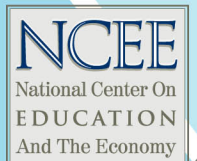


9 Building Blocks

For a World-Class State Education System



CENTER ON INTERNATIONAL
EDUCATION BENCHMARKING
LEARNING FROM THE WORLD'S HIGH PERFORMING EDUCATION SYSTEMS



9 Building Blocks

For a World-Class State Education System

1. Provide strong supports for children and their families before students arrive at school



- Countries in which young children who come to school healthy, eager to learn and ready to profit from the instruction tend to be countries in which those children do well in school.
- Some countries have extensive government supports for pre-natal care, mother and child nutrition, universal health care, high quality child care for working mothers, high quality preschools and family allowances for families with young children.
- Others have little or no government programs of this sort, but do have cultures that work to provide many of the same kinds of supports.
- In countries that have neither of these, especially those that are experiencing large and growing disparities in income, many children come to school with disadvantages that are very difficult to overcome, even in the best of circumstances.

2. Provide more resources for at-risk students than for others

- Top-performing countries have made explicit decisions to create systems in which all students are educated to standards formerly reserved only for their elites.
- Policy makers in these countries know that, if less advantaged students are going to achieve at league-leading levels, they will have to have access to more resources than students who come to school with greater advantages.
- Most of these top-performing countries are providing more teachers to harder-to-educate students. Some are even providing strong incentives to their best teachers to work in classes and schools serving students from low-income and minority families.



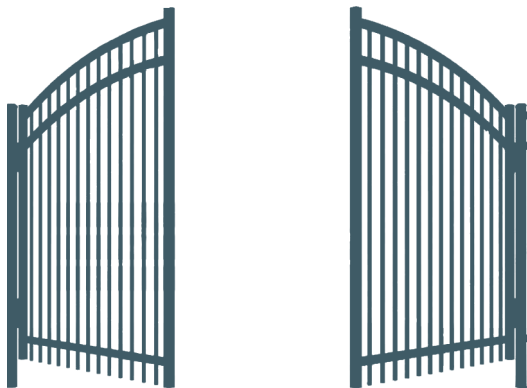
3. Develop world-class, highly coherent instructional systems

- Top-performing systems typically have well-developed, highly coherent and very demanding instructional systems for all students that incorporate student performance standards, curriculum and assessments, as well as the use of instructional methods appropriate to the goals and standards of instruction.
- Top performing countries are constantly benchmarking their standards, curricula and assessments to other leading countries.
- The standards might be expressed as stand-alone statements about what students should know and be able to do or might be incorporated in syllabi for courses, which would include all the courses in the core curriculum as well as the native language, (almost always) English, sometimes other foreign languages, mathematics, the sciences, technology, their own history, world history, often geography, music and the arts, and physical education.
- In top- performing countries, the standards for these courses typically emphasize the acquisition of:
 - A wide range of complex knowledge
 - Deep conceptual understanding of the subjects studied
 - The ability to write well
 - The ability to synthesize material from many disciplines to address real-world problems
 - Strong analytical capacity and creative and innovative capacity
- Ministry officials develop strong curriculum frameworks designed to specify in some detail what topics are to be taught at which grade levels, subject-by-subject and grade-by-grade.
- Though schools are expected to create their own lesson plans, the state provides extensive guidance and curriculum support for teachers. Textbooks follow that guidance closely.
- Top-performing systems typically develop one to three summative assessments, taken by all students, requiring students to respond with essays, or, in the case of mathematics, by showing how they went about solving multi-step problems.
- No top-performing country relies primarily on computer scored, multiple-choice tests, because they do not believe such tests can adequately test for acquisition of the high-level cognitive skills they are aiming for.
- Summative assessments are typically used to hold students, not teachers, accountable for their performance.



- The options available to students as they proceed with their education or enter the workplace are significantly affected by their performance on these exams.
- Scores by school are widely published.
- The content of the entire examination is typically made public after the exam is given. Also, examples of high scoring student work are made public, in order to provide guidance to teachers and students in the future as to what kind of student work will win high scores.
- In some countries, low scores for schools result in visits from expert principals and teachers who develop recommendations to improve the performance of the school.

4. Create clear gateways for students through the system, set to global standards, with no dead ends



- Instead of issuing a high school diploma—essentially a certificate of attendance—top-performing countries issue qualifications showing what high school courses the holder has taken and the grades earned in those courses.
 - Because the state has specified the content of the courses and because the exams are developed and administered by the state, not the school, everyone knows just what the student has accomplished.
- Students are highly motivated to take the necessary courses and do well in them, whether they want to be a brain surgeon or an auto mechanic.
 - Countries with well-developed qualifications systems have arranged them into pathways such that an individual can always go back later and pick up a qualification that he or she missed earlier.
 - Successful systems have no dead ends; all paths can be linked up to others so that one can always go further in their education without having to start at the beginning.
 - The qualification one receives at the end of a course of study is the ticket of admission to the next stage of one's education.

5. Assure an abundant supply of highly qualified teachers

- The top-performing countries believe it will be impossible to deliver to all their students the kind and quality of education formerly reserved for their elites unless they are able to put a very highly qualified teacher in front of all their students.
- Top-performing countries recruit their teachers from the top ranks of high school graduating classes, most in the top third to top quarter. Finland recruits from the top 10 percent, South Korea from the top 5 percent.
- Teacher training programs are highly selective, with admission rates in many top-performing countries ranging from 10-15 percent.
- Admissions screens are rigorous and comprehensive and take into account:
 - Academic qualifications (class rank, grades, scores on admissions exams)
 - Reliability to students (sometimes through observation)
 - Passion for teaching (through interviews with expert educators)
- Top performers develop very rigorous requirements for mastery of the subjects the prospective teacher will teach.
- At least a year is given over to mastery of the craft of teaching, either during teacher preparation or the first year of employment as a new teacher serves as an apprentice of a Master Teacher.
- The top-performing systems do not allow, much less encourage, “alternative routes” into teaching that bypass these rigorous requirements.
- Teachers in preparation programs are required to study research methods, enabling them to determine the effectiveness of their own work developing and implementing improved curriculum, instruction and assessment in their schools.
- Instruction for these prospective teachers is emphasized in both diagnosis and prescription as a key part of the teacher preparation curriculum, to identify why students are not learning and developing strategies to address the causes.
- Teacher education is housed in top research universities, typically producing a surplus of first-rate teachers.
- Beginning teacher compensation is set at about the same level as compensation for beginning engineers.
- Very aggressive career ladders are created that increase compensation, responsibility, authority and autonomy, and higher status as teachers progress through their careers.



6. Redesign schools to be places in which teachers will be treated as professionals, with incentives and support to continuously improve their professional practice and the performance of their students



- Improving the competence of currently serving teachers is a priority as depending solely on newly trained teachers results delays improvement.
 - Career ladders are created that develop the skills of the current teacher work force and establish a culture and organization that supports continuous improvement of the school as a whole.
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- The career ladders have four levels, each level of which is broken down into four or more steps. All except those at the top of the career ladders have teacher mentors.
 - Teachers at the upper levels of the teacher career ladder:
 - Serve as mentors to new teachers and others lower on the ladder
 - Identify areas in which the curriculum and instruction methods need to be improved
 - Lead teams in the process of researching and then developing new lessons, materials and formative assessment techniques, demonstrating new lessons, revising them and implementing them.
 - Teachers meet once a week by grade and by subject to participate in all these processes. The research, development, trial, revision and evaluation process is very disciplined and highly collegial.
 - Professional development is an integral part, indeed a result, of how the work of the school gets done. There is wide access to workshops for professional teachers, but this is not a workshop model of professional development.
 - The integrity of the whole system depends on the creation of powerful career ladders, which in effect define what it means to have a career in teaching and create an environment in which teachers come to be treated as leaders and as professionals.
 - Staffing ratios are similar to those in U.S. schools; increasing the size of classes provides time needed for teachers to work with one another.
 - Use teaching methods that harness the power of large class sizes to encourage students' deep understanding of class content.
 - Staffing ratios are modestly higher in schools serving students from disadvantaged backgrounds and slightly lower in schools serving others.

7. Create an effective system of career and technical education and training

- The key to a healthy economy, lower wealth inequity and unemployment, and strong business competitiveness is a healthy, productive, effective system of vocational education and training (VET).
- VET systems risk collapse when enrollment is below 40 percent of students, as at that point VET becomes a last resort for students who have no other option.
- Successful VET systems are No-Dead-End System. Offer viable routes for students enrolled in career and technical education and training programs to acquire further education and training for work in the professions and in senior management.
- Quality training is offered that embeds modern technical skills on state-of-the-art equipment at the hands of teachers and mentors who are deeply versed in the most up-to-date equipment and practices.
- VET student's study in settings that have all the attributes of real industrial settings, or by offering students an opportunity to study in real industrial settings, or both.
- Skill standards that reflect the state of the art in the industries being trained for and a high level of investment in the education and training of the students,
- The demand of industry for skilled workers in the industries served by the system is matched with the supply being produced.
- Industry is encouraged to involve itself in the provision of the up-to-date equipment and training staff needed to make the system work and sufficient demand for the newly trained students to ensure a smooth transition from schooling and training to employment.



8. Create a leadership development system that develops leaders at all levels to manage such systems effectively



- Successful systems identify and develop leaders who can:
 - Get broad agreement on demanding goals for both the students and the staff;
 - Build the career ladders;
 - Recruit a highly capable staff; and finally,
 - Create a culture in the school founded on the belief that effort determines student achievement and it is the obligation of schools to get all students to high levels of performance, no matter what.
- Systems seek out and develop school leaders with a combination of strategic skills, self-knowledge, patience, drive, management skill, ethical roots, moral qualities and knowledge based on what is known world-wide about the management of professionals.

9. Institute a governance system that has the authority and legitimacy to develop coherent, powerful policies and is capable of implementing them at scale

- To develop a modern, high performance education system with high and internationally competitive levels of student performance and high levels of equity at reasonable cost depends on having an institution comparable to a typical ministry of education in a high-performing country.
- In top performing systems, either at the state or national level, there is a place where the buck stops that has responsibility for all policymaking or management functions directly related to education and can be held accountable for the design and functioning of the system as a whole.
- In effective systems, education professionals in the ministry are responsible for planning and proposing policies that can then be debated by the responsible elected officials, and are then responsible for carrying out the decisions their legislatures make.

