

## Harnessing Evaluation to Improve Upper Secondary Education

Although Mexico has made great strides in improving the coverage of education at all levels, it still has a major gap in enrollment at the upper secondary level: less than half of the youth population graduates. The education level of adults in Mexico is far behind that of other middle-income countries. In addition, the results from international learning assessments give rise to concerns about the quality and relevance of upper secondary education. The Sub-Secretary of Upper Secondary Education is leading a major reform of the sector with the twin objectives of increasing coverage and quality within the framework of a more integrated system. Evaluation has been an important tool in designing, implementing, and monitoring the reform.

### Upper Secondary Education in Mexico

In recent decades, Mexico has made substantial progress in education. At the primary education (*primaria*) level, coverage has remained around 90% since 1970 and the system's efficiency has improved significantly. The coverage of lower secondary (*secundaria*) has risen from 30% in 1970 to around 90% in 2006, and the coverage of upper secondary (*media superior*) 10% to 55% over the same period. However compared to basic education, there are significant problems with efficiency. In essence, Mexico can get youth into the upper secondary system but cannot get them to graduate.

Measuring quality is difficult, but the international PISA learning assessment shows that Mexico is one of the lowest-performing countries in the OECD.<sup>1</sup> While its scores have improved, it is still behind other middle-income OECD countries. At the same time, the OECD report *Education at a Glance 2007* indicates that Mexico has made

major investments in education and has shown consistent increases in educational investment, not just in absolute terms, but also in terms of a rising share of GDP being dedicated to education.

The Sub-Secretary of Upper Secondary Education (SEMS) is introducing a series of reforms intended both to increase coverage and to improve the quality and relevance of the education that students receive. As part of these reforms, SEMS is supporting the establishment of a National Degree System (*Sistema Nacional de Bachillerato*), which will create a set of common standards for upper secondary education and allow transferability within the system. It is also introducing a universal

#### Box 1. The Upper Secondary System in a Nutshell

Whereas basic education in Mexico is provided by state governments, upper secondary education is complicated: it is provided by the federal government, autonomous public universities, state governments, and a large private sector. Nationwide, 28% of enrollment is in the federal system, 37% in the state system, 15% in the university system, and 21% in the private sector. The proportions vary greatly from state to state.

With the variety of different providers, it is estimated that 200 to 300 different subsystems are in operation, providing both technical and academic education. Upper secondary education depends heavily on contract and part-time teachers. Transfer among the different subsystems is difficult, and both learning and regulatory standards vary greatly.

<sup>1</sup> PISA, the Program for International Student Assessments, is applied every three years to fifteen year old youth in school in all OECD and many partner countries. It covers mathematics, science, and language.

student assessment to complement existing assessments in the basic education system.

## Role of Evaluation

Along with the rest of Mexico's public administration, SEMS is moving toward results-based management and performance-based budgeting approaches. A fundamental aspect of these approaches is emphasis on monitoring and evaluation of policies and programs—a challenge that involves a range of activities, from monitoring and assessing progress in the implementation of programs, to measuring changes in outcomes and evaluating the impact of specific interventions on those outcomes.

There is broad consensus that improving quality in education requires establishing transparent and well-known quantitative standards, accompanied by a strong assessment system to follow up on student learning and help guide action by the school system.<sup>2</sup> With transparent standards and an assessment system, the education system can target resources where they are needed—for example, to teacher training, materials, or other interventions.

## Expanding the Integrated Quality Assessment System

SEMS is developing an integrated quality assessment that both builds on existing resources and introduces new tools in the sector. At the center of the quality assessment system is a new learning assessment (test) that is being given to all students at the end of 12<sup>th</sup> grade. This complements the *Exámenes de la Calidad y Logro Educativo* (EXCALE) assessment that is currently administered in the basic education system to all students in 3<sup>rd</sup>, 5<sup>th</sup>, 7<sup>th</sup>, and 9<sup>th</sup> grades. The new assessment was first given at the upper secondary level during the 2007–2008 school year. Although SEMS only has “authority” over federal school systems, it was able to persuade other school systems to participate, and participation was universal.

With repeated results (probably after the assessment is administered twice), it will be pos-

sible to compare the efficiency of different types of upper secondary school systems. This is where the second element of the new quality assessment system plays an important role. SEMS is using information from the Secretary of Public Education to update its databases and correct information it has on schools and education finance so that it can analyze what it is spent in upper secondary education and what the results are. With the assessment information about the operation of the upper secondary system, SEMS will then be able to improve the allocation of resources.

## Using Impact Evaluations

Impact evaluation assesses the specific outcomes attributable to a particular intervention. It is a powerful instrument to determine “what works and what does not work” in designing development interventions. For example, impact evaluation can measure the increase in student learning that results from a change in the curriculum. This is done by using a counterfactual that represents the hypothetical state the beneficiaries would have experienced without the intervention.

Over the past few years some significant improvements have made impact evaluations easier to implement systematically. First, information is more readily available because countries are collecting more micro data through household surveys. Second, specialists have developed a number of evaluation techniques to construct the counterfactual, ranging from randomized experiments to quasi-experimental techniques.

Mexico has been a leader in developing and applying impact evaluation techniques to policymaking. The national transfer program, *Oportunidades*, started with a detailed impact evaluation of a pilot program that was brought to national scale. Building on that experience, Mexico has introduced impact evaluation techniques in different sectors to develop and improve new programs.

<sup>2</sup> This approach is discussed in L. Crouch (2006) *Por una Educación de Calidad para el Perú*. Washington: World Bank and E. Vegas and J Partow (2008) *Incrementar el Aprendizaje estudiantil en America Latina*. Washington: World Bank.

SEMS has been a pioneer in using impact evaluation as part of its overall reform program. On introducing new programs to improve the coverage and quality of the upper secondary education, SEMS prepared a series of impact evaluations to measure the impact of these new programs. At the center of SEMS' impact evaluation strategy was the creation of an international impact evaluation consultative group. The consultative group comprises a number of world experts in impact evaluation who have published widely on impact evaluation and education, and most of them have worked extensively in Mexico.

Working with the consultative group, SEMS is carrying out impact evaluations on the new upper secondary education scholarship program, the use of computers in upper secondary training programs, and the selection of school principals. Data from these evaluations will help improve the design of these programs. Future impact evaluations are planned for other SEMS programs.

## Introduction of Performance-Based Budgeting

The Mexican public administration is moving forward in adopting results-based management and performance-based budgeting through the new Performance Evaluation System or *Sistema de Evaluación al Desempeño* (SED). This framework will promote the generation and use of performance information throughout the budget cycle, and the line ministries (*Secretarías*) will play a critical role in implementing it. SEMS's development of rigorous evaluations and quantitative standards is an example of relevant performance information that will feed into the system.

The federal government finances the upper secondary system through several mechanisms. First, it provides direct financing to its own schools, whether decentralized or autonomous; most of the decentralized school systems are operated by SEMS. Second, it provides financing to the state systems, and it often plays a significant role in the management of these state systems. Third, it provides a significant part of the budget directly to federal- and state-level autonomous universities, which allocate their resources freely to their own secondary education system. (State

governments also contribute to the budgets of their own autonomous universities.) In many ways, the upper secondary education system is more flexible than other areas of the education system. It relies heavily on contract teachers and has been quite open to experimenting with new approaches and new systems.

The overall evaluation system that SEMS is establishing will allow more comparisons among the different systems. Some systems are more efficient than others, and some have a bigger equity impact. The combination of statistical analysis and impact evaluation will help the federal government target additional resources to the best-performing systems. As the evaluation system goes beyond the systems that the federal government influences directly, other school systems may make similar use of the available information. Given the increasing attention that the Ministry of Education is giving to results and outcomes, the establishment

### Box 2. Use of Education Evaluation in OECD Countries

Objective assessments are playing a growing role in education sectors throughout the OECD. This includes both international assessments, which provide international benchmarks, and national assessments.

In the United States, secondary students' performances on the PISA and on the *Trends in International Mathematics and Science Study* have raised concerns about the state of science and mathematics education and led to greater emphasis on math and science education. The federal government has required states to introduce their own assessment systems and minimum standards. Schools that have low performance receive additional support to help students meet state standards. However if a school continues to "fail," the state can take control of the school or shut it down. This approach does not reward well-performing schools but ensures a minimum standard for all schools.

In Germany, PISA results have given rise to intense debate on ways the country can improve students' performance. Policymakers used the PISA results to support their efforts to introduce new initiatives to improve quality. Germany does not have a strong testing tradition, and PISA forced the public to see the significant weaknesses in the education system. As a result of reforms and targeted investment, Germany saw increases in its PISA scores. Thus in Germany, PISA served as an analytic database, a benchmarking instrument, and advocacy tool.

of performance budgeting in Mexico can benefit from this experience and support this already positive development.

## Challenges

In Mexico the education sector is the single largest recipient of public resources and one of the largest employers. It plays a key role in the economy, particularly because, as a middle-income country, Mexico is increasingly dependent on the services produced by educated workers. The upper secondary education system is growing quickly and will continue to grow in the coming years.

To meet the challenges of the growing and very diverse upper secondary system, the federal government will need additional information to track decisions and make key decisions. It will need to share this information with states and autonomous universities to allow them to make better decisions, as well. The newly introduced evaluation system will help both the state and federal governments meet the growing demand for upper secondary education.

**Erik Bloom, Senior Economist, Human Development Network (World Bank)**



*Mexico: Quality of Public Expenditure* is a series of notes produced in collaboration between the Mexican Government's *Secretaría de Hacienda y Crédito Público* and the Public Sector and Governance unit in the World Bank's Latin American and Caribbean Region.

