bureau of Statistics). The Bureau of Labor Statistics-survey of "Employer provided training", cited above, estimates the volume of informal training to be three times the volume of formal training.

25. A detailed consideration of national questionnaires is revealing in this respect. Table 5 describes the type of training questions or definitions used in the various sources according to whether it is structured or not and whether off- or on-the-job. The table represents the training categories into which specific questions of national questionnaires might be attributed; it does not provide an answer to the question "whether all possible forms of a given type of training" are covered by the specific question in a national questionnaire. The actual situation of comparability is thus, likely to be worse than the one suggested by the table.

26. While in most countries the questions tend to capture formal training activities, in some countries there are questions which could cover both informal and formal activities. For example, Australia has a question on on-the-job training which clearly includes both formal and informal activities (e.g. "asking questions to a co-worker"). The same holds, e.g., for New Zealand and Switzerland. While some European countries ask for courses or studies only (formal activities) -- as e.g. Greece, Italy and

Spain --, most do also have questions which could capture informal activities as well (e.g. "Did you undertake any other training (practical, On-the-job, etc.)?").

27. Therefore, it is likely that any a-posteriori attempt to obtain comparable categories (e.g. formal training) from data based on these questions will produce problematic results.

Available break-down of training by type

28. In addition to the possible absence of a distinction between formal and informal, as well as between off- and on-the-job training, several further important distinctions by type of training are either missing in some countries or not uniformly defined across countries.

a) The existing statistics are often vague about the extent to which the training was completely, partially or not at all *sponsored* by the enterprise, by individuals or by public authorities or by some combination of these.

b) In some surveys, a distinction is made between "*initial* vocational training" and "*continuous* vocational training" (e.g. European Union labour force survey). In other surveys there are also other criteria ("leisure or non job-related reasons" in Switzerland, "due to unemployment" in Adult Education and Training Survey for Finland).

c) The distinctions made with regard to the *purposes* of training are not always the same. In some surveys (IALS or Adult Education and Training Survey of Canada), a distinction is made between "career job-related purposes" and "personal interests". In most labour force surveys, the purpose of training is more focused on job-related objectives, for example "career advancement" or "change of occupation". Even if, in most of cases, it is possible to make distinctions between "career job-related purposes" and "non job-related reasons" some differences or bias can be introduced in the way for which types of training are defined and can lead to some inclusions/exclusions of the one or other form of training activity from one survey to the other.

d) Similarly there is a grey area concerning the distinction by *provider*, especially as far as the distinction between educational institution, commercial provider, training centre and company is concerned.

The Manual for Better Training Statistics: a first step towards harmonisation

29. In this context of a lack of the appropriate conceptual definitions and clarification of certain aspects of collecting training data, experts from the Australian authorities in co-ordination with the OECD published in 1997 the "Manual for Better Training Statistics" (TM). The Manual is a guide for use by national statistical agencies and serves a number of useful functions:

- it clarifies conceptual issues, as e.g. nature and forms of training and delineations between them, as well as between training and non-training activities

- it defines at the conceptual level the most elementary training statistics: the volume of training that employers deliver; the volume of training that employees receive and the cost of training to employers and individuals, as well as the elements they comprise.

- it deals with measurement and data-collection issues related to the above statistics and clarifies which of their elements are measurable -- or should rather be excluded from measurement -- and also what type of survey (employers-survey, employers-survey with employees sub-sampling and household-survey) is capable of measuring what type of information (volume/cost of formal/informal training received/provided by employee/employer).

- it highlights some practical data collection issues, such as the development, the methods, the design and the co-ordination of a training data collection.

30. The Manual is mainly intended for use by national statistical offices for the conduct of training surveys, but also for administrative data sources, case studies, etc. It thus offers a conceptual framework and a practical basis for a harmonisation of training statistics. As the experience in other areas of statistics has shown, such a conceptual work is a first indispensable step in the process of a cross-country harmonisation of statistics. Thus, for example, without a strict definition of the different types of training, and without a clarification of the different forms of training activities included in the one or other type, no agreement on the forms of training to be included in international statistics is possible.

Possibilities for a common core data collection effort on training statistics

The time is ripe...

31. Training statistics have already gone through significant parts of the process involved in achieving consensus on international statistical guidelines. The importance of life-long learning -- and of enterprise-based training, as part of it -- is today widely accepted. There is an extensive literature drawing on existing training statistics and asserting its importance (see Box). There have already been some harmonisation-efforts, in particular among European countries, and a first conceptual basis was given by the Training Manual, in the preparation of which experts from different countries were involved. However, what is still needed is to identify (from the Manual as well as national experience) a core set of guidelines with respect to coverage, a common reference period, the measurement of incidence and volume, etc, which countries can subscribe to and implement in their national training surveys.

An Electronic Discussion Group among national experts could serve this purpose

32. In order to arrive at an international consensus, the OECD has set up an electronic discussion group where training statistics experts can engage in exchange regarding the issues at stake. While the Manual was intended to serve as a guide, the scope of this electronic discussion would be to define “International guidelines for training statistics”, with a view not only to furthering international comparisons but perhaps to improving national statisitcs as well.

33. These guidelines would include not only definitions of key concepts but also a listing of a core set of statistics on training for international comparative analyses. The Training Manual is a comprehensive guide which countries can refer to in their collection efforts, but unless there is some consnesus on what definitions are to be used and what data items are collected, international comrability will remain an elusive goal.

34. Participants in this electronic discussion would involve both data producers and data users from Member countries, to ensure that the guidelines are at once practicable and satisfy user and anlytical requirements.

Harmonisation issues

35. In order to arrive at the required consensus, a number of measurement issues will need to be addressed. Some issues may concern only one type of source (household or enterprise survey), for example employer training costs, whereas others may apply to all sources, for example, identification of job-related training. These issues are listed below; the list is undoubtedly not exhaustive.

The reference period

36. The harmonisation of the reference period across countries is an absolute priority. Currently comparisons are only possible within groups of countries with the same reference period.

37. Short reference periods of, say, 4 weeks have the disadvantage that they do not allow conclusions on the flow during the whole year: training activity may be seasonal. Moreover, they result in relatively low participation rates (2-5 per cent for some countries). As a result, the estimation of characteristics of training may be subject to important sampling variability. On the other hand, training events which occurred in a recent past are more memorable than events which are older. Therefore, more forms of training (e.g. informal training) may be included with short reference periods.

What types of training should be included?

38. There are different options concerning the types of training to be included. Most comparability problems between existing individual surveys arise currently from the inclusion/exclusion of *a) informal* training; *b) initial* training (including *apprenticeships*); *c) non-job-related* training; *d)* training in the *formal education system* e) training which was *not employer-sponsored*.

39. The issue here is whether to broaden the base by including a wide range of education and training activities while collecting in parallel information on the type of training received, or whether to restrict it to specific types of training. The advantage of such a broadening is to better respond to differences in the institutional set-ups across countries: certain skill- and knowledge accumulation which is acquired as part of initial education in some countries will be the content of further education and training in others; similarly, some skills and knowledge provided by the formal education system in some countries will eventually be provided by enterprise-based training in others.

40. However, it remains, an issue whether “informal” training should be included in the core. Informal training is defined in the Training Manual as “unstructured” training: unorganised, spontaneous training “as need arises”, being shown a task by a co-worker, etc. Although informal training might be important in skill formation, its measurement requires short reference periods (the Manual notes that with the use of a prospective diary informal training can be measured concerning the week preceding the survey; without a diary only for the previous day). On the other hand existing data show that informal training may represent an important part of training activities.

41. A further issue is whether non-job-related training should be included or not.

Population coverage

42. For both, individual and employer surveys, the target population should be commonly defined. For individual surveys this would concern the specification of a population of individuals, as e.g. is the adult population: those aged 15 and above. For employer surveys this would rather concern a population of enterprises. Most studies limit the coverage to enterprises above a certain number of employees (e.g. EUROSTAT CVTS: 10, United States: 50, Japan: 30). These limits need to be harmonised. Often certain sectors of the economy (agriculture, public administration and defence, health and education) are excluded from the coverage; for this as well, agreement is needed.

Volume, costs

43. The issue here is how volume and costs should be defined and measured.

44. The volume of training received by an individual and the volume of training provided by an employer are defined as the duration of training-related activities. But various issues arise here concerning the exact definition of time to be taken into account. Should, for example, only the time within the reference period be taken into account or the total length of the activity?

45. Accurate figures on costs of training to the individual and the costs of training to an employer are notoriously difficult to collect. Incompatibilities among existing sources arise from the fact that different components are included in these costs. Here too harmonisation is necessary. TM presents a detailed discussion of these components, of possibilities of their measurement and also makes concrete practical proposals for the latter.

Training related information

46. In addition to the type of training, additional information is generally needed on the forms and contents of training, which are likely to affect returns. *The issue is to define which information is necessary and to what detail the break down should arrive*.

47. In individual surveys information on the training activity attended by an individual could concern:

48. whether the training activity was job-related or not; whether it was part of initial or of continuous training; whether it was work- or class-based, or a combination; whether it was sponsored by an employer or not; whether it was provided by the employer, by a public or a commercial institution; whether it led to an officially recognised certification; information on the main field/subject covered.

49. For employer surveys the information might involve:

50. whether the training was externally or internally provided; whether it occurred in “Off-the-job” classes or was rather “On-the-job” training; and possibly the main subject of training (for example: management, accounting/finance, data processing, languages, production processes, etc).

Trainee information

51. Additional information on training participants would be desirable. The issue here again is to define which information is necessary and to what detail the break down should arrive.

52. Additional characteristics in individual surveys could include: age, sex, labour market status, highest educational level attained, occupation, sector of activity, size-class of establishment, earnings, tenure with current employer. Most of these are standard data items in labour force surveys.

53. In employer surveys, breakdowns of volume and costs of training by characteristics of employees who participated in training, such as sex, age, occupation, whether apprenticeship, new recruit, although desirable, may be problematic to collect except for the simplest variables.

Employer (firm) type information

54. For employer surveys (only) certain information on firm characteristics is necessary for analysing different firm training behaviour by characteristic: sector of main activity, size-class, etc. They are present in most national surveys but the categories are not always the same. Further information -- such as the number of employees, wage costs, sales -- is needed in order to relate the order of magnitude of training activities to it and to relate training activity to firm performance.

The measurement of human capital stock: a medium term perspective

55. A further issue which could -- possibly -- be discussed is the one concerning the construction of measures for the stock of training and education. Most surveys of training concentrate on measuring the flow of training, i.e. the amount of enterprise-based training in a given reference period. While statistics based on these training flows seem appropriate to explain flow-outcomes, as e.g. the average increase in productivity, they are inappropriate to analyse outcomes expected to depend rather on the stock of accumulated knowledge and skills and not on its flow, as e.g. employability or wages.

56. It is theoretically preferable to think in terms of a stock of knowledge and skills which is embodied in each individual and which is, thus, distributed across the labour-force of an economy or industry or firm. Such a stock could be defined as the cumulation of the flows of education and training during a lifetime, eventually appropriately depreciated. In this context enterprise-based training may be thought of as "adding" to this stock of knowledge/skills and, thus, shifting (parts of) this distribution. The issue of the impact of training becomes one of analysing the way this shifting is happening, its order of magnitude and the relative importance of the contribution of training to this shifting as compared to the one of other factors. *This can only be accomplished in a framework which allows the **joint** consideration of current flows of training with the corresponding stock.*

57. Finally, current training flows seem to be highly correlated with the level of human capital stock: training incidence is increasing with ISCED (International Standard Classification for Education) level. Therefore, any analysis of the impact of training which does not take the stock correctly into account, stands the risk of the "stock-impact" being mistaken for the "training-impact": the estimated impact or rates of return to training would be biased. Wrong policy conclusions could result from such effects.

58. The forthcoming implementation of the new ISCED 97 in labour-force surveys will constitute an important step, as it will include “years of theoretical duration”, a further break-down into vocational/general education, school- versus work-based training, etc. However, qualifications obtained through work-based training, as well as horizontal training courses taken “after the highest ISCED level currently achieved” will in principle be counted only once they have "a higher level of complexity".

Conclusion

59. Existing training statistics suffer from a low degree of international comparability. Despite important harmonisation steps in European countries, a lot of problems remain. This is confirmed by an empirical comparative analysis of existing data as well as by a detailed overview of national questionnaires.

60. In order to enhance a harmonisation process of training statistics it is necessary to arrive at the definition of a set of "core" statistics. Such a specification should be the subject of a wide discussion among national experts and users of data. It will build on the "Manual for Better Training Statistics" (OECD, 1997) which clarifies conceptual and data-measurement issues.

61. The main points where comparability is at stake and should consequently be discussed are: *a)* he reference period, *b)* the population coverage, *c)* the exact definition of training activities to be included, *d)* the specification and exact definition of further core statistics as the volume and costs of training, *e)* additional information on the training activity, the trainee and the employer, and *f)* the measurement of the stock of knowledge and skills in the work force.

62. It is proposed that this should be done through an electronic discussion group.

NOTES

1. “On-the-job” training is defined as training received while performing a task in working-mode, but not necessarily during the course of normal output. “Off-the-job” training is training received when a task is not performed in working-mode. Both may be conducted on or off-site and involve instruction but no output; instruction and output; output, but no instruction (Glossary of the Manual for Better Training Statistics).

2. “Formal”, or equivalently “structured” training, is defined as such which has predetermined guidelines which establish the objectives pursued, the training content and the methods employed. “Informal” or “unstructured” is training which is not structured, i.e. which is improvised (Glossary of the Manual for Better Training Statistics).

LITERATURE ON TRAINING OUTCOMES IN NATIONAL STUDIES

(Papers marked with "*" are cited according to the survey "The Economic Returns to Lifelong Learning, 1997", prepared by Elchanan Cohn and John Addison from the University of South Carolina for the OECD. Papers marked with "**" are cited according to "OECD, Employment Outlook 1991, Training by Firms").

Subsequently some references are given to studies which analyse the impact of training on the economic performance of individuals and firms.

Impact of vocational education on earnings

Kang and Bishop (1989)* show that --provided students take a certain number of academic courses-- the number of vocational courses taken improves labour market outcomes. Moreover, substituting vocational for academic courses can yield gains that pay for the incremental cost.

Hoolenbeck (1993)* points to higher returns to completing a 2-year college as compared to high school graduates, while **Lyke, Gabe and Aleman (1991)*** show that there is no such return if no distinction is made between type of associate degree.

Bennett, Glennerster and Nevinson (1991)* distinguish vocational qualifications into high, intermediate and low and show that they all come along with higher expected lifetime earnings as compared to no qualification.

Impact of training (and vocational education) on earnings

Tan (1989)** finds that company-based training has a statistically greater effect on earnings than other training sources.

Lynch (1992)* indicates that off-the-job training and apprenticeship with previous employers as well as on-the-job-training and apprenticeship with the current employer raise wages significantly (more than additional schooling or tenure). Only the effects of apprenticeship training --but also certain combinations of training with higher vocational qualifications-- are confirmed in a subsequent study by **Blanchflower and Lynch (1994)***, while for other types of training a more differentiated outcome by gender is obtained.

The **US Department of Labour (1993)*** finds --in a study concerning economically disadvantaged groups-- significant earning returns of on-the-job-training and some indication the classroom type training on occupational skills also works well, depending on gender.

Dolton, Makepeace and Treble (1994)* and **Makepeace and Johnson (1995)*** study the earning effects of the Youth Training Scheme (YTS) and show that they are positive only in cases where YTS was combined with other forms of private sector training.

In a comparative study of Britain with Norway **Elias, Hernaes and Baker (1994)*** conclude that long-term structured employer-based training works and that vocational skills obtained from a school based system that is delinked from the demand of labour does not --other than at the very highest levels.

Groot, Hartog and Oosterbeek (1994)* find that returns to experience are only pronounced among those who undergo company schooling, while **Groot (1995)*** carries the analysis further by distinguishing different types of training.

Harhoff and Kane (1996)* find in a Germany-United States comparative study that the earnings effect of a year of education and training is the same for German apprentices and American workers with a high school education up to the age of 30.

Impact of training on productivity and employability of individuals

Bishop (1989)** examines the productivity and wage effects of new hires and indicates that the first is substantial during the first year in a job and higher than the second.

Tan (1989)** finds that receipt of training is associated with less likelihood of becoming unemployed.

Holzer (1990)** finds that training is positively related to supervisor's productivity growth ratings.

Laulhé (1990)** confirms that persons who received some employer-sponsored training are less likely to go from employment to unemployment and more likely to experience occupational mobility.

O'Connell and McGinnity (1997) show that market oriented training programmes work substantially better than those which are not linked to the market, as far as both employability and earnings of participants are concerned.

Impact of training on productivity of firms

Steedman and Wagner (1987, 1989)** find that average labour productivity in German firms was found to be generally higher than in British ones, even when comparable capital equipment was installed. Differences between the two countries linked to much higher level of skills in German plants, itself related to training provisions and work organisation facilitating training.

Holzer et al (1993) find that an increase in training per worker is associated with a fall in the scrappage rate.

Bartel (1994) finds that the introduction of new training produced a productivity gain.

Groot (1994)* finds a significant impact of training on productivity growth.

Barrett and O'Connell (1997) find a significant impact of training on productivity, but only as far as general --as opposed to company-specific-- training is concerned.

Finegold and Mason (1996) compare productivity levels and skill structure of the labour force in cookie- and metalworking plants in the United States, Germany and the Netherlands. They find that higher productivity levels in the US-firms are mainly due to economies of scale, which --together with investments in firm-based training which provided specific skills-- compensated for the broad-intermediate skill deficiencies of the workforce. It is less clear whether this advantage is likely to continue in the future.

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ANNEX
TABLES AND GRAPHS

Table 1. **Public education and training expenditures as a percentage of GDP, 1994**

	Formal eudcation[1]	Training for unemployed adults[2]	Training for employed adults[2]
North America			
Canada	6.7	0.25	0.01
Mexico	4.5	m	m
United States	4.9	m	m
Pacific Area			
Australia	4.8	0.14	0.01
Japan	3.8	0.03	m
Korea	3.7	m	m
New Zealand	6.0	0.33	m
European Union			
Austria	5.4	0.12	m
Belgium	5.5	0.16	0.12
Denmark	6.6	0.62	0.40
Finland	6.6	0.45	m
France	5.6	0.34	0.04
Germany	4.5	0.38	m
Greece	2.4	0.01	0.08
Ireland	5.2	0.16	0.06
Italy	4.7	0.02	m
Luxembourg	m	0.02	m
Netherlands	4.7	0.16	m
Portugal	5.3	0.05	0.15
Spain	4.8	0.24	0.08
Sweden	6.6	0.50	0.02
United Kingdom	4.9	0.09	0.01
Other OECD countries			
Czech Republic	5.7	0.01	m
Hungary	5.7	0.13	0.00
Iceland	4.5	m	m
Norway	6.8	0.23	m
Poland	m	0.02	m
Switzerland	5.6	0.07	m
Turkey	3.4	m	m

1. Total public expenditure on educational institutions plus subsidies to households, excluding public subsidies for student living costs (OECD, Education at a Glance).

2. Database for Labour Market Programmes

Source: OECD, Education at a Glance, 1997 and OECD, Database for Labour Market Programmes.

Table 2. **Participation, volume and costs of employer provided training, 1994**

	Participation rate at courses	Hours of training courses per participant	Hours of training courses per employee	Hours of training courses per 1000 h worked (trainer-enterprises)	Cost of CVT training courses as % of labour cost
EU12 [1]	28	45.2	12.7	10.0	1.6
Belgium	25	40.8	10.2	9.9	1.4
Denmark	33	39.2	12.9	9.6	1.3
Germany	24	34.2	8.2	5.6	1.2
Greece	13	138.5	18.0	19.4	1.1
France	37	54.4	20.1	13.5	2.0
Ireland	43	25.4	10.9	7.3	1.5
Italy	15	40.9	6.1	7.6	0.8
Luxembourg	25	40.1	10.0	7.5	1.3
Netherlands	26	66.1	17.2	12.1	1.8
Portugal	13	84.4	11.0	16.3	0.7
Spain	20	50.2	10.0	11.4	1.0
United Kingdom	29	40.4	11.7	10.6	2.7
Australia, 1993[2]			5.6		2.9
Canada, 1985[3]					0.9
Japan, 1989[3]					1.7
United States, 1995			13.4 [4,5]		1.8[3]

1. For European countries: includes only enterprises with more than 10 employees. Excludes: Agriculture, forestry and fishing, Public administration, health, and education, Households employing domestic staff, Extra territorial bodies.
Reference period: 12 months.
2. Employer Training Expenditure, Australian Bureau of Statistics, 1993
3. OECD, Employment Outlook, 1991
4. Survey of Employer Provided Training, 1995. Reference period: 6 months.
5. Hours of formal training according to employers (10.7) / formal training according to employees (13.4) / informal training according to employees (31.5).
Source: EUROSTAT, Continuing Vocational Training Survey (CVTS), 1997 and national employer surveys.

Table 3. **Participation rates at training**

(Percentage of persons in job-related training - Employed persons, aged 25 to 64)

Reference period	4 weeks		12 months				
Source	EUROSTAT [1] 1995	OECD / INES 2	IALS [3] 1994/95	OECD / INES 2	date OECD / Nw B	**Notes OECD / INES study**	**Sources Nw B data**
North America							
Canada			37.5	28.4	1993		Adult Education and Training Survey (supplement to LFS)
Mexico							
United States			45.5	33.5	1995	Excludes full-time students. Persons who were on vacation during the survey week have been included in the total population.	National Household Education Survey (Adult Education File)
Pacific Area							
Australia			38.1	38.1	1995	Includes persons studying part-time, enrolled for the whole or part of the year in external courses; training organised and run internally at the work place; and training courses run outside the work place. Excludes persons enrolled only in full-time programmes during the 12-month period preceding the survey, and people pursuing only on-the-job training.	ABS, Survey of Education and Training
Japan							
Korea							
New Zealand			46.9				
European Union							
Austria	7.3	7.6			1995		LFS
Belgium	2.8	3.0	20.0 *		1994	Refer to every form of CET and not only to job-related training. Includes employees who attend full-time formal education.	LFS
Denmark	14.6	14.8			1995	Includes persons in formal education.	LFS
Finland	3.5			45.0	1995	Includes only training which is sponsored by the employers.	Supplement to LFS
France	1.8			40.2	1994	Related to training financed or provided by the employers, includes small enterprises.	Administrative data sources (DARES - Ministère du Travail) and LFS (INSEE)
Germany	3.8			33.3	1994	Includes part-time education at ISCED 5/6/7 if classified as "Weiterbildung" (further training) but not in the case of "Ausbildung" (apprenticeship).	Berichtssystem Weiterbildung (BSW report system on continuing education)
Greece	0.5	0.5			1994		
Ireland	4.3	4.2	23.4		1994		LFS
Italy	2.3	1.3			1995	Excludes persons enrolled in ordinary schools. Excludes also part-time in regular education at ISCED 5/6/7.	LFS
Luxembourg	2.3	1.1			1996		LFS
Netherlands	13.4		32.5				
Portugal	2.3						
Spain	2.3	3.1			1995	Excludes part-time in regular education at ISCED 5/6/7.	
Sweden	14.8			41.6	1996	6 months; related to CET provided or sponsored by the employers. Excludes labour market training.	LFS
United Kingdom	12.4	12.2	51.9		1995		Supplement to LFS
Other OECD countries							
Czech Republic							
Hungary							
Iceland							
Norway				37.0	1991		
Poland			16.5				Level of living Survey (Levekarsundersokelsen)
Switzerland			31.7	35.0	1996	Excludes part-time in regular education at ISCED 5/6/7.	
Turkey							

* Flanders only

1. Excludes initial education. Includes "career-related job", "advancement in career" and "other purposes".
2. Includes all job-related and career-related education and training organised, financed or sponsored by authorities, provided by employers or self-financed.
   Does not include military training or full-time studies at the tertiary level as defined by ISCED (International Standard Classification of Education).
3. Includes only "job-related training".

Source: EUROSTAT, labour force survey, 1995; OECD, *Education at a Glance* ; OECD, *International Adult Literacy Survey* (IALS), 1994/95.

Table 4. **Availability of training statistics**[1, 2]

Geographical area and country	Source	Type of survey	Sample of survey	Population covered	Date of last survey ?	Reference period	Training characteristics: Purposes of training	Type of training	Field of courses / skills provided	Obtention of a qualification	Who suggested this training	Provider of training	Location of training	Methods of training	Barriers to training	Duration: Full-time or part-time basis	Total length of training	Number of hours per week (or hours per day)	Hours per employee	Financing: Wage and salary costs of training	Sources of financing	Training leave
North America																						
Canada	IALS	Individual	4 500 ind.			12 months	x	x		x	x	x	x	x	x		x	x			x	
	Adult education and training survey	Individual		17 and +	1993	12 months	x	x		x	x	x	x	x	x	x	x	x			x	
Mexico																						
United States	IALS	Individual	3 053 ind.			12 months	x	x		x	x	x	x	x	x		x	x			x	
	Survey of Employer Provided Training (SEPT95)	Enterprise	5 000 ind.		May-Oct 95			x	x			x		x				x	x	x		
	NHES: Adult education	Individual		18 and +	1995	12 months	x	x		x		x			x	x	x	x			x	
Pacific Area																						
Australia	IALS	Individual	8 204 ind.			12 months	x	x		x	x	x	x	x	x		x	x			x	
	Survey of Training and Education (Training and Education experience)	Individual	24 500 interviews	15 - 64 who had worked as wage or salary earners	April - May 93	12 months	x	x	x	x		x		x	x	x	x			x	x	x
	Employer Training Expenditure, Australian Bureau of Statistics (only for formal training)	Enterprise	6 000 ent.	Enterprise survey	July-Sept 93	12 months?		x	x										x	x	x	
Japan	Survey of Vocational Training in Private Enterprises, Human Resources Development Bureau, Ministry of Labour	Enterprise	4 000 private ent. and 12 000 ind.	Only some industries are covered	Survey conducted in Feb-March 95	12 months	x	x?	x	x ?				x							x	x
	General survey on Wages and Working Hours System, Ministry of Labour	Enterprise	6 000 private ent.		end of Dec 88															x		
Korea	Not specified questions on training in LFS																					
New Zealand	IALS	Individual	4 223 ind.			12 months	x	x		x	x	x	x	x	x		x	x			x	
	Household labour force survey - Education and training supplement	Individual				12 months	x	x	x	x		x	x		x	x	x	x			x	
European Union																						
EUROSTAT	LFS	Individual		15 and +		4 weeks	x	x		x							x	x				
	CVTS (only Continuous vocational training)	Enterprise	50 000 ent.	Excludes: Agriculture, Public Administration, Health, Education, Domestic staff	1993	12 months		x	x			x ?		x?	x		x			x		
Austria	LFS	Individual				4 weeks	x	x									x	x				
Belgium	IALS	Individual	2 261 ind.	Flanders only		12 months	x	x		x	x	x	x	x	x		x	x			x	
	LFS	Individual				4 weeks	x	x									x	x				
Denmark	LFS	Individual				4 weeks	x	x									x	x				

Table 4. **Availability of training statistics[1,2] (Con't)**

Finland	LFS	Individual		Employees		12 months		x								x						
	LFS			Employees		1 week		x								x						
	LFS			15 - 64		4 weeks	x	x		x						x	x					
	Adult Education Survey 1995	Individual	5 000 ind.	18 - 64		12 months	x	x		x	x		x		x						x	x
France	LFS	Individual		15 and +		at the moment		x								x	x					
	Statistique de la formation professionnelle continue financée par les entreprises, CEREQ	Enterprise	Data based on the declaration of expenditure by employers	All enterprises in the private, semi-public and co-operative sectors with at least 10 salary workers	1993	12 months										x		x	x	x	x
Germany	IALS	Individual	2 062 ind.			12 months	x	x		x	x	x	x	x	x	x	x				x	
	LFS	Individual	350 000 households	15 and +		4 weeks	x	x								x	x					
Greece	LFS	Individual		14 and +		4 weeks	x	x								x	x					
Ireland	IALS	Individual	2 423 ind.			12 months	x	x		x	x	x	x	x	x	x	x				x	
	LFS	Individual		15 and +		4 weeks	x	x								x	x					
Italy	LFS	Individual				4 weeks	x	x								x	x					
Luxembourg	LFS	Individual				4 weeks	x	x								x	x					
Netherlands	IALS	Individual	2 837 ind.			12 months	x	x		x	x	x	x	x	x	x	x				x	
	LFS	Individual		Under 75		at the moment		x		x	x				x	x	x					x
Portugal	LFS	Individual				not precised	x	x					x			x	x					
Spain	LFS (Occupied population survey)	Individual		16 and +		4 weeks	x	x					x			x	x					
Sweden	IALS	Individual	2 645 ind.			12 months	x	x		x	x	x	x	x	x	x	x				x	
	LFS	Individual				4 weeks	x	x								x	x					
United Kingdom	IALS	Individual	6 718 ind.			12 months	x	x		x	x	x	x	x	x	x	x				x	
	LFS	Individual		men: 16 - 64 women: 16 - 59		Not precised (currently ?)		x		x			x			x						
	LFS			men: 16 - 64 women: 16 - 59		3 months		x			x											
	LFS			men: 16 - 64 women: 16 - 59		4 weeks	x	x					x				x	x			x	
	LFS			men: 16 - 64 women: 16 - 59		1 week		x														
ther OECD countries																						
Czech Republic	Not specified questions on training in LFS																					
Hungary	Not specified questions on training in LFS																					
Iceland	LFS	Individual				4 weeks	x	x								x	x					
Norway see EmO 91	"Statistical information on Enterprise-based training", paper prepared for an OECD meeting, Feb. 91	Enterprise	1 050 firms and 6 100 ind.		year 1989	12 months		x?								x					x?	
Poland	IALS	Individual	3 000 ind.			12 months	x	x		x	x	x	x	x	x	x	x				x	
Switzerland	IALS	Individual	2 828 ind.			12 months	x	x		x	x	x	x	x	x	x	x				x	
	ESPA (~ LFS)	Individual	16 325 ind.	20 - 74	2e trim 96	12 months	x	x	x	x		x		x	x	x	x				x	
Turkey	Not specified questions on training in LFS																					

Table has been built on the basis of available questionnaires for individual and employer surveys.

"x" indicates that information is available; " " indicates that information is not available.

Purposes of training refer to information on whether job-related training, initial training, etc.

Types of training refer to information on whether formal or informal training, on-the-job or off-the-job, etc.

Table 5. **Comparability of training definitions - Individual surveys**[1,2]

				Formal education (or schools)			Structured enterprise-based training[3]				Unstructured training[3]			
Country	*Source*	*Coverage of population*	*Training definition (or first question on training)*	School education (primary, secondary), general programmes	University (or higher) education	School education (including non-university) - vocational education	Dual training (both work environment and school)	of which: Apprenticeship	Off-the job[4] structured training	On-the-job[4] structured training	On-the-job[4] unstructured training	Off-the-job[4] unstructured training	Non-job related	Includes / Excludes:
Household Surveys				(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	
Australia (12 months)	Survey of Training and Education	15 - 64 who had worked as wage or salary earners	Training activities which are designed and/or undertaken to maintain, develop or learn skills related to job performance and/or competency. They consist of periods of instruction or a combination of instruction and monitored practical work.	←		→	x		←	→		?		**Includes:** Workshops, lectures, tutorials, training seminars, audio-visual presentations, demonstration sessions, monitored self-paced training packages **Excludes:** Study to an educational qualification (in other module)
			Study for an educational qualification	x	x	x								
Austria (4 weeks)	LFS		Have you attended in the last 4 weeks any school, university, or have you participated at a professional training ? Follow examples of schools and: practical professional training at the enterprise, at the enterprise and elsewhere, other professional	x	x	x	x	x	←	→	?			
Belgium (4 weeks)	LFS		Education and training attended during the last 4 weeks.	x	x	x	x	x	←	→	?			
Canada (12 months)	Adult education and training survey	17 and +	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	x	x	x	x	x	x	x	?	?	x	
									x	?				
Denmark (4 weeks)	LFS		Have you undergone during the last four weeks any form of instruction either at school, in a teaching establishment or on a course (including apprenticeship/traineeship) ?	x	x	x		x	←	→				
EUROSTAT (4 weeks)	LFS	15 and +	Education and vocational training which is relevant for the current or possible future job of respondent. Courses undertaken purely for interest, as hobbies are not included. Instruction with a general application, such as driving lessons, are excluded.	x	x		←	→	←	→	?			**Includes:** Only education and vocational training which is relevant for the current or possible future job of the respondent. **Excludes:** Courses undertaken purely for interest, as hobbies, or such of general application, as driving lessons.
						x								
Finland (12 months)	LFS	Employees	Staff training: training paid for by your employer			←						→	?	
(4 weeks)	LFS	15 - 64	Are you studying at an educational institution?	x	x	x		x	←	→	?			**Excludes:** Studies undertaken as a hobby
(12 months)	Adult Education Survey 1995	18 - 64	Participation at general and adult education (both general education and vocational training) in particular.	x	x	x		x	x	x	x	x	x	**Includes:** Folk high school, music-school, sport institute, dance school, driving school, summer university, series on radio or TV, study circle center

Table 5. **Comparability of training definitions - Individual surveys[1,2] (con't)**

France (at the moment)	LFS	15 and +	Is X participating at any studies or training after a break or is he attending initial studies? What type of training is he attending?	←	→	→		x			x → ?			
						?	←					→ ?		
Germany (12 months)	LFS since 1993	15 and +	Have you participated at continuous professional training (include also re-training, and other further practical professional training)?		←	→			x					
						x	←				→	?		
(4 weeks)	LFS	15 and +	Are you currently an apprentice or undergoing any other vocational training, further training or retraining ?		x	x		x		x	- - →	?		
							←				- - →	?		
Greece (4 weeks)	LFS	14 and +	During the previous four weeks was he/she attending a school or institution or was he/she receiving vocational- or other training-courses?	x	x	x	x	x	←	→			?	**Includes:** Popular education programme or other programme
IALS (12 months)	Adult education and training survey		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.	x	x	x	x?	x	x	←	→	?	x	**Includes:** Workshops, arts, crafts, recreation courses
Iceland (4 weeks)	LFS		Were you studying, taking a course or on-job training during the last month ? Which school or training ?	x	x	x	←	x		→				
Ireland (4 weeks)	LFS	15 and +	Has person received education or training, including on-the-job training during the last 4 weeks?	x	x	x	x	x	←	→			?	**Includes:** Adult education courses
Italy (4 weeks)	LFS		In the month before the interview, did you attend any of the following courses? (follow examples of courses by type)	x	x	x	x	x	←	→			?	**Includes:** Further education courses
Luxembourg (4 weeks)	LFS		Did you participate during the four preceding weeks at any training course (or other form of instruction)?	x	x	x	x		x	x				
Netherlands (at the moment)	LFS	Under 75	Are you at the moment receiving training or attending a course at a school, at another educational establishment or in the enterprise? Is work part of your training (on-the-job training)?	x	x	x	←					→	?	
New Zealand (12 months)	Household labour force survey		Within the last 12 months have you worked towards or acquired a school qualification, a trade certificate or traineeship ? have you worked towards or acquired any qualification that takes more than the equivalent of three months of study to get ?	x	x	x	←					→		**Includes:** Seminars, workshops, other courses
Portugal (at the moment)	LFS		Are you currently receiving any vocational or craft-trade training (other than in higher education) of which the duration is at least one year? Are you currently receiving any other training?	x	x	x	←	→	←	→				**Excludes:** Higher education
Spain (4 weeks)	LFS	16 and +	Have you pursued any type of studies during the last four weeks ? What type of studies have you pursued ?	x?	x?	x?	←	→	x	?	←	→		

Table 5. **Comparability of training definitions - Individual surveys[1,2] (con't)**

Sweden (4 weeks)	LFS		During the last four weeks, have you received any form of education or vocational training which may be of significance to your present or future employment ?	x	x	x	x		←→?					**Includes:** Research studies
Switzerland (12 months)	LFS (ESPA)	20 - 74	Module "Continuing training": concerns any knowledge acquisition by studying specialised literature or by attending courses. May be general or vocational and may be sponsored or not by the enterprise.				←						x	**Includes:** Sport/games, arts/craft/culture, household/family, personal development, specialised literature, conferences/colloquium, radio/TV programmes, video/tapes. **Excludes:** Basic education and the formal education system (which is treated in another module)
United Kingdom (questions either for at the moment, or 1 week, or 4 weeks or 3 months	LFS	Men: 16-64 Women: 16-59	Are you at present enrolled on any full-time or part-time education course excluding leisure classes? (include correspondence courses and open learning as well as other forms of full-time or part-time education courses)	x	x	x	x	x	x	x	←→?	x		Excludes: Leisure classes
United States (12 months)	NHES	At least 18	Formal structured activities only (programme credentials, job-related courses, non-job related courses)	x	x	x		x	x	←→?			x	**Includes:** Arts and crafts, sports or recreation, first aid or childbirth, Bible study

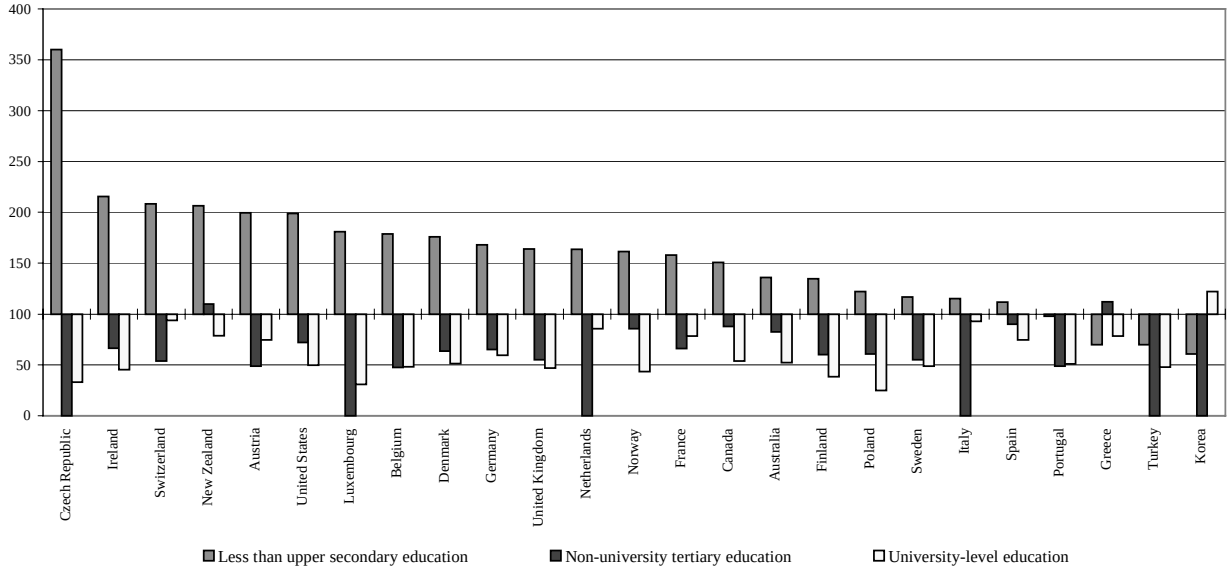
1. Table has been built on the basis of available questionnaires for individual surveys.
2. Table shows whether questions about training contents from national questionnaires may be clearly attributed to a certain category or to another category. It does not indicate that a category is completely covered.
   -- "x" indicates that this category is separately available.
   -- "x" with an arrow and "x?" indicate that this category is in principle available but can contain some parts of other categories.
   -- An arrow across categories indicates that corresponding categories are together (but not separately) available.
3. Structured training is defined as training with predetermined guidelines establishing the pursued objectives, the training contents and the employed methods.
4. On-the-job training is defined as training received while performing a task in working mode, but not necessarily during the course of normal output.

Table 6. **Comparability of training definitions - Employer surveys**[1,2]

			Definition of training							Costs of training				
			Structured training[3]				Unstructured training[3]							
Country	***Source***	***Coverage of training and coverage of sample***	External courses	Internal courses	Conferences, seminars, workshops, etc ...	On-the-job[4]	On-the-job[4]	Self-learning, etc ...	Other	Wage costs	Trainer costs	Fees for outside costs	Other	Includes / Excludes:
Enterprise (or employer) Surveys														
Australia	Employer expenditure training	Only formal training is included.	x	x	x	x				x	x	?	x	**Excludes** the following sectors: agriculture, private households employing staff, overseas embassies, consulates and the Australian permanent defence forces.
EUROSTAT (12 EU countries)	CVTS	Only Continuing Vocational Training (CVT) is included. Covers enterprises with 10 or more employees.	x	x	x	x	?	x	Job rotation?	x	x	x	x	**Excl.** Initial training, Apprenticeship, recognised trainees. **Excl.** the following sectors: Agriculture, Public administration, health and education, Households employing staff and Extra-territorial bodies. Costs only cover internal and external courses.
Japan	Survey of Private Sector Education and Training	Off-the-job training, programmatic on-the-job training, support for self-enhancement, other methods, no specific methods. Covers 4 000 private sector businesses with 30 or more full-time employees.	?	?	?	←	→	x	x					**Includes** the following sectors: Construction, manufacturing, transportation and telecommunications, wholesale and retail, restaurants, finance and insurance, real estate and services.
United States	Survey of Employer Provided Training	Covers 1 433 enterprises with 50 or more employees (in September 95)	←	→	x	x	x	x	x	x	x	x	x	**Excludes** the following sector: agriculture (?)

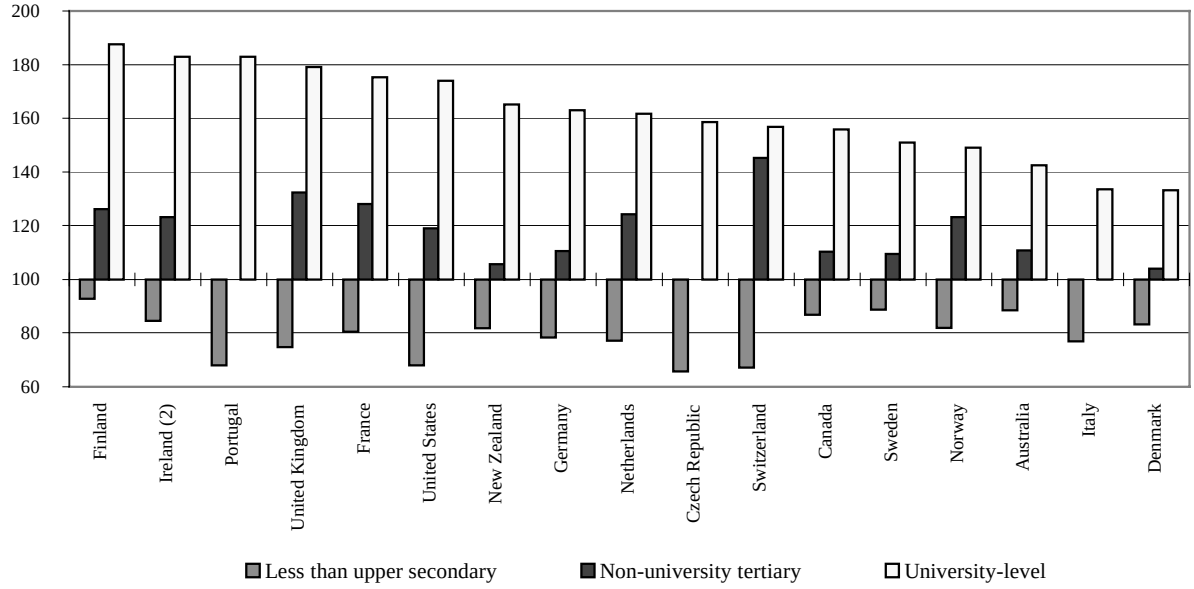
1. Table has been built on the basis of available questionnaires.
2. Table shows whether questions about training contents from national questionnaires may be clearly attributed to a certain category or to another category. It does not indicate that a category is completely covered.
   -- "x" indicates that this category is separately available.
   -- "x" with an arrow and "x?" indicate that this category is in principle available but can contain some parts of other categories.
   -- An arrow across categories indicates that corresponding categories are together (but not separately) available.
3. Structured training is defined as training with predetermined guidelines establishing the pursued objectives, the training contents and the employed methods.
4. On-the-job training is defined as training received while performing a task in working mode, but not necessarily during the course of normal output.

Chart 1. **Unemployement rates by level of educational attainment, 1995**[1]
(persons aged 25 to 64, as a percentage of unemployment rates at the upper secondary level)



1. Countries are ranked in descending order of the difference between unemployment rates for "Less than upper secondary" and "Upper secondary" attainement.
Source: OECD, *Education at a Glance* , 1997.

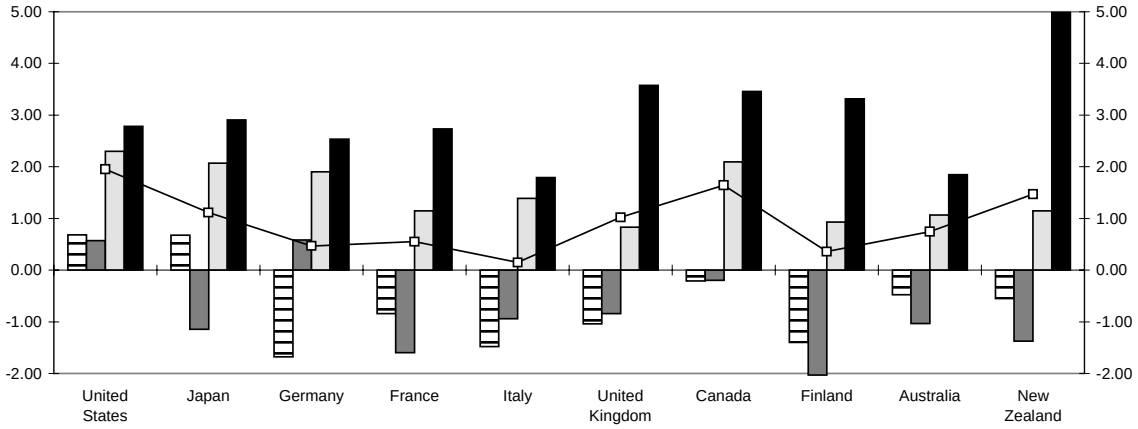
Chart 2. **Mean annual earnings by level of educational attainment, 1995**[1]
(persons aged 25 to 64, as a percentage of mean annual earnings at the upper secondary level)



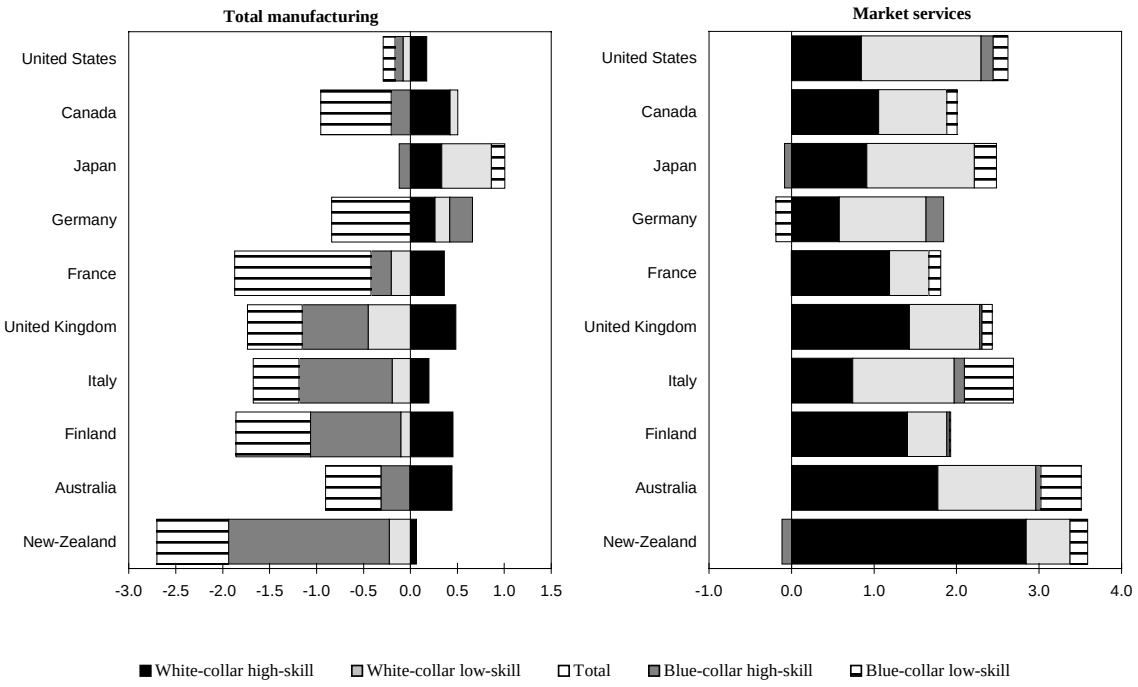
1. Countries are ranked in descending order of the difference between mean earnings for "University level" and "Upper secondary" attainement.
2. 1993 data.
Source: OECD, *Education at a Glance* , 1997.

Chart 3: **Employment growth and skill groups[1], 1980-90[2]**
(average annual growth rates)

a) **Employment growth by skill group**



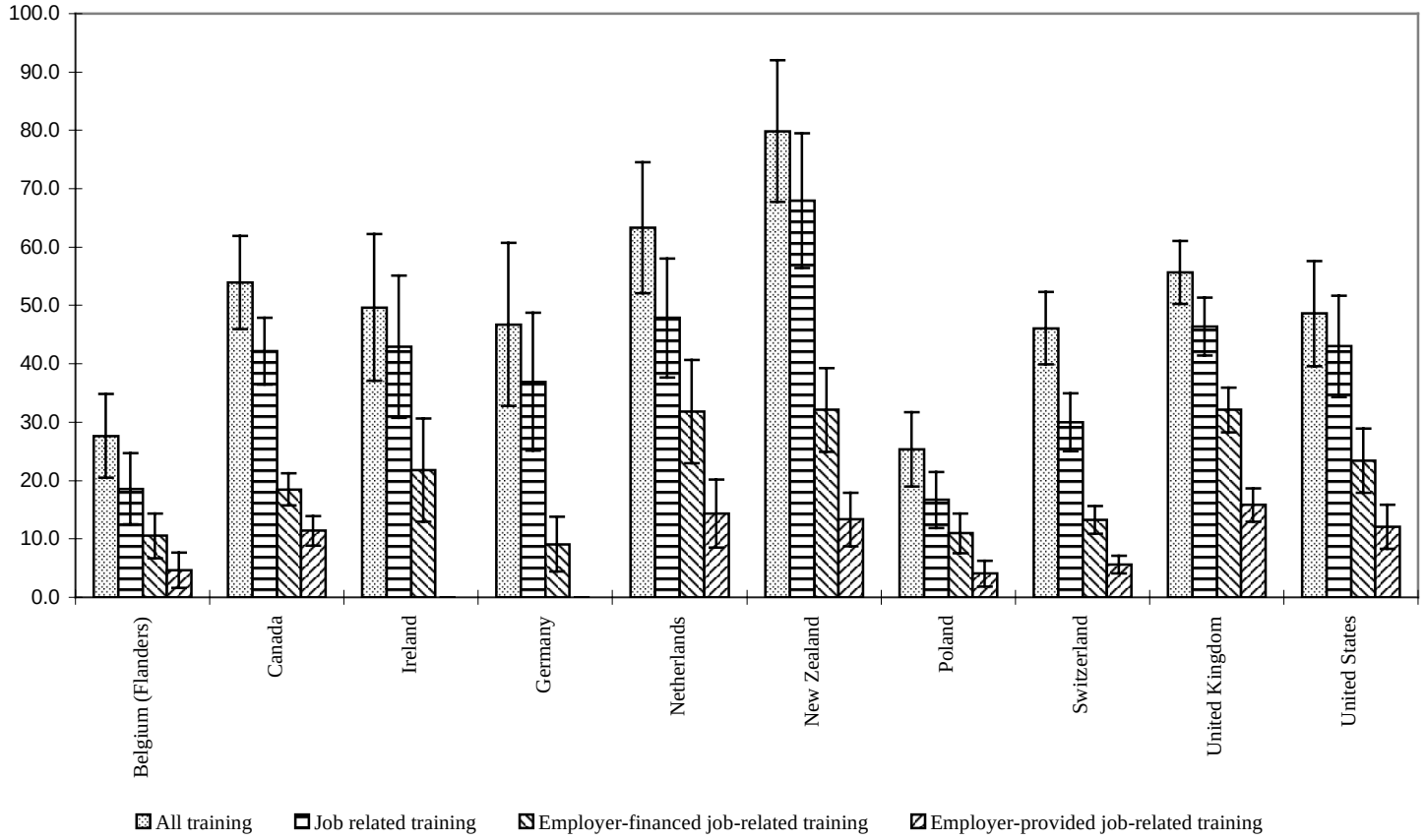
b) **Contributions of skill groups to employment growth**



1. The skill groups have defined according to the International Standard Classification of Occupations (ISCO-88).
White-collar high-skilled: Legislators, senior officals and managers (Group 1); Professionals (Group 2) and Technicians and associate professionals (Group 3). *White-collar low-skilled:* Clerks, service workers (Group 4); Shop and sales workers (Group 5);
Blue-collar high-skilled: Skilled agricultural and fishery workers (Group 6); Craft and related trade workers (Group 7);
Blue-collar low-skilled: Plant and machine operators and assemblers (Group 8); Elementary occupations (Group 9).
2. Growth between indicated years: United States: 1983-93; Canada: 1981-91; Japan: 1980-90; Germany: 1980-90; France: 1982-90; United Kingdom: 1981-91; Italy: 1981-91; Finland: 1980-90; Australia: 1986-91; New-Zealand: 1981-91.
Source: OECD, *Science, Technology and Industry: Scoreboard of Indicators* , 1997.

Chart 4. **Employer involvement in Training, 1994/95**[1]

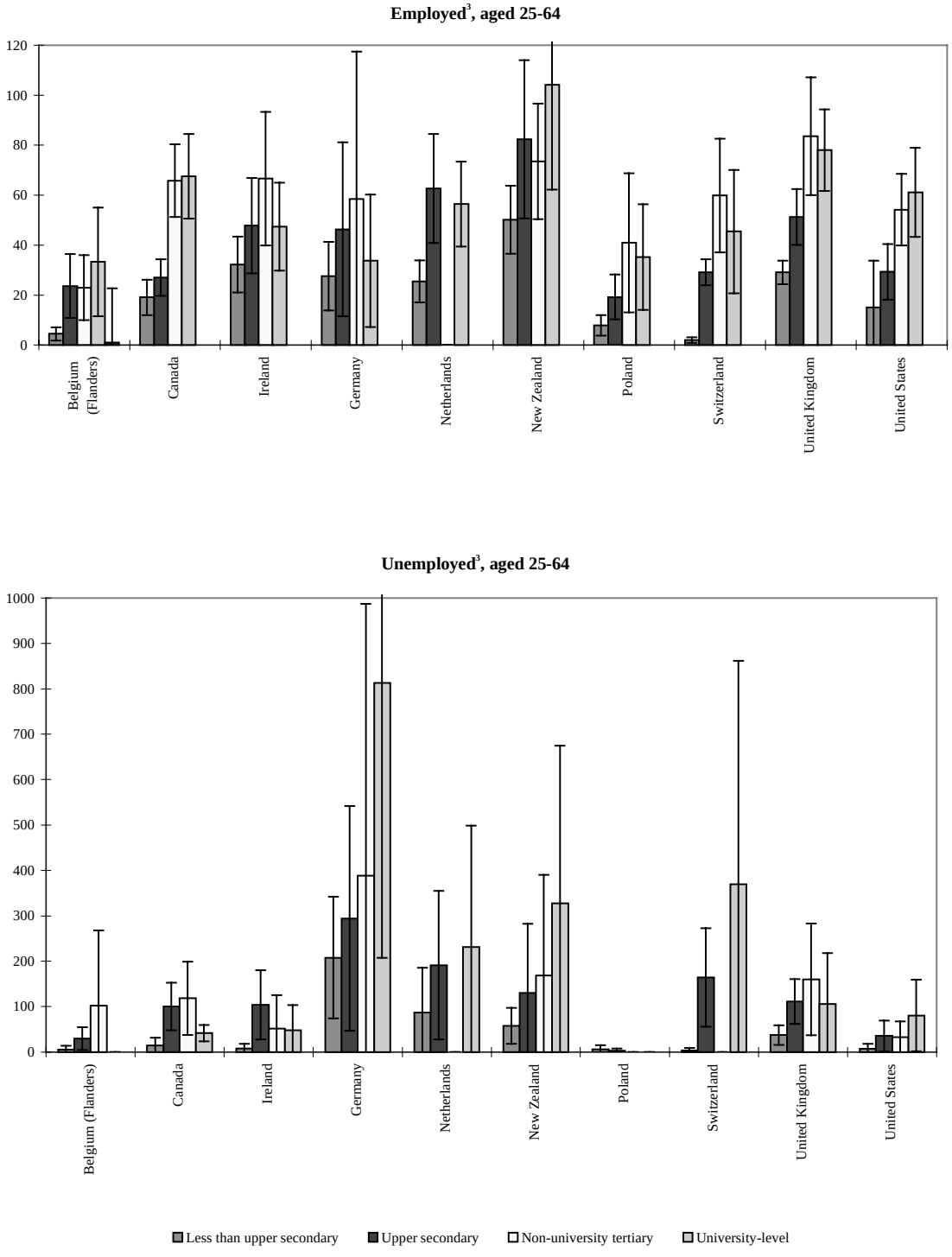
(Average hours of training per employee per year, employed population[2] aged 25-64)



1. Error bars indicate 95 % confidence intervals.
2. Excluding full-time students.

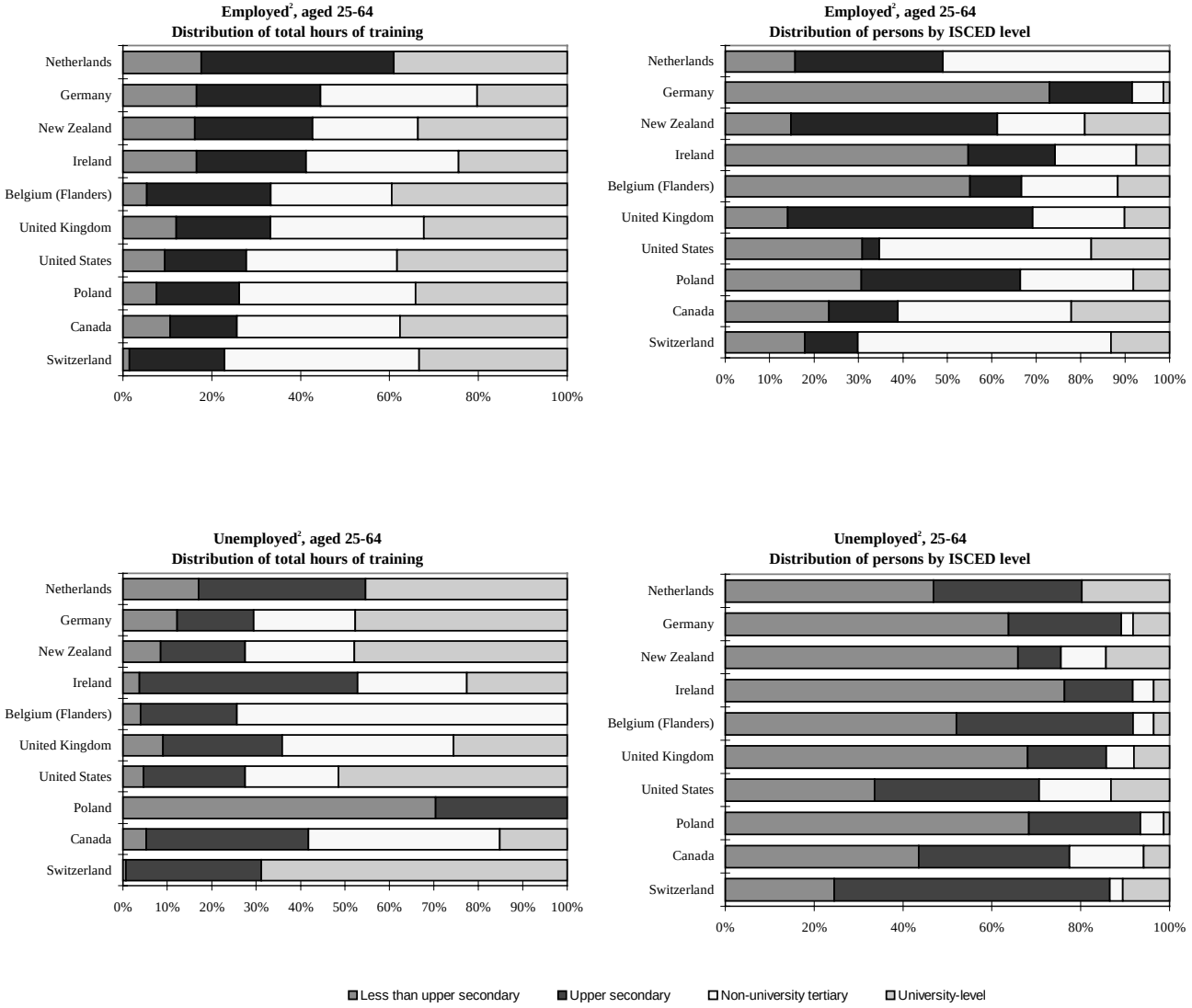
Source: OECD, *International Adult Literacy Survey* (IALS), 1994/95.

Chart 5. **Volume of training[1] by level of education, 1994/95[2]**
(Average hours of training per person per year in each population)



1. Job-related training only.
2. Error bars indicate 95% confidence intervals.
3. Excluding full-time students.
Source: OECD, *International Adult Literacy Survey* (IALS), 1994/95.

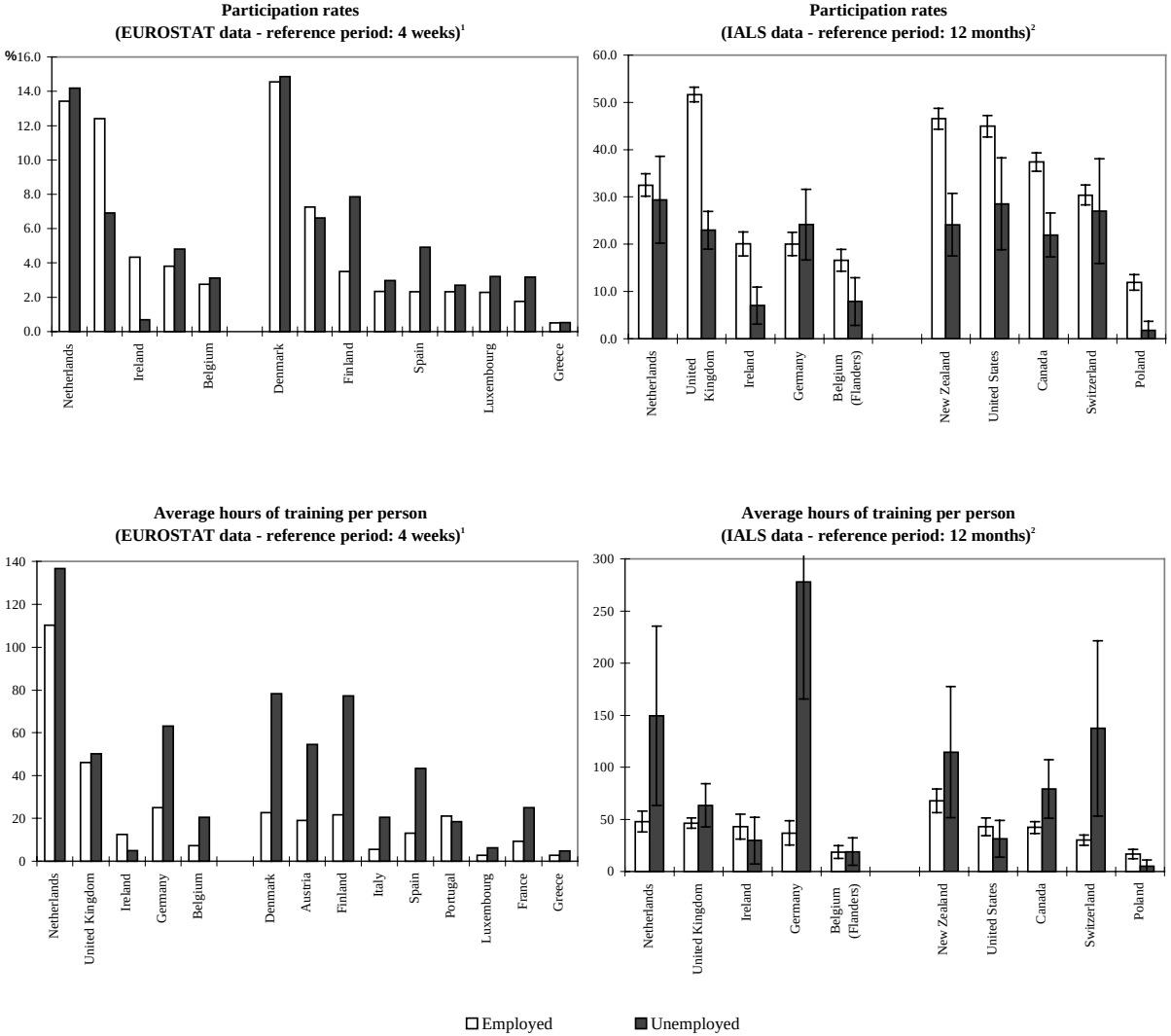
Chart 6. **Distribution of training[1] across levels of education, 1994/95**



1. Job-related training only.
2. Excluding full-time students.

Source: OECD, *International Adult Literacy Survey* (IALS),1994/95.

Chart 7. **Participation rates and volume of job-related training, 1994/95**
(employed and unemployed population, aged 25-64)

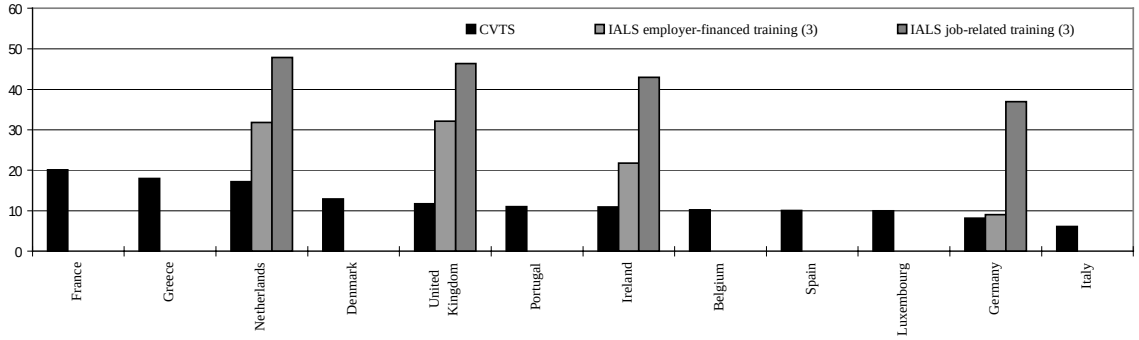


1. Excludes initial training but includes employed/unemployed full-time students.
2. Includes job-related training, excludes full-time students. Error-bars indicate 95% confidence intervals.
3. Hours of training based on EUROSTAT's LFS are only an estimate which should be treated with caution: as in this survey the duration of training events is given in intervalls (less than week, less than a month, etc the average hours of training were estimated under the assumption that the expected duration within an intervall equals the intervall's midpoint.

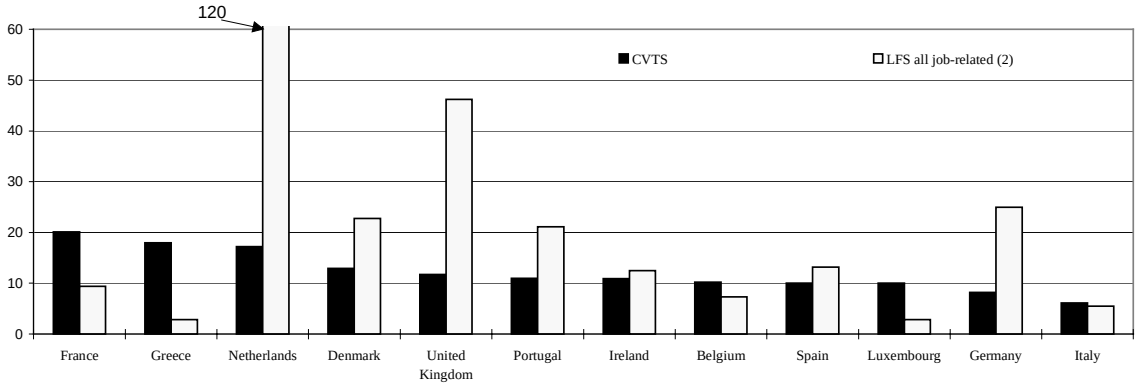
Source: EUROSTAT, LFS, 1995 and OECD, *International Adult Literacy Survey (IALS)* , 1994/95.

Chart 8. **Average hours of training per person for employed, aged 25-64, 1994/95**[1]

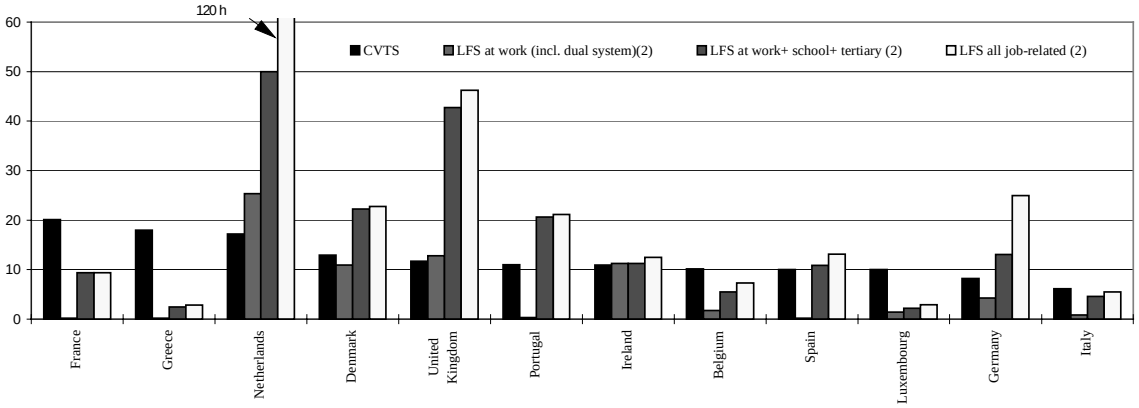
a) CVTS and IALS



b) CVTS and LFS



c) CVTS and LFS broken down by type of training



1. Countries are ranked in descending order of CVTS figures.
2. Excludes initial training, includes full-time students. Reference period: 4 weeks. Hours of training based on EUROSTAT's LFS are only an estimate which should be treated with caution: as in this survey the duration of training events is given in intervalls (less than week, less than a month, etc.) the average hours of training were estimated under the assumption that the expected duration within an intervall equals the intervall's midpoint.
3. Includes job-related training, excludes full-time students. Reference period: 12 months.

Sources: EUROSTAT, Continuing Vocational Training Survey, 1994; EUROSTAT, Labour Force Survey, 1995; OECD, *International Adult Literacy* Survey (IALS), 1994/95.