

Comprehensive Education Outside the United States

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THE PERCEPTION THAT THE U.S. is behind other industrialized nations when it comes to K–12 education stems in large part from U.S. performance on international standardized comparison tests including the Progress in International Reading Study (PIRLS), Trends in International Mathematics and Science Study (TIMSS), and Program for International Student Assessment (PISA). Recently this impression is buttressed by discussion around the reauthorization of the No Child Left Behind Act (NCLB), by the policy debates of the 2008 presidential candidates, and by President Obama’s education agenda.¹

U.S. performance under PIRLS and TIMSS² has not always been low.³ However, it has rarely been strong and never very strong, especially in the upper grades. Comparative performance of U.S. eighth graders in science has been consistently lower than their elementary school peers’ results as shown by the TIMSS’ performance in science in 1995, 1999, 2003 and 2007. Results have been even lower for math, where the U.S. has scored at or around the TIMSS average score, on TIMSS 1995, 1999, 2003, and 2007. International comparisons carried out under the auspices of IEA since 1960 to the early 1990s and known as FIMS, FISS, SISS⁴ were even more disappointing.

The most discouraging results have been in the three rounds of PISA, where U.S. performance has been consistently low and at or below the Organisation for Economic Cooperation and Development (OECD) mean score, and well below the highest level of attainment of high performers. However, it is important to be cautious when construing the results from international comparisons. There are methodological issues that should be considered.⁵

In 2006, U.S. students performed below the OECD’s average value for PISA Science and Mathematics, placing the U.S. 25th in science and 26th in mathematics among the 30 OECD’s members.⁶ In contrast with IEA’s international studies where students are sampled at a given grade level, PISA’s sample is based on students’

age, i.e. from 15 to 16 years old⁷. For the U.S. this means that most of the sampled students are enrolled in grades 10 and 11, whereas Finnish students sampled for PISA are all enrolled in grade 9 or below (lower secondary school). This did not bode well for the U.S. in that Finnish students were outperforming them even with a year less schooling. An additional blow came with the publication of an U.S. government-sponsored report highlighting PISA as a very rigorous and more difficult test than NAEP and TIMSS-R.⁸

As summarized by Gene V. Glass, the call for reform is not new:

Reforming the public elementary and secondary schools of America is not a new endeavor. Those who come late to an interest in the education of children may think that serious discussion of reforming schools began with No Child Left Behind, or at least not before *A Nation at Risk* in 1983. In fact, debates about reforming schools are as old as public education itself.⁹

Significant attempts to overhaul the U.S. education system have been unsuccessful, as a U.S. government study acknowledges:

Federal policy has had a significant impact on America’s schools and children ever since ESEA was enacted in 1965. Yet, despite hundreds of programs and hundreds of billions of dollars invested during the last generation, American students still lag behind many of their fellow foreign students and the academic achievement gap in this country between rich and poor, white and minority students, remains wide.¹⁰

The modern age of school reform in the U.S. began as a response to *A Nation at Risk* report in 1983. The Reagan administration reacted with the promise of less government intervention and a school education reform agenda aligned to U.S. economic growth and competitiveness. During the 1990s, an assessment and accountability policy based on results was bolstered by the George H. W. Bush administration. In 1991,

the National Council on Education Standards and Testing was established, and together with the National Education Goals Panel, created in 1990, helped to initiate a shift toward standards, testing, and accountability. The Clinton administration continued and broadened the trend and scope of standards and accountability epitomized in the Goals 2000 National Educate America Act. Then, in 2002, George W. Bush's No Child Left Behind Act became law. NCLB is based on four principles:

(...) stronger accountability for results; greater flexibility for states, school districts and schools in the use of federal funds; more choices for parents of children from disadvantaged backgrounds; and an emphasis on teaching methods that have been demonstrated to work.¹¹

Disappointments and frustrations have been heightened over the years by the fact that U.S. per student expenditure remains very high. A recent OECD comparative analysis of education expenditures shows that the U.S. ranks first among the OECD and partner countries in expenditures per student at the pre-school level; third at the primary or elementary level; second at the lower-secondary level and fourth at the upper secondary level.¹² This denotes the U.S. productivity level under PISA as one of the lowest in the world as shown in Graph 1.¹³

One way of reading Graph 1 is by asking how much does a PISA point cost. For the U.S. the cost is \$80.6¹⁵ compared to an OECD average of \$60.1. Of course, one might not care about the cost of learning if performance was high or very high. But if cost is high and performance is low, there are points of concern. This seems to be,

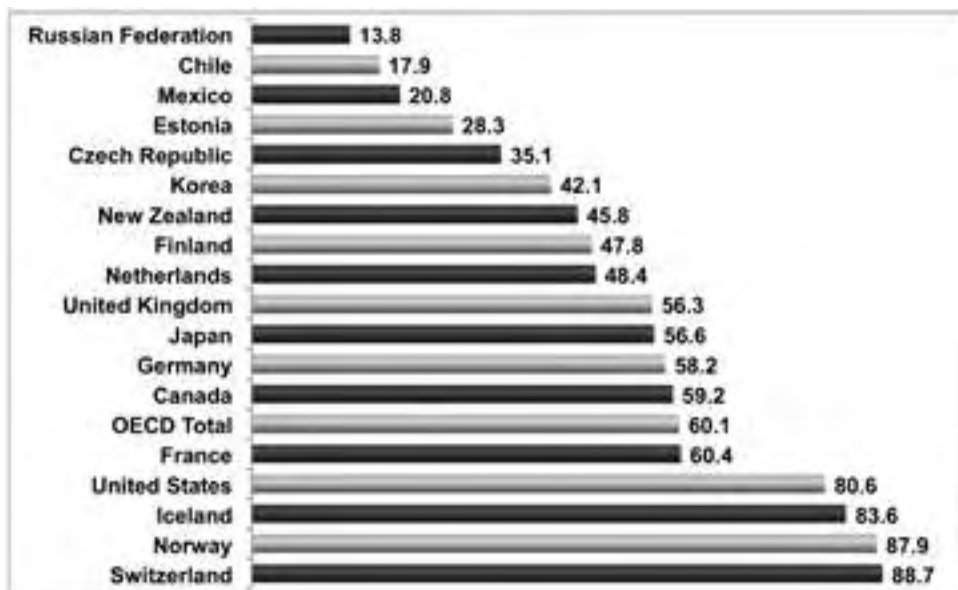
unfortunately, the situation for the U.S. On the other end of the spectrum, countries like Korea, New Zealand, Finland, and the Netherlands show relatively high performance marks and very high performance levels. This is, indeed, a very good public policy outcome for these nations.

Coupled with the factors mentioned above, there is also the challenge of comparing the U.S. education system to that of other nations. The U.S. has, probably, the most complex education system in the world. It is very large, decentralized, and asymmetrically fragmented¹⁶, with education authority split among many different players, including the federal government, state governments, and local school boards under varying leadership including commissioners, chancellors, secretaries or even mayors. There is no simple way to frame a unit of analysis to compare the U.S. to other education systems, particularly when we try to infer about processes or to explain about successes and failures based on a cause-effect relationship.¹⁷ Nevertheless, the complexity of making comparisons must not prevent us from tapping this valuable resource. One way of doing this is to look at documents such as national standards and assessments in high performing education systems to see whether the content of education they deliver differs from that offered in lower performing nations, such as the United States.

Five years ago, I commenced an ambitious education project. I packed my things and traveled around the world in search of the education Shangri-la. In the end, instead of explaining the intricacies of an ideal model, I ended up explaining why there is no such ideal. Nevertheless, it was a valuable experience, as I learned

Graph 1.

Student performance and cumulative expenditures per student/ PISA 2006 score points¹⁴



much about global education and cultural differences.

High performing nations, such as Finland, have a comprehensive approach to educational content but lack a system of national assessments attached to accountability. In no high performing nation that I examined¹⁸ are schools closed, restructured, or are teachers fired or removed based on students' performance on universal standardized assessments. I also found that in countries with tracking systems, such as Singapore, Germany, and Switzerland, the curriculum for the non-academic track is still very broad and comprehensive.

I also learned that nearly all high performing countries such as Finland, New Zealand, Ireland, England, Scotland, Hong Kong, and Singapore do have national secondary school (high school) exit or qualification exams, wherein students show their aptitude in both

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required and self-selected subjects. In my discussions with teachers, I found that they seemed to be more concerned with teaching and learning rather than their student's performance on standardized national benchmarks. While student performance on tests is important for these high performing schools, it is not a fixation, and performance is measured in numerous ways.

In sharp contrast, the U.S., as shown by the history of education reform, is obsessed with assessments and accountability. The New York City and Washington, D.C. school districts are prominent examples of this trend. While the U.S. focuses excessively on test results and accountability, other high performing countries exhibit more devotion to issues including comprehensive, knowledge-based curriculum; teaching strategies; learning environments; professional development; exit or qualification exams; and opportunities for teacher collaboration.

Again, the complexity of the U.S. school education system does not make it easy to compare directly what is taught in the U.S. to the core curriculums of high performance nations. Finland, Hong Kong, Korea, Sweden, Scotland, New Zealand, Singapore, and Flanders have national curriculums or frameworks. This is true for secondary schools and for primary schools as reported by PIRLS: "Nearly all countries have a national curriculum that covers reading instruction at the fourth grade."¹⁹ The exceptions in the PIRLS sample are Canada, Germany, and the United States.

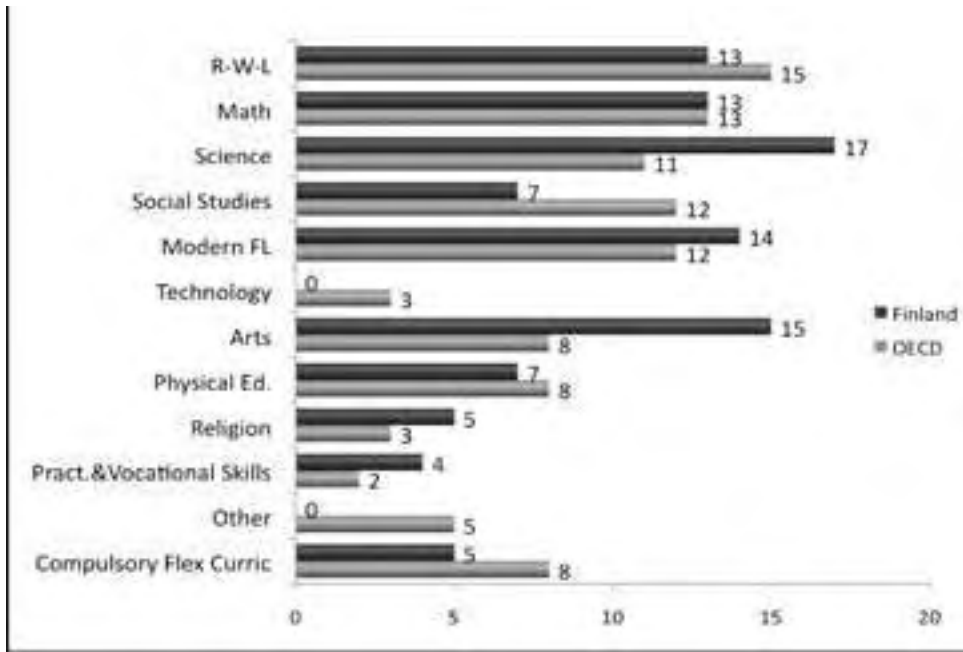
Although decentralized systems like Australia, Switzerland, and Canada do not have, by definition, a national curriculum, they have made, and are still making efforts through intergovernmental organizations composed of representatives from state or provincial governments to agree on basic policy issues, including the creation of some core or central curriculum recommendations. The Swiss cantons are organized, for educational purposes, under the Swiss Conference of Cantonal Ministers of Education (EDK)²⁰. Some of the understandings of EDK are legally binding and are known as "concordants."

Similarly, Canada has a confederation of education ministers known as Council of Ministers of Education Canada (CMEC),²¹ which brings together the 10 provinces and three territories on common issues of education policy, initiatives and goals. The Australians have the Ministerial Council on Education, Employment, Training and Youth Affairs (MCEETYA).²² MCEETYA is an intergovernmental body comprised of the six states and two territories of Australia, plus the government of Australia and the New Zealand's ministers of Education and Social Development. Pacific Island (Papua New Guinea, Norfolk Island and East Timor) ministers of education and labor take part in MCEETYA as observers.

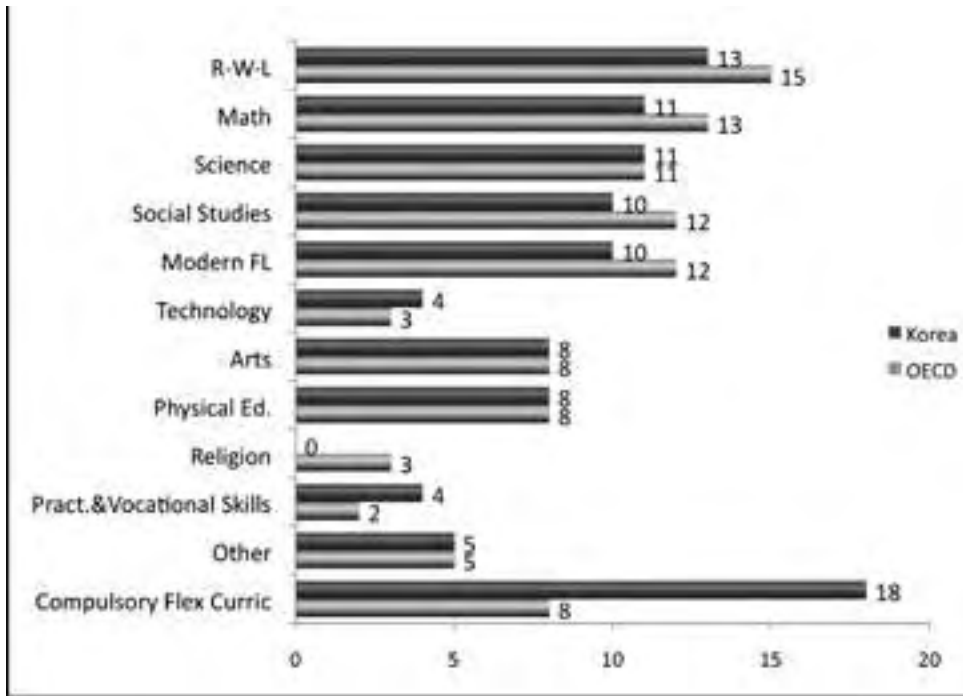
Because the U.S. does not have a centralized system, it is challenging to compare and analyze common policies, curriculum, and goals. When one looks at the comparative statistics compiled by international organizations or associations such as the OECD or the IEA, data from the U.S. is missing in many indicators of curriculum comparisons. And while policymakers everywhere are preoccupied by the menaces of a competitive and global world, this is especially true in the United States. For decades, education systems, authorities, and analysts have warned about the poor performance of students and school systems in relation to specific outcomes and challenges. The U.S. response has been a compulsory assessment in numeracy and literacy. But such a focus has not proven to be enough. It appears that many high performing countries take a more balanced and comprehensive curriculum approach to learning than does the U.S.

Look at Finland's compulsory distribution of instructional time per subject. Graph 2 shows the number of hours of compulsory instruction divided by subjects. Note that Finland tends to have a more balanced and comprehensive and less skewed curriculum than the OECD's average. In numeracy and literacy, Finland has a slightly less concentrated curriculum for children aged 12–14 than the OECD's average of 26 percent versus 28 percent. Conversely, Finland emphasizes science, art, and vocational or practical subjects more than the OECD's average (Graph 2).

Technology, per se, is not taught in Finland, and arts education (divided into music, visual arts and crafts in



Graph 2.
Instruction time per subject as a percentage of total compulsory instruction time for 12 to 14 years old (2006): Finland and OECD



Graph 3.
Instruction time per subject as a percentage of total compulsory instruction time for 12 to 14 year-olds (2006): Korea and OECD

the comprehensive schools) is given almost twice the level of importance as in the OECD average (15 per cent versus 8 per cent). In contrast, social studies comprises only a 7 percent share in Finland compared to a 12 percent share at the OECD's level. Practical and vocational training is given twice as many hours of instruction in Finland as those devoted in the theoretical OECD's average. The U.S. data is missing in the OECD's calculations, so a direct comparison with a U.S. curriculum is not possible.

Korea, another very high performing country, shows an even more balanced curriculum, seeming to be less concentrated in numeracy and literacy (24 percent) than Finland at 26 percent. Further, the time allocation for subjects, as seen in Graph 3, is also more balanced across such subjects as reading, mathematics, science, social

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studies, modern languages, arts and physical education.

There are some hints about the U.S. curricular concentration in surveys to principals conducted under IEA's PIRLS and TIMSS. Looking at PIRLS for instance, there seems to be an over-concentration in numeracy and literacy in U.S. schools for fourth graders. The total average number of implemented instructional hours overall in the U.S. is 30 hours per week for fourth graders compared to 23 hours for the PIRLS' international average. The U.S. is surpassed only by Indonesia with 31 hours. Of this total, 60 percent is devoted to language and reading in the U.S. compared to 50 percent for the international average. Furthermore, 68 percent of U.S. fourth graders are reportedly taught reading more than six hours per week. Hong Kong, the second highest performing country in PIRLS 2006, reported spending only five percent of instructional time on reading.

In mathematics, the story is similar for fourth graders. The total average number of intended instructional hours in mathematics per week in the U.S. is 32 compared to 23 hours for the TIMSS' international average. The U.S. is tied only by Algeria. Again, Hong Kong one of the highest performing countries on TIMSS, devotes only 23 intended hours to mathematics, leaving more room for other subject areas. This also appears to be true with Finland, as shown by the OECD's above-mentioned comparisons.

For eighth graders the concentration story irons out to 29 hours per week for the U.S. vis-à-vis 27 hours at the international average level. The three highest performing countries in math for eighth graders, Chinese Taipei,

Korea, and Singapore, show a lower number of intended mathematics hours, i.e., 25, 26, and 23 respectively. Much more information about curriculums, time allocation, and timetables is needed. In the end what actually happens inside the classroom, i.e., quality of teaching and school ethos, is much more important than the number of hours students spend in class or in school. But, with other factors remaining constant, high performing countries seem to devote significant effort and resources to maintaining a broad, comprehensive core curriculum.

The comparisons above serve as an indicator of a broad common comprehensive curriculum for OECD's and IEA's countries and more conspicuously for Finland in PISA, Hong Kong and Russian Federation for PIRLS, and Chinese Taipei, Hong Kong, Korea and Singapore for TIMSS in math. I am not implying at all that the allocation of hours is the ultimate explanation for education success. I am only suggesting that these high performing countries do seem to favor comprehensive core curriculums.

As I mentioned before, it is important to be cautious when making these comparisons; there are methodological questions that can be raised when comparing education systems. There are even questions that have been raised about comparisons based on the national standards and tests. In any case, data that comes from a variety of sources and methodologies are only inputs and up for interpretation by policy makers who draw upon them to make decisions. It is difficult to paint a precise international comparative picture when we are all forced to use thick, broad brushes.

If we continue to grow and reform our education systems based on the idea that we must beat competitors in order to survive in a more complex, global and critical-thinking world, we are educating our children based on wrong assumptions. Can we all succeed in a global world? Not if we design our education system based purely on competition. For every winner there are many losers. The Finnish, Swedish, Chinese, Singaporeans, Koreans, Australians, New Zealanders, English, Scottish, Chilean and Mexicans, etc., are all trying to do the same: beat competitors.

There has been an epidemic traveling the world to favor standards and accountability over ensuring all children receive a comprehensive, content-rich curriculum. Some systems have resisted (Finland and Scotland for instance) others have yielded (Australia, England and the U.S., Chile, and Mexico). And yet, my understanding is that accountability attached to national standardized assessments has not really spread around the world despite the OECD's view.²³ High performing countries rely more on students' learning from a networked system of broad and coherent core and co-core curricular schemes plus national exit or qualification exams than on a narrow view of education where the measure of outcomes is

based only on standardized, high stakes tests.

The best strategy under competitive conditions is to concentrate on a broad, learning-centered curriculum based on a core comprehensive knowledge-based content where the only aim is to develop the full potential of students, rather than to appease the aims of politicians. As per the evidence used above, and as suggested by the curriculum and assessment excerpts included in this report, high performing education systems, and the schools within them, are taking a broad holistic approach to education. U.S. federal, state, and local education policymakers can learn much from the practices of the high-performing countries included in this report.