

Technology and the Management of Learning: The New Accountability

Laurence Wolff

There is an increased emphasis on accountability in education. Education management information systems are being used to measure school and teacher performance. Until recently, data was still scarce in some places or out of date, sometimes lagging three or four years behind schedule. Technological advances taking place, especially increased computing power and the rapid transfer of data, are now “revolutionizing” the way schools and learning systems are managed and evaluated. Some LAC countries like Chile, Mexico and Brazil have started to use data and research to make education policy decisions at country, state and local levels.

Behind Closed Doors

Teaching has been a work of “artisanship” since the time of Socrates. Even with formal teacher training colleges, most teachers have toiled alone in their classroom, unseen by all except an inquiring school principal. What has happened in the classroom has been between the teacher and the student. Schools themselves have been only sporadically evaluated. Successful teachers and schools have usually been defined anecdotally as those with the best reputation or those with the highest percentages of students who moved on to the next level of education or entered the most prestigious institutions at the next level.

Even with the increasing emphasis on accountability and the start of the use of education management information systems (EMIS) in education, it has been difficult and time consuming to measure in a timely manner how teachers and schools were functioning. Minimum data on school performance, such as completion rates, have typically been a year out of date in developed countries such as the USA and three or four years old in developing countries. Test results have taken many months to score and it has been excessively time consuming and expensive to definitively identify and seek to explain well performing schools.

Opening the Doors

Technology, especially increased computing power and the rapid transfer of data, are now revolutionizing the way schools and learning systems are managed and evaluated. With computing power and nearly instantaneous communication with central data processing systems, it is now possible to have data-driven educational goal setting and rapid measurement of results. Education is becoming a reliable system with memory.

In the new data-driven educational process, scores on tests, as well as dropout rates, and even instances of school violence or disruption, can be made available to decision making authorities or the general public within days and at most a few months. These results can now be linked with school and student characteristics. “Effective” schools can be identified; these are not simply high scoring schools, but rather they are schools, which, given the socioeconomic makeup of their student body, score higher than would be expected; or they are schools that increase performance from year to year. With the new availability of reliable data, principals can be asked to set measurable goals and are then evaluated on the basis of the extent to which they have met these goals. Computer analysis can even track value-added learning of students from one year to the next, providing, for the first time, measures of the extent to which teachers are achieving their goals.

Available items from test scores can permit comparison of school and district performance with systems throughout the country as well as the world. For example, two thirds of the test items from the Third International Math and Science Test (TIMSS) of the IEA are now available for downloading from the Internet (<http://timss.bc.edu/>). Therefore any school or school system, on its own, can compare its student performance with that of 42 other countries in the world. Schools and school systems can determine how far they have to go to reach the level of performance of the students of Singapore, who score half a standard deviation higher than any other national school system in the world.

A Case of Goal Setting and Monitoring

Many state school systems in the United States have moved in this direction. For example, Texas (<http://www.tea.state.tx.us>), North Carolina (<http://www.dpi.state.nc.us>), and Maryland (<http://www.msde.state.md.us>), among others, are publishing school level test scores on their Internet sites. Data-driven goal setting can also be undertaken at the local or county level. The Montgomery County Public School System (MCPS) in Maryland, USA, is an example of data-driven school management focussed on goal setting and accountability.¹ Analysis of scores, dropout rates and changing demographics has helped to define the challenge for this school system. For many years, the county had a mainly white, middle class, relatively high performing clientele and was considered one of the leading school systems in the United States. The past twenty years have seen a dramatic demographic change. In the year 2000, only 49 percent of enrolled students were white, with the remainder black, Hispanic, and Asian. The data show an enormous chasm between the achievement scores of Hispanics and blacks compared with achievement of whites and Asians. If the county does not reduce the gap soon, its vaunted educational system will become second rate. Its new clientele requires a new set of strategies.

The county's goals have been defined on the basis of data and detailed focus group discussions with critical stakeholders. The critical goal is to reduce the gap between the poorly and well performing minorities in achievement, while at the same time raising the bar for achievement of all students. The county has begun to require data-driven action plans for all schools. Within the next two years, MCPS is seeking on-line rapid data availability throughout the county.

One critical objective is to increase the number of students successfully taking Algebra 1 in ninth grade, since research has shown that algebra is the key to students remaining and succeeding in school. Individual schools are setting, and some are achieving, goals such as raising the number of ninth grade students successfully completing algebra from 60 to 90 percent. A second effort at raising the bar for all students is to increase the numbers of students, especially minorities, taking advanced placement (AP) tests, which are college level courses with a nationally defined curriculum and objectively scored tests. Students are "self-selecting" into AP classes and teachers are challenged to keep the scores at the same level with a wider self-selected classroom population. Also based on research, the county has undertaken a series of outreach programs to Hispanic and black parents, and established strategic alliances with early childhood education groups.

More Accountability and Transparency

Data- and research-driven policy decisions are not unique to the United States. Chile regularly publishes the school-by-school results of the testing program SIMCE,² and the Brazilian State of Sao Paulo³ will also shortly publish its results. Mexico is a country that for many years has been testing its students and measuring performance, but has kept the results confidential. Finally Mexico is publishing the results of

¹ See "Our Call to Action: The Citizens Budget for FY 2001," Montgomery County School System, Rockville Maryland, December 1999 and also <http://www.mcps.k12.md.us>. Documents on the web site include "Annual Report to Parents, Staff and the Community," "Raising the Bar, and Closing the Gap, Because All Children Matter," and "Teacher Evaluation System."

² See <http://www.mineduc.cl/simce>.

³ See <http://www.educacao.sp.gov.br>.

some of its research. A recent document identified 1,000 high performing schools located in poor neighborhoods.⁴ Using these data, research teams undertook qualitative analysis of the qualities of these schools. They found that these high performing “value-added” schools had dynamic leaders, consistency and continuity, clear goals, and strong school community relationships—results very much like those of similar studies. The Mexican authorities now have the beginnings of a roadmap to increase the quality of education in their country.

Some teachers, and their representatives—teachers’ unions—have been questioning the new process of data-driven accountability and transparency. Some may argue that the intimate and personal relationship between the student and teacher is compromised, and that teachers no longer have an opportunity to be creative, since they are tied to external examinations. They argue that tests and data can only measure a small element of the educational process. The fact is that teachers are losing the free hand they once had in the classroom. But a data-driven, transparent education system, with the right goals and measurements, can only help them in their task. At the same time, to work, the new accountability requires school principals with wide reaching skills, able to motivate teachers, understand figures, interact with parents, identify goals, and remain committed over a long time. The demands are so great that some studies in the USA report problems of “principal burnout.”⁵ For the new accountability to be successful, school systems throughout the world will need to develop coherent programs, which develop, nurture and adequately remunerate a new generation of school principals.

⁴ See Secretaría de Educación Pública de México, “Distribución de los planteles públicos de educación primaria y secundaria, según el nivel de aciertos de sus alumnos en los exámenes de carrera magisterial” and also <http://www.sep.gob.mx>.

⁵ See the Harvard Education Letter, November-December 2000 and online at <http://www.edletter.org>.