

# INTRODUCTION: THE INDICATORS AND THEIR FRAMEWORK

## The organising framework

*Education at a Glance – OECD Indicators 2004* provides a rich, comparable and up-to-date array of indicators that reflect a consensus among professionals on how to measure the current state of education internationally. The indicators provide information on the human and financial resources invested in education, on how education and learning systems operate and evolve, and on the returns to educational investments. The indicators are organised thematically, and each is accompanied by relevant background information. The education indicators are presented within an organising framework which:

- distinguishes between the actors in education systems: individual learners, instructional settings and learning environments, educational service providers, and the education system as a whole;
- groups the indicators according to whether they speak to learning outcomes for individuals or countries, policy levers or circumstances that shape these outcomes, or to antecedents or constraints that set policy choices into context; and
- identifies the policy issues to which the indicators relate, with three major categories distinguishing between the quality of educational outcomes and educational provision, issues of equity in educational outcomes and educational opportunities, and the adequacy and effectiveness of resource management.

The following matrix describes the first two dimensions. References between the individual indicators and the cells in this matrix are provided in the next section.

|   | (1) Education and learning outputs and outcomes                              | (2) Policy levers and contexts shaping educational outcomes                   | (3) Antecedents or constraints that contextualise policy                    |
|---|--|---|---|
| (I) Individual participants in education and learning | (1.I) The quality and distribution of individual educational outcomes        | (2.I) Individual attitudes, engagement, and behaviour                         | (3.I) Background characteristics of the individual learners                 |
| (II) Instructional settings                           | (1.II) The quality of instructional delivery                                 | (2.II) Pedagogy and learning practices and classroom climate                  | (3.II) Student learning conditions and teacher working conditions           |
| (III) Providers of educational services               | (1.III) The output of educational institutions and institutional performance | (2.III) School environment and organisation                                   | (3.III) Characteristics of the service providers and their communities      |
| (IV) The education system as a whole                  | (1.IV) The overall performance of the education system                       | (2.IV) System-wide institutional settings, resource allocations, and policies | (3.IV) The national educational, social, economic, and demographic contexts |

## The indicators

### Chapter A: The output of educational institutions and the impact of learning (Indicators A1 to A12)

*Chapter A examines the outcomes of education and learning in terms of...*

*...the educational attainment of the adult population...*

**Chapter A** begins by examining the **educational attainment of the adult population (Indicator A1)** which provides a proxy measure of the stock of “human capital” in each country, equally providing a measure of the output of education systems (**Framework Cell 1.IV**). It also provides important context for education systems (**Framework Cell 3.IV**) as is witnessed by the close interrelationships between student performance and parental levels of educational attainment (OECD, 2001). **New:** This indicator also presents new analysis of demographic factors that are shaping the future supply of educational qualifications.

*...the output of educational institutions...*

**Indicator A2** focuses on **graduation rates at the upper secondary level** of education which is often considered the minimum credential for successful labour market entry. In presenting both the annual upper secondary graduation rate as well as the stock of upper secondary graduates in the population, the indicator speaks both to the current output of educational institutions and of the system more generally (**Framework Cells 1.III and 1.IV**). An analysis by gender provides an assessment of gender equity in upper secondary qualifications.

**Indicators A3 and A4** turn the focus on tertiary level, examining **tertiary graduation rates**, as well as historical patterns of **tertiary educational attainment**. Tertiary graduation rates are an indicator of the current production rate of advanced knowledge by each country’s education system whilst measures of educational attainment by age cohort show the evolution of advanced knowledge in the population (**Framework Cells 1.III and 1.IV**). Attainment levels for different generations also provide an important context for current educational policies (**Framework Cell 3.IV**) helping to shape thinking on life-long learning policies, for instance.

Analysis of **tertiary graduates by field of study (Indicator A4)** can be indicative of both the admission policies of tertiary institutions (**Framework Cell 2.III**) and prevailing labour market conditions (**Framework Cell 3.IV**) and can shed light on the demand for courses and teaching staff, as well as the supply of new graduates.

The indicator also reviews countries’ progress in closing the gender gap in tertiary attainment and graduation rates, both overall and across different fields of education.

**Indicator A3** also compares **drop-out rates** which provide some indication of the internal efficiency of education systems (**Framework Cell 1.III**). Students leave educational programmes before their completion for many reasons – they realise that they have chosen the wrong subject or educational programme, they fail to meet the standards set by their educational institution, or they may want to work before completing their programme. Nevertheless, high drop-out rates indicate that the education system is not meeting the needs of its clients. Students may find that the educational programmes do not meet their expectations or their needs in order to enter the labour market, or that the programmes require more time outside the labour market than they can justify.

*...the quality of learning outcomes...*

Counting the numbers of graduates alone does not provide information about the quality of learning outcomes. To address this, Chapter A also compares the knowledge and skills attained by students across

countries (**Framework Cell 1.I**). **New: Indicator A5** has been newly introduced to assess **trends in reading literacy skills** of students around the age of 9 years both overall and by gender.

While **Indicator A5** looks at reading skills towards the beginning of schooling, **Indicators A6** and **A7** compare the **reading, mathematics and science knowledge and skills of students at age 15**, *i.e.* towards the end of their compulsory schooling period (from PISA 2000). These indicators are essential indicators for gauging the quality of educational performance as they assess to what extent societies have succeeded in equipping young adults with key foundation skills at an age when the transition to work is becoming a key concern for many.

Indicators A5, A6 and A7 not only benchmark the overall performance of countries (**Framework Cell 1.IV**), but devote much attention also to the distribution of knowledge and skills in the student population, with the aim to assess to what extent countries succeed in combining high overall performance with an equitable distribution of learning outcomes (**Framework Cell 1.I**).

*...and how this varies between gender...*

Recognising the impact that education has on participation in labour markets, occupational mobility and the quality of life, policy makers and educators emphasise the importance of reducing **educational differences between males and females**. Significant progress has been achieved in reducing the gender gap in educational attainment (see **Indicators A1 and A2**), although in certain fields of study, such as mathematics and computer science, gender differences favouring males still exist (see **Indicator A4**).

As females have closed the gap and then surpassed males in many aspects of education, there are now many instances in which there is concern about the underachievement of males in certain areas, such as reading. Indeed, **Indicator A5** shows that boys underachievement in reading has been long standing and has not significantly improved over a 10-year period. **Gender differences in student performance** therefore need to receive close attention from policy makers if greater gender equity in educational outcomes is to be achieved.

Furthermore, students' perceptions of what occupations lie ahead for them can affect their academic decisions and performance. An important policy objective should therefore be to strengthen the role that the education system can play in moderating gender differences in occupational expectations to help reduce performance gaps in different subject areas. **Indicator A9** begins by examining data from OECD's PISA study on **gender differences in the occupations** which 15-year old students expect to have by the age of 30 and then examines **gender differences in performance, attitudes and learning strategies** in primary and secondary schools (**Framework Cells 1.I and 2.I**).

An important element in the attitudinal profile of students is their sense of engagement in school life. School is a major aspect of the daily lives of young people, and their perception of schooling is reflected in their participation in academic, as well as non-academic, pursuits. **New: Indicator A8** examines two dimensions of **student engagement**: sense of belonging and participation in school and explores the extent to which these vary across countries. The indicator goes on to examine the inter-relationships between student engagement and reading literacy performance. Student engagement can be seen both as an outcome of the schooling process (**Framework Cells 1.I**) as well as a context which shapes educational outcomes (**Framework Cells 2.I**).

*...and the returns to investments in education for individuals and society.*

As levels of skill tend to rise with educational attainment, the social costs incurred when those with higher levels of education do not work also rise; and as populations in OECD countries age, higher and longer

participation in the labour force can lower dependency ratios and help to alleviate the burden of financing public pensions. **Indicator A10** examines **the relationship between educational attainment and labour force activity**, comparing employment rates first and then rates of unemployment and examining how these vary by gender. *New* for this indicator is an assessment of how these comparisons have changed over time. In measuring the relationship between labour force activity and educational attainment, these are, first and foremost, indicators of the long-term outcomes of education systems (**Framework Cell 1.IV**). The adequacy of workers' skills and the capacity of the labour market to supply jobs that match those skills are, however, also important contexts for national education policy making (**Framework Cell 3.IV**). Unemployment rates can also influence student decisions to continue in education and therefore can shed light on differing participation rates in education across countries.

One way in which markets provide incentives for individuals to develop and maintain appropriate levels of skills is through wage differentials, in particular through the enhanced earnings accorded to persons completing additional education. The pursuit of higher levels of education can also be viewed as an investment in human capital. Human capital includes the stock of skills that individuals maintain or develop, usually through education or training, and then offer in return for earnings in the labour market. The higher the earnings that result from increases in human capital, the higher the returns on that investment and the premium paid for enhanced skills and/or for higher productivity. **Indicator A11** and **Indicator A12** seek to measure **the returns to education** for individuals (**Framework Cell 1.I**), in terms of higher earnings; for taxpayers, in terms of higher fiscal income from better educated individuals; and for societies more generally (**Framework Cell 1.IV**), in terms of the relationship between education and labour productivity. Together, these indicators shed light on the longer-term impact of education for individuals and societies. Indicator A11 also sheds light on an important national context (**Framework Cell 3.IV**) for policy making and can influence public funding policies in general and policies on financial aid to students in particular. It can also provide context for individual students' decisions to engage in education at different levels (**Framework Cell 3.I**). A *new* dimension to Indicator A11 is the comparison of relative earnings over time both overall and for males and females separately.

## Chapter B: Financial and human resources invested in education (Indicators B1 to B6)

*Chapter B considers the financial and human resources invested in education, in terms of...*

Financial resources are a central policy lever for improving educational outcomes. As an investment in human skills, education can help to foster economic growth and enhance productivity, contribute to personal and social development, and reduce social inequality. But like any investment, education needs to be financed. After Chapter A examined the returns to education, **Chapter B** provides a comparative examination of spending patterns in OECD countries. By giving emphasis to trends in educational spending, the chapter seeks to analyse how different demand and supply factors interact and how spending on education, compared to spending on other social priorities, has changed.

*...the resources that each country invests in education relative to its number of students enrolled,...*

Effective schools require the right combination of trained and talented personnel, adequate facilities, state-of-the-art equipment, and motivated students ready to learn. The demand for high-quality education, however, can translate into higher costs per student, and must therefore be weighed against undue burdens for taxpayers. No absolute standards exist for measuring the per student resources needed to ensure optimal returns for individual students or society as a whole. Nonetheless, international comparisons can provide a starting point for discussion by evaluating the variation that exists between OECD countries in educational investment. **Indicator B1** examines direct public and private **expenditure on educational**

**institutions in relation to the number of their full-time equivalent (FTE) students** and investigates how this relates to countries' relative wealth, as measured by GDP per capita. It also reviews how OECD countries apportion per student education expenditure between different levels of education and presents a decomposition of the changes in student numbers and expenditure which underlie these figures. **New:** To further understand the comparisons by level a new feature of the indicator is a comparison of the distribution of expenditure by education level and the distribution of students by educational level.

Expenditure per student is a key policy measure which most directly impacts on the individual learner as it acts as a constraint on the learning environment in schools and student learning conditions in the classroom (**Framework Cells 2.I, 3.III and 3.II**).

However, relating Indicator B1 to Indicators A6 and A7 also shows, that lower expenditure cannot automatically be equated with a lower quality of educational services.

*...and relative to national income,...*

**Indicator B2** examines the **proportion of national resources that goes to educational institutions** and the levels of education to which they go. The proportion of national financial resources allocated to education is one of the key choices made by each OECD country; it is an aggregate choice made by governments, enterprises, and individual students and their families. Indicator B2 also shows how the amount of educational spending relative to the size of national wealth and in absolute terms has evolved over time in OECD countries. National resources devoted to education are a key national policy lever (**Framework Cell 2.IV**) but also act as an antecedent to the activities of schools, classrooms and individual learners (**Framework Cells 3.III, 3.II and 3.I**).

*...the ways in which education systems are financed, and the sources of the funds,...*

Cost-sharing between the participants in education and society as a whole is an issue that is under discussion in many OECD countries. This is a particularly relevant question at the early and late stages of education – pre-primary and tertiary – where full or nearly full public funding is less common. As new client groups participate in education, the range of educational opportunities, programmes and providers is growing, and governments are forging new partnerships to mobilise the necessary resources. Public funding is now being looked upon increasingly as providing only a part, albeit a very substantial part, of the investment in education. Private funding is playing an increasingly important role.

**New funding strategies** aim not only at mobilising the required resources from a wider range of public and private sources, but also at providing a broader range of learning opportunities and improving the efficiency of schooling. In the majority of OECD countries, publicly funded primary and secondary education is also organised and delivered by public institutions. However, in a fair number of OECD countries the public funds are then transferred to private institutions or given directly to households to spend in the institution of their choice. In the former case, the final spending and delivery of education can be regarded as subcontracted by governments to non-governmental institutions, whereas in the latter instance, students and their families are left to decide which type of institution best meets their requirements. To the extent that private financing of education creates barriers for the participation of learners from lower income groups, this may reflect in variation of performance between institutions.

To shed light on these issues, **Indicator B3** examines **the relative proportions of funds for educational institutions from public and private sources**, and how these figures have evolved since 1995. **New:** For the first time, private expenditure is disaggregated between household

expenditure and the expenditure of other private funders, allowing a more refined analysis of public and private funding to be undertaken.

As with Indicator B2, national resources devoted to education are a key national policy lever (**Framework Cell 2.IV**) as well as an antecedent to the activities of schools, classrooms and individual learners (**Framework Cells 3.III, 3.II and 3.I**).

*...relative to the size of public budgets,...*

All governments are involved in education, funding or directing the provision of services. Since markets offer no guarantee of equal access to educational opportunities, governments fund educational services to ensure that they are within the reach of their populations. Public expenditure on education as a percentage of total public expenditure indicates the value of education relative to the value of other public investments such as health care, social security, defence and security. **Indicator B4** completes the picture of the volume of resources invested in education by examining **changes in public spending on education in absolute terms and relative to changes in overall public spending**.

Since the second half of the 1990s, most OECD countries made serious efforts to consolidate public budgets. Education had to compete for public financial support against a wide range of other areas covered in government budgets. To portray this, the indicator evaluates changes in educational expenditure in absolute terms and also relative to changes in the size of public budgets.

As with **Indicators B2 and B3**, national resources devoted to education are a key national policy lever (**Framework Cell 2.IV**) as well as an antecedent to the activities of schools, classrooms and individual learners (**Framework Cells 3.III, 3.II and 3.I**).

*...different financing instruments,...*

The primary financing mechanism of education in most OECD countries remains direct spending on educational institutions. However, governments are looking increasingly towards greater diversity in financing instruments. Comparing these instruments helps to identify policy alternatives. **Subsidies to students and their families**, the subject of **Indicator B5**, constitute one such alternative to direct spending on institutions. They are used as incentives to engage individuals or groups of individuals in education or to open opportunities for them in different types of institutions (**Framework Cells 2.I and 2.III**).

Governments subsidise the costs of education and related expenditure in order to increase access to education and reduce social inequalities. Furthermore, public subsidies play an important role in indirectly funding educational institutions. Channelling institutional funding through students may heighten institutional competition and therefore the efficiency of education funding. Since aid for student living costs can also serve as a substitute for work as a financial resource, public subsidies may enhance educational attainment by enabling students to study full-time and to work fewer hours or not at all.

Public subsidies come in many forms: means-based subsidies, family allowances for all students, tax allowances for students or parents, or other household transfers. Should household subsidies take the form of grants or loans? Do loans effectively help increase the efficiency of financial resources invested in education and shift some of the costs to the beneficiaries? Or are student loans less appropriate than grants for encouraging low-income students to pursue their education? **Indicator B5** cannot answer these questions, but it does provide a useful overview of the subsidy policies being pursued in different OECD countries.



*...and how the money is invested and apportioned among different resource categories.*

Chapter B concludes with an examination of **how financial resources are invested and apportioned among resource categories (Indicator B6)**. The allocation of resources can influence the quality of instruction (through the relative expenditure on teachers' salaries, for example), the condition of educational facilities (through expenditure on school maintenance), and the ability of the education system to adjust to changing demographic and enrolment trends. A comparison of how OECD countries apportion their educational expenditure among resource categories can provide some insight into the differences in organisational structure and operation of educational institutions. Systemic budgetary and structural decisions on allocating resources eventually make themselves felt in the classroom; they affect teaching and the conditions under which teaching takes place. A system-wide description of decisions on how educational funding is spent, decisions that will influence system level outputs (**Framework Cell 2.IV**).

### **Chapter C: Access to education, participation and progression (Indicators C1 to C5)**

*Chapter C looks at access to education, participation and progression, in terms of...*

A well-educated population is critical for a country's economic and social development, in both the present and the future. Societies therefore have an intrinsic interest in ensuring broad access to a wide variety of educational opportunities for children and adults. Early childhood programmes prepare children for primary education. They can help to combat linguistic and social disadvantages and provide opportunities to enhance and complement home educational experiences. Primary and secondary education lay the foundations for a wide range of competencies and so prepare young people to become lifelong learners and productive members of society. Tertiary education, either immediately after school or later, provides a range of options for acquiring advanced knowledge and skills. **Chapter C** sketches a comparative picture of access, participation and progression in education across OECD countries.

*...the expected duration of schooling, overall and at the different levels of education,...*

Virtually all young people in OECD countries can expect to go to school for 11 years. However, participation patterns and progression through education vary widely. Both the timing and participation rate in pre-school and after the end of compulsory education differ considerably between countries. Some countries have extended participation in education, for example, by making pre-school education almost universal by the age of three, by retaining the majority of young people in education until the end of their teens, or by maintaining 10 to 20% participation aged into their late 20s.

**Indicator C1** sheds light on these issues by portraying **enrolment rates and the expected duration of schooling**. It can help to elucidate the structure of education systems and access to educational opportunities in them. **New:** An analysis newly added to this indicator is that of the pattern of enrolment in education for single years of age for young adults. This indicates the ages at which the transition between different levels of education occurs across countries and also the ages at which young people's participation in formal education starts to decline. Enrolment patterns indicate overall outcomes of educational policy (**Framework Cell 1.IV**) but, in the form of school expectancy, also outcomes at the individual level (**Framework Cell 1.I**).

*...entry into and participation in different types of educational programmes and institutions,...*

While the successful graduation from upper secondary education is becoming the norm in most OECD countries (see Indicator A2), routes to it are becoming increasingly varied. Upper secondary programmes can differ in their curricular content, often depending on the type of further education or occupation for which the programmes are intended to prepare students. Most upper secondary programmes in OECD

countries are primarily designed to prepare students for further studies at the tertiary level. The orientation of these programmes can be general, pre-vocational or vocational. Besides the programmes primarily preparing students for further education, in most OECD countries there are also upper secondary programmes designed to prepare students for direct entry to the labour market. **Enrolment in these different types of educational programmes** is examined in **Indicator C2**.

**Indicator C2** also sheds light on **rates of entry into tertiary education**, that provide an important indication of the extent to which a population is setting out to acquire the high-level skills and knowledge that labour markets in knowledge societies value. The indicator also provides a gender profile of the participants.

Like Indicator C1, Indicator C2 reflects on overall outcomes of educational policy (**Framework Cell 1.IV**) as well as on outcomes at the individual level (**Framework Cell 1.I**).

*...cross-border movements of students,...*

Access to and participation in tertiary education is no longer limited to national boundaries. One way for students to expand their knowledge is to attend higher educational institutions in countries other than their own. Such international student mobility involves costs and benefits to students and institutions in sending and host countries alike. While the direct short-term monetary costs and benefits of this mobility are relatively easy to measure, the long-term social and economic benefits to students, institutions and countries are more difficult to quantify. **The number of students studying in other countries (Indicator C3)**, however, provides some idea of the extent of student mobility and illustrates those countries that are net importers and net exporters of students. **New:** As well as, for the first time, providing some comparisons over time of student mobility, the indicator this year introduces an analysis of the subjects which foreign students choose to study. Such analysis helps to highlight “magnet” programmes which attract students from abroad in large numbers and which result from many factors related to the demand for and supply of particular programmes.

The indicator reflects on students’ motivation to study in other countries and hence raise their labour market prospects (**Framework Cell 2.I**) but is also indicative of the national policy on student mobility (**Framework Cell 2.IV**). The policy itself is, of course, a condition under which students’ mobility takes place (**Framework Cell 3.I**) and the extent of student mobility is a context for the learning environment in school and teaching and learning practices in the classroom (**Framework Cells 3.III and 3.II**).

*...and learning beyond initial education.*

All OECD countries are experiencing rapid social and economic changes that are making the transition to working life more uncertain. Entering the labour market is often a difficult period of transition. While the length of time spent in education has increased, a significant proportion of young people still remain marginal if they are neither in education or working, *i.e.*, they are either unemployed or in non-employment. **Indicators C4 and C5** examine **the education and employment status of young men and women** and provide information on how successfully the **transition from school to work** is made. Indicator C4 focuses on the combination of work and study and Indicator C5 on the work status of young people who are no longer in education. **New:** An important new development in Indicator C4 is the addition of comparisons over time which help to show how the experiences of young people in managing the transition between education and work have changed in recent years. **New:** For the first time, Indicator C5 examines the profile of young persons with low levels of qualifications in terms of whether or not they were born in the host country, throwing further light on the challenges facing countries in raising education levels. **New:** The indicator also now provides further insight into the difficulties faced by the low qualified in finding employment by showing the proportion of under-qualified young people who have never had a job.



Both indicators reflect outcomes not only for the individual student (**Framework Cell 1.I**) but also for the education system as a whole as it interacts with the labour market (**Framework Cell 1.IV**). They also provide a context for current participation rates and patterns both individually and collectively within the system (**Framework Cells 3.I and 3.IV**).

#### **Chapter D: The learning environment and organisation of schools (Indicators D1 to D6)**

*Chapter D examines the learning environment and organisation of schools, in terms of...*

Chapters A, B and C examined financial resources invested in education, patterns of participation, and the results of education in terms of student achievement and the labour market outcomes of education. **Chapter D** concludes the publication with an examination of student learning conditions, teacher working conditions and the decision making processes in place in national education systems. These are crucial contexts within which student learning takes place and which are, in the main, open to policy influence.

*...student learning conditions,...*

The amount and quality of time that people spend learning between early childhood and the start of their working lives, shape their lives, socially and economically. How effectively learning time is used depends on how appropriate study programmes are, and on how much instruction time a student receives. At the same time, instruction time in formal classroom settings comprises a large part of the public investment in student learning. Instruction time is, therefore an important policy lever which acts most directly on the individual learner (**Framework Cell 2.I**) but also as a context for teaching and learning practices in the classroom and school (**Framework Cells 3.II and 3.III**).

**Indicator D1** examines **instruction time** available for various study areas for students of different ages.

Besides policies on instruction time, other important aspects of student learning conditions are policies which determine student admissions to different schools and how students are then grouped within these schools. **Student admission, placement and grouping policies** set the framework for selection of students for academic programmes and for streaming of students according to their specific career goals and educational needs. **New:** The newly introduced **Indicator D5** examines these policies as they apply at the upper secondary level, where the educational provision begins to show greater diversity and the choices made by students need to be carefully managed to allow them to fulfil their potential and at the same time to ensure equal opportunities for all.

Student admission and grouping policies are policy levers which act on the individual learner (**Framework Cell 2.I**) but which are also contexts in which the classrooms and institutions operate (**Framework Cells 3.II and 3.III**).

The size of the learning group that shares teacher time is another variable that impacts on the use of classroom learning time. **Indicator D2** looks at the variation in **average class size**, and **the ratio of students to teaching staff** across OECD countries to estimate the human resources available for individual students. Both measures are factors which, on the whole, schools can influence (**Framework Cell 2.III**), though in some cases these can be constrained by system-level policies. They are also important contexts which shape student learning (**Framework Cell 3.I**) and classroom instruction (**Framework Cell 3.II**). **New:** A newly introduced feature of the indicator is a comparison of ratios of students to teaching staff between public institutions and private institutions, which has relevance to the debate concerning the comparative strengths and weaknesses of public versus private sector education.

*... teachers' working conditions....*

Chapter D continues with a comparative review of **teachers' working conditions**, examining first teachers' salaries and then teachers working and teaching time. Education systems employ a large number of professionals in increasingly competitive market conditions. Ensuring a sufficient number of skilled teachers is a key concern in all OECD countries. Key determinants of the supply of qualified teachers are the salaries and working conditions of teachers, including starting salaries and pay scales, and the costs incurred by individuals to become teachers, compared with salaries and costs in other occupations. Both affect the career decisions of potential teachers and the types of people attracted to the teaching profession. At the same time, teachers' salaries are the largest single factor in the cost of providing education. Teacher compensation is thus a critical consideration for policy makers seeking to maintain the quality of teaching and a balanced education budget. The size of education budgets naturally reflects trade-offs between a number of interrelated factors, including teachers' salaries, the ratio of students to teaching staff, the quantity of instruction time planned for students, and the designated number of teaching hours. To shed light on these issues, **Indicator D3** shows the starting, mid-career and maximum **statutory salaries of teachers** in public primary and secondary education, and incentive schemes and bonuses used in teacher rewards systems.

Together with class size and ratios of students to teaching staff (**Indicator D2**), hours of instruction for students (**Indicator D1**) and teachers' salaries (**Indicator D3**), the amount of time that teachers spend in the classroom teaching influences the financial resources which countries need to invest in education. While the number of teaching hours and the extent of non-teaching responsibilities are important parts of a teacher's working conditions, they also affect the attractiveness of the profession itself. To shed light on this, **Indicator D4** examines the **statutory working time of teachers** at different levels of education, as well as the statutory teaching time, *i.e.*, the time that full-time teachers are expected to spend teaching students. Although working time and teaching time only partly determine the actual workload of teachers, they do give some insight into differences between countries in what is demanded of teachers. **New:** To provide a sharper focus on how teachers' working time is used, a new analysis of the proportion of teachers' statutory working time that is spent teaching is included in the indicator this year.

Teacher salaries and working hours not only impact on recruitment and retention of teachers within institutions (**Framework Cell 2.III**), but as a feature of teacher working conditions, they also provide a context to the quality of instruction in instructional settings and for the learning outcomes of individual learners (**Framework Cells 3.I and 3.II**).

*....and the decision making framework in which schools operate.*

An important factor in educational policy is the division of responsibilities among national, regional and local authorities, as well as schools. Placing more decision-making authority at lower levels of the educational system has been a key aim in educational restructuring and systemic reform in many countries since the early 1980s. Yet, simultaneously, there have been frequent examples of strengthening the influence of the central authorities in some areas. For example, a freeing of "process" and financial regulations may be accompanied by an increase in the control of output from the centre, and by national curriculum frameworks. **New:** Chapter D concludes with a newly introduced **Indicator D6**, which examines the pattern of **decision making in education systems**: which authority takes decisions on which areas of the system and the degree of autonomy with which they take these decisions.

Although the profile of decision making in a country may be more or less centralised, the particular model of decision making that exists within a country is more often than not set at the system level. As such it is a system level policy lever (**Framework Cell 2.IV**), which provides contexts in which the educational institutions and instructional settings operate (**Framework Cells 3.II and 3.III**).

# READER'S GUIDE

## **Coverage of the statistics**

Although a lack of data still limits the scope of the indicators in many countries, the coverage extends, in principle, to the entire national education system (within the national territory) regardless of the ownership or sponsorship of the institutions concerned and regardless of education delivery mechanisms. With one exception described below, all types of students and all age groups are meant to be included: children (including students with special needs), adults, nationals, foreigners, as well as students in open distance learning, in special education programmes or in educational programmes organised by ministries other than the Ministry of Education, provided the main aim of the programme is the educational development of the individual. However, vocational and technical training in the workplace, with the exception of combined school and work-based programmes that are explicitly deemed to be parts of the education system, is not included in the basic education expenditure and enrolment data.

Educational activities classified as “adult” or “non-regular” are covered, provided that the activities involve studies or have a subject matter content similar to “regular” education studies or that the underlying programmes lead to potential qualifications similar to corresponding regular educational programmes. Courses for adults that are primarily for general interest, personal enrichment, leisure or recreation are excluded.

## **Calculation of international means**

For many indicators a country mean is presented and for some an OECD total.

The *country mean* is calculated as the unweighted mean of the data values of all OECD countries for which data are available or can be estimated. The country mean therefore refers to an average of data values at the level of the national systems and can be used to answer the question of how an indicator value for a given country compares with the value for a typical or average country. It does not take into account the absolute size of the education system in each country.

The *OECD total* is calculated as a weighted mean of the data values of all OECD countries for which data are available or can be estimated. It reflects the value for a given indicator when the OECD area is considered as a whole. This approach is taken for the purpose of comparing, for example, expenditure charts for individual countries with those of the entire OECD area for which valid data are available, with this area considered as a single entity.

Note that both the country mean and the OECD total can be significantly affected by missing data. Given the relatively small number of countries, no statistical methods are used to compensate for this. In cases where a category is not applicable (code “a”) in a country or where the data value is negligible (code “n”) for the corresponding calculation, the value zero is imputed for the purpose of calculating country means. In cases where both the numerator and the denominator of a ratio are not applicable (code “a”) for a certain country, this country is not included in the country mean.

For financial tables using 1995 data, both the country mean and OECD total are calculated for countries providing both 1995 and 2001 data. This allows comparison of the country mean and OECD total over time with no distortion due to the exclusion of certain countries in the different years.

### Classification of levels of education

The classification of the levels of education is based on the revised International Standard Classification of Education (ISCED-97). The biggest change between the revised ISCED and the former ISCED (ISCED-76) is the introduction of a multi-dimensional classification framework, allowing for the alignment of the educational content of programmes using multiple classification criteria. ISCED is an instrument for compiling statistics on education internationally and distinguishes among six levels of education. The *Glossary* at [www.oecd.org/edu/eq2004](http://www.oecd.org/edu/eq2004) describes in detail the ISCED levels of education, and Annex 1 shows corresponding typical graduation ages of the main educational programmes by ISCED level.

### Symbols for missing data

Five symbols are employed in the tables and charts to denote missing data:

- a* Data not applicable because the category does not apply.
- c* There are too few observations to provide reliable estimates (*i.e.*, there are fewer than five schools or fewer than 30 students with valid data for this cell).
- m* Data not available.
- n* Magnitude is either negligible or zero.
- x* Data included in another category or column of the table (*e.g.*, *x*(2) means that data are included in column 2 of the table).

### Further resources

The web site [www.oecd.org/edu/eq2004](http://www.oecd.org/edu/eq2004) provides a rich source of information on the methods employed for the calculation of the indicators, the interpretation of the indicators in the respective national contexts and the data sources involved. The web site also provides access to the data underlying the indicators, as well as to a comprehensive glossary for technical terms used in this publication.

The web site [www.pisa.oecd.org](http://www.pisa.oecd.org) provides information on the OECD Programme for International Student Assessment (PISA), on which many of the indicators in this publication draw.

*Education Policy Analysis* is a companion volume to *Education at a Glance*, which takes up selected themes of key importance for governments. The 2004 edition contains four chapters that draw together key findings and policy developments under the following headings: Education and ageing societies; Getting returns from investing in educational ICT; Tomorrow's teachers, tomorrow's schools; Trade-offs in restructuring tertiary education: The roles of tertiary institutes and colleges.

**Codes used for territorial entities**

|                             |     |                 |     |
|-----------------------------|-----|-----------------|-----|
| Australia                   | AUS | Japan           | JPN |
| Austria                     | AUT | Korea           | KOR |
| Belgium                     | BEL | Luxembourg      | LUX |
| Belgium (Flemish Community) | BFL | Mexico          | MEX |
| Belgium (French Community)  | BFR | Netherlands     | NLD |
| Canada                      | CAN | New Zealand     | NZL |
| Czech Republic              | CZE | Norway          | NOR |
| Denmark                     | DNK | Poland          | POL |
| England                     | ENG | Portugal        | PRT |
| Finland                     | FIN | Scotland        | SCO |
| France                      | FRA | Slovak Republic | SVK |
| Germany                     | DEU | Spain           | ESP |
| Greece                      | GRC | Sweden          | SWE |
| Hungary                     | HUN | Switzerland     | CHE |
| Iceland                     | ISL | Turkey          | TUR |
| Ireland                     | IRL | United Kingdom  | UKM |
| Italy                       | ITA | United States   | USA |

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Argentina, Brazil, Chile, China, Egypt, India, Indonesia, Jamaica, Jordan, Malaysia, Paraguay, Peru, Philippines, Russian Federation, Sri Lanka, Thailand, Tunisia, Uruguay and Zimbabwe participate in the OECD/UNESCO World Education Indicators (WEI) programme. Data for these countries are collected using the same standards and methods that are applied for OECD countries and therefore are included in this publication. Israel has observer status in OECD's activities on education.





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Many people have contributed to the development of this publication. The following lists the names of the country representatives, researchers and experts who have actively taken part in the preparatory work leading to the publication of this edition of *Education at a Glance – OECD Indicators*. The OECD wishes to thank them all for their valuable efforts.

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indicator in the  
2003 edition

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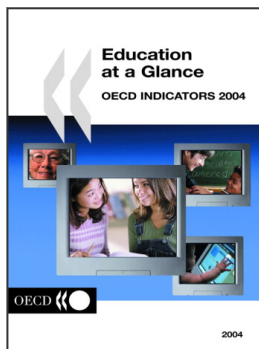
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**From:**  
**Education at a Glance 2004**  
OECD Indicators

**Access the complete publication at:**  
<https://doi.org/10.1787/eag-2004-en>

**Please cite this chapter as:**

OECD (2004), "Introduction: The Indicators and their Framework", in *Education at a Glance 2004: OECD Indicators*, OECD Publishing, Paris.

DOI: <https://doi.org/10.1787/eag-2004-3-en>

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