

INTRODUCTION: THE INDICATORS AND THEIR FRAMEWORK

■ The organising framework

Education at a Glance 2017: OECD Indicators offers a rich, comparable and up-to-date array of indicators that reflects 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, how education and learning systems operate and evolve, and the returns to investments in education. The indicators are organised thematically, and each is accompanied by information on the policy context and an interpretation of the data. The education indicators are presented within an organising framework that:

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

The following matrix describes the first two dimensions:

	1. Education and learning outputs and outcomes	2. Policy levers and contexts shaping education outcomes	3. Antecedents or constraints that contextualise policy
I. Individual participants in education and learning	1.I. The quality and distribution of individual education outcomes	2.I. Individual attitudes towards, engagement in, and behaviour in teaching and learning	3.I. Background characteristics of the individual learners and teachers
II. Instructional settings	1.II. The quality of instructional delivery	2.II. Pedagogy, 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

■ Actors in education systems

The OECD Indicators of Education Systems (INES) programme seeks to gauge the performance of national education systems as a whole, rather than to compare individual institutional or other subnational entities. However, there is increasing recognition that many important features of the development, functioning and impact of education systems can only be assessed through an understanding of learning outcomes and their relationships to inputs and processes at the level of individuals and institutions. To account for this, the indicator framework distinguishes between a macro-level, two meso-levels and a micro-level of education systems. These relate to:

- the education system as a whole
- the educational institutions and providers of educational services
- the instructional setting and the learning environment within the institutions
- the individual participants in education and learning.

To some extent, these levels correspond to the entities from which data are being collected, but their importance mainly centres on the fact that many features of the education system play out quite differently at different levels of the system, which needs to be taken into account when interpreting the indicators. For example, at the level of students within a classroom, the relationship between student achievement and class size may be negative, if students in small classes benefit from improved contact with teachers. At the class or school level, however, students are often intentionally grouped such that weaker or disadvantaged students are placed in smaller classes so that they receive more individual attention. At the school level, therefore, the observed relationship between class size and student achievement is often positive, suggesting that students in larger classes perform better than students in smaller classes. At higher aggregated levels of education systems, the relationship between student achievement and class size is further confounded, e.g. by the socio-economic intake of schools or by factors relating to the learning culture in different countries. Therefore, past analyses that have relied on macro-level data alone have sometimes led to misleading conclusions.

■ Outcomes, policy levers and antecedents

The second dimension in the organising framework further groups the indicators at each of the above levels:

- Indicators on observed outputs of education systems, as well as indicators related to the impact of knowledge and skills for individuals, societies and economies, are grouped under the sub-heading *output and outcomes of education and learning*.
- The sub-heading *policy levers and contexts* groups activities seeking information on the policy levers or circumstances that shape the outputs and outcomes at each level.
- These policy levers and contexts typically have *antecedents* – factors that define or constrain policy. These are represented by the sub-heading *antecedents and constraints*. The antecedents or constraints are usually specific for a given level of the education system; antecedents at a lower level of the system may well be policy levers at a higher level. For teachers and students in a school, for example, teacher qualifications are a given constraint while, at the level of the education system, professional development of teachers is a key policy lever.

■ Policy issues

Each of the resulting cells in the framework can then be used to address a variety of issues from different policy perspectives. For the purpose of this framework, policy perspectives are grouped into three classes that constitute the third dimension in the organising framework for INES:

- quality of education outcomes and education opportunities
- equality of education outcomes and equity in education opportunities
- adequacy, effectiveness and efficiency of resource management.

In addition to the dimensions mentioned above, the time perspective in the framework allows for dynamic aspects of the development of education systems to be modelled as well.

The indicators that are published in *Education at a Glance 2017* fit within this framework, though often they speak to more than one cell.

Most of the indicators in **Chapter A**, *The output of educational institutions and the impact of learning*, relate to the first column of the matrix describing outputs and outcomes of education. Even so, indicators in Chapter A measuring educational attainment for different generations, for instance, not only provide a measure of the output of the education system, but also provide context for current education policies, helping to shape policies on, for example, lifelong learning.

Chapter B, *Financial and human resources invested in education*, provides indicators that are either policy levers or antecedents to policy, or sometimes both. For example, expenditure per student is a key policy measure that most directly affects the individual learner, as it acts as a constraint on the learning environment in schools and learning conditions in the classroom.

Chapter C, *Access to education, participation and progression*, provides indicators that are a mixture of outcome indicators, policy levers and context indicators. Internationalisation of education and progression rates are, for instance, outcome measures to the extent that they indicate the results of policies and practices at the classroom, school and system levels. But they can also provide contexts for establishing policy by identifying areas where policy intervention is necessary to address issues of inequity, for example.

Chapter D, *The learning environment and organisation of schools*, provides indicators on instruction time, teachers' working time and teachers' salaries that not only represent policy levers that can be manipulated but also provide contexts for the quality of instruction in instructional settings and for the outcomes of individual learners. It also presents data on the profile of teachers, the levels of government at which decisions about education are taken, and pathways and gateways to gain access to secondary and tertiary education.

The reader should note that this edition of *Education at a Glance* covers a significant amount of data from partner countries as well (please refer to the *Reader's Guide* for details).



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