

SCHOOLING IS ubiquitous in our modern world. On a given workday, more people in the world participate in schooling than in any other formal institution, including health care, the military, and even the entire labor market. In most places in the world, just about every child from the age of five or six until well into the teens daily attends a school, and an increasing proportion of older youths and adults take part in some type of postsecondary education. The teachers and administrators operating the world's schools make up a significant portion of the labor force in each nation, and the parents of all those children are frequently drawn into helping with and monitoring their child's schooling as a daily routine.

Although on a political level schooling is a national enterprise, the essential educational activities of curricula, teaching, and administration are shaped not just by local and national influences but increasingly by transnational forces. This is becoming more obvious in all categories of nations. Examples abound. U.S. educators now routinely talk of "benchmarking" their schools' performance against international standards; some school districts routinely compare their students' achievement against students in Singapore (a top mathematics and science performer). Singapore educators suggest that their high-performing educational system has room to improve. South Korean administrators worry that gender differences in learning mathematics among their students are large by international comparison. Kuwaiti educational administrators wonder why their schools are so vulnerable compared to schooling in other nations. A number of Asian nations are concerned about a runaway trend in the use of private tutoring and home influences fairness in schooling. There is a heated debate in Germany over relative differences in international competitiveness of schooling among individual provinces. Icelanders ask why their science scores are not high internationally. Politicians in Chile see relatively low scores and ponder what that means for the international competitiveness of the country's future workers. And so on, through all nations. Everyone is concerned about

cator, and the consumer of schooling in modern society.

Schooling is shaped and changed by a world culture of values about education that sometimes mixes with (and other times flattens) national cultures on a massive scale, producing remarkable similarities in what is taught and learned in school all around the world. Yet there are striking differences from nation to nation, and from place to place within nations. These tales help us understand how the institution of schooling is evolving.

On the basis of a four-year project of analyses of unique international information on schooling and its consequences over a selection of the world's nations, we examine important trends in mass education and speculate on where these trends might take this institution in the future. Looking at the workings of the institution, we try to see how it actually functions in many places today and how it might work tomorrow. Our tales are written without complicated statistical jargon, but each is based on a published empirical statistical journal article. In each chapter, a summary of the article is the point of departure for an essay on the implications of a particular trend for mass schooling in the world now and in the future. There are, of course, many other trends that we do not comment on here, but the ones chosen are particularly informative about the institutional workings of schooling.

The stories are about how children are schooled, how parents participate in schooling, and how national governments shape education in their societies. All suggest some ways in which schooling might morph itself in the near future to something that would have been difficult to predict just a few decades ago. The information we use focuses on teaching and learning in mathematics and science in the fourth, eighth, and twelfth grades, but the trends we identify apply to elementary and secondary schooling in general.

Although the tales are comparative and discuss trends cross-nationally, in each we draw some attention to the U.S. case for several reasons. First, we can argue that the United States, for better or for worse, is often the benchmark in the institutional development of schooling. Second, a large share of the readers of this book are familiar with the U.S. school system, and we can serve them as a reference point regarding the cross-national trends. Third, like a number of other nations, the United States has just gone through a particularly active period of education debate and reform that in large

internationally mediocre American school system; and recent large-scale international comparisons and ideas about reforming the American mathematics and science curricula along international standards. In each case, the international comparison of schooling in the United States with other nations motivated a major change in the American school system. Also in each case, there were a number of misuses of international data and exaggerations in the images about American schooling from overly simplified comparisons with schooling in selected nations. Nevertheless, international comparisons and their influence are not going away and may very well intensify their influence on the policy landscape in the near future.

People in charge of running and improving schools need to know there is much to learn about schools in general by comparing what goes on in them across nations, well beyond the usual sound bite. We hope our studies provide an alternative to what has become an annoying and common public reference by educational policy makers to “international findings.” These sound bites about what is happening in other nations are frequently simplistic and often ill informed, yet they can have major consequences on how a nation thinks about the health of its school system.

One important consequence of all this internationalization of education and its successes and failures is that there is now more sophisticated information on schools, teachers, students, and their learning than ever before. Here we use the Third International Mathematics and Science Study (TIMSS), which in 1994 collected a massive amount of data in schools from forty-one nations across three grades (fourth, eighth, and twelfth), and in some analyses we also use data from the TIMSS-99, an identical study conducted in 1999; together these studies furnish data on some fifty nations.

This type of information has been available for the past thirty years, but there have never been international data sets as extensive as the two TIMSS studies. Probably without knowing TIMSS was the source, just about everyone who reads a newspaper or watches TV news has at least heard something about its basic findings about American mathematics and science performance relative to other nations. But TIMSS has much more to tell.

Since this book is not about basic facts and figures of various national school systems, a statistical profile of education worldwide would serve

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