



Summarize and compare the evidence of the effectiveness of interventions that address your school or district's needs.

**Find what works for...**

**Topic/Outcome Domains**

(Click to expand)

- Children and Youth with Disabilities (12)
- Dropout Prevention (19)
- Early Childhood Education (26)
- English Language Learners (11)
- Literacy (70)
- Math (36)
- Science (4)
- Student Behavior (18)

Select a topic/outcome to see more filters.

*Find what works for...*

- reducing dropout rates for high school seniors,
- children with special needs,
- improving reading achievement for English language learners,
- increasing math achievement,

... or select a topic or outcome and then customize your search.

Intervention	Topic	Improvement Index	Effect Size	Cost
Fast Forward Language	English Language Learners	12	0.29	Read
Instructional Organization and Literacy Log	English Language Learners	13	0.29	Read
Fast Forward	English Language Learners	13	0.29	Read
New Teaching and Response Group	English Language Learners	17	0.29	Read
Instructional Organization Program for English Language Learners	English Language Learners	17	0.29	Read
Strategic Organization Program for Reading and Comprehension (SOP)	English Language Learners	11	0.29	Read

View glossary and extended help.

Only interventions with research evidence that meets WWC standards are included in the summary results. To view a list of all interventions considered by the WWC, including interventions for which the WWC found no evidence that met standards, search all WWC publications. To find studies of interventions by author name, search the reviewed studies.

<http://ies.ed.gov/ncee/wwc/>

Okay, now go to the links below at the US Education What Works Clearinghouse and skim/read the summaries of a few reviews they did to get a sense of how this works-

Follow the link below here and you will notice the Effect Sizes discusses in the article at the left- You will see and read that they mention a .29 Effect Size- >

Now go to the ESD STATS Excel spreadsheet and make sure that Effect Size is chosen and then next to it enter the number .29 BAM- Updates everything interpreting it for you....

Read each of the four sections and it tells you what kind of impact could occur with the student implementing the program based on research already done in the field

<http://ies.ed.gov/ncee/wwc/SingleStudyReview.aspx?sid=10006>

Okay, just for fun again-

Go here to Career Academies and look to the right-

Notice Improvement Index numbers-

Take one and then go to the Excel spreadsheet and change the Effect Size to Improvement index- For example Progressing in School +13

Now be sure and change the effect Size to Improvement Index and then enter the 13 and hit enter and watch what it does/says.... Translator/interpreter....

<http://ies.ed.gov/ncee/wwc/interventionreport.aspx?sid=70>

Now here is Reading Recovery I mentioned for Grade 1-

It has a Reading Fluency improvement for Grade 1 of +46 and Reading Achievement of a +32

Put those in the ESD STATS translator and see what they say about what to expect as far as gains for students....

<http://ies.ed.gov/ncee/wwc/interventionreport.aspx?sid=420>

**Table 1**

<b>Influence</b>	<b>Effect Size</b>	<b>Source of Influence</b>
<b>Feedback</b> (instructional & assessment)	<b>1.13</b>	<b>Teacher</b>
Students' prior cognitive ability	1.04	Student
<b>Instructional quality</b>	<b>1.00</b>	<b>Teacher</b>
<b>Direct instruction</b>	<b>0.82</b>	<b>Teacher</b>
<b>Remediation feedback</b>	<b>0.65</b>	<b>Teacher</b>
Students' disposition to learn	0.61	Student
<b>Class environment</b>	<b>0.56</b>	<b>Teacher</b>
<b>Challenge of Goals</b>	<b>0.52</b>	<b>Teacher</b>
<b>Peer tutoring</b>	<b>0.50</b>	<b>Teacher</b>
<b>Mastery learning</b>	<b>0.50</b>	<b>Teacher</b>
Parent involvement	0.46	Home
<b>Homework</b>	<b>0.43</b>	<b>Teacher</b>
<b>Teacher Style</b>	<b>0.42</b>	<b>Teacher</b>
<b>Questioning</b>	<b>0.41</b>	<b>Teacher</b>
Peer effects	0.38	Peers
<b>Advance organisers</b>	<b>0.37</b>	<b>Teacher</b>
<b>Simulation &amp; games</b>	<b>0.34</b>	<b>Teacher</b>
Computer-assisted instruction	0.31	Teacher
<b>Testing</b>	<b>0.30</b>	<b>Teacher</b>
<b>Instructional media</b>	<b>0.30</b>	<b>Teacher</b>
Aims & policy of the school	0.24	School
Affective attributes of students	0.24	Student
Physical attributes of students	0.21	Student
<b>Programmed instruction</b>	<b>0.18</b>	<b>Teacher</b>
Ability groupings	0.18	School
<b>Audio-visual aids</b>	<b>0.16</b>	<b>Teacher</b>
<b>Individualisation</b>	<b>0.14</b>	<b>Teacher</b>
Finances/money	0.12	School
<b>Behavioural objectives</b>	<b>0.12</b>	<b>Teacher</b>
<b>Team teaching</b>	<b>0.06</b>	<b>Teacher</b>
Physical attributes (e.g., class size)	-0.05	School
Television	-0.12	Home
Retention	-0.15	School

## TEACHERS MAKE A DIFFERENCE: THE CENTRAL ROLE OF TEACHERS IN TOP-PERFORMING SCHOOLS

This article centres around three publications on the importance of teachers. The first is the collation of research carried out by McKinsey and Company between May 2006 and March 2007 and looks at the qualities of the best-performing schools and systems internationally; the second is from a Sydney Morning Herald report which outlines recommendations for a 'teacher revolution' in Australia; and the third, by New Zealand researcher John Hattie, presents what the research evidence suggests makes excellent teaching.

In its analysis of what best-performing schools do that keeps them and their systems 'on top', as measured by their achievements as defined by the OECD's Programme for International Student Assessment (PISA), McKinsey researchers studied 25 of the world's school systems, including ten of the top performers<sup>1</sup>. In addition to analysing their achievements in the PISA, the researchers also completed a literature survey and interviewed more than one hundred experts, policy makers and practitioners.

The researchers came to three conclusions. These were that in the top school systems what mattered was:

1. getting the right people to become teachers;
2. developing them into effective instructors; and
3. ensuring that the system is able to deliver the best possible instruction to each child.

The report begins with an overview of reform efforts in a number of OECD countries; reforms which are described as 'well thought-out and far-reaching in their objectives' but 'perplexing failures'. In particular, in England despite 50 years of reform, a 1997 report (National Foundation for Education Research) concludes there has been no measurable improvement in standards of literacy or numeracy in English primary schools; in the US the charter school movement, despite some significant improvements in the best schools, has not produced, in the aggregate, the results that significantly outperform non-charter schools; and in NZ, where there has been a strong movement to decentralisation (based on credible research), a review five years after implementation showed that up to one third of schools were failing.

Perhaps most interesting of all, has been the one policy that all but one OECD school system has pursued – the reduction of class sizes. Again, this has not, except at the very early grades, had much impact on student outcomes. Of 112 studies into the impact of reduced class sizes on student outcomes, only 9 found any positive results and these were not substantial. In the other 103 studies there was no significant relationship or a significant *negative* relationship. Furthermore, every single study showed that within the range of class sizes typical in OECD countries, 'variations in teacher quality completely dominate any effect of reduced class size'.

So what happens in the high performing schools and systems to make a difference?

The report nominates three fundamental similarities in those systems where students consistently perform better than their peers in international testing. These are:

- They get the right people to become teachers (the quality of the education system cannot exceed the quality of its teachers).
- They develop these people into effective instructors (the only way to improve outcomes is to improve instruction).
- They put in place systems and targeted support to ensure that every child is able to benefit from excellent instruction (the only way for the system to reach the highest performance is to raise the standard of every student).

The top-performing systems recruit their teachers from the top third of each cohort graduate from their school system; the top 5 percent in South Korea, the top 10 percent in Finland and the top 30 percent in Singapore and Hong Kong. Conversely, lower-performing school systems, recruit from the bottom one-third.

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<sup>1</sup> It should be noted that Australia was included in top ten best performers.

The top-performing systems also limit the number of teacher training places available so that supply matches demand. In this way they can control the quality of entrants as well as the quantity and ensure there is not an oversupply of graduates who struggle to find jobs, thus making the course less appealing to more able students. Making teacher training selective makes it attractive to high performers, and automatically lifts the status of the profession. This was identified as an important factor in attracting talented applicants to teaching. In all school systems powerful feedback loops were associated with the status of teaching. Once teaching became a high-status profession, more talented people became teachers, thus lifting the status further. Where the profession had low status, it attracted less-talented applicants, pushing the status down further.

Attracting top graduates into teaching was a matter of a deliberate policy to lift the status of the teaching profession by top-performing systems. Common strategies included, using marketing and recruitment techniques from business to increase the supply of quality applicants, removing obstacles to entry into the profession by creating alternative pathways for non-education graduates, developing processes to remove low-performing teachers from the classroom, developing effective mechanisms for selecting teachers for teacher training (see Case Study), and paying good starting salaries.

The second characteristic common to the top-performing systems was that they recognise the only way to improve outcomes is to improve instruction. These systems have understood which interventions are effective in achieving improved instruction – coaching classroom practice, moving teacher training to the classroom, developing stronger school leaders, and enabling teachers to learn from each other – and have found ways to deliver these interventions throughout the system.

They have begun by being relentless in their focus on improving the quality of instruction, have identified what great instruction looks like and have developed and implemented successful strategies to improve classroom instruction. More importantly, they have placed the focus on individual teachers 'getting it right' by ensuring three things happen:

- Individual teachers become aware of specific weaknesses in their own practice, including building an awareness of the mindset underlying what they do.
- Individual teachers gain understanding of specific best practices. In general, this can only be achieved through the demonstration of such practices in an authentic setting.
- Individual teachers are motivated to make the necessary improvements. This means more than changing material incentives; it occurs when teachers have high expectations, a shared sense of purpose and, above all, 'a collective belief in their common ability to make a difference to the education of the children they serve'.

The McKinsey research identified four approaches high-performing school systems used to help teachers improve instruction, including (1) building practical skills during the initial training, (2) placing coaches in schools to support teachers, (3) selecting and developing effective instructional leaders and (4) enabling teachers to learn from each other.

The final common characteristic of top-performing systems is that they intervene at the level of the individual student by quickly identifying whenever a student is starting to fall behind and intervening immediately to improve performance. All of the high performing systems studied set clear and high expectations of their students, they placed a strong focus on literacy and numeracy and they monitored and measured outcomes using school review inspections, system-wide assessments and school exit examinations.

In an article in the *Sydney Morning Herald*, December 2007, Professor Brian Caldwell, former Dean of Education at the University of Melbourne, cites the McKinsey report as 'currently the most widely read study worldwide of what should lie at the heart of an education revolution'.

Caldwell makes the point that 'the McKinsey report contained seriously disturbing evidence that Australia had nearly trebled its per student expenditure on school education since the early 1970s but average attainment by students has not increased.' Furthermore, no other country has such a poor investment record, with the gap between our lowest and highest performing students among the widest in the OECD. In addition, up to half of all Australian teachers plan to leave the profession within ten years. Finally, most of our government schools and many non-government schools are 'in run-down condition or are educationally obsolete'.

Caldwell proposes, that in order to transform schools in Australia:

- every teacher entering the profession should have a Master's degree – as in top-performing Finland;
- there should be incentives to attract outstanding graduate practitioners from fields other than education in disciplines of high priority in schools;
- at least 20 days per annum of professional development should be required of all teachers;
- there should be significant increases in starting salaries and upper-level salaries for teachers, as well as principals and other school leaders;
- allowances of up to 25 percent of salary should be available to ensure top-flight professionals take up appointments in remote or difficult-to staff schools;
- there should be financial and non-financial rewards to acknowledge high-performing teachers and principals;
- targets should be set to rebuild or refurbish schools judged to be run-down and educationally obsolete;
- there should be personalised learning plans for every student in every school;
- targets should be set for all primary and secondary schools to have a partnership with business that operates in an area of school specialisation, or in other ways that make good educational sense, within five years; and
- targets should be set to reduce the amount of system-wide testing of all students and release of results (Caldwell notes that Finland, the highest-performing nation on international tests, does not have national testing).

While the McKinsey report and the Cardwell article largely focus on the central role of the teacher in improving school performance, the final article by John Hattie (2003) targets the individual teacher and what qualities the best teachers possess.

Hattie points out that when we examine all of the variances that may make a difference to student achievement – the students, the home, schools, principals, peers and teachers – the greatest source of variance *that can make the difference* is the teacher. He argues, therefore, that 'we need to ensure that this greatest influence is optimised to have powerful and sensationally positive effects on the learner'.

Using the synthesis of over 500, 000 studies of the effects of the above variances, Hattie (1992, 1993) identified those attributes of teachers that have a marked and meaningful effect on student learning – and those that don't (see Table 1).

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As a result of his analysis, Hattie argues two things: (1) that the location of evidence that makes a difference to teaching and learning must be located at the 'teacher' level and (2) we should implement those effects that enhance achievement by more than the average for educational research (0.40 effect-sizes).

He goes further, to argue that while most teachers cause little damage – either maintaining the status quo in growth of student achievement, or providing positive improvement, many teachers display excellence. These are the teachers, he says, we 'need to identify, esteem, and grow'. And, these are the teachers whose qualities we need to study, in order to identify what makes the difference between 'experienced' teachers and 'excellent' teachers.

The research findings from each of the three articles, which are the subject of this paper, clearly identify the vital role of teachers in ensuring best performance in schools and systems. While educators have always known 'it's the teacher who makes the difference', McKinsey and Company, Caldwell and Hattie provide a framework on which to achieve real improvement in outcomes for all students. As the McKinsey article concludes:

*...ultimately, for achieving real improvement in outcomes (nothing is) as important to the school system and its leaders as three guiding principles:*

- (1) *the quality of an education system cannot exceed the quality of its teachers,*
- (2) *the only way to improve outcomes is to improve instruction and,*
- (3) *achieving universally high outcomes is only possible by putting in place mechanisms to ensure that schools deliver high-quality instruction to every child.*

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## CASE STUDY

### Finland

Finland consistently scores top in the world in international tests of mathematics, science, reading and problem solving. Following are some of the central characteristics of the Finnish system identified in the McKinsey and Company report as contributing to its position as one of the top-performing, if not the top, school systems in the world:

#### Getting the right people to become teachers

- Finland recruits its teachers from the top 10 percent of graduates.
- Finland has introduced a first-round in its teacher selection process which consists of a multiple-choice examination designed to test literacy, numeracy and problem-solving skills. The top-scoring candidates then go through to the second round in the selection procedure which is run by individual universities. Applicants are tested for their communication skills, willingness to learn, academic ability and motivation for teaching. Upon graduation from teacher training, there are further tests by the individual schools to which prospective teachers apply to teach.
- Finland limits the number of places on teaching training so that the supply of teachers matches demand.
- Finland, like Australia, frontloads its compensation by paying good starting salaries, but relative to other OECD countries, subsequent increases in salary are small with a difference between the average starting salary and the maximum teacher salary of only 18 percent. Teachers who are committed to teaching stay, despite the salary; others who are less committed leave as their compensation decreases relative to peers.
- Teaching is seen as a high status profession in the eyes of the general public in Finland.

#### Developing teachers into effective instructors

- Finnish teachers work together, plan their lessons jointly, observe each others' lessons and help each other improve.
- Most faculties of education manage their own training schools: these are fully operational schools where students carry out their initial teaching practice. The organisational structure helps to ensure that the content of teacher training is tightly linked to the actual practice within schools, and provides additional opportunities for the faculty to incorporate observation and practice gained in the classroom into their teacher training courses.
- Teachers are given one afternoon each week for joint planning and curriculum development. The fact that the national curriculum specifies only general outcome goals, rather than paths by which to attain them, means that teachers in schools have to work together to develop the curriculum and the instructional strategies tailored to the needs of their school.
- Schools are encouraged to work together and share materials so that best practice spreads quickly throughout the system.

#### Ensuring that the system is able to deliver the best possible instruction to each child

- Finland has arguably one of the least prescriptive curricula of all systems. It emphasises the need for teachers to adapt learning to the specific context in which they find themselves and recognises that children learn at different rates, while at the same time setting high expectations for what should ultimately be achieved.
- Finland has largely dispensed with national examinations, conducting only periodic assessments of student performance, the results of which stay confidential.
- Finnish children start preschool at age six and school at age seven and in primary school they study for just four to five hours per day. They, in fact, receive fewer hours of instruction between the ages of seven and 14 than any other children in an OECD country; yet by age 15, Finnish children top the world in the OECD's assessments of reading, mathematics, science and problem-solving.
- Finland has a highly effective system of interventions to support individual students. Each school employs a number of specialist teachers; an average of one special education teacher for every seven class teachers.
- Special education teachers provide support one-on-one or in small-groups of students who are at risk of falling behind. They intervene to support 30 percent of all students in a school in any given year.
- Special education has been de-stigmatised in Finland because of the high volume of students who take part and because of the practice in which the best students are also sent, on occasion, for additional instruction; this makes clear that intervention is not necessarily a sign of under-performance.
- Special education teachers receive an extra year of teacher training and are paid slightly higher salaries.
- Through intervening quickly at the level of individual students, Finland prevents early failure compounding into long-term failure, and thus maintains strong and consistently equitable outcomes for all students.

(Source: McKinsey & Company (2007), *How the World's Best-performing School Systems Come Out on Top*, [http://www.mckinsey.com/client-service/social-sector/resources/pdf/Worlds\\_School\\_Systems\\_Final.pdf](http://www.mckinsey.com/client-service/social-sector/resources/pdf/Worlds_School_Systems_Final.pdf))