Introduction to ADePT Edu: Broadening Access to School and Household Data in Education

This chapter highlights recent efforts by the World Bank to broaden the availability of education data, especially data used in the analysis of education inequality. It explains the benefits of ADePT Edu, a software program designed to provide common educational indicators from micro-level survey data, and the model behind the structure and organization of the reports users can produce with it.

The Need for Data

As the World Bank’s new education sector strategy notes, the production and dissemination of reliable education statistics are essential for effective education sector planning and for monitoring progress toward national and global education targets, such as the Millennium Development Goals (MDGs). Good access to education statistics for all countries is also an important global public good that, by definition, is normally not supplied by the market. In response to the need for greater availability of reliable education statistics, the World Bank, the donor community, and national governments have been working to promote the production, dissemination, and use of education statistics.
Accurate and reliable information on education sector performance is crucial for designing policies and programs. Even in environments in which the political economy of education may suggest that education statistics, education policy analysis, and data on sector performance take second place to political decisions, policy makers often use education data as points of reference for their political decisions (Crouch 1997). In recent years many countries have made substantial reforms to their education systems, moving toward greater decentralization of education and the use of performance indicators and the measurement of learning outcomes to monitor educational performance and reinforce accountability (Bruns, Filmer, and Patrinos 2011). Successful implementation of these reforms requires the intensive use of Education Management Information Systems (EMIS) and, by inference, education statistics and education indicators on school and student performance (Arcia and others 2011; Cassidy 2005).

When evaluating the education sector in any country, analysts often need to use statistical indicators of internal efficiency and other educational statistics that monitor policy impacts. As education systems move toward decentralization and accountability, emphasizing access to and the use of education statistics at the local level becomes a necessary part of policy implementation (Filmer and Rubio-Codina 2011; Kitamura and Hirosato 2009). Analysts also need to know about the context in which internal efficiency operates. Educational expenditures by student and education level and the incidence of private educational expenditures by households are examples of the types of information needed to evaluate the potential winners and losers of changes in education policy. In particular, household-level data can be an important source of information in evaluating the impact of education expenditures on equity, living standards, and social outcomes (Das 2004). After all, education is considered the key element of long-term poverty reduction, because it is a key component of social and economic mobility (Hanushek and Wößmann 2007).

Despite considerable efforts made to improve the availability and quality of data, much work remains to be done to generate reliable and timely education statistics at the global level (Porta and Klein 2010). Some progress has been made. In 1990 publicly available education data allowed for the calculation of only 17.5 percent of 153 key education indicators; by 2000 the figure had risen to 46.7 percent (figure 1.1). Between 2000 and 2008, data availability levels fluctuated slightly over time, reaching 46 percent of nearly 280 education indicators in 2008.¹
The number of education indicators on which data are reported has increased. The percentage of countries reporting net enrollment data almost doubled between 1990 (when 32 percent of countries reported data) and 2008 (when 61 percent of countries did so). More data also became available on youth literacy, with 10 percent of countries providing such data in 2007 and 55 percent doing so in 2009. Overall, 62.4 percent of the data needed to estimate the four MDG indicators were available in 2008, an increase of almost 30 percentage points over 1995. Information gaps remain, however: between 2000 and 2008, only about half of all countries collected the data required to estimate the four MDG education indicators (figure 1.2).

**Complementing ADePT Edu: Broadening the Availability of Education Projections Modules**

In 2007 the World Bank’s EdStats website updated its database and menu of education modules to complement UNESCO Institute for Statistics (UIS) data and increase data availability. Its databases are described below.
Education Projections Modules

The Education Projections modules allow users to easily access projections of educational attainment, enrollment rates, and gender parity indexes until 2025 or 2050, depending on the country and data coverage. Three projection models are included in the projections query:

- The International Institute for Applied Systems Analysis/Vienna Institute of Demography (IIASA/VID) Educational Attainment Model includes the reconstruction of educational attainment distributions (primary, secondary, tertiary, and no education) for 120 countries by age for 1970–2000, with projections through 2050.
- The Education Policy and Data Center Educational Attainment Model produces similar projections for 81 countries (as of September 2008) for 2005–25 (the countries covered by these two models do not overlap 100 percent).
• The Education Policy and Data Center Enrollment Rates Model, which projects net enrollment rates (NERs), total net enrollment rates (TNERs), gross enrollment rates (GERs), and gender parity indexes (GPIs) for more than 150 countries until 2025.

Users may choose a model depending on the country and time period covered by each module.

**World Bank Education Projects Database**

The World Bank Education Projects Database allows users to search Bank education projects approved by the Education Sector Board since 1998. Users can search projects by country to find detailed project information or search by one of more than 100 project components to generate a list of projects that included a specific component. This module includes links to the Project Appraisal Documents, allowing EdStats users to easily access World Bank project descriptions around the world.

**Public Expenditure Database**

The Public Expenditure Database includes education finance indicators for 79 countries and about 850 education expenditure indicators. Because there is no standard method of calculating most indicators, users are cautioned not to compare data across countries.

**ADePT Edu As a Tool for Analyzing Education Inequality**

About half of the countries in Sub-Saharan Africa report that 25 percent of their children—about 31 million—do not attend school. Worldwide about 69 million children were out of school in 2008, a figure that is significantly lower than the more than 100 million who were not attending school in 1999 (UN 2010).

Limited access to education does not necessarily reflect inadequate infrastructure—in fact, infrastructure may be the easiest issue to resolve. Poor access may also involve problems in enrollment, attendance, and abandonment, which affect the demand for education. Poverty and education quality are two important factors that help explain access to education and are central to the analysis of educational inequality (Pritchett 2004).
Administrative data collected through school surveys provide information about children attending school. To identify groups that are excluded from the school system and understand the challenges and circumstances that keep them out of school, governments and donors must draw on household survey data. They need better information to design the policies and plan the interventions that will help achieve Education for All.

The World Bank created ADePT Edu to facilitate access to education data and allow education analysts to concentrate on monitoring and analyzing education indicators. ADePT Edu can be used with any household survey to produce tables of all education indicators covered by UIS, as well as indicators associated with educational inequality. ADePT Edu can use Stata (.dta) or SPSS (.sav) datasets as source files; users specify the variables for analysis. Within the Bank, ADePT uses Stata to compute all education indicators, regardless of the type of input file. Users need not have SPSS installed to work with SPSS datasets in ADePT.

Although the analysis of education data—both administrative and survey based—can be done with commercial software available all over the world, many countries cannot afford the cost of producing and publishing a large number of good-quality indicators at the national and subnational levels on an annual basis. ADePT Edu provides these countries with four distinct benefits:

- It is free, alleviating the financial burden on ministries of education and education analysts in poor countries.
- It is already configured to produce a large number of educational indicators, which saves significant amounts of time on country analysis. It eliminates the need to configure commercial software to generate education indicators.
- It ensures the consistency of indicators and their compliance with international standards.
- It allows for the creation of benchmarks at the national level, which can be compared with results in other countries.

The pursuit of equality in access to education has both a moral and an economic basis. Differential access to schooling by children comes through no fault of their own. However, the differential abilities that result have important impacts on individual prosperity and long-term prosperity for society (Bourguignon and Dessus 2007). Unequal opportunities in education
reduce the ability of individuals and societies to maximize human potential; the lower levels of human capital created as a result of differential access limit innovation and investment and slow economic growth (OECD 2010; World Bank 2005). The potential impact of increasing education equity is especially important because education is one of the few factors that can break the intergenerational cycle of poverty (World Bank 2003).

In their studies of education inequality in Central America, Porta and Laguna (2007a, 2007b) find that, despite progress in expanding educational services, some groups remain marginalized and are left behind. Among non-indigenous male children of educated parents living in the urban areas of Guatemala, the probability of school attendance is 97 percent. In contrast, among indigenous girls in rural areas whose parents are illiterate and belong to the poorest 20 percent of the income distribution, the probability of school attendance is only 22 percent.

Building on this work and on the conceptual and empirical work of others in education inequality (Bourguignon 2006; Patrinos and Skoufias 2007; Pritchett 2004; World Bank 2005), ADePT Edu was developed to maximize the use of household-level education information and create ready to print reports that allow users to easily visualize inequalities in school participation, school progression, school attainment, education expenditures, and labor market outcomes. These inequalities can also be analyzed for boys and girls, indigenous populations, people living in rural areas, and poor families. The organization of the ready to print reports generated by ADePT Edu follows the logic of the effects of inequality. Those affected by inequality—girls (or sometimes boys), the extreme poor, ethnic groups, and people living in isolated areas—have less access to education because they cannot cover the costs, do not relate to the education content, or are simply discriminated against. Lower access to education may compel them to enter the labor force too early and with a lower level of education than they may desire. The result is a lower level of productivity and innovation for society because people are not given an equal opportunity to control their destinies.

ADePT Edu reports have been generated for more than 80 countries. They are available to the public in EdStat’s Household Survey module. More than 40 percent of the surveys come from Sub-Saharan Africa and 23 percent from Latin America and the Caribbean. Forty-two percent of the surveys were carried out in Highly Indebted Poor Countries (HIPC). Many countries in this database have conducted multiple surveys over time; for example, 13 countries conducted four or more surveys between 1985 and 2007.
The inclusion of household survey data in the EdStat portal allows for the analysis of education data at the micro level and the close examination of education inequality. This is an important contribution to education, as school administrative data do not capture information on children outside the school system or information about the private cost of education to households. ADePT Edu allows for the analysis of any type of household survey data, giving analysts a better picture of inequality issues and the need for policy and intervention responses.

Household survey data also allow for more precise interventions. Having information on educational inequality may add significant insight into policy decisions. Household-level data allow for the analysis of educational costs, cost equity, the relationship between educational attainment and levels of household income, and educational inequality from location and gender perspectives. Although the provision of information on educational inequality is not a sufficient condition for policy change, it has the potential to influence policy interventions at the local and national levels. As education systems become more decentralized and accountability begins to take shape at the local level, ADePT Edu can facilitate the analysis of educational inequality, before or after policy implementation.

Notes

1. Because of quality checks and verification procedures, the UNESCO Institute for Statistics publishes data two years after the end of the calendar year.
2. ADePT Edu has an imbedded version of Stata, so there is no need for users to install Stata or to have access to additional statistical software.
3. More reports are regularly added to the database as household data become available. Users should check the website periodically for updated content.

References

Assessment for Benchmarking Education for Results, Regulatory and Institutional Framework. World Bank, Human Development Network, Washington, DC.


Assessing Sector Performance and Inequality in Education


