How the world’s most improved school systems keep getting better

How does a system with poor performance become good? How does a good system become great?

- What interventions move a system from poor to fair to good to great to excellent?
- Which aspects of the school system improvement journey are universal and which are context-specific?
- How does a system ignite and sustain system improvement?

SOURCE: McKinsey & Company
We identified 20 improved systems across the world from which to learn

Each of these systems has achieved an increase in student achievement that is:

- **Significant**
- **Widespread**
- **Sustained**

**Sustained improvers**
1. Aspire Public Schools, USA
2. Boston/Mass, USA
3. England
4. Hong Kong
5. Latvia
6. Lithuania
7. Long Beach, CA, USA
8. Ontario, Canada
9. Poland
10. Saxony, Germany
11. Singapore
12. Slovenia
13. South Korea

**Promising starts**
14. Armenia
15. Chile
16. Ghana
17. Jordan
18. Madhya Pradesh, India
19. Minas Gerais, Brazil
20. Western Cape, South Africa

SOURCE: McKinsey & Company
Our sample represents a continuum of improvement from poor to fair to good to great

Systems
- Singapore
- Hong Kong
- South Korea
- Ontario, Canada
- Saxony, Germany
- England
- Latvia
- Lithuania
- Slovenia
- Poland
- Long Beach, CA, USA
- Boston/MA, USA
- Armenia
- Jordan
- Western Cape, SA
- Chile
- Ghana

Systems with Special Assumptions
- Aspire Public Schools (USA)
- Minas Gerais, Brazil
- Madhya Pradesh, India

SOURCE: TIMSS, PISA, NAEP, national and provincial assessments; McKinsey & Company interventions database
Systems with similar spend have widely ranging levels of performance

Universal scale score (maximum, median, minimum), in PISA 2000 units

SOURCE: World Bank EdStats; IMF; UNESCO; PISA, TIMSS, PIRLS, McKinsey & Company
Lesson I

A system can make significant gains from wherever it starts – and these gains can be achieved in as short as six years.

SOURCE: McKinsey & Company
Systems at all performance levels can improve outcomes substantially in as short as six years

PISA scores, average¹; 2000–06

<table>
<thead>
<tr>
<th>Initial Performance</th>
<th>Chile</th>
<th>Latvia</th>
<th>Saxony</th>
<th>Hong Kong</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poor</td>
<td>412</td>
<td>460</td>
<td>497</td>
<td>533</td>
</tr>
<tr>
<td>Fair</td>
<td>440</td>
<td>485</td>
<td>525</td>
<td>542</td>
</tr>
<tr>
<td>Good</td>
<td>460</td>
<td>485</td>
<td>525</td>
<td>533</td>
</tr>
<tr>
<td>Great</td>
<td>440</td>
<td>485</td>
<td>525</td>
<td>542</td>
</tr>
</tbody>
</table>

¹ Average across math, science, and reading PISA scores
² One school-year-equivalent (SYE) corresponds to 38 points on the PISA scale

SOURCE: PISA, McKinsey & Company interventions database
Singapore narrowed the achievement gap between its ethnic groups

% of pupils who sat the Primary School Leaving Exam and achieved eligibility for secondary school by ethnicity

SOURCE: Singapore Ministry of Education
Western Cape narrowed the literacy inequality gap in four years: among 3rd graders, the bottom three quintiles have caught up to the second richest

<table>
<thead>
<tr>
<th>Pass rates, grade 3</th>
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<th>Pass rates, grade 3</th>
<th>Pass rates, grade 3</th>
<th>Pass rates, grade 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lowest wealth</td>
<td>2nd lowest wealth</td>
<td>3rd lowest wealth</td>
<td>2nd highest wealth</td>
<td>Highest wealth</td>
</tr>
<tr>
<td>Percent</td>
<td>Percent</td>
<td>Percent</td>
<td>Percent</td>
<td>Percent</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year</th>
<th>Lowest wealth</th>
<th>2nd lowest wealth</th>
<th>3rd lowest wealth</th>
<th>2nd highest wealth</th>
<th>Highest wealth</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004</td>
<td>17</td>
<td>23</td>
<td>30</td>
<td>45</td>
<td>80</td>
</tr>
<tr>
<td>2006</td>
<td>24</td>
<td>33</td>
<td>36</td>
<td>54</td>
<td>88</td>
</tr>
<tr>
<td>2008</td>
<td>42</td>
<td>42</td>
<td>43</td>
<td>44</td>
<td>75</td>
</tr>
</tbody>
</table>

1 Interviewees in WCED attributed some of the drop in the two highest wealth quintiles to shifts upwards in wealth categories of learners from 2006

SOURCE: WCED Learner Assessment Studies, Final Reports, 2002-2008
Lesson II

Each stage of the school system improvement journey is associated with a unique set of interventions, from poor to fair to good to great to excellent.

SOURCE: McKinsey & Company
Our research finds that a unique ‘intervention cluster’ exists for each improvement journey.

<table>
<thead>
<tr>
<th>Journey</th>
<th>Poor to fair</th>
<th>Fair to good</th>
<th>Good to great</th>
<th>Great to excellent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intervention cluster theme</td>
<td>Achieving the basics of literacy and numeracy</td>
<td>Getting the foundations in place</td>
<td>Shaping the professional</td>
<td>Improving through peers and innovation</td>
</tr>
</tbody>
</table>

**Common across all journeys**

- **Six interventions:**
  1. Revising curriculum and standards
  2. Reviewing remunerations structure
  3. Building technical skills
  4. Assessing student
  5. Utilizing student learning data
  6. Revising policy or education laws

SOURCE: McKinsey & Company
Poor to Fair example: Following implementation of the literacy reform in 2006, Minas Gerais improved literacy levels and rose to the top of Brazil’s national assessment.

Percentage of 8 year olds reading at recommended level

<table>
<thead>
<tr>
<th>Year</th>
<th>2006</th>
<th>2008</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>%</td>
<td>49</td>
<td>73</td>
<td>86</td>
</tr>
</tbody>
</table>

Percentage of 8 year olds reading at poor levels

<table>
<thead>
<tr>
<th>Year</th>
<th>2006</th>
<th>2008</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>%</td>
<td>31</td>
<td>14</td>
<td>6</td>
</tr>
</tbody>
</table>

From 2007 to 2009, Minas Gerais also rose from 5th place to 1st place among Brazilian states on Brazil’s national (IDEB) assessments.

1 Poor performance level is defined by assessment as students are only able to read words.

SOURCE: Brazil PROALFA reading assessment
Poor to fair journeys focus on achieving basic literacy and numeracy

<table>
<thead>
<tr>
<th>Theme</th>
<th>Intervention types</th>
</tr>
</thead>
</table>
| Providing scaffolding and motivation for low skill teachers and principals | - Scripted lessons  
- Instructional time on task  
- Coaching on curriculum  
- School visits by center  
- Incentives for high performance |
| Getting all schools to minimum quality standard | - Targets, data, and assessments  
- Infrastructure  
- Textbooks and learning resources  
- Supporting low performing schools |
| Getting students in seats | - Expand seats  
- Fulfill students’ basic needs |

**Systems included**
- Chile (2001–05)  
- Madhya Pradesh (2006+)  
- Minas Gerais (2003+)  
- Western Cape (2003+)  

SOURCE: McKinsey & Company
Good to Great example: Long Beach math scores on the California STAR examinations improved significantly between 2004–09

% of students proficient and advanced

SOURCE: Long Beach Unified School District
Good to great journeys emphasize shaping the professional

<table>
<thead>
<tr>
<th>Theme</th>
<th>Intervention types</th>
</tr>
</thead>
</table>
| Raising calibre of entering teachers and principals | ▪ Recruiting  
▪ Preparation and induction                      |
| Raising calibre of existing teachers and principals | ▪ Professional development  
▪ Coaching on practice  
▪ Career pathways                                   |
| School-based decision-making               | ▪ Self-evaluation  
▪ Curriculum flexibility                           |
| Systems included                           | Aspire (2003+)  
Boston (2006+)  
Hong Kong (1989–99)  
Long Beach (2005+)  
Latvia (2001+)  
Lithuania (2001+)  
Poland (2003+)  
Saxony (2000–05)  
Singapore (1988–98)  
Slovenia (2006+)  
South Korea (1983–98) |
The engine of sustained and continuous improvement is collaborative professional practice

Collaborative practice is school professionals working with each other to improve their practice

- **Study groups, professional learning communities using research and data**
- **Teachers visiting each other's class rooms**
- **Teachers doing demonstration lessons together and joint-lesson-planning**
- **Teachers mentoring and coaching each other and working with specialist coaches and principals on instructional practice**
- **Schools, subject groups, or system developing a consensus model of good practice**
- **Teacher and leaders reviewing student performance data together and jointly developing solutions**

**Examples**

- **Boston, MA, USA**
- **Ontario, Canada**
- **Aspire Public Schools, USA**
- **Hong Kong**

SOURCE: system interviews, McKinsey analysis
The core of collaborative practice is *intentional instruction*.

Teachers build a shared range of effective instructional strategies.

Teachers analyse student data to understand needs.

Teacher assesses impact on student learning with data.

Teachers schedule common time to work together to plan lessons and student support.

Teacher uses the planned lesson and strategies.

“Were are precise but not prescriptive…we are trying to cultivate *intentional teaching*, where a teacher can tell you why she is using a particular strategy for a particular student need.”

– Student Achievement Officer

SOURCE: Interviews
The balance of capability-building and accountability shifts as systems improve their performance

**Capability building vs. formal accountability**
Share of professional development & training interventions relative to accountability interventions

Teachers directly receive 56% of all support interventions and only 3% of all accountability interventions

Percentage of interventions in reform area directed at agent among all improved systems

<table>
<thead>
<tr>
<th>Accountability</th>
<th>Support</th>
</tr>
</thead>
<tbody>
<tr>
<td>Centre / Overall system</td>
<td>Centre / Overall system</td>
</tr>
<tr>
<td>• Create targets</td>
<td>• External partnerships</td>
</tr>
<tr>
<td>• Tracking and/or reporting school performance</td>
<td>• Advisory bodies</td>
</tr>
<tr>
<td>Schools / Principals</td>
<td>Schools / Principals</td>
</tr>
<tr>
<td>• School inspections &amp; principal assessment</td>
<td>• School coaches</td>
</tr>
<tr>
<td>Teachers</td>
<td>Teachers</td>
</tr>
<tr>
<td>• Teacher appraisal or proficiency assessment</td>
<td>• Principal professional development</td>
</tr>
<tr>
<td>Students</td>
<td>Students</td>
</tr>
<tr>
<td>• Student assessments</td>
<td>• Teacher professional development</td>
</tr>
<tr>
<td></td>
<td>• Teaching materials</td>
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<tr>
<td></td>
<td>• Textbooks</td>
</tr>
<tr>
<td></td>
<td>• Meeting student basic needs (e.g. nutrition, health)</td>
</tr>
</tbody>
</table>

1 Accountability: N = 101; Support: N = 180

Lesson III

A system’s context might not determine *what* needs to be done, but it does determine *how* it is done

SOURCE: McKinsey & Company
One of the most important contextual decisions we encountered is when to mandate or persuade change.

<table>
<thead>
<tr>
<th>Data</th>
<th>Persuade</th>
<th>Mandate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Singapore</td>
<td>“We have never used targets. Focusing on targets can lead to shortcuts in teaching practice”</td>
<td>“When there is time pressure to deliver results, and the stakeholder environment is fractious, sometimes agreeing to a number is the best way to get people focused”</td>
</tr>
<tr>
<td>Hong Kong</td>
<td>“No good for our students could ever come from making school data public and embarrassing our educators”</td>
<td>Singapore</td>
</tr>
<tr>
<td>Professional development expectations</td>
<td>Poland</td>
<td>Lithuania</td>
</tr>
<tr>
<td></td>
<td>“There is no shame in transparency…we are here for the kids”</td>
<td></td>
</tr>
</tbody>
</table>
Our research highlights nine lessons about school system improvement

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>A system can make significant gains from wherever it starts – and these gains can be achieved in as short as six years.</td>
</tr>
<tr>
<td>2</td>
<td>Each stage of the school system improvement journey is associated with a unique set of interventions.</td>
</tr>
<tr>
<td>3</td>
<td>While ‘structure’ and ‘resource’ interventions dominate the debate, ‘process’ deserves as much attention.</td>
</tr>
<tr>
<td>4</td>
<td>A system’s context might not determine what needs to be done, but it does determine how it is done.</td>
</tr>
<tr>
<td>5</td>
<td>Leadership continuity is essential – the median tenure of new strategic leaders is six years and that of new political leaders is seven years.</td>
</tr>
<tr>
<td>6</td>
<td>Prescribe adequacy and unleash greatness, with collaborative practice as the engine of continuous improvement.</td>
</tr>
<tr>
<td>7</td>
<td>Six interventions occur equally at every performance stage for all systems but manifest differently.</td>
</tr>
<tr>
<td>8</td>
<td>Ignition occurs due to socio-economic crisis, a critical report about system performance, or the installation of a new political or strategic leader.</td>
</tr>
<tr>
<td>9</td>
<td>The middle layer plays a crucial role in delivering and sustaining improvement – compliance, communication, collaboration, and insulation.</td>
</tr>
</tbody>
</table>

SOURCE: McKinsey & Company
Appendix
To compare our sample systems to each other, we created a Universal Scale of performance

Multiple assessments...

...normalised...

...onto a Universal Scale

- 25 unique assessments
  - Test
  - Subject
  - Year
  - Level

- Normalised to a single scale¹
- New units are equivalent to 2000 PISA
- Tiered into Poor, Fair, Good, Great, and Excellent performance

PISA
TIMSS
NAEP
Other local assessments

1 Via method of Erik Hanushek & Ludger Woessmann
2 School Year Equivalent (equal to 38 points on the PISA 2000 scale)

SOURCE: TIMSS; PISA; PIRLS; Hanushek et al; team analysis