Canadian and International Education / Education canadienne et internationale

Volume 31 | Issue 2 Article 5

10-8-2012

Education and Socio-economic Outcomes

Patrice de Broucker

Canadian and International Education
Vol. 31, No. 2, December 2002.

Education and Socio-economic Outcomes

Patrice de Broucker
Statistics Canada

Within the OECD INES Project, the development of indicators on "Education and socio-economic outcomes" is the focus of Network B's activities. The aims of education have always been viewed more broadly than imparting basic elements of knowledge and skills to youth. This article presents the framework that brings together the various areas in which the development work takes place: school-work transitions, continuing education and training, and human and social capital. The issue of equity, a central one in education, is also explicitly dealt with, mainly as a dimension integrated in each area of indicator development. After its initial work focussing on educational attainment of the population and the labor force – key measures of the "stock" of human capital – and education and earnings, Network B turned its attention to the resolution of comparability issues in labor market outcome indicators and the improvement of indicators related to lifelong learning. Stating the policy issues it is aiming to address always precedes indicator development work, so these issues are also presented in this article.

Introduction

The aims of education have always been viewed more broadly than the imparting of certain basic elements of knowledge and skills to youth. Indeed the fact that governments historically have become heavily involved in the financing and organization of education is an implicit recognition of the nature of education as a *public good*, which contributes to individual well-being, but also to the creation of a national identity, to participation in democratic institutions and processes, and to national economic development. Although these are underlying objectives of education systems, the extent to which governments are successful in attaining them cannot always be assessed

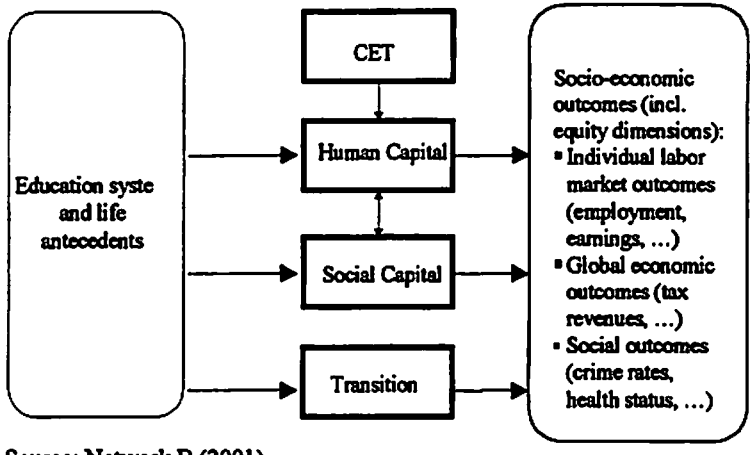
within the confines of education systems themselves. Education systems can measure how well youth have mastered basic literacy and numeracy skills or whether certain lessons of history, principles of democratic life, etc. have been mastered, but not whether these are having the expected downstream effects on individuals' accomplishments in personal life and in the labor market and, more broadly, on the functioning of society and the economy. International comparisons provide the means to assess how well education contributes, to a greater or lesser degree, to the furthering of the broader objectives outlined above.

This article presents the specific indicator development work of Network B.[1] Within the International Indicators of Educational Systems (INES), the mandate of Network B[2] from its beginnings has been to develop indicators relating education and training – received within or outside the formal education system – with socio-economic outcomes. A second feature of the mandate of Network B is founded on the observation that all learning does not take place within the formal education system, nor does it end with the completion of initial education.[3] In an environment where new knowledge and new technologies are being regularly introduced, to which a significant segment of the work force will not have been exposed during initial education, the ability and the opportunity to learn throughout adult life become critical, if workers and indeed, the general population, are to be able to adapt. This calls for the development of indicators that map how education systems, enterprises, and individuals go about ensuring continuing learning throughout adult life.

The work of Network B has up to now consisted of exploiting existing data sources for what they are able to yield on outcomes of education and on participation in education beyond initial education. The future is likely to be more challenging because of the need to pay attention to broader outcomes, to make a closer link with malleable factors that affect outcomes, and to overcome the difficulties associated with measuring continuing education and training. Figure 1 depicts the framework for Network B's indicator development work, identifying the key areas of concern it endeavors to cover (Network B, 2001).

This article presents some of the established "standard" indicators, developed in the early stages of work (early 1990s), followed by a description of recent and current indicator development work in the areas referred to in Figure 1.

Figure 1: Areas of Network B Indicator Development



Source: Network B (2001).

The "Standard" Indicators

In its early contribution to INES and *Education at a Glance* (EAG), Network B developed indicators of educational attainment and education and earnings. These remain solid pillars of the education database (Nordin, 2000).

Educational Attainment of the Population

One of the main goals for the education and training policies of OECD countries is to enhance the education and skill levels of the population. This goal is clearly associated with gaining or retaining economic competitiveness. Educational attainment – and, by extension, labor force qualifications – are important factors in determining economic outcomes and the quality of life for individuals and society as a whole. Educational attainment is of ongoing interest to policy makers and a frequently used indicator to represent the "stock" of a nation's human capital.

Educational attainment indicators have been presented in different ways to emphasize different aspects: distribution of educational attainment among the adult population by age and gender, population with tertiary[4] education, educational attainment of the labor force,

proportion of women at given levels of education, index of gender dissimilarity in education, and cumulative years of schooling by gender. Labor force and household surveys have been used as data sources for such indicators in most countries.

These indicators generally show major differences between countries. Interpretation of these differences must take into account various national institutional arrangements. For example, Canada and the United States have a significantly larger proportion of their populations with tertiary credentials. This reflects, in large part, the fact that the education system in these countries is not organized to provide credentials valued by the labor market at the end of secondary school, so young people are drawn into post-secondary studies to prepare themselves for the labor market. This is in sharp contrast to the situation in several European countries where young people go more directly into the labor force.

Observed across generations, indicators of educational attainment show the tremendous progress of education in all countries. The proportion having attained university level was much higher in all countries among 25-34-year-olds than among 55-64-year-olds. This proportion is expected to grow steadily for several years as younger, more educated people replace the relatively less educated retiring cohorts. In 14 of 29 countries, the proportion of university graduates was at least twice as high among those aged 25-34 as among those aged 55-64, providing a historical perspective on the issue of access to post-secondary education.

Data for age groups by gender show another type of change across generations (see Figure 2, pp. 60-61). In 2001 (data presented in EAG 2002) the proportion of people having graduated at the tertiary level was significantly higher among men than among women in the age group 45 to 54. The average proportion for the OECD as a whole was 23% for men and 19% for women. In only seven countries were women more likely than men to hold a diploma at ISCED levels 5 or 6. Among 25-34-year-olds, the situation has dramatically changed: 29% of women and 26% of men have achieved a tertiary qualification. Such a pattern is now common in 20 of the 30 OECD countries, demonstrating the substantial gains made by women in all countries over the last 20 years.

Labor Force Status by Educational Attainment

In general there are significant differences in labor market participation between educational levels. Network B has brought together data that can shed light on how different educational groups fare in the labor market across OECD countries. Labor force participation rates for different educational groups demonstrate that those having attained higher levels of education are more likely to participate in the labor market. This does not necessarily mean that individuals with higher levels of education are also employed in larger proportions than those with lower levels, although this is the case as rates of unemployment are usually considerably higher for those with a lower level of educational attainment than for those with a higher level.

These labor market aspects, summarized in one indicator in EAG 97 and 98 indicated expected years in employment, out of the labor force, and in unemployment for the different educational levels. By using other labor force data and converting rates into time it was possible to synthesize the labor force statistics into one indicator. In all countries, individuals with lower educational qualifications spend fewer years in the labor market and more of them are unemployed than those with tertiary education. Differences are even more striking for women.

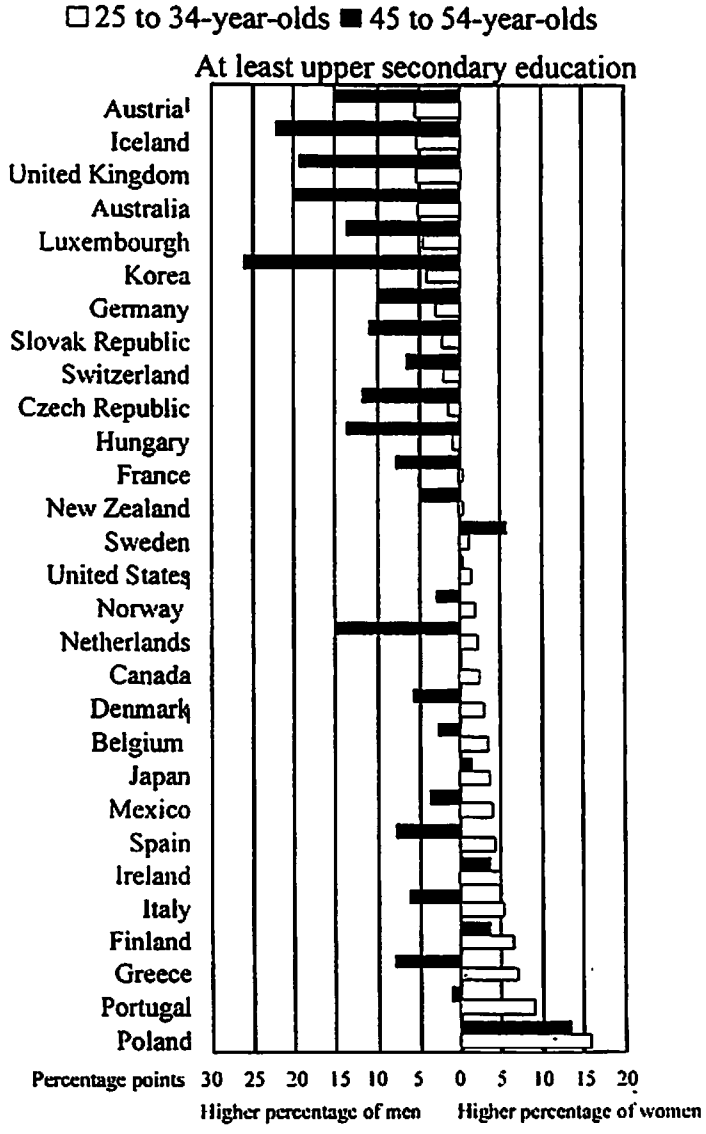
Network B has also developed indicators measuring the labor force status of persons leaving education. The data sources for such indicators are typically follow-up surveys describing what graduates at various levels of education were doing about one year and five years after leaving education. These surveys are not as harmonized as the labor force surveys and thus do not produce as comparable data. These indicators are often associated with analyses of school-work transitions, but this is probably less and less the case, at least for tertiary levels of education, as individuals of all ages enter and graduate from tertiary level institutions, a sign that lifelong learning becomes reality for some.

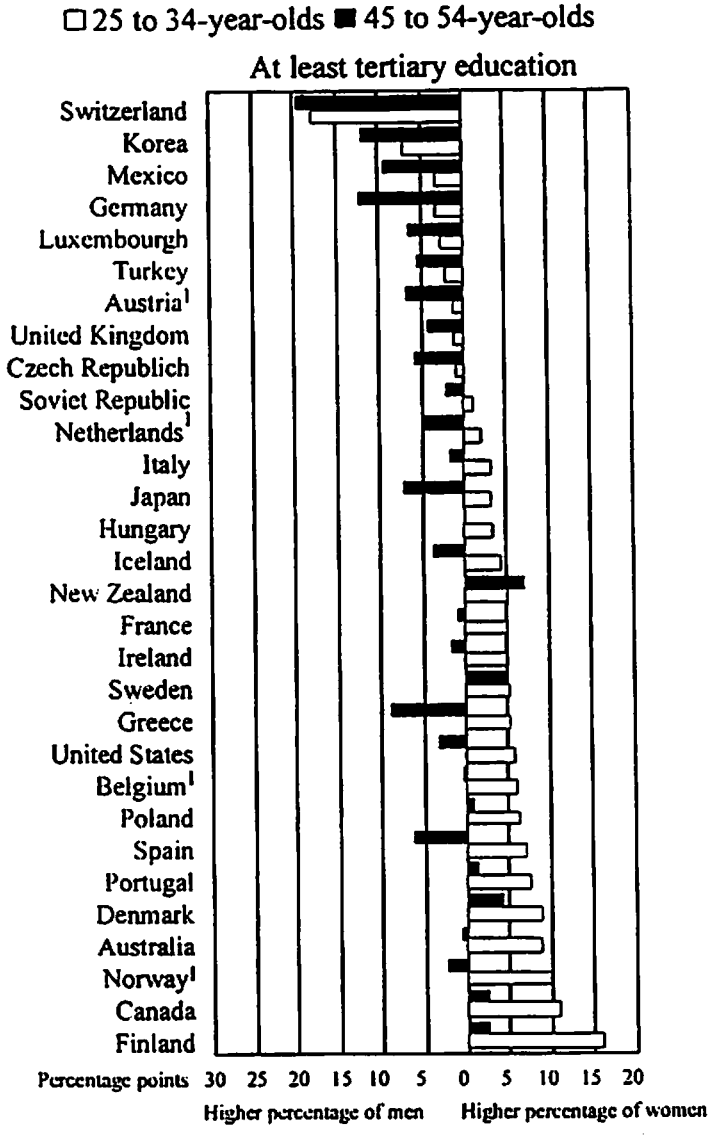
Education and Earnings

Earnings are, in large part, associated with education and experience. As an indicator observed over time, earnings data provide information on the balance between supply and demand for different groups. Network B collects data on earnings by level of education, gender and age. The population base consists of all individuals with

Figure 2: Gender Differences in Educational Attainment, By Age Group (2001)

Difference between female and male 25 to 34 and 45 to 54-year-olds in the percentage of the population that has attained at least upper secondary or at least tertiary education





Note: Not all ISCED 3 programmes meet minimum requirements for ISCED 3C long programmes. See Annex 3 for notes *(www.oecd.org/els/education/eag2002)*.

1. Year of reference 2000.

Countries are ranked in ascending order of the difference between women and men as a percentage of 25 to 34 year-olds who have attended at least upper secondary or tertiary education.

Source: OECD. Table A3.1c. See Annex 3 for a description of ISCED-97 levels, ISCED-97 country mappings and national data sources *(www.oecd.org/els/education/eag2002)*.

earnings from employment during the given year. Two main types of indicators have been derived: one that relates average annual earnings at each level of education to those at the upper-secondary level, and the other presenting a ratio of women's earnings to men's by age for each level of education. The comparison across countries offers information on the structure of relative earnings. Interpretation of these indicators can be complex because the data are influenced by a number of confounding factors such as the number of hours worked during the year – either through part-time work or employment for only part of the year – which vary by age, gender and education level, and, for each of these groups, to a different extent across countries. However, these indicators have retained attention and have the merit of a single measure that reflects structural differences across countries. As well they have helped to document how much better off individuals with higher levels of education are and whether or not the earnings gap between men and women has narrowed.

Further Indicator Development in Four Major Areas

Beyond these early – and now standard – contributions and with a renewed emphasis on outcomes and their determinants, Network B has organized its work around three major interconnected areas: school-work transition, continuing education and training, and human capital. Another dimension – equity – has been present in much of the work within these areas and, occasionally, has been the direct focus of an indicator. For each of these areas, stated policy issues serve as the guide and framework for the development of policy-relevant indicators.

School-Work Transition

Policy Issues

The transition from initial education to working life is a key transition in life, a major contributor to young people's longer-term life trajectories. In a constantly changing economic and social environment, the elements contributing to the transition process have to adapt so that young people maintain their chance of a smooth school-work transition. Recently, the Thematic Review on Transition from Initial Education to Working Life (OECD, 2000) – which maintained a close relationship with Network B activities on transition – put forward seven goals that all national transition policies should aim to meet:

1. High proportions of young people completing a full upper secondary education with a recognized qualification for work, tertiary study, or both.

2. High levels of knowledge and skill among young people at the end of the transition phase.

3. A low proportion of teenagers being at the one time not in education and unemployed.

4. A high proportion of those young adults who have left education having a job.

5. Few young people remaining unemployed for lengthy periods after leaving.

6. Stable and positive employment and educational histories in the years after leaving upper secondary education.

7. An equitable distribution of outcomes by gender, social background, and region.

These goals reflect important policy issues to guide Network B's work in this area (Network B, 2001):

1. What is the impact of different levels and types of education, including leaving school without graduating, on the labor market outcomes of young people?

2. How does the nature of educational programs and choices affect transition processes?

3. How do educational and labor market pathways vary for different groups of youths, i.e. males and females, ethnic minorities, lower socio-economic backgrounds, learning disabilities?

4. What policies and programs support successful transitions?

5. How can the transition process be organized to promote lifelong learning?

Indicator Development

Addressing every aspect of school-work transition systems and assessing their quality requires numerous indicators. The classic method is to look at indicators on education, labor force participation, unemployment and employment for each of the age groups relevant to transition (e.g. 15-19, 20-24, 25-29). Although readily available, these indicators have significant limitations. They are too static, and fail to describe what is essential to any analysis of transition, namely the dynamics, changes in status, the gradual accumulation of valuable or unfortunate experiences. Measuring unemployment at any given time, for instance, does not indicate whether it is always concentrated on the same groups (experiencing long and/or repeated spells of unemployment), or whether the experience of unemployment is more broadly shared with shorter spells on average. It has therefore been necessary to develop new indicators.

Prior to 1996, most work consisted in calculating, for the age groups concerned by transition, the same classic indicators as for adults, in particular labor force participation and unemployment rates. This was to some extent imposed by the availability of documented comparable databases. The information came mainly from Labor Force Surveys (Gensbittel & Mainguet, 1995).

A low labor force participation rate in the adult population indicates that a high proportion of people are not working, nor seeking work, for a variety of reasons, some of which may reflect their low productive capacity because of inadequate skills. A low participation rate among the youth population predominantly reflects high educational enrolment, a necessary correlate of building skills for the future. It is therefore an ambiguous indicator, depending on the age group.

Unemployment rates[5] can be very high among the young, well above adult rates. In fact, when many young people remain in education, there are proportionally fewer young members in the labor force, many of whom have likely left school early (i.e., with low or no qualification), and they usually encounter numerous problems in the labor market where highly skilled young people abound. Consequently unemployment rates in a particular age group are not easy to interpret in isolation, and do not give a broad picture of the status of young people at that age. As labor force participation rates indirectly reflect educational enrolment, the two sets of information have to be put together.

Youth unemployment rates – classically calculated – are also hard to compare across countries. In countries with an apprenticeship system, apprentices are counted as employed and included in the unemployment rate denominator; in those with predominantly school-based vocational training, students are not counted as participating in the labor force and so unemployment rates will be higher, other things being equal. High rates of employment do not necessarily imply successful transition. For a variety of reasons depending on the business cycle, many young people may be tempted to accept jobs that are easy to find but insecure or under-skilled, thereby jeopardizing their education and possibly even their future career. A further limitation when interpreting "stock" data, even by age group, is that at a given age the more highly skilled young people who have spent more time in education have necessarily spent less time in the labor market than have early school-leavers. The attainment effect is therefore blurred by the effect of time spent in the labor market and the experience gained. Hence, as international comparisons of youth employment and unemployment, on the basis of the standard approaches, can be quite misleading as guides for policy development, it is important to look beyond the classic indicators to grasp the realities of youth status from a more qualitative standpoint.

To overcome some of these limitations, Network B worked on the development of indicators that would better reflect the combined status of work and education among students (de Broucker et al., 2000). It launched an original data collection, cross-classifying enrolment in an educational or training program with labor market status. The labor force survey data on enrolment and employment are gathered in such a way as to allow for cross-classification, making it possible to envisage better unemployment indicators and describe how the young gain initial work experience either via formal programs alternating classroom teaching with practical experience, or via employment while still studying, even if such jobs are not directly related to the content of their studies. This was a major innovation, providing an accurate picture of education and work status with no double counting, and allowing new indicators to be built and tested. Such data were first published in the 1998 edition of EAG.

Using these data, a major breakthrough was the calculation of unemployment rates for young people not enrolled in education (where cross-country comparison is significant). These rates are calculated as ratios of unemployed non-students to the population of the selected age

group. When defining transition policy, it is probably one of the most important indicators to consult; in our view this measure of unemployment is the best way of grasping the real scale of youth unemployment as a policy issue. This indicator can also be supplemented with information on young people who are neither in the labor market nor in education, often considered to be a sign of marginalization, among specific groups. Care is needed here, however, for this status may be temporary or intentional and not necessarily a real sign of marginalization. It is fair to say, nevertheless, that this is not a normal or favorable situation to be in at such a young age.

Planned Contributions

Drilling deeper into the data, Network B is now trying to address another of the policy issues stated at the beginning of this section, i.e., what is the impact of leaving school without graduating on the labor market outcomes of young people? For this activity, "young adults with low level of education" (YALLE) are operationalized as "a person aged 20-24 years, who has not attained ISCED level 3[6] and who is not enrolled in education nor in a work-study program". Other age groups will serve as control groups either in terms of level of education or in terms of length of experience in the labor market, both factors that affect one's situation.

A second avenue of development work is the project for monitoring transition systems. The Transition Thematic Review has articulated goals for transition policies (see above) and has proposed an early set of indicators to measure countries' performance along the stated goals. When the review wrapped up its work, the indicators selected were constrained by the immediate availability of data. Network B is reviewing the goals and indicators in light of national policy statements and new data developments.

Considering the lack of relevant data to describe and understand the dynamic aspects of the transition process, Network B has been a strong voice in favor of the development of a harmonized longitudinal survey of transition. It promotes the concept of PISA-L, a longitudinal survey of transitions based on the Programme for International Student Assessment, which assesses 15-year-old students in reading, mathematics, and science every three years. Network B held an International Workshop on Comparative Data on Education-to-Work Transitions, jointly with the research project on Comparative Analysis

of Transitions from Education to Working in Europe (CATEWE) in June 2000 (Raffe, 2000).[7] Taking lessons from a limited number of national surveys of this sort, one of the main outcomes of this workshop was a clear demonstration of the capacity of longitudinal studies to deepen our understanding of school-work transitions and youth pathways (see also OECD, 1998b).

Continuing Education and Training (CET)

Policy Issues

The regular education system is perhaps the most important provider for human capital formation. However, the contribution of "enterprise-based training" and other commercial learning efforts as well as adult learning at the initiative of the state or the individual, both formal and informal, appear to be growing in importance, as the labor market increasingly demands new skills that the regular education system cannot provide. While much is known about the efforts expended to promote learning within formal educational institutions, far less is known about the extent of learning that takes place in the workplace or other settings outside of formal education. In a global context where lifelong learning becomes a central reference for national policy development, better measures are needed, both within and across countries, about the extent to which adults engage in different types of learning outside of the formal education system, about which adults are in need of opportunities for continued learning, and about the existing barriers and incentives to continued learning (OECD, 1999). More specifically, information is needed to answer the following policy questions that guide the network's indicator development program in this area (Network B, 2001):

1. Who invests in continuing education and training, and how is it financed? All existing sources indicate that OECD countries differ quite markedly in the degree to which continuing education and training are supported by employers, offered by governments, or considered to be the responsibility of the individual.

2. How do the incidence of participation in continuing education and training and the volume of participation differ between social groups and between persons with different skill levels? Access to continuing education and training by different groups is a crucial issue for governments of the OECD. To ensure that a country's human capital is fully and effectively utilized, it is important to

monitor the participation of groups of adults, particularly those who are likely to be marginalized within the initial education system or the society as a whole.

3. What are the benefits of and returns to participation in continuing education and learning? Work related benefits include job security, salary raises, or increased job performance.

4. What inhibits adults' participation in continuing education and training? How can people be encouraged to participate in CET? In knowledge societies individuals who are not frequent learners are at risk of social exclusion. Furthermore, evidence points to the cumulative nature of learning. It is therefore important to understand what factors encourage and what factors discourage individuals' participation in learning activities.

5. How are the skills acquired in CET recognized by or "signalled" to employers? Given the demand for a flexible workforce, it is of interest to know the extent to which CET activities provide transferable skills. Certification is also an issue on which the policies of countries vary greatly, and which therefore may contribute to international differences in CET participation rates.

6. To what extent is there an unmet demand for continuing education and training? Since the goal of a learning society is to offer sufficient and appropriate learning opportunities for all citizens, the extent to which unmet demand for CET exists is an important indicator of the success of a learning society.

Indicator Development

While the goal of lifelong learning for all is established on the political agenda, there remain serious questions about the ability of our societies to meet the challenge. Providing for lifelong learning for all will put new demands on the organizational capacity of education systems. As yet unresolved is the issue of how best to organize this provision of learning opportunities for all, and the roles to be played respectively by the formal – mostly public – education system, by market-oriented providers, by employers, and by other agencies. The differences among OECD countries in the policies pursued in this respect seem fairly substantial. Empirical findings and indicators on the provision of CET and the effectiveness of such provision schemes are important. Such information can help policy makers evaluate, for

example, whether their country's individuals, businesses, or governments are under-investing in adult learning, and the appropriate policy responses to stimulate learning behavior.

At the international level, the last years of the 1990s saw developments and advances on several different perspectives – the development of conceptual frameworks, advances in definitions and methods, data gathering both at the national and the international levels, and the publication of indicators in EAG. The results have given a rather diverse but, as yet, uneven picture.

Conceptual work within the OECD has resulted in a framework for indicators based on the concept of lifelong learning. "The idea of lifelong, lifewide learning means an expansion of education and learning investment mainly outside the public sector and the traditional education institutions, by providing and recognizing education and learning at the work place and in other situations all over the lifecycle." (Härd, 1999)

Several OECD countries have regular national surveys on CET, some going back to the 1980s: Canada, Finland, Germany, Sweden, Switzerland, United Kingdom, and the United States. While the data collected are not strictly comparable, there is much convergence in the key issues they address. Some of the recurring questions, themes and dimensions relating to CET are (i) participation (incidence), (ii) time spent in training (volume), (iii) the nature of the training (formal, informal, job-related, other), (iv) the source of financial support for the training (public, employer, self), (v) the extent of demand (especially unmet) for training or learning opportunity, and (vi) barriers to participation experienced by non-participants.

Other sources of data include:

- The European Union has organized two enterprise surveys on Continuing Vocational Training (CVTS) in 1994 and in 2000, which asked about the training offered by enterprises in the previous year.

- The harmonized European Labor Force Survey (ELFS) has long included a question on participation in job-related training during the four weeks preceding the interview. The module on participation in education has been changed to include information on all training.

- The International Adult Literacy Survey (IALS) is a data source that has been used extensively to present CET indicators in EAG.

The first indicator on CET participation appeared in the third edition of *Education at a Glance* (OECD, 1995) as "participation in job-related continuing education and training," and included breakdowns by educational attainment and gender, and could be calculated for the employed population only (Borkowsky et al., 1995). One of its limitations was the use of different reference periods for participation in CET. For this reason, all the data presented had to be split – one part for countries using a 12-month reference period and another for those using a 4-week reference period. Comparability was really an issue.

From 1997 onward, the CET indicators published in EAG were based on data from the International Adult Literacy Survey (IALS), which had initially been conducted in 1994-1995, then covered about 20 countries by 1998. While this survey provided the most comparable data of the available sources, it was not to occur regularly and was handicapped by relatively small sample sizes. The indicators developed from these data included overall and job-related participation rates, volume of participation, and various information on financing CET, the providers, media of instruction, and other aspects of CET. Information on the reasons for non-participation was also included. IALS documented for several countries the well-known relationship between initial education and participation in adult education and training. This relationship holds for all countries, but the extent of the gaps between various levels of education differs widely across countries.

The indicators developed culminated in showing the measure of the total expected years in education, including continuing education and training. For the conversion of hours of training into years, retaining the benchmarks of 30 hours a week and 40 weeks a year for "equivalent" full-time participation, it showed that CET added a "learning time" equivalent to between one and two years of education to the already fairly long duration of initial education. But still, formal CET amounts in most countries to less than five percent of the total educational time (Borkowsky, 2000).

Planned Contributions

There is much to gain from the use of common and agreed-upon definitions and standards to measure CET. Data collected according to

common standards provide a secure basis for comparative analysis and a better understanding of the role of CET in countries' education and workforce development efforts. They also provide a platform for more ambitious research into the outcomes of different learning activities and the factors that motivate adults to engage in learning. In this context, Network B is investing in a project known as the Network B CET module. The goal of this project is to develop operational guidelines for gathering statistics on adult participation in continuing education and training in the context of household surveys. The module would include examples of "best practices" and examples of core questions. The module is intended to be used by OECD countries as a supplement to existing national surveys, such as national household panels or labor force surveys. Designing a CET module to be implemented within a national "carrier" survey avoids the burden of an additional national data collection, and provides a vehicle for linking CET participation data to other important characteristics of the adult population (such as age, sex, educational level, and employment status) that are typically assessed in existing national surveys.

The concepts and definitions underlying the questions and answer categories within the module will be designed to provide internationally comparable data for key CET indicators, including the level of CET participation, the intensity (duration) of participation, providers of CET, incentives and barriers to participation, and important types of participation (such as formal versus informal, required versus voluntary). The module will focus primarily on organized learning, which is relatively easy to measure and relatively amenable to public policy intervention. However, since capturing less formal or less organized types of learning is of increasing policy interest, these forms of learning will also be considered for inclusion in the module.

In addition to this major initiative, alternative sources of data are being examined, such as time-use surveys and enterprise-based surveys.

Human and Social Capital

Policy Issues

Human and social capital have been of ongoing interest to policy makers and researchers in many countries as they seek to describe the outcomes of education and determine how these outcomes contribute to

the economic and social functioning of both individuals and countries. Two key OECD publications, *Human Capital Investment: An International Comparison* (OECD, 1998c) and *The Well-being of Nations: The Role of Human and Social Capital* (OECD, 2001a), summarize OECD's work in this area and suggest a number of strategies to further our knowledge of the role of human and social capital across countries. Network B has also engaged in a number of exploratory activities aimed at determining both how to measure basic human capital concepts and the availability of comparable data across OECD countries.

Among the policy issues of central interest to Network B are the following (Network B, 2001), some being identified explicitly in *Human Capital Investment*:

1. What are adequate levels of human capital investment? Determining "adequate" levels of human capital investment is not a straightforward matter, but two key benchmarks could probably be agreed upon: (a) the numbers of adults who have not attained upper-secondary education, and (b) the proportion of the population that does not display the literacy and other skill levels demanded of 21st century life.

2. How should the costs for human capital development be shared? Individuals, families, businesses, and governments all invest in the development of human capital. While it is necessary to incorporate the returns to investment for each of these entities in order to determine appropriate shares of costs, better measures of who invests in what types of education and training are also needed.

3. What is the optimal allocation of resources in relation to the costs and benefits of alternative investments? Differential investments in the various levels of education – primary, secondary, and tertiary, as well as continuing education and training – across countries raise important policy questions about maximizing limited resources.

4. What should be considered an equitable distribution of investment? Variations across countries in who receives further education, and at whose expense, raise important questions about which individuals should receive which types of education and training, and how a more equitable distribution of learning opportunities can be achieved.

5. To what extent does human capital contribute to economic growth and positive social outcomes? To help allocate scarce resources most effectively, policy makers have a legitimate interest in knowing the extent to which countries' economic and social success is linked to human capital. Therefore it is important to examine the effects that the development of human capital has on a variety of economic and social outcomes such as employment, earnings, health, crime rates, self-esteem, and social cohesion, to name a few.

6. To what extent do differences in human capital explain differences across countries in economic performance and social well-being? Many factors affect countries' economic and social standing (e.g., physical resources, economic and social policies, as well as human capital). Examining the role of human capital in fostering economic growth and social capital across countries provides insights into how human capital might be better translated into economic performance and well-being within countries.

7. What institutional factors and government policies influence the returns to investment in human capital? To what extent do these influences differ across countries?

Recent work on social capital raises a number of policy concerns as well. Since OECD's work on social capital is currently at a more conceptual level, the work of Network B will proceed more slowly with regard to social capital compared to human capital. A few key policy issues will frame this activity:

1. What role does social capital play in the development of economic and social well-being? Recent research suggests that economic progress can have both positive and negative effects on the social well-being of individuals. Conversely, the role of social capital in helping sustain economic well-being and other positive social outcomes is not fully understood.

2. How can education and social capital support each other? *The Well-being of Nations* identifies a number of social capital measures and concepts. A better understanding of how education interacts with social capital can provide a critical tool for policy makers to influence the growth and development of both social capital and human capital, through policies that encourage the

reinforcing role one form of capital development may have on the other.

3. What political, institutional, and legal arrangements help foster social capital? What policies might governments adopt to support desirable forms of social capital? More generally, the development of social capital may be influenced by a number of societal arrangements and government policies, acting both individually and in concert with each other. Understanding these contextual factors and how they operate can further our understanding of how social capital can be developed and sustained across countries, why levels of social capital may differ across countries, and how individual countries can foster social capital in ways that are consistent with their societal and governmental values and priorities.

Indicator Development

The economic returns to education have long been a concern not only to educators and economists, but also to the general public and policy makers. While few doubt the positive impact that education has on the economy, there are heated debates in many OECD countries about the level of social resources that should be devoted to education, the allocation of finite resources to different areas of education, and, more broadly, the sharing of the costs and benefits of education among individuals, the government, and society. To address these policy concerns, in 1996, the OECD Ministerial Council requested that OECD use existing data to conduct a study of the economic returns to investment in education, with a particular emphasis on economic returns to government expenditures on education. Network B assumed responsibility for conducting the study. Ten countries – Australia, Belgium, Canada, Denmark, France, Germany, Norway, Portugal, Sweden, and the United States – participated in the study.

The first phase of the study focused on estimating the internal rates of return (IRR) to education. The internal rate of return to education may be interpreted as an annual rate of monetary returns to the expenditure on education. Building on previous work by Alsalam and Conley (1995), Network B designed a conceptual framework for estimating the IRR. Using this framework as a guide, each participating country submitted information concerning earnings, property income, social transfers, and income taxes for population cohorts in different age, gender, and educational attainment categories. Countries also

submitted information about individual and government expenditures on education. A cost-benefit analysis was performed to estimate the internal rates of return to education from three different perspectives – individual, governmental, and societal. Table 1 shows selected findings from this phase of the study, which was reported in EAG 98.

Table 1: Estimates of Private, Fiscal and Social Rates of Return (%) to Education at University Tertiary Level, By Gender, 1995

Country	Men			Women		
	Private	Fiscal	Social	Private	Fiscal	Social
Australia	14	10	11	21	10	13
Belgium	14	9	9	8	13	9
Canada	14	7	9	21	7	11
Denmark	8	8	8	7	8	8
France	20	11	13	28	9	13
Sweden	–	6	9	–	4	7
US	11	9	10	12	9	11

– Not available
Source: OECD (1998) Table F8.1, p. 363.

In view of the limitations of the IRR analysis (e.g., a concept not widely accepted among educators, stringency of some assumptions), Network B "unpacked" the various components of the IRR analysis (Jin, 2000). Instead of estimating the IRR to education, the emphasis now is on examining the specific economic benefits from education that are combined to derive the IRR estimates. By focusing on specific factors such as average annual earnings, property income, social transfer income, as well as income taxes, the new approach minimizes reliance on complex economic concepts or unrealistic assumptions. The findings from this approach are easier to understand and the policy implications of the findings are more intuitive, particularly when making comparisons across countries with different education systems and social structures.

As an example of this "unpacking" exercise, Network B looked at the association between level of education and drawing on social transfers as a source of income. Social transfers and income taxes are two major means for society to redistribute income and to improve economic equity among various social groups. As such, one would expect to find that the less educated (who have lower earnings) would receive more social transfers and pay less income taxes than those with

more education. Results actually show that there is such a strong negative relationship between individuals' social transfer income and their educational attainment level: the higher an individual's educational attainment, the less the individual's income from social transfers. However, there are large differences across countries. Compared to men with an upper secondary education (posited as 100), the average social transfer income for men with less than upper secondary education ranges from 111 percent in Sweden to 260 percent in the United States. The similar comparisons for women range from 116 percent in France to 296 percent in the United States. On the other hand, persons with a university education receive much less social-transfer income than their counterparts with upper secondary education. For example, the average social-transfer income received by men with university education range from 29 percent in Australia to 90 percent in Belgium of that received by individuals with a secondary education. The same comparisons for women range from 40 percent in the United States to 93 percent in Belgium.

Planned Contributions

Network B is currently constructing a multi-year plan of work for the development of indicators related to human and social capital. This plan will build on the network's past indicator development work related to human capital, expanding that work to address the issues listed above. As noted in *The Well-Being of Nations*, better measures of social capital are needed before the policy issues related to social capital can be adequately addressed. Network B will focus its future work in this area on determining feasible and valid indicators of social capital.

Equity

Issues relating to equity in the relationship between education and socio-economic outcomes are mainly dealt with within each of the three other components of Network B activities, i.e. transition, continuing education and training, and human and social capital. Indeed, they are often central to these components. However, considering their importance, it is relevant to mention how Network B sees the framing of the equity issues within its mandate. This is why it has made explicit the policy issues it considers on equity and the main elements of equity it is looking at.

Policy Issues

The distribution of education and learning in any country is a matter of profound political, social, and economic importance. Throughout OECD countries equity concerns occupy a prominent role in official statements. Within the "knowledge society" it becomes increasingly important for policy makers to narrow the gap between people with high levels of knowledge, skills and competencies and people who fall behind in learning. During the last decades, considerable progress has been achieved in many countries in reducing or eliminating inequalities in educational access and outcomes, but, in spite of these efforts, many inequalities still persist.

Inequalities among individuals are typically considered acceptable, assuming they indicate "normal" variations among individuals, whereas inequalities among groups are typically considered inequitable, i.e., considered as the result of possible discrimination. This holds true especially for women, individuals of lower socio-economic origin, ethnic minorities, and immigrants. Therefore, Network B is focusing on such inequalities among groups.

Major policy-related questions about equity to be addressed by indicators are (Network B, 2001):

1. To what extent does the education system reduce, maintain or increase inequalities?

2. Are identifiable group characteristics associated with inequalities in education participation or access and in educational outcomes?

3. Are disparities in access and outcomes widening or narrowing over time?

4. What are the effects of socio-cultural, economic, and educational disadvantage on the range of outcomes considered by Network B?

5. What are the characteristics of education systems that minimize inequalities, and what education policies help minimize inequalities?

These generic policy issues must be seen in the context of the domains covered by Network B activities.

Indicator Development

Since its inception, Network B has mainly emphasized gender differences in the production of its indicators related to socio-economic outcomes, whether educational attainment, participation in CET, or returns to education, largely because statistical information related to other dimensions, (such as socio-economic family background or ethnic origin) are often more difficult to gather from diverse national sources of data whose comparability may be somewhat problematic. As well, Network B has addressed some policy issues on equity through the development of original indicators. An example is the intergenerational educational mobility indicator published in EAG 1998 (see Figure 3). This indicator shows the relationship between educational attainment of parents and their offspring. The likelihood of obtaining a tertiary qualification given one's parents' educational attainment is an indication of the degree of intergenerational mobility in a country.

This work was elaborated in a contribution to the OECD Ad Hoc Group on Equity's *In Pursuit of Equity in Education: Using International Indicators to Compare Equity Policies* (de Broucker & Noël, 2001).

Planned Contributions

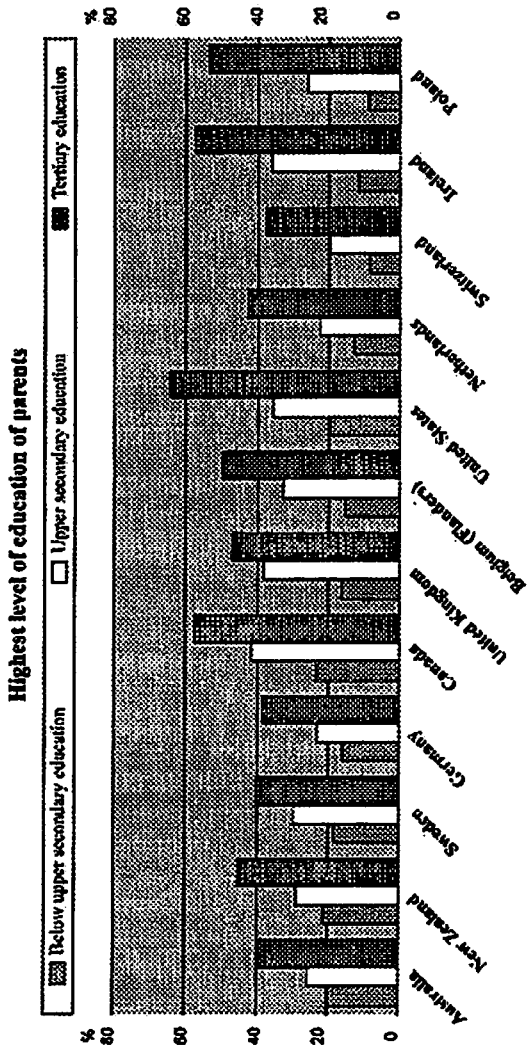
In planning its work on equity, Network B is considering the following dimensions as priorities for the exploration of issues:

Socio-economic status. The social status of parents and the quality of the home environment are important factors influencing students' school and learning outcomes. Differences by socio-economic group are the major focus of attention in studies of educational equity.

International comparisons require the specification of an international index or classification of socio-economic status (SES).

Gender. Although there has been a narrowing of the gender gap in terms of enrolments and successful completion of higher levels of education, some issues remain concerning the labor market performance of women. Specifically, disparities still persist in labor market participation, earnings, and patterns of graduation by field of study. Indicators related to these variables already exist, but need some refinement. For example, the earnings and labor market participation

Figure 3: Percentage of the population 16 to 65 years of age who have completed tertiary education by level of educational attainment of their parents (1994-1995)



Countries are ranked in ascending order of the probability of obtaining a tertiary qualification for individual's whose parents have also completed tertiary education compared to individuals whose parents have not completed secondary education.
Source: OECD and Statistics Canada/IALS

indicators make no distinction between full-time and part-time employment.

Immigrants/ethnic groups. The growing cultural and ethnic diversity within a number of OECD countries raises important issues for policy makers concerning the integration of different groups into the education and labor market systems and the provision of opportunities for learning. It has been difficult, however, to arrive at comparable definitions for ethnic or immigrant groups so further work is needed on this dimension. One reason for the insufficient performance of immigrants in the labor market is lack of knowledge of the language. Therefore indicators on language learning might be useful for understanding the situation of immigrants.

Conclusion

One main pillar of Network B's work has been to develop indicators which attempt to link education and training to broader outcomes, and in particular labor market outcomes. The work on school-work transition is a representative case, which focuses on the immediate interface between education and the labor market, where the knowledge and skills learned during initial education encounter the needs of the labor market.

Thus far, the broader work on labor market outcomes has focused on measuring results in the labor market as a function of educational attainment. Although the results have not been especially surprising (labor market performance generally improving with educational attainment), they have shown considerable differences in the payoffs to higher levels of education in different countries. Labor market outcomes, however, are heavily influenced by the overall economic situation in countries as well as by particular labor market institutions, over which education systems have little control. For example, collective bargaining systems may induce a certain amount of wage compression, which tends to reduce the payoff to higher levels of education.

Labor market outcomes are of course not the only outcomes of education. Some developmental work has explored the associations between educational attainment and other outcomes such as receipt of social transfers and payment of income taxes. This work is helpful in showing more clearly social/fiscal benefits to investment in education by governments. Little work has yet been done in terms of exploring

similar associations beyond such monetary benefits, addressing the numerous non-market benefits of education, for example, better health, increased participation in public life and voluntary activities, increased civic consciousness, etc., which are emerging as significant policy issues under the buzzwords of social capital. Measurement issues and deep and different cultural references are among the difficulties faced when bringing such issues into an international comparison framework.

NOTES

This article represents the views of the author and does not necessarily reflect the opinions of Statistics Canada.

1. Other articles in this publication deal with the areas of indicator work covered by the other INES constituent groups and networks.

2. At present, Network B comprises representatives from the following 26 OECD countries: Australia, Belgium (Flemish Community and French Community), Canada, Czech Republic, Denmark, Germany, Greece, Finland, France, Hungary, Ireland, Italy, Luxembourg, Korea, Netherlands, New Zealand, Norway, Poland, Portugal, Slovak Republic, Spain, Sweden (chair and secretariat for the Network), Switzerland, Turkey, United Kingdom and the United States. EUROSTAT and CEDEFOP are also represented in the network.

3. In this context initial education refers to education received in a formal educational setting in one's early years in life. It usually extends from preschool education to whenever a young person leaves education after the end of compulsory education for an extended period (often at least one year).

4. OECD uses the International Standard Classification of Education (ISCED-97) in which tertiary education corresponds to educational programs beyond high school, with a minimum duration of two years. It comprises two levels: Level 5 consists of programs that do not lead directly to an advanced research qualification while Level 6 is reserved for programs leading to advanced research qualifications. Level 5 is subdivided into two categories, ISCED 5A and 5B. ISCED 5A covers more theoretically based programs that give access to advanced research qualifications or professions with high skill requirements. ISCED 5B is meant for more

practically oriented or occupationally specific programs that provide participants with a labor-market relevant qualification.

5. The unemployment rate defines the number of unemployed persons (all persons who are without work, actively seeking employment and currently available to start work) as a percentage of the labor force.

6. SCED level 3 corresponds to graduation from high school.

7. Articles presented at this workshop are available at http://www.mzes.uni-mannheim.de/projekte/catewe/workshop/homepage.html

REFERENCES

Alsalam, N. & Conley, R. (1995). The rate of return to education: A proposal for an indicator. In *Education and employment* (pp.83-109). Paris: OECD.

Borkowsky, A., Van der Heiden, M., & Tuijnman, A. (1995). Indicators of continuing education and training. In *Education and employment* (pp.139-146). Paris: OECD.

Borkowsky, A. (2000). Indicators on continuing education and training. In *The INES compendium* (pp. 95-108). Fourth General Assembly of the OECD Education Indicators Programme. Paris: OECD.

de Broucker, P., Gensbittel, M-H., & Mainguet, C. (2000). Educational determinants and other aspects of the transition process. In *The INES compendium* (pp. 108-124). Fourth General Assembly of the OECD Education Indicators Programme. Paris: OECD.

de Broucker, P., & Noël, S. (2001). Intergenerational inequalities: A comparative analysis of the influence of parents' educational background on length of schooling and literacy skills. In W. Hutmacher, D. Cochrane, & N. Bottani (Eds.), *In pursuit of equity in education – Using international indicators to compare equity policies*. Dordrecht, NL: Kluwer Academic Publishers.

Gensbittel, M-H., & Mainguet, C. (1995). Transition from school to employment. In *Education and employment* (pp. 55-67). Paris: OECD.

Härd, S. (1999). *Lifelong learning: An indicator framework.* Unpublished paper prepared for the OECD INES Steering Group.

Jin, Z. (2000). New indicators for economic returns to education. In *The INES compendium* (pp. 125-144). Fourth General Assembly of the OECD Education Indicators Programme. Paris: OECD.

Network B. (2001, October). *Draft strategy for Network B of the OECD INES project.* Document Network B(01.2)9.1 in Briefing Book, Prague meeting.

Nordin, A. (2000). Labor market outcomes. In *The INES compendium* (pp. 85-94). Fourth General Assembly of the OECD Education Indicators Programme. Paris: OECD.

OECD. (1995). *Education at a glance.* Paris: Author.

OECD. (1998a). *Education at a glance.* Paris: Author.

OECD. (1998b). Supporting youth pathways. In *Education policy analysis* (pp. 41-55). Paris: Author.

OECD. (1998c). *Human capital investment: An international comparison.* Paris: Author.

OECD. (1999). Training of adult workers in OECD countries: Measurement and analysis. In: *Employment outlook* (pp. 133-175). Paris: Author.

OECD. (2000). *From initial education to working life – Making transitions work.* Paris: Author.

OECD. (2001a). *The well-being of nations: The role of human and social capital.* Paris: Author.

OECD. (2001b). *Education at a glance.* Paris: Author.

OECD. (2002). *Education at a glance.* Paris: Author.

Raffe, D. (2000, June). *Comparative data on education-to-work transitions.* Report of an international workshop held in Paris ,June 2000, Centre for Educational Sociology, The University of Edinburgh. http://www.mzes.uni-mannheim.de/projekte/catewe/workshop/Report.doc

Correspondence concerning this article should be addressed to Patrice de Broucker, Statistics Canada. Email: debrpat@statcan.ca.