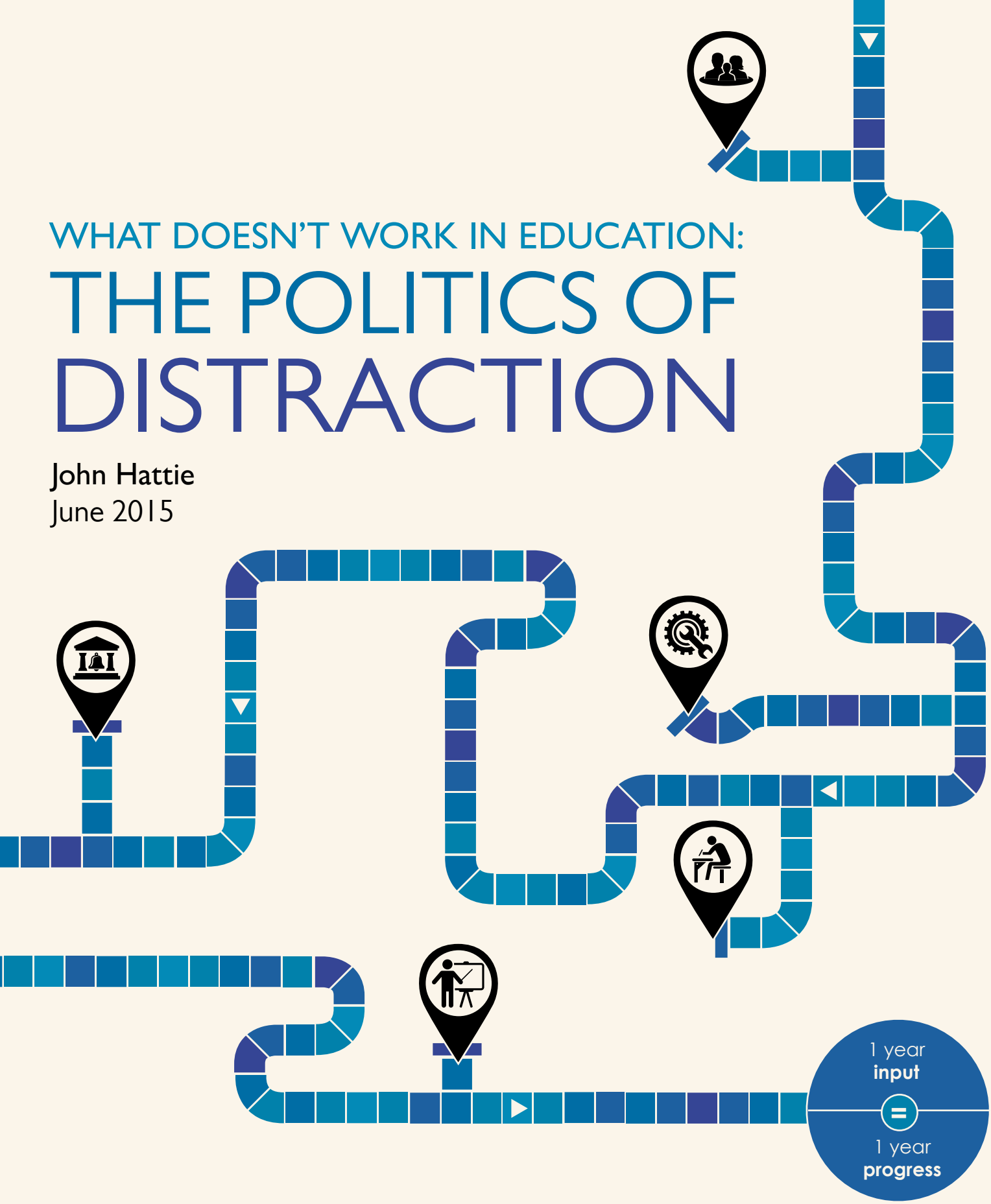
WHAT DOESN'T WORK IN EDUCATION:

THE POLITICS OF DISTRACTION

John Hattie

June 2015



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What Doesn't Work in Education: The Politics of Distraction

John Hattie

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CREATIVE COMMONS

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This updated version of the report was produced in January 2016 and reflects corrections to Figure 4.1.

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FOREWORD

Few, if any, academics have made as great a contribution to our collective knowledge base about what works in education as John Hattie. His painstaking meta-analysis of literally tens of thousands of academic studies on education interventions resulted in his now justly famous book, *Visible Learning*, which he has since followed up with others.

While many of the academic papers he has reviewed show a particular education intervention to have a positive effect (as John memorably puts it, 'perhaps all you need to enhance learning is a pulse!'), he has made the case that unless an intervention has an effect size of 0.4 or greater (the average expected growth effect size for one year of progress in school), it would be unwise to base decision-making on it. In other words, John asks for more impact for our effort, and he has identified the relatively few ideas that pass this benchmark at a classroom level.

In this new paper, the first of two, he addresses the question of what this search for more impact means, and he does two things powerfully. The first is to make the case that the minimum goal of education, when rightly expressed, should be for all students to make at least one year's progress for one year's input, no matter where they start. The second is to argue that at the level of public policy there are many ideas, many of them popular and plausible, which do not pass the 0.4 test. These comprise what he calls the politics of distraction.

What does this mean for practical action? What should we do? This is something that John considers in a second paper that focuses on the notion of collaborative expertise. I hope that the important messages in this companion paper will be heard loud and clear.

To my mind, there is also a more general question of how practical action – across all fields – should respond to an existing evidence base. This is something that John and I have debated in public and private, and our views are not identical.

Having played a significant role in policy-making in England, and having advised government on education policy from time to time, I have felt and experienced some of the dilemmas John describes. I learnt that purely evidence-based policy is neither desirable nor possible. This is not an argument for ignoring the evidence. On the contrary, every decision should take available evidence into account. There are three problems with a purely evidence-based approach though. One is that the evidence is not always clear-cut and is often the subject of vigorous debate – which is healthy, but it doesn't make it any easier to reach conclusions.

Another is that in a fast-moving world, policy-makers often have to innovate, and,

by definition, there will not be conclusive evidence either way on an innovation. For example, while I agree that promoting choice can be a distraction, I believe that genuine choice will become a powerful lever for getting us closer to John's goal of every student making a year's worth of progress for a year's worth of input. (For example, another recent entry into the Pearson thought leadership catalogue by Tooley and Longfield [2015], makes the case that choice over schools really does matter in the developing world.)

The third is that ideology is not always bad: we elect governments partly on the policies they set out in a campaign but partly also on the broad view of the world they espouse. For example, it is perfectly plausible to be for or against choice on ideological grounds (i.e. to believe that choice is or is not a good thing in itself). For these reasons, I would argue for evidence-informed policy rather than evidence-based policy.

As with every piece in Pearson's thought-leadership series, John's papers represent an important, independent voice in our global conversation on education. Using the evidence that he has amassed over the course of his incredibly generative career, John has produced a provocative synthesis that will challenge thinking along all points of the political spectrum. Although John's papers won't answer every question (and, indeed, they will raise quite a few more), they do provide an unmatched summary of the baseline knowledge every education policy-maker should have. And, if these papers become a starting point from which policy-makers build their knowledge about what does and does not work, the result is certain to be policy that is better informed and more effective.

As it happens, the papers are also an excellent read.

Michael Barber

INTRODUCTION

In this report, the first of two linked papers on what doesn't work in education, and then on what does, I describe the confused jargon and narratives that distract us from the most ambitious and vital aim of schooling: for every student to gain at least a year's growth for a year's input.

I then outline the policy responses commonly used by systems aspiring to be in the world's 'top five' for education. I argue that these responses are 'fixes' that fail to address the important questions, and so are unlikely to make a difference, despite costing many billions of dollars. Such responses are part of what I call the 'politics of distraction'.

In a subsequent paper, I will make the case for countries moving to systems that value and develop teacher expertise. This might be termed the politics of collaborative expertise, or, more simply, what works best. My hope is that these two papers spark a debate about the need, and then the actions required, to realign the narrative around schooling.

1. WASTED GOOD INTENTIONS

In my travels I have met with many political leaders and department officials and continue to be impressed with their commitment to improving their education systems, their desire to make them world-leading and their dedication to improving outcomes for students. But they struggle to have the hard, somewhat uncomfortable discussions about the variability in the effectiveness of what happens at the classroom level and instead focus on policies which are politically attractive but which have been shown to have little effect on improving student learning – structural 'fixes' such as more money, different forms of schooling, different types of buildings, performance pay for teachers, setting standards, privileging a few subjects, more assessments, more technology, lower class size, greater school choice, or longer school days, to list just a few.

These are typically expensive proposals, which the evidence shows have minimal effect on improving student learning. These distract us from implementing policies that can make a significant difference, defined here as interventions with an effect size of at least 0.4, the average expected effect size for one year of progress in school. This commitment to the commonly heard list of fixes is part of the politics of distraction.

2. THE FUNDAMENTAL PROBLEM

To date, too much discussion is focused on between-school differences when the greatest issue is the differences within schools. The variance between schools, based on the 2009 PISA results for reading across all OECD countries, is 36 per cent, and variance within schools is 64 per cent. For Australia, it is 18 and 72 per cent; Canada, 20 and 80 per cent; Finland, 8 and 92 per cent; New Zealand, 16 and 84 per cent; the UK, 24 and 76 per cent; Sweden, 9 and 91 per cent; and the USA, 30 and 70 per cent.[1]

There are many causes of this variance within schools, but one of the more important (and one that we have some influence to reduce) is the variability in the effectiveness of teachers. This does not mean that all teachers are bad; it means that there is much variability among teachers in the effect that they have on student learning. Nearly all teachers, school leaders, students and parents know about this variability – although it is too often absent in discussions about policy, teaching and schools. Such discussion means asking some very hard questions; hence, the politics of distraction are often invoked to avoid asking them. We can only find a solution when we recognise within-schools differences as the fundamental problem. The evidence from many decades of research on what really enhances student learning reflects this and points to solutions such as improving teacher and school leader expertise, ensuring that teachers and school leaders work together on common understandings about progress and high expectations for the impact of their teaching, school leaders who focus on developing collective expertise among their teachers, systems that have robust discussions to decide the purpose and desired outcomes of their schools and students who want to learn the skills they need to become their own teachers.

These policies, less frequently heard, could be termed 'the politics of collaborative expertise', because it is only by resourcing and privileging collaborative expertise that a nation can have any chance of becoming one of the top education systems in the world. Recognising, valuing and enhancing the teachers and school leaders with high levels of expertise makes the difference. It's what works best.

Many systems are imbued with high levels of such expertise, but it is all at risk if the politics of distraction command the limelight.

1 Although, note the between-school variance is higher in developed countries that make the most use of grouping students by academic achievement at the school level: Germany is 59 and 41 per cent, and Chile 51 and 49 per cent.

3. GETTING THE STRATEGY RIGHT

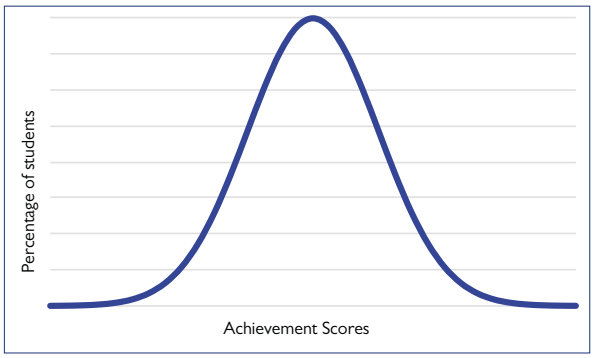
All students deserve at least a year's progress for a year's input, no matter where they start. But accepting this means that we stop using terms like achievement standards, tails, gaps and flatlining. We may feel comfortable using them, but they confuse and distract.

ACHIEVEMENT STANDARDS

We love to talk about standards, and, in particular, high standards. There are many methods of standard-setting, but, whatever the method, it is usually the case that they are set somewhat just above the average – not so high that too many fail and not so low that too many pass. Now, consider most achievement subjects in schools (such as English or mathematics). If, for any one country, you draw a graph of the distribution of the students, you get a bell-shaped curve – commonly known as the 'normal curve' (see Fig. 3.1).

When we put these two observations together (setting the standard just above the average and the bell-shaped normal distribution of achievement), it is expected that about 50–65 per cent of the students will be at or above the standard. It is highly unlikely that 100 per cent, or even 80 per cent, of students will get above the standard (and, if they do, the claims will be that the standard was set too low). Thus, in any education system with standards that are set 'just above the average', it is highly unlikely that all students will gain the standard, as it is not possible for all students to be 'above the average'.

Figure 3.1 A normal distribution curve.



Hence, the politics of standards and high achievement have an in-built failure system that results in many believing that, despite increased resources, the schools and teachers have still not delivered. It will never be the case that all students will exceed most achievement standards, and it is not the responsibility of schools to make all students an Albert Einstein or a Marie Curie. The aim of schooling should not be to get 100 per cent of students above the standard (unless the standards are set very low), although this is what the current politics demands of our schools.

THE 'TAIL' AND 'NARROWING THE GAP'

It's often said that there is a 'tail' of underachieving students, and that there are many more people than expected near the bottom of the achievement distribution. So millions of dollars are spent, even though there are few instances

of such investment reducing the problem – it can't make much difference because there will always be a tail.

Now, a long 'tail' means that countries can have greater spread or dispersion and that there are fewer students in the middle; thus there are flatter bell curves – there is a greater distance between the top group and the bottom group of students. Yes, this is a problem, but the solution is related more to getting all students to improve – especially those just below and just above the average – and not being overly obsessed with those at the bottom, or assuming there are many more than expected 'at the bottom in the tail'. (This is not advocating that inequality of outcomes should be ignored – to the contrary: a focus on inequality is the essence of excellent policy in education.)

For example, consider the distribution of Aboriginal compared to non-Aboriginal reading achievement in Australia (Fig. 3.2). The curves show the distribution of scores on the national assessment reading task, NAPLAN. Where is the tail? Where is the gap? In fact, there are two tails (one below the average of what Aboriginal students achieve, and one above the same average), and there are three gaps.

Lower-achieving Aboriginal students achieve less than non-Aboriginal students similarly placed on the distribution curve; Aboriginal students who achieve around the average for indigenous students achieve less than average-achieving students in the non-Aboriginal group; and higher-achieving Aboriginal students achieve less than non-Aboriginal students similarly placed.

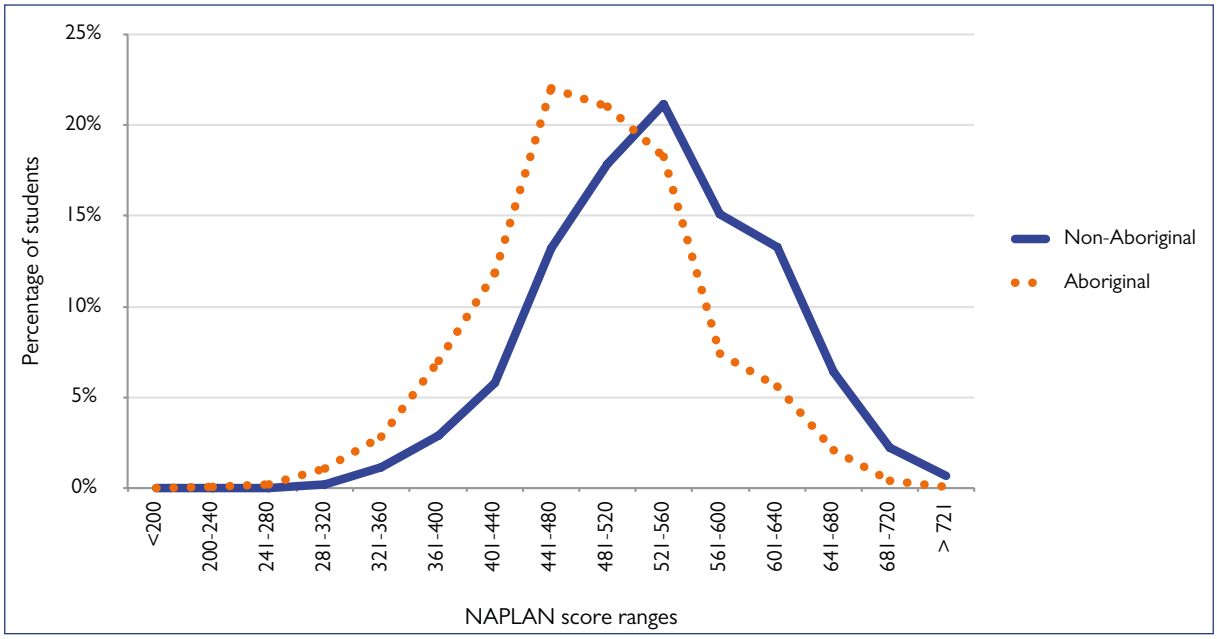
Indeed, there are as many Aboriginal students below the majority group at the upper end of achievement as at the lower end, but so often these students at the upper end are ignored while millions of dollars are spent trying to 'fix' those at the other tail. Indeed, for many minority groups, paying attention to this group could lead to the greatest long-term benefits, given their potential to be leaders in their communities. Instead, we end up with deficit language about minority underachievement as if all minority children are below the average. How language can mislead and hurt!

FLATLINING

A new piece of jargon is creeping into our lexicon: flatlining. It is usually illustrated using graphs showing that the average achievement has not changed over past decades (despite a massive increase in funding, and so on). Now, imagine a business making a profit of $500 million in each of the past ten years. This would be flatlining. But would you consider it a poor result? (Surely, even though the profit is not increasing, it's still a great result.) In the same way, a flatline for schools means that each year a new group of students enters, and we add a similar amount of value to get these students up to last year's 'average'. Educators who achieve a consistent, high level of value add for each cohort of students should be lauded in the same way as a consistent, high-performing business would be.

The notion of flatlining places too much emphasis on rankings and not enough on performance, which can be misleading, particularly when the number of countries participating in assessments such as PISA and

Figure 3.2 NAPLAN reading results 2010, Year 3–9 students.



Source: NAPLAN 2010, dataset sourced by author.

TIMSS increases. Of course, both the business and the educators would want to increase and improve the 'profit', but flatlining is not necessarily a negative situation.

So we should stop talking about the tail, the gap and flatlining. There will always be a tail, there are many gaps, and, if the average is high, then flatlining may be a healthy trend.

The major problem is the large spread of scores between the top and bottom groups of students, and the solution to that relates to getting all students to improve their achievement. All students deserve at least a year's progress for a year's input, no matter where they start (although those starting behind will need much more than a year's progress if the gap is to be reduced). It is more an equity than an excellence problem.

A common objection to my work: it's poverty that needs fixing, not schools

Before considering the list of policy prescriptions that distract, I want to address a common criticism of my work: that it leaves out the issue of poverty. As many have noted, students do not take a holiday from poverty during school hours, and, indeed, addressing the impact of poverty can lead to major improvements in achievement. But it is a gross misreading of my work to say that I ignore these issues. See the chapter in *Visible Learning* (Hattie 2009) on the importance of home resources, for example. Poverty, homelessness, abuse and inappropriate use of drugs are all major impediments to students progressing in their learning. They are, in particular, killers of high expectations and encouragement to succeed.

It is my view that we educators cannot do much to fix poverty. Instead, we can offer the best chances to help students, no matter what their home situation is. Indeed, one of the reasons governments make schooling compulsory is that it offers all students a chance to succeed – and there are many teachers and schools that make important differences to the lives of children from poverty.

A belief that we can make a difference for children from poorly resourced families is a critical starting point, and the mantra needs to be, 'I can make a profound positive difference to every person who crosses the school gate into my class or school regardless of their background.' Poverty and low family resources are no excuse for not making a major contribution to students, although they certainly make for a tough start.

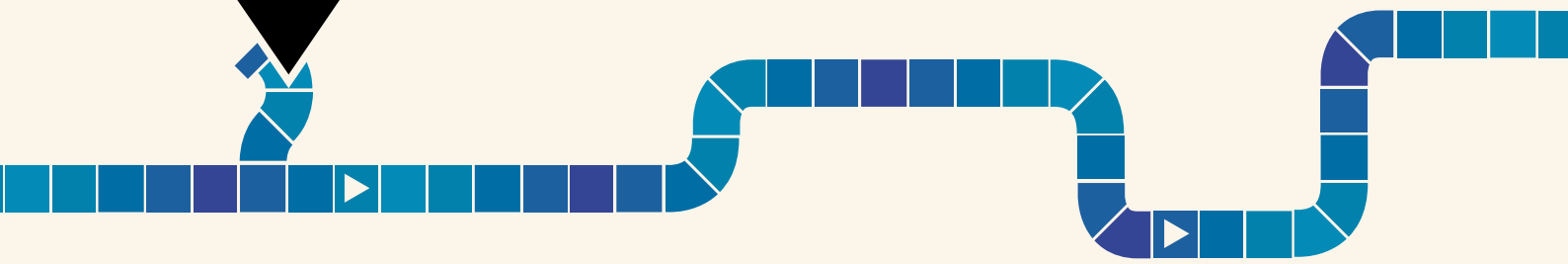
The two elementary schools I myself attended are classified among the lowest for socio-economic status in New Zealand (then and now). If fewer home resources were a major barrier, then I should not have grown up to write this paper. The difference between then and now is that I was never told that I was unlikely to succeed due to my background. Instead, my teachers helped me to believe that I could succeed in school. I am not advocating blindness to poverty and its effects; I am instead advocating finding success in whatever way possible, creating the circumstances for success and removing barriers (especially low expectations and explanations of why we cannot effectively teach these students) to allow the best opportunities for all.

I was blessed with some excellent teachers (thanks Mr Tomlinson, Mr McNeil, D. McDonald and Miss Fisher) and with parents who had high expectations for me. I was taught perseverance, deliberate practice and to never say no. It is surely a fundamental role of schooling to enable anyone to climb out of a lower socio-economic situation.

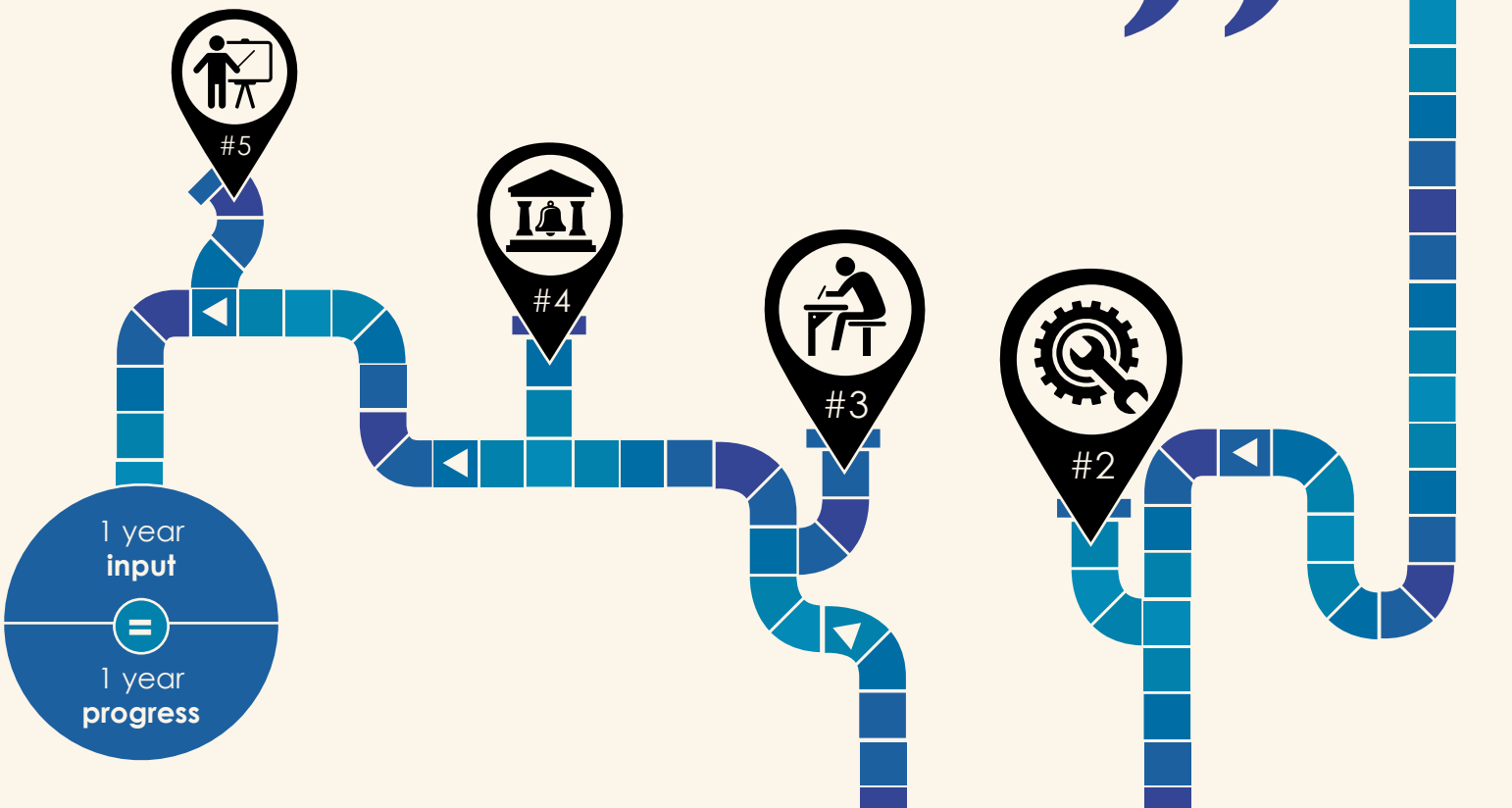
4. THE POLITICS OF DISTRACTION

Let's now turn our attention to some of the more popular 'fixes' for improving student learning. The argument is not that any of these solutions is irrelevant, wrong or mischievous but that an overemphasis on one or all of them creates a distraction from other, more critical, more effective ways for education systems to become world-class.

Distraction #1:
APPEASE THE PARENTS



“If only there were **more choice** of **schools** and **smaller class sizes**”



DISTRACTION 1: APPEASE THE PARENTS

Perhaps the greatest explanation for why systems look to policies that make little difference to student learning is that they are aimed at appeasing parents. Parents have power as they, not the students, are the voters.

The Californian system is an example of appeasement. A generation ago, California was one of the leading education states in the USA. Despite recent signs of improvement, that is not the case now (with low graduation rates, flight from public schools, etc.). By giving voters powers over specific propositions (such as levels of tax that then supports schools, teacher salaries and resources), some of the most regressive policies in the USA have been enacted, severely harming the quality and future of the state school system.

California has newly built schools that cannot be opened due to financial restrictions, while overcrowded, falling-down schools next door keep going. Negative policies have been subsequently introduced to put Band Aids on an almost hopeless system, and all this has led to a vicious spiral of falling public confidence in teachers, leaders and public schools – not thanks to any fault of the personnel but because the power given to the people has, until recently, blocked tax monies going into education. This issue will only get worse as the proportion of voters without children in public schooling grows.

California illustrates what we are about to confront globally. As attention moves from how to best educate students to how to best convince voters that their tax money is well spent, we are confronting some of the difficulties of democracy. By allowing the debate to focus on what schools can do for us and not what we can do for schools, we create an argument that schools can only lose. We will see more national debate about the quality of schools, we will see more debate about between-school issues (rather than within-school variability), we will seek to find alternatives to government-funded schools, and we will see more and more people viewing non-government schooling as better. The government-funded school system will be for those parents 'not willing' to invest in their own children's education; there will be more public–private initiatives, and there will be even greater misunderstanding about how schools can actually be successful.

Choice

This misunderstanding will start (in many countries it has already started) with middle-class flight from government-funded schools. The OECD average is 82 per cent of students attending government-funded schools, and in many countries this percentage is dropping (OECD 2014: 409). Many have argued that the presence of a strong, government-funded school system is key to the survival of democracy and that there must be a critical mass in the public system to ensure effective advocacy for this democracy. But many parents see the grass as greener in the private system. The 'private' brand is compelling, and parents pay high fees for these schools in the hopes of insuring a high quality education for their child. There is the perception of there being slightly higher odds of a good education (or at least of meeting the 'right' people and avoiding the 'wrong' ones).

When students' prior achievement or socio-economic background is considered, however, the evidence shows little difference in achievement between private and public schools in many systems (OECD 2014: 409). Of course, private schools promote the brand that they have better teachers, smaller class sizes, better equipment, more extra-curricular activities – and this is a very successful script for the politics of distraction because private schools can rarely show they have better outcomes (especially when prior incoming achievement is taken into account). It's fascinating that often the same people who think public schools are wasting money are happy to spend lots of money on private schools for their own children.

In the spirit of appeasing parents, systems promote the language of choice, although it is usually only the more affluent who can exercise any choice offered. The choice is nearly always a choice of schools (not teachers), and the typical choice is between government-funded and private schools. As noted above, this choice between schools is despite between-school variability being, in most Western countries, small relative to the much more important 'within-school variability'. This raises the question, 'Why do we provide choice at the school level when this matters far less than the choice of teacher within a school?'

The vicious aspect of the 'choice' debate is that too many parents make their decisions based on proxies of school success. The worst proxy is using socio-economic status (SES) as if it is some indicator of quality. While the average levels of achievement can be lower in low SES schools, there is no evidence that teachers in lower SES schools are less effective than those in higher SES schools in adding value (indeed, in Australia, the growth effects for students are higher in below-average SES schools than in above-average SES schools) (OECD 2014: 409). Further, socio-economic background is very much a correlate of prior achievement, leading to false assumptions about the quality of lower SES schools. In some ways, a fair proportion of the correlation between socio-economic status and outcomes is the correlation between prior and post performance.

Reduce class sizes

Reducing class sizes is an innovation that certainly appeases parents, teachers and school leaders. Parents see reducing class size as a proxy for more attention being paid to their children. School leaders see it as a proxy for more resources (since salaries are 80+ per cent of most budgets, more staff automatically means more money), and teachers argue it is less stressful and more effective to deal with fewer students.

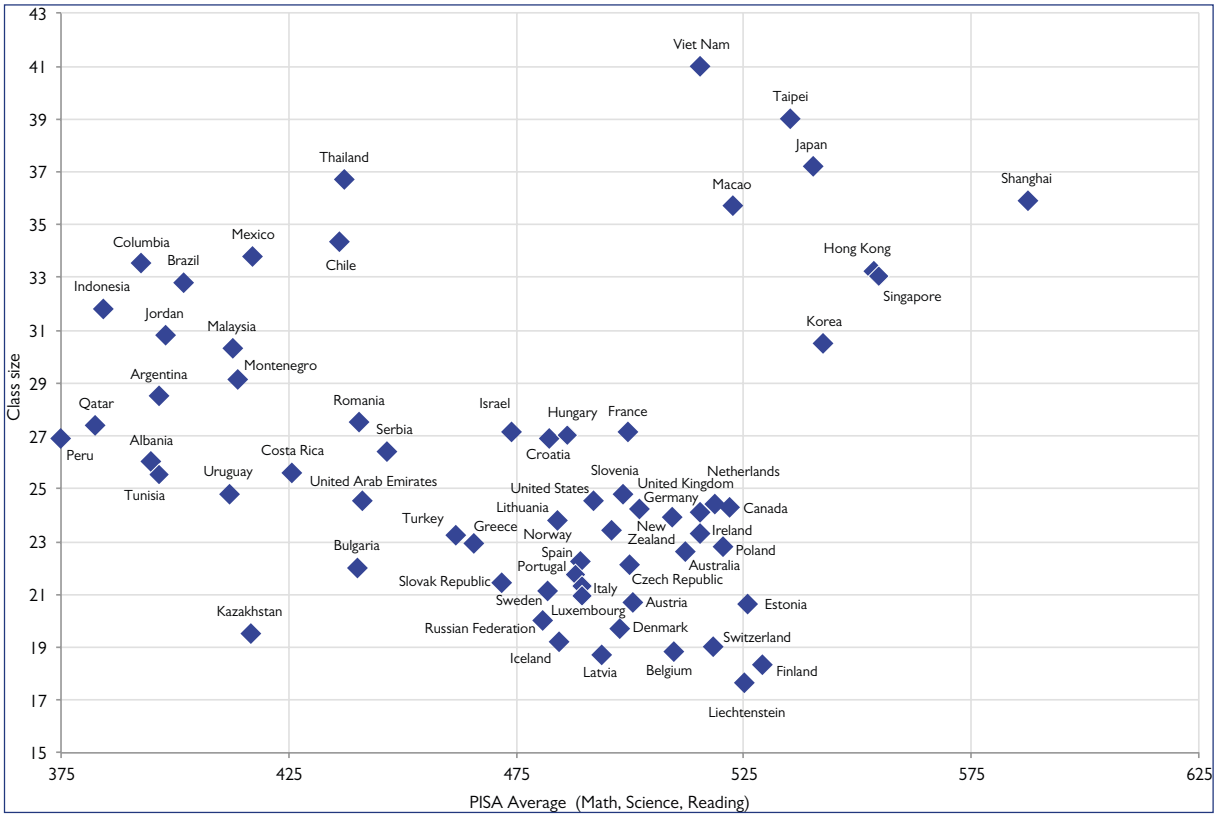
The evidence from the many meta-analyses on reducing class size shows a positive but small effect. Thus, the major question needs to be, 'Why is this effect so small?' The answer seems to be that teachers rarely change how they teach when they move from larger to smaller classes. (For example, they continue to talk as much, if not more, than they did in larger classes; see Hattie 2005.)

Maybe if they changed how they teach to make the most of having fewer students, the effect would be larger. But they do not. To paraphrase Andreas Schleicher, 'If you have to choose between great teaching and a small

class, go for the great teaching' (Schleicher 2015).

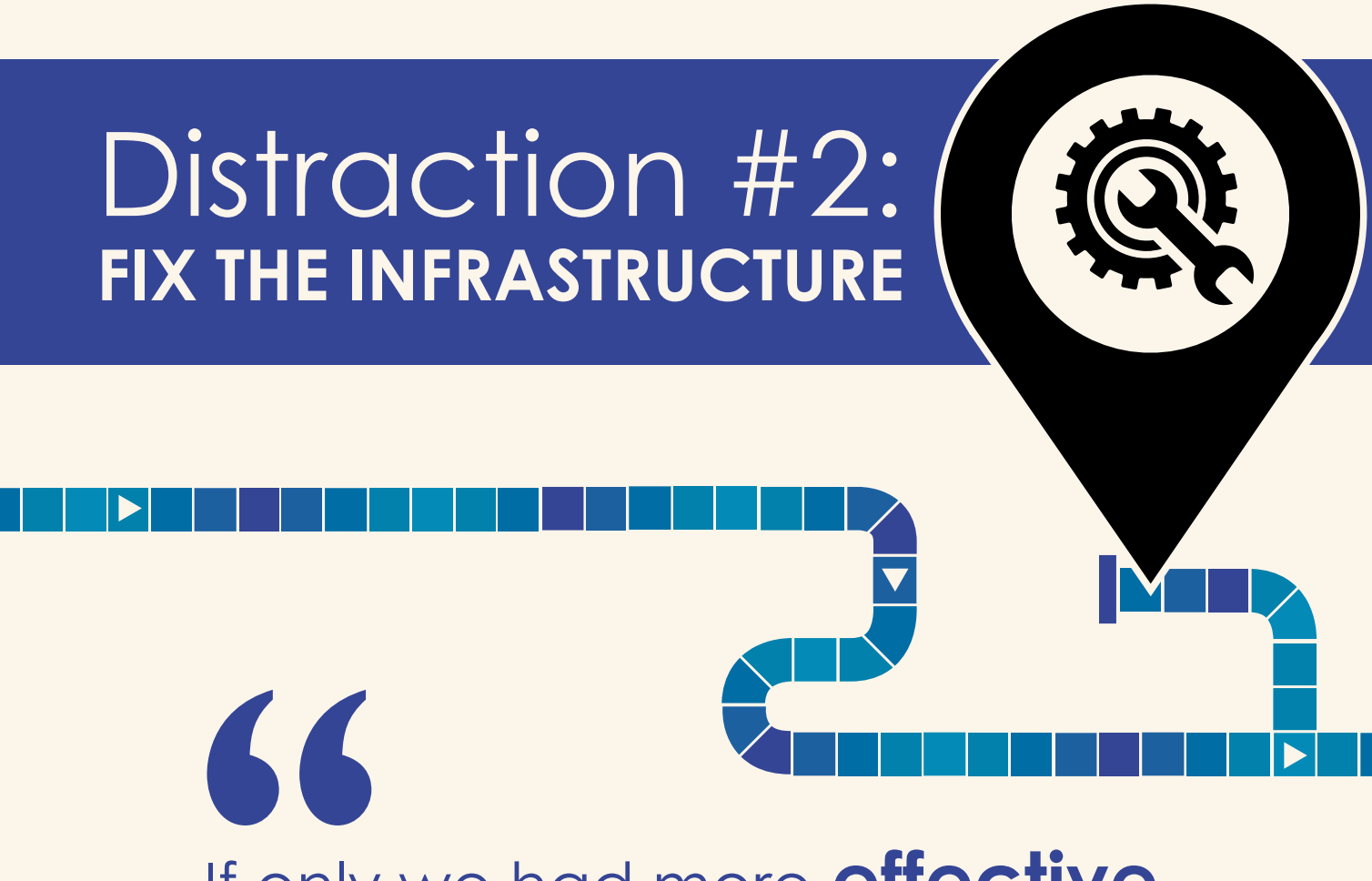
Figure 4.1 shows the average country PISA score (an average of each country's reading, numeracy and science scores) according to average class size. There is little obvious relation. Note, this is not suggesting that systems should increase class size (across studies, I have found that the overall effect of smaller class sizes is a positive, not negative, .20), but if the evidence is to be ignored (as it often is on this topic), then reduction needs to be aligned with specific, evidence-based proposals for investment in teacher expertise to teach differently – and more effectively – in smaller classes.

Figure 4.1 Average 2012 PISA scores (average of reading, numeracy and science), arrayed by average class size.

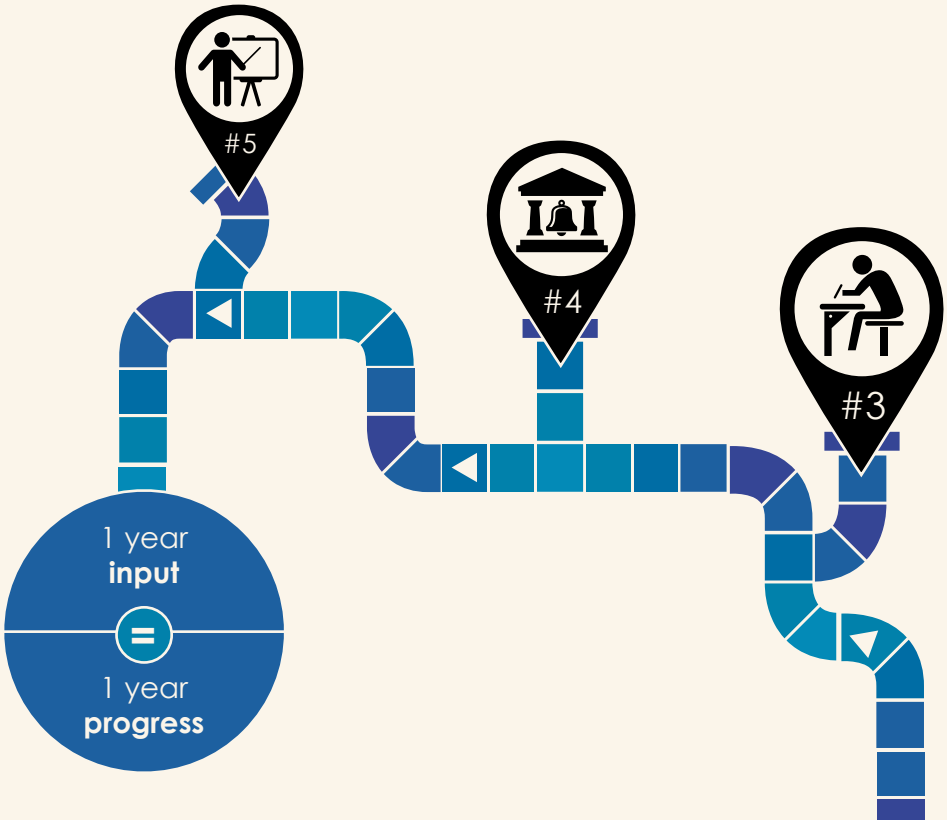


Source: OECD, 2014b (average PISA scores), OECD, 2013 (class size).
Notes: Data are presented for OECD member and partner countries for which average class size data are available. I thank Dan Murphy for noting errors to this figure in the first printing of the report.

Distraction #2:
FIX THE INFRASTRUCTURE



“If only we had more **effective curricula**, more **rigorous standards**, more **tests** and more **alternative-shaped buildings**”



DISTRACTION 2: FIX THE INFRASTRUCTURE

One of the major distractions to truly making a difference is the quest for better infrastructure: if only we had more effective curricula, more rigorous standards, more tests and more alternative-shaped buildings … or so the argument goes. So let's look at some of these infrastructure ideas.

Tinker with the curriculum

At the centre of any curriculum are the expectations of what is to be learned at various milestones. Setting these expectations is the power of curriculum (provided the expectations are constructively aligned to the assessments and resources used in classrooms). Too often, however, curriculum expectations are stipulated in 'years', as if all students in a year cohort are working at the same level. A better interpretation of the '5' in 'Year 5' is that there is likely to be five years' spread of performance in that year (students working at Year 1–5 levels of achievement); in Year 10 there is likely to be ten years' spread of performance, and so on. But even with our almost-universal year-based system of schooling, it is still possible to ameliorate the worst damages of grouping children as if they were all working at the same achievement levels. We can do this by implementing a levels-based curriculum with levels-based assessments (where students work at their level irrespective of their year in school or age) rather than a year-based curriculum.

Countries that have levels-based curricula are more likely to be attuned to student development and more likely to seek progress for all. Levels-based curricula with clear milestones, targets or expectations, which are then aligned with the assessment system, are more likely to have an impact on student learning than year-based curricula.

There is surprisingly little research on how students develop and progress through various subjects, but we know they grow at different rates, depending on their prior accomplishments. Too many curricula are crowded, not aligned with the assessment systems, have low or poorly articulated expectations of progress and assume all students progress in similar ways. We need more sophisticated diagnostic tools to help teachers ascertain each student's recent successes and work out the best way for them to progress to the next level. A one-size-fits-all approach does not work.

Emphasise either surface or deep learning

There are those who say the route forward is more facts, or knowledge-based learning. There are those who favour deep learning, or twenty-first-century skills. This is a false dichotomy, even if it is one that has been common for aeons. In the fifth century BC, Socrates promoted a method of questioning that led students to reconsider their confused meaning, inadequate evidence, self-contradictory beliefs and woolly thinking. He encouraged them to seek evidence, examine reasoning and assumptions, analyse basic concepts and see the implications of critical thinking. Socratic questioning is now a commonplace notion (although unfortunately not so common in classrooms). Then followed the Greek Sceptics and, later, Thomas Aquinas, who claimed we needed to develop critical thought and reasoning to be systematically cultivated. The

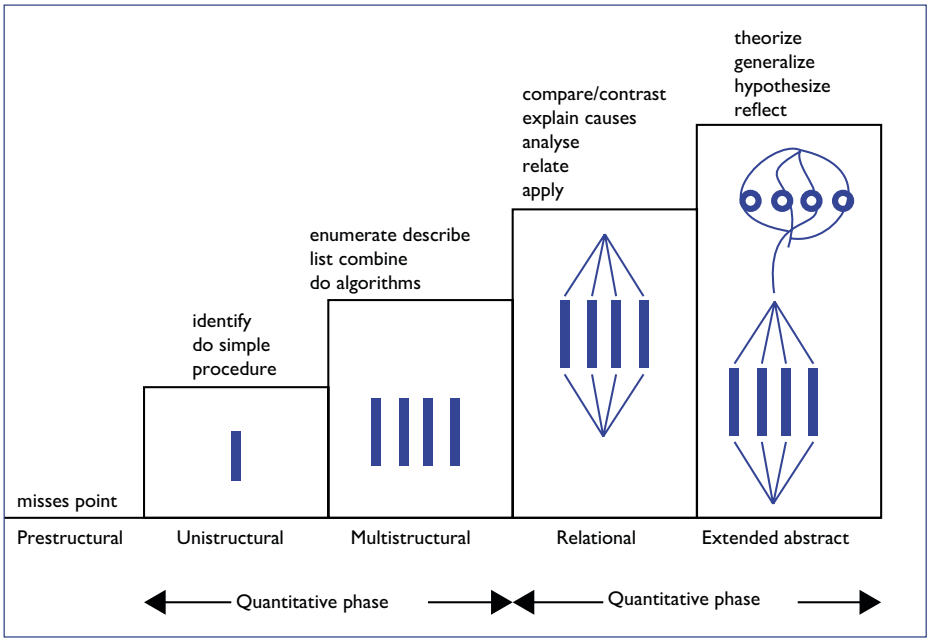
Renaissance led to searching for analysis and critique, and so on …

On the other hand, in the mid nineteenth century, when state-funded schools were being developed to educate compliant workers for lower-level jobs, this emphasis on thinking was reversed to privilege facts. Mr Gradgrind, the headmaster in Dickens's *Hard Times*, preferred his students to be brimful of facts, and upon demanding the definition of a horse from a pupil received the reply, 'It is a Quadruped. Graminivorous. Forty teeth, namely twenty-four grinders, four eye-teeth, and twelve incisors. Sheds coat in the spring; in marshy countries, sheds hoofs, too. Hoofs hard, but requiring to be shod with iron. Age known by marks in mouth' (1854: 7).

The use of curricula full of things to know, the push to know the 'great books', the back-to-the-basics movement and many other developments, have privileged the facts. The common assessment methods do the same, and, despite the expertise of their writers, many students approach multiple-choice tests with the belief that what is needed is evidence of their knowledge of facts and the skill to recognise the right answers. Finding out what teachers want you to know and giving it back to them in assignments and exams is a common key to success (and many teachers expect this to occur). Such narrow excellence tends not to favour twenty-first-century deeper-thinking skills such as creativity, critical thinking, communication and collaboration.

The art of teaching is to balance the need for surface knowledge with deep processing of this knowledge. Deeper-thinking skills need content on which to work. You cannot use deeper-thinking skills unless you have something to think about. The more effective taxonomies of thinking highlight this relationship. Consider the SOLO taxonomy (Biggs and Tang 2011), for example (see Fig. 4.2).

Figure 4.2 The SOLO taxonomy.



Source: Biggs and Tang (2011). Reproduced with the kind permission of Open University Press. All rights reserved.

This taxonomy has a five-level hierarchy: no knowledge, one idea, many ideas, relating ideas and extending ideas. The one and many ideas are surface thinking, and the latter two are deeper thinking, but the latter depend on the former. The important questions are:

- Do the students have the surface understandings to then apply the deep thinking?
- What is the proportion of surface to deep thinking in this lesson? and
- When is it the right time to move from gathering ideas to relating and extending them?

When you are learning something new, you need a greater proportion of surface to deep thinking, but as you become more proficient, the balance can change to more deep thinking. Consider, for example, the following seemingly sane and sensible teaching programmes privileging deep learning:

- inquiry-based learning;
- individualised instruction;
- matching teaching to styles of thinking;
- problem-based learning;
- whole-language learning; and
- student control over learning.

The average effect-sizes of these programmes are very low (0.31, 0.22, 0.17, 0.15, 0.06 and 0.04 respectively), well below the average of many possible influences of 0.4. It is not that they are not worthwhile programmes. The problem is that too often they are implemented in a way that does not develop surface understanding first.

Surface and deep learning: two interesting developments

There are two interesting developments due to take place over the next few years. First, the Chinese government's most recent policy on education (the Outline of China's National Plan for Medium and Long-term Education Reform and Development) states that

> *reducing the schoolwork burdens on students is the society's shared responsibility. . . . The ways and means to test and evaluate student performance and to appraise school operation shall be reformed. . . . Schools should reduce students' schoolwork burdens so as to give students enough time to learn about the society, think deeply, practice more, and do exercises and amuse themselves. It is imperative to improve teachers' professional quality, their teaching methods and efficiency, while cutting down on homework and classroom examinations.*
>
> *(UNESCO 2010: 15)*

Second, the next subject to be added to the PISA tests (currently on reading, numeracy and science) is collaborative problem-solving (Griffin et al. 2012).[1] This will involve students solving a set of problems with another person or a computer-simulated person. The chat between the two is scored for each student to assess their levels of collaboration.

1 Pearson, the publisher of this paper, have developed the conceptual framework of the collaborative problem-solving assessments for PISA (2015) and (2018).

The solution is less about twenty-first-century or inquiry learning and more about knowing when to think surface and when to think deep. It is about the appropriate proportions of surface and deep in any series of lessons and about knowing when to move from learning more ideas to relating and extending these ideas. When we learn new material, we might need a higher focus on surface, but as we become more proficient, the balance should shift to the deeper. Astonishingly, when lesson plans are analysed to see whether students delve deeper than the facts, about 80 per cent are devised so that this deeper learning does not occur (Fullan and Langworthy 2014).

More achievement tests; or, testing gone mad

Typically, a call for a 'more rigorous curriculum' is coupled with 'more tests' to check the curriculum has been implemented and that teachers are doing their job. I recall working in one US state that prescribed a set of curriculum objectives for each half of the year and a test that related to each half. Halfway through the year, the teachers stopped teaching the first half of the curriculum and moved to the second half and started to prepare the students for the next test, regardless of whether or not students had understood the first half. These teachers were doing the job asked of them, but how absurd that the system assumed the curriculum was this 'packagable'. The pressure to cover the second half of the curriculum for the next test meant teachers could not return to address what students did not understand in the first half. This is testing gone mad!

There are millions of achievement tests, and multi-millions of test items, but there is little evidence that creating more achievement tests will help much. Even if the tests become more available online, more responsive, adaptive and efficient (and prettier) for as long as they are focused on providing information about student achievement, they will continue to tell us little.

I am not arguing against assessments in schools. The major purpose of assessment in schools, however, should be to provide interpretative information to teachers and school leaders about their impact so that they have the best information possible about where to go next in the teaching process.

Instead, we drop tests on schools like 'precision bombs'. We see the purpose of testing as informing the student, not the teacher, how to change and adapt, and we create tests, not reports, first. Until we see tests as aids to enhance teaching and learning and not primarily as thermometers of how much a student knows now, on this day, on this test, then developing more tests will add little and will remain an expensive distraction.

Change the buildings and open spaces

Governments love infrastructure – and especially love to build new buildings: they can see the effects of their largesse; they can open them with fanfare; and the buildings can be named after someone important (and maybe after the person who funded the largesse). New buildings are particularly promoted when they are different: lots of glass, no walls or doors, for example.

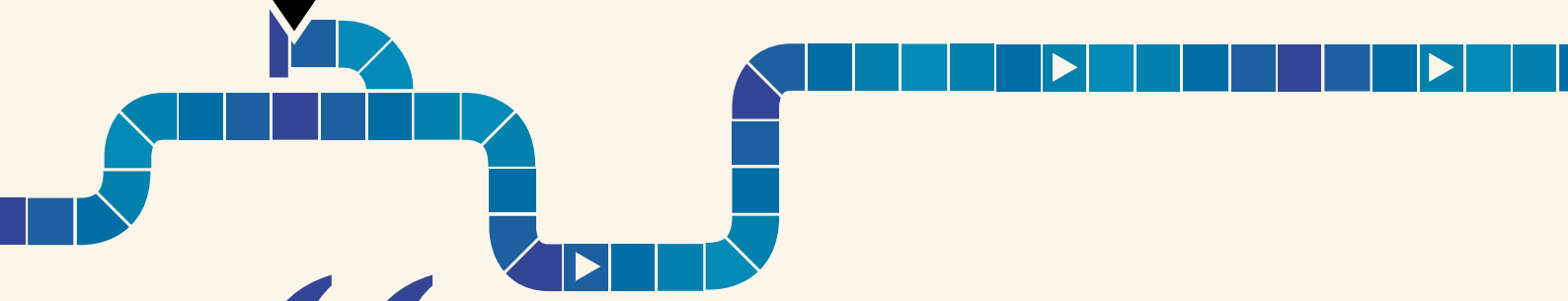
Yet there are so many studies and meta-analyses that show that changing the shape of

buildings does not lead to teachers teaching differently. For example, in open spaces, teachers are adept at using bookcases, trees in pots and posters to recreate their own 'walled-in' spaces. This does not mean that open spaces cannot lead to better teaching – indeed they can, and there are many instances of superb teaching in open spaces.

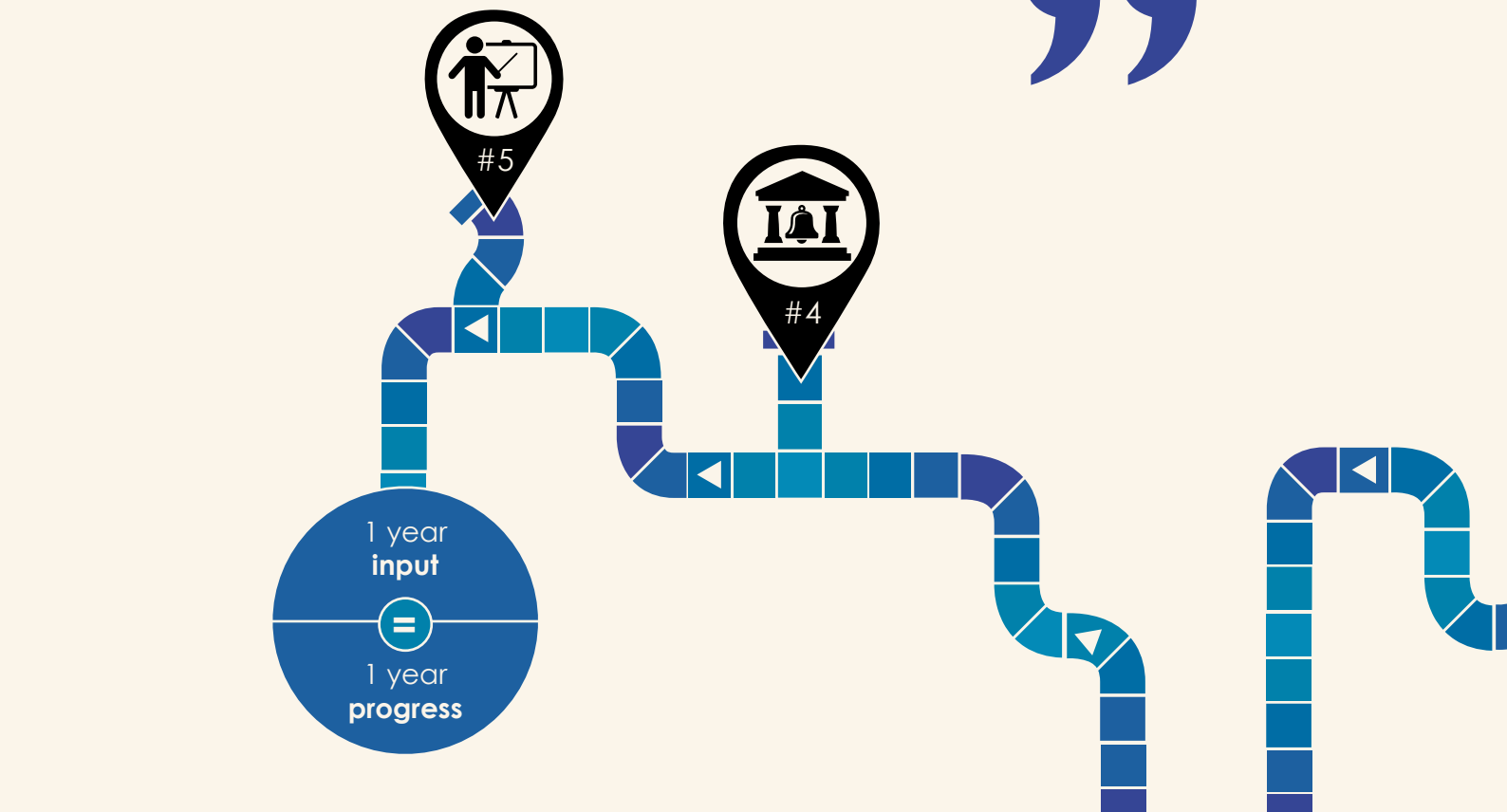
Too often, however, many of these newer configurations are missed opportunities because there has been no prior investment in working with teachers to show them how they can teach differently and effectively in these spaces. I have long argued that there should be manuals of advice (*How to Teach in Open Spaces for Dummies*, for example) so that each school does not first welcome the space and then decide what to do with it.

Teachers should be coached in alternative ways of teaching that open space invites, should be coached in working with each other to teach together in these spaces and should be coached on how to evaluate their impact when working in these different spaces.

Distraction #3:
FIX THE STUDENTS



“If only we had **better**, well-prepared **students**”



DISTRACTION 3: FIX THE STUDENTS

Pour more money into early childhood education

During a child's first five years, there is remarkable brain development. They can learn so much, and there are so many opportunities to enhance their learning. Thus, there has been a focus in many systems on providing early childhood education systems. Many countries are investing so much in these early years that we should be marvelling at children's increased readiness to learn reading and number skills when they start school. Alas, there are meta-analyses that show that by the age of eight it is hard to detect who did and did not have pre-school education (Nelson et al. 2003).

But the role of the early years is for play-based learning, according to the counter-argument. Yes, play may well be critical, but recent reviews raise questions about the adequacy of evidence to support some aspects of play. For example, Lillard et al. (2013: 27) concluded that 'despite over 40 years of research examining how pretend play might help development, there is little evidence that it has a crucial role'. Perhaps this is because pre-schools emphasise play for social and emotional development at the expense of play for cognitive development.

Before pouring in more money, we need a robust discussion about what learning means in the 0–5 age range – and especially at 0–3 when the most critical bases are set for language, communication, listening and thinking. I do not mean discussion about reading and times tables but about the many cognitive skills that develop in these early years: rhyme, language, seriation and so on – that are precursors to later reading and numeracy.

We also need better evaluation of the effects of different early years' programmes on learning, and we need to have more effective longitudinal studies of learning from the ages of 0–8 onwards. This research can be done: the Abecedarian programme includes 100-plus play-based learning games for 0–3-year-olds, and the positive effects of these early learning experiences can be traced in a cohort of students (compared to others not in the programme) twenty years later (Sparling et al. 2007).

Using labelling to explain

When students fail to thrive in the early school years, there is an increasing move to 'label' these students. Indeed, there has been a major increase in the number of children who come to school each day pre-labelled. In my own state, Victoria, the incidence of autism and Asperger's has increased 340 per cent in the past three years; in the USA, autism increased 650 per cent in the past ten years. Many systems now have 15 per cent or more of their students pre-labelled and drugged in some way compared to 3–8 per cent pre-2000 (Seltzer et al. 2011).

Although diagnostic tests may have improved, it is hard to believe that these major increases in incidence are real. One potential reason for the increase might be parents' (and teachers') desire to seek an explanation for 'unusual' behaviours and the medical and pharmaceutical professions' ready provision of answers (and drugs). Another potential reason for the spike might be the extra funding that is tied to students who are labelled as autistic.

This is not to insinuate that ADHD and autism are not real; they are. Instead, I believe that the massive increase in the frequency of these labels points to a potential cultural problem: students are being diagnosed and labelled primarily for financial and accountability reasons rather than for the enactment of appropriate educational interventions.

In the medicine and psychology professions, diagnoses are the starting point for interventions, but in education, diagnoses seem to lead to explanations for why we cannot intervene. The logic seems to be that if students with behaviour issues are 'calmed', they will learn. What is often missed is that while individual interventions and drugs may calm these children there is no necessary corollary that they will then learn. In fact, there are learning interventions that have been shown to be more effective in educating students with behaviour issues than medication. In my own work I have found that if you take two students with the same personality and behaviour problems, and label only one (with, say, autism, Asperger's or ADHD), you will observe a major decrease in achievement gains for the labelled student compared to similar non-labelled student (Hattie 2009). However, a learning intervention is much more expensive for the system (and requires high levels of teacher expertise) than drugs or medical attention, which the parents pay for.

Hold the students back

A commonly recommended solution for students who are not achieving is to hold them back a year. It seems obvious: if you cannot meet the standards for entering the next grade level, it is better to hold back and repeat the previous year. This is one of the few areas in education where it is difficult to find studies that show a positive effect on achievement. The research shows that being retained one year almost doubles a student's likelihood of dropping out, while being held back twice almost guarantees it (Hattie 2009). Add to this the equity issue: consider two students of the same achievement (in the USA), and it is four times more likely that the student of colour (African American, Hispanic) will be retained and the other (White) student of the same achievement level will be promoted. The only question of interest relating to retention is why it persists in the face of this damning evidence (and it is a very expensive intervention).

So why does it still occur? More than any other group, it is the teachers who ask for it on the basis of 'If I only had him for another year, I could make a difference.' (Note that 80 per cent of retained students are male.) But you had him for a year, and you failed! What this student does not need is more of the same kind of teaching, more of the same kind of activities, more of the same kind of assessment, more of the same kind of peer interactions. What this student needs is different teaching, different activities, different assessments and different peer interactions. At the moment, this means social promotion; that is, promoting them by their age group.

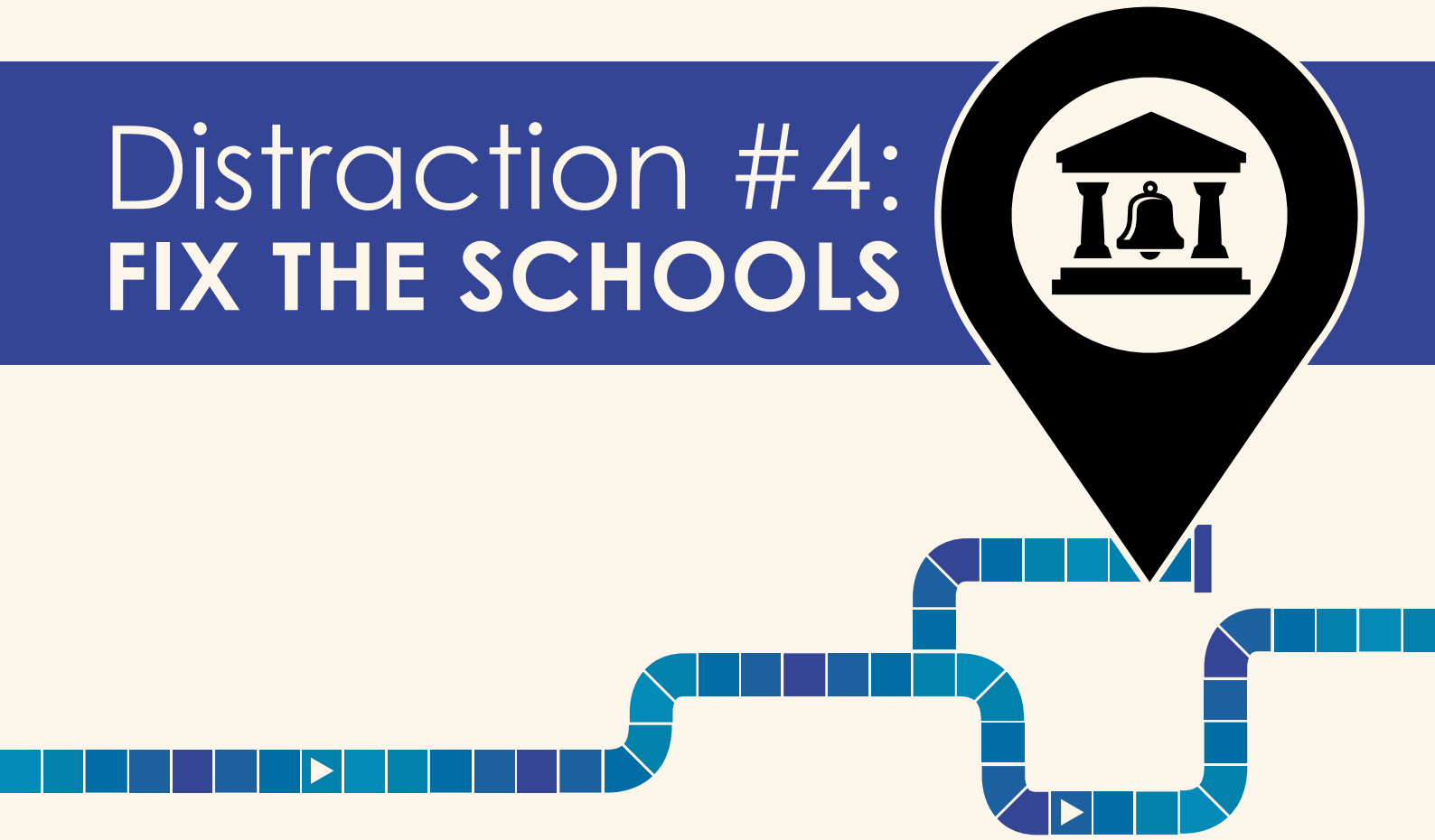
Teach to the learning styles

'But my son/daughter/student learns differently from others': this concept has led to a proliferation of various learning styles, the most common being that students have a preference for learning in an auditory, visual, tactile or kinaesthetic (with their hands) style

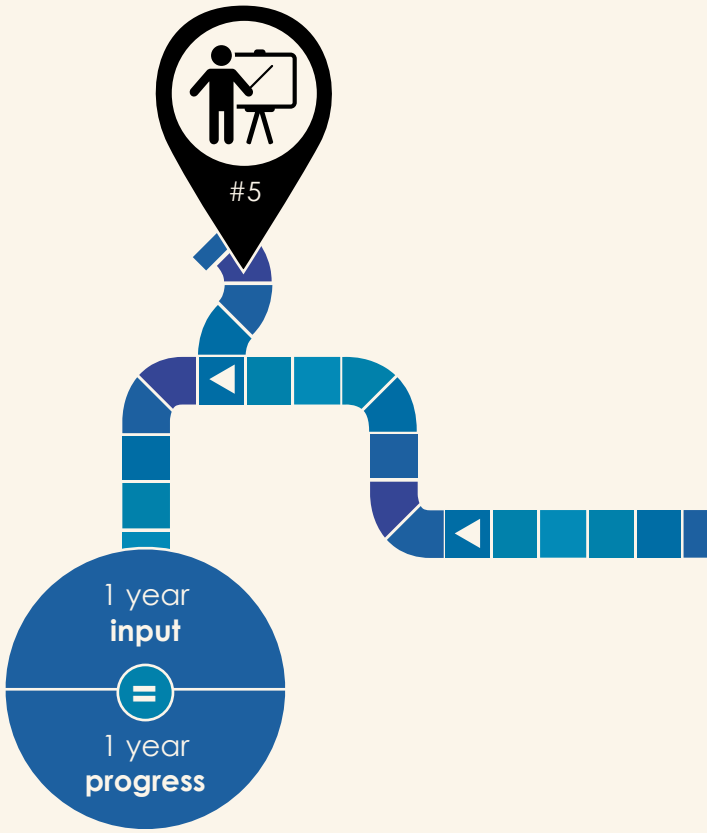
and learn best when instruction is oriented to that style. There is little evidence that the many measures of learning styles have led to similar classification of students; thus, the robustness of classifying students is questionable.

Further, there is little evidence that when teaching is matched to style there is enhanced learning. Yes, teachers should use various methods of teaching, and if one method does not work they should change to another, but there is no support for classifying students by learning style and then matching the teaching to that style.

Distraction #4:
FIX THE SCHOOLS



“If only schools had **more money** and **autonomy**, they would be better schools”



DISTRACTION 4: FIX THE SCHOOLS

Create new forms of schools

It is ironic that a popular solution to claims about 'failing schools' is to invent new forms of schools. There is a remarkable hunger to create charter schools, for-profit schools, lighthouse schools, free schools, academies, public–private schools – anything other than a public school. But, given that the variance in student achievement between schools is small relative to variance within schools, it is folly to believe that a solution lies in different forms of schools.

These new forms of schools usually start with fanfare, with self-selected staff (and sometimes selected students) and are sought by parents who want 'something better'. Indeed, there is evidence there is a slight increase in achievement in these schools in the short term, but the long-term effects lead to no differences when compared with public schools. The effect of charter schools, for example, across three meta-analyses based on 246 studies is a minuscule .07 (Hattie 2009).

This lack of a marked effect is surely not surprising when it is realised that within a year or so the 'different' school becomes just another school, with all the usual issues that confront all schools.

Privilege hero and transformational leaders

Another common 'fix' is to look to the business world for ideas for improving schools, particularly for leadership. After all, there are plenty of remarkable business leaders. Yet one of the greatest distractions is to borrow the notion of the transformational leader from the business community. In the context of school leadership, a transformational principal would set the vision, establish the school goals, define the expectations, provide support for teachers, buffer the staff from external demands, ensure that staffing is fair and equitable and promote a high degree of autonomy for the staff. However, the effect of such transformational leaders in schools is very low, whereas that of instructional leaders is much higher (Robinson et al. 2008).

Schools need high-impact instructional leaders, ones who make several formal classroom observations each year, interpret test scores with teachers, insist teachers collaborate in planning and evaluating the teaching programme across grades, insist teachers expect high proportions of their students to do well on achievement and social outcomes and insist and know that the staffroom and classroom atmosphere is conducive to learning for all students.

There is an urgent need for leadership literature that says more about educational matters and the role of leaders in putting in place high-impact practice, building collaborative expertise and seeking and privileging successful teaching that leads to maximum student growth and understanding.

All that is needed is autonomy

Another great distraction is the debate about school autonomy. It is promised by governments to improve the quality of schooling, with the claim that decision-making is best done locally (even as many take autonomy from schools and give it back in bits and pieces) and is often coupled with many other so-called desirable attributes such as choice, competition and accountability.

There is a belief that by creating choice and competition and then locating responsibility at the local school level there will be incentives to improve the quality and accountability of each school. The argument is that schools, like businesses, should thrive (or not) based on their proficiency to meet or create consumer demands.

The road to autonomy is well travelled. There are many countries where decisions related to resource allocation and curriculum and assessment are local and principals have high levels of autonomy (the Czech Republic, the Netherlands and Macao, for example). There are other countries where local decision-making relates only to resource allocation and not to curriculum and assessment (Chile, Hungary, Sweden, Bulgaria, Dubai and Shanghai). And there are countries where local decision-making is high relating to curriculum and assessment (Japan, South Korea, New Zealand, Hong Kong, China and Thailand). The key issue in any discussion about autonomy needs to be about what is controlled, where and with what responsibilities for maximising impact. My reading of the evidence shows the following:

- Achievement is higher in countries where schools have autonomy in staffing decisions, in hiring teachers and where there are high levels of external accountability (such as inspections and external exit examinations) but negative when schools have autonomy over formulating their own budget.
- Achievement is higher when school principals have some control over opportunistic learning costs such as the purchase of instructional supplies, hiring and rewarding teachers and choosing textbooks and instructional methods.
- Local autonomy is more effective when school leaders are instructional leaders rather than transformational leaders.

So, autonomy about some factors in schooling can have a positive effect (although the effects on achievement are still small). Relative to other impacts on student learning, school autonomy is not the place to invest lots of effort. Perhaps it should be continued if the increased autonomy leads to increased student learning: 'use it or lose it' may be more compelling than autonomy or not!

But the debate about school autonomy misses two major issues. First, the greater the amount of local autonomy, the more likely it is that schools become unequal: the better schools tend to become better, and the not-so-good schools tend to become worse.

Second, granting autonomy to schools and principals distracts from the real issue: to what level should individual teachers have autonomy over how they teach? As Larry Cuban (2013) has argued, in many other professions, the front people (e.g., doctors, engineers) have lost much of their autonomy over the past fifty years because their decisions now are very much based on research evidence. The days when GPs made their own interpretations of treatment without recourse to evidence-based research are thankfully well past. But this situation is not even close in teaching. We need to ask, 'Under what conditions and to what extent should teachers have autonomy?'

Invest more money

Perhaps the answer is more obvious: provide more money to the schools for them to do their job. Of course money matters. Jonathan Kozol (2005: 59) believes it is, citing Deborah Meier's comment to support his view: 'I'll believe money doesn't count the day the rich stop spending so much money on their own children.' Even so, in most Western countries it is hard to find evidence that more money makes much of a difference: above a certain level of funding, there is little relation between more money and improved achievement.

This should not be surprising, as 80 per cent of funding is fixed in salaries, buildings, bussing and maintenance; the discretionary amounts are relatively small, and where these amounts are spent on instructional matters (such as resources for teachers), there is a small positive impact. But these expenditures are small in their effect on students compared to the effects of resources invested in teacher expertise (Grubb 2009).

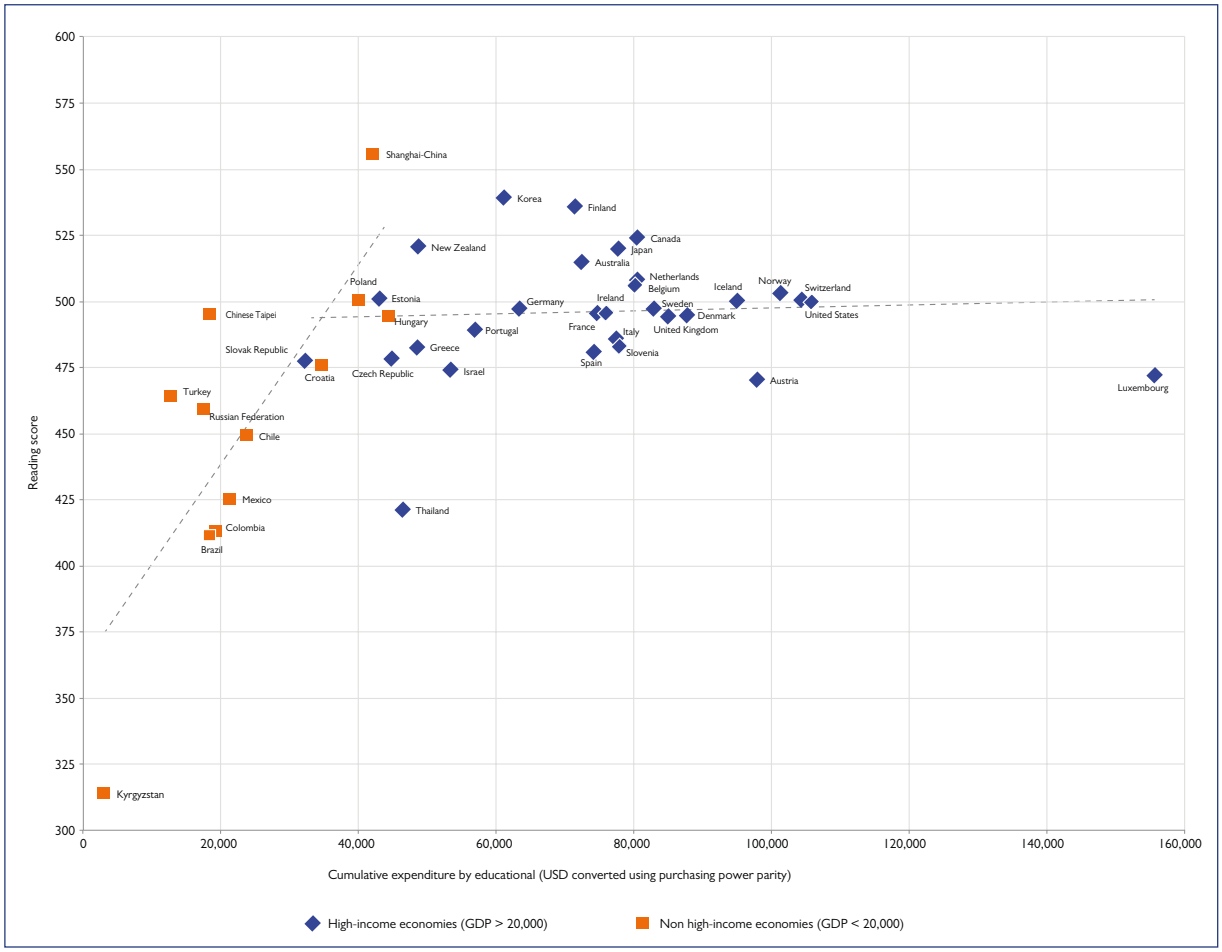
There does appear to be a tipping point between the cumulative expenditure on education from ages six to sixteen and average reading scores (see Fig. 4.3). For low-income countries, expenditure is a good predictor of mean performance. However, for countries with middle to high GDPs, there is no relationship between expenditure and performance. A 2012 OECD report on money and achievement concluded that 'Money alone can't buy a good education system. … Among wealthier economies; those that prioritise the quality of teachers over smaller classes tend to show better performance. When it comes to money and education, the question isn't how much? but rather for what?' (OECD 2012: 4).

It is a common plea for more money to be added into the education system, but there is less of a plea to account for the efficiency or effectiveness of how the money is to be spent to improve education outcomes. The programme logic stops at some point in the causal chain: add more money to get more teachers, lower class sizes and more teacher aide support, but where is the evidence that all these extra resources lead to improved learning? The 'extra' stops with the adults, as if then the effects on students are obvious.

Except they are not. It is not the amount of money spent that is important but how it is spent and how the programme logic of investing more then leads to enhanced student outcomes not enhanced adult satisfaction. As Andreas Schleicher has shown (2012), if we invest in more untrained adults, lower class sizes and many other structural features, the costs will go up appreciably with no significant effect on student achievement. The question 'How to spend money effectively?' should be the key issue.

Further, there are few financial incentives for a teacher to maximise student achievement as most of these financial incentives are related more directly to school than to teacher differences. Policy-makers should not expect to gain increases in overall levels of student achievement simply by adjusting annual funding rates, although it is a common claim that results will follow from delivering more funding to schools. If an increase in student achievement is desired, policy-makers should consider alternative funding models with stronger links to the variables that do affect student outcomes.

Figure 4.3 Average reading performance in PISA and average spending per student from the age of six to fifteen.



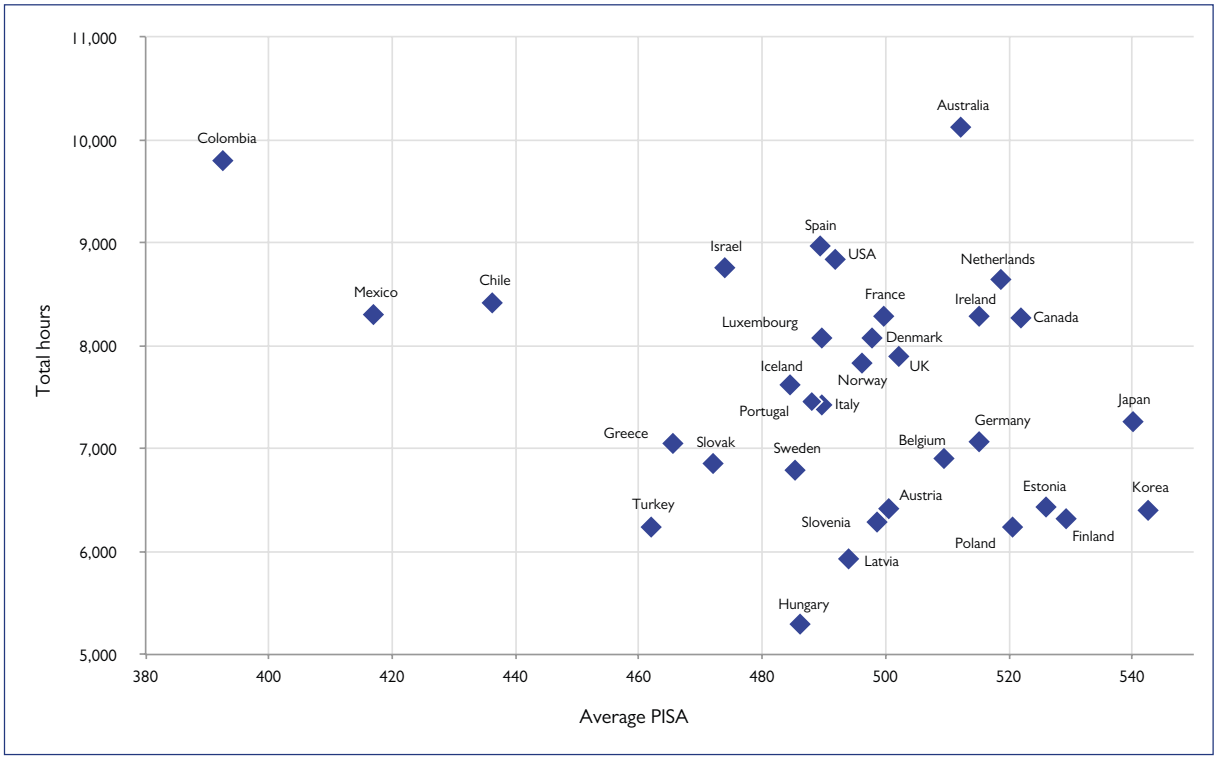
Source: OECD (2012). Reproduced with permission.

Lengthen the school day or year

Another popular, and expensive, education fix is to lengthen the school day or school year. Figure 4.4 shows average PISA 2012 achievement scores arrayed by the average number of intended instructional hours per year for the thirty-three mainly developed nations for which we have both sets of data.

A correlational analysis of the hours of instructional time and student achievement reveals a negative relationship on average (−0.32) and for each subject (reading −0.25, math −0.35, and science −0.33). Even once you remove the three lowest scoring countries, the relationship only approaches zero, making it clear that merely adding more time to the day, or days to the year, makes little difference.

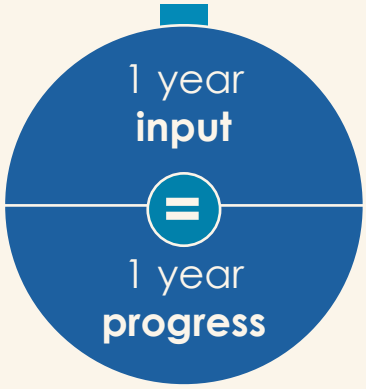
Figure 4.4 Average PISA scores (average reading, numeracy and science), arrayed by hours of instruction per week.



Source: OECD (2014) (hours in instruction), OECD, PISA 2012 Results in Focus: What 15-Year-Olds Know and What They Can Do with What They Know, p. 5 (PISA scores).

Distraction #5:
FIX THE TEACHERS

"If only teachers had **better initial training**, were **paid for performance** and adopted **new technology**"



DISTRACTION 5: FIX THE TEACHERS

Certainly there is a constant clamour to emphasise the teacher is the key, with claims that the system is only as good as the teacher and that teacher standards must be raised. In many ways this is correct, except that teachers cannot do it on their own: they need support, they need to collaborate with others in and across schools, they need to develop expertise, and they need excellent school leaders. Further, supportive and great systems are needed to support and nurture great leaders. But more often the debate is about improving teacher education, introducing performance pay and other such distractions.

Changing initial teacher education

Improving initial teacher education has long been debated as a 'fix' for raising teacher standards. In Australia, for example, there has been, on average, at least one major state or national enquiry per year into teacher education over the past thirty years.

Each enquiry arrives at much the same conclusions on the deficiencies of teacher education and makes some general suggestions for improvement – particularly what is to be taught in these programmes. The recommendations are usually about how much time should be spent teaching particular subjects, demanding more time practising in schools, imploring building closer school–tertiary collaborations and insisting on higher entry or exit standards.

At present, teacher education is little more than a cottage industry, an apprenticeship rather than a profession, and it is devoid of debate about the effect of teacher education programmes on student learning. The studies that are available show teacher-education programmes have among the lowest overall impact of all the influences on student achievement. I found three meta-analyses (Hattie 2009) with a very low effect size of 0.11 – ranked 124 of 150 influences on student achievement.

When we look at the development of teacher expertise, the greatest learning is not from teacher-education programmes but from the first year of full-time classroom teaching (the next is from the second year). After this, the increase in the development of expertise fades and initial teacher education has little or no effect. There is a well-known phenomenon called 'transition shock' which is what new teachers discover when they are 'released' into their first year in the classroom. The class is buzzing, busy and decision-laden, and most new teachers say they were not well prepared for the harsh reality of the classroom. 'Lack of preparation shock' would probably be a better label.

These findings about teacher education have many critical implications, first among them that teacher education should focus on teachers being excellent in the first few years of classroom teaching. Teacher education needs to be about preparing students for the immediate practice of teaching. The recent push towards clinical models of teaching is promising, provided that the true essence of such clinical teaching is to provide new teachers with the skills of how to 'Diagnose', how to have multiple 'Implementations' and how to 'Evaluate' their effectiveness – a framework of skills my colleagues and I have dubbed, 'Teaching is to DIE for' (see Hattie et al. 2014).

Any evidence of transition shock among teachers in their first year could well be considered evidence of the failure of the teacher-education programme to prepare its students for teaching. We may need to consider a two-year 'registrar' position as the key part of pre-service teacher education, in the same way that the first two registrar years in medicine are considered part of their 'pre-service' clinical training. The focus in these years should be on supporting these teachers to make an excellent transition into fully fledged members of the profession.

There is a simple conclusion: we need to dramatically improve teacher-education programmes. The most obvious place to begin is by asking for evidence of how these programmes impact on the capabilities of teacher candidates to enhance their students' learning. Stop asking about the features of the programmes and start asking institutions to provide evidence of their impact.

Performance pay

Another suggestion for 'fixing the teachers' is to pay more based on their performance. It is intuitively obvious that if teachers are offered such an incentive, this will drive them to improve their impact on students. Despite the many implementations of performance pay, it is difficult to find a performance-pay model that has made much, if any, difference to student learning. If anything, the effects can be the opposite to those desired: teachers in performance-pay systems tend to work fewer hours per week and are involved in fewer unpaid cooperative activities. Their stress levels increase, and their enthusiasm decreases.

But neither is the status quo acceptable: nearly all teachers receive a satisfactory rating through performance appraisals, and even beginning teachers believe they deserve the highest performance ratings. More than 90 per cent of teachers say they would receive no recognition if they improved the quality of their teaching or were more innovative in the classroom (Jensen 2012).

Perhaps the solution is to change direction and introduce better pay for increased expertise rather than for performance. That is, when teachers attain additional expertise (such as studying to become a learning-difficulties coach, assessment coach or literacy coach) and take responsibility for improving the skills of their fellow teachers within a school, they could receive additional payment. This model would mean that teachers do not have to leave the classroom to be paid higher salaries; their expertise can be recognised, developed and esteemed; and they would be improving their expertise and their colleague's expertise, provided that they can demonstrate that their additional expertise actually enhances the progress of students.

Technology as a magic bullet

Another distraction is the demand for teachers to adopt new technologies. We have been hearing that 'the technology revolution is coming' for the past thirty years or more and how the advent of desktop computers, iPads, smartphones, the Cloud and so on will radically change classrooms. We are told that WiFi is fast, available, cheap and will transform education; that there are terabytes of information available and that schools need access to the web to find it; that kids are now digital natives, wired and on social media and that classrooms need to

run to catch up. So why has a transformation in teaching not yet occurred?

Larry Cuban (2003) asked this 'why not' question and concluded that technologies will never be used in any transformative sense until we change our teaching methods. At best we will use technology to consume more facts and knowledge, and we will use the Internet instead of the encyclopedia, PowerPoint and Word instead of slate and paper, and complete practice tasks online instead of on worksheets. As before technology, we prioritise knowledge consumption.

Once again, the grammar of schooling privileges 'knowing much' rather than encouraging faster, more efficient and socially wired connections. It will only be when we move from using technology as a newer form of knowledge consumption to seeing technology as an aid to teaching for enhanced knowledge production that there will be an effect.

Have more adults in schools

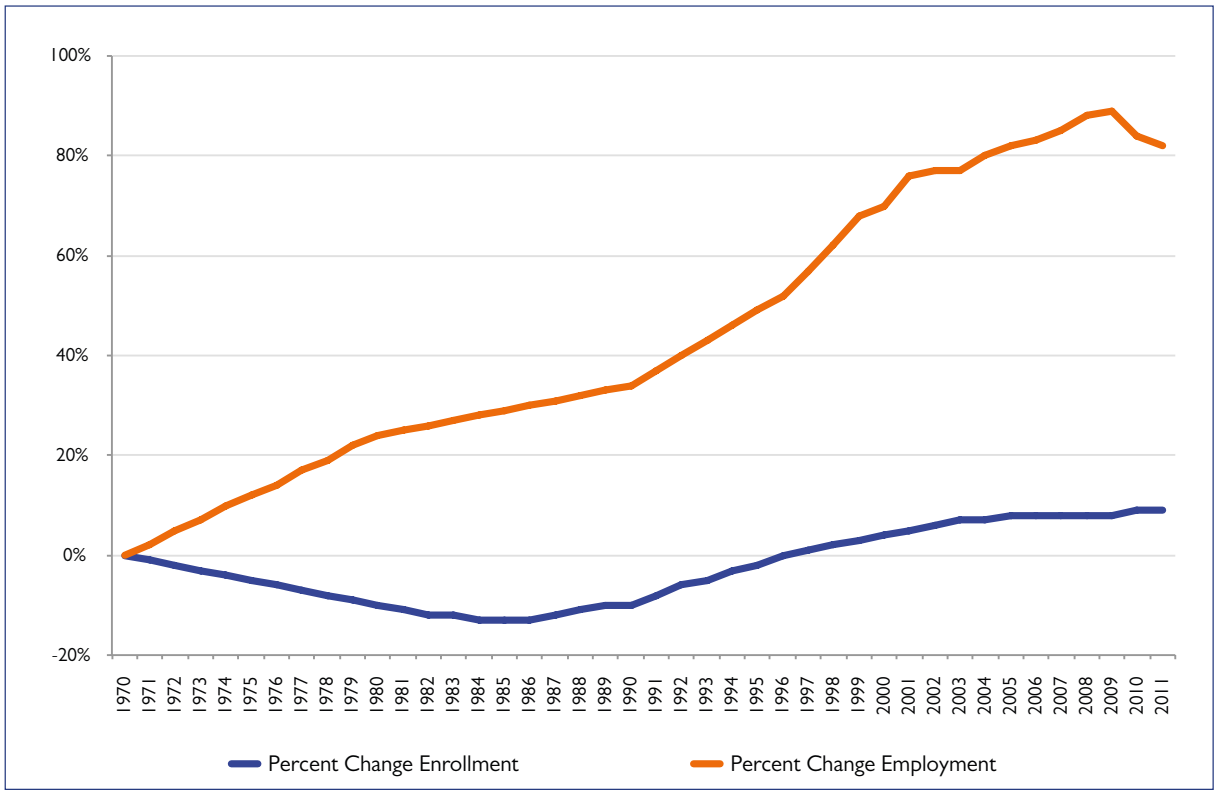
It was noted earlier that reducing class size is a common distraction. A related distraction is to ask for more adults in schools to assist teachers. In the USA, since 1970, the K-12 student population has increased by 10 per cent, but the number of full-time school employees has grown by 95 percent (NCES 2013) (see Fig.4.5). Indeed, if you look back a little further to 1950, you will find that the number of adults in schools has grown 386 per cent – teachers by 252 per cent and administrators and other staff by 702 per cent (Scafidi 2012). It seems we believe that we can solve our school dilemmas by putting more and more adults in schools, especially cheaper and often not deeply trained adults, such as teacher aides.

Peter Blatchford, from the Institute of Education at the University of London, has completed a systematic study of teaching aides (Blatchford et al. 2012). He noted that they have tripled in the past ten years: one in four staff members in the English school workforce are teacher aides, and they account for 16 per cent of the gross school expenditure. Teachers love them and claim they reduce their stress and increase job satisfaction, reduce workloads, improve student outcomes and allow them to improve the quality of their teaching. Blatchford, however, could find no effect on students' confidence, motivation, attention, independence, relationships with peers, work-completion rates or in following instructions.

Those students receiving the most support from teacher aides made less progress than similar pupils who received little or no support from teacher aides, even after controlling for factors likely to be related to more teacher-aide support (e.g., prior attainment and special-education status). Teacher aides work more often with the students that most need expertise, and the more support they provide the lower the progress.

The reasons for these null-to-negative findings is that teacher aides tend to separate the teacher from the students (particularly those students most in need of teacher expertise); they become an alternative rather than an addition to the teacher; the students they support spend less time covering the mainstream curriculum; teacher-aide explanations are sometimes inaccurate or confusing; teacher aides are more likely to prompt pupils and provide them with answers; and they are most concerned with task completion.

Figure 4.5 Percentage increase (since 1970) of adults employed in schools relative to student enrolments in the USA.



Source: NCES (2014). Data for 1970–80, 1980–90 and 1990–6 interpolated by the Pearson Research & Innovation Network.

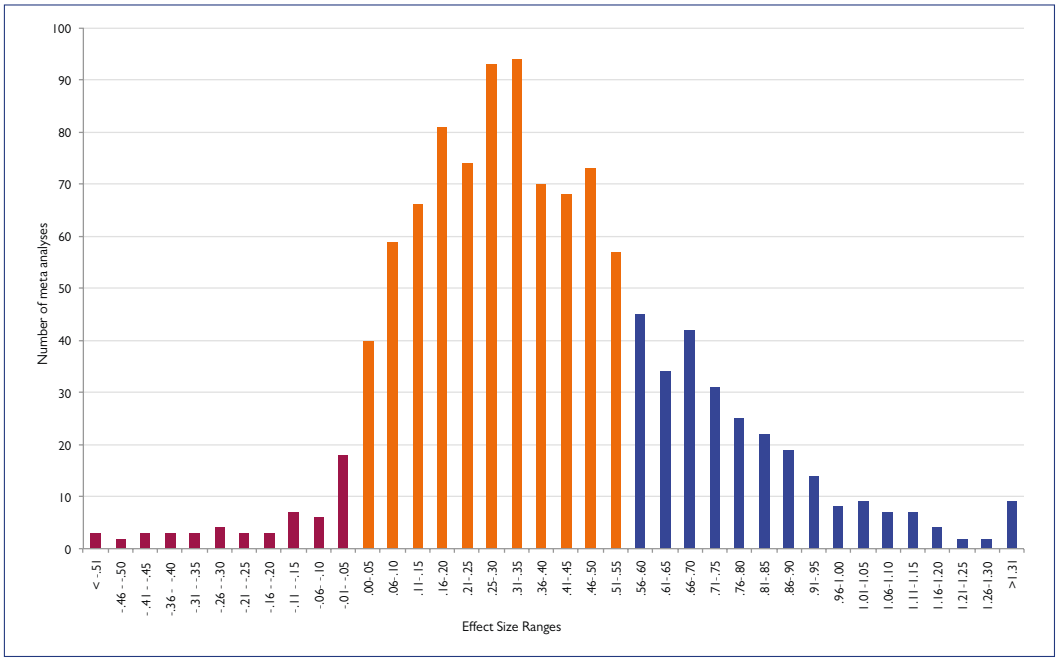
5. SUMMING UP THE DISTRACTORS

The issues discussed above dominate our debates about improving schools, but they do not improve student learning in any major way. Yes, many do have some kind of positive effects, but those effects are relatively low. Indeed, almost every intervention has some positive effect on student learning, so simply claiming that Policy A or B 'works' has little meaning. Figure 5.1 shows the distribution of more than 65,000 effect-sizes, gleaned from over 1,100 meta analyses, representing approximately 200 different kinds of education interventions and a quarter of a billion students who have been in some programme to enhance their achievement. Almost all effects are greater than zero – anything above zero means that the programme raised students' levels of learning. Perhaps all you need to enhance learning is a pulse!

So while most 'fixes' can lead to increases in achievement (it is almost impossible not to), the effects are not profound. We love talking about the distractors that do not matter. And, as Table 5.1 shows, some of our most politically popular fixes rank near the bottom in terms of the effect they have on student achievement.

We can and should expect more – from our investments and for our children. In a separate paper I will turn to what does matter, what I call the politics of collaborative expertise, or, more simply, what works best in education.

Figure 5.1 Relative ranking of a selection of popular education 'fixes', by effect size.



Source: Author's own data.

Table 5.1 The effect-sizes of many popular 'fixes' to the schooling system.

Rank	Influence	Effect-size
91	Inquiry-based methods	0.31
140	Summer school	0.23
141	Finances	0.23
142	Religious schools	0.23
143	Individualised instruction	0.22
147	Class size	0.21
156	Co-/Team teaching	0.19
159	Within-class grouping	0.18
164	Matching style of learning	0.17
170	Mentoring	0.15
168	Problem-based learning	0.15
171	Ability grouping	0.12
175	Teacher education	0.12
177	Distance education	0.11
179	Changing school calendars/timetables	0.09
180	Detracking	0.09
183	Charter schools	0.07
184	Whole language	0.06
185	Diversity of students	0.05
187	Multi-grade/age classes	0.04
189	Volunteers/teacher aides	0.03
192	Open vs. traditional	0.01
194	Welfare policies	−0.12
195	Retention	−0.13

Source: Author's own data.

REFERENCES

Biggs, J. B. and C. Tang (2011) *Teaching for Quality Learning at University*, 4th edn, Maidenhead: Open University Press.

Blatchford, P., A. Russell and R. Webster (2012) *Reassessing the Impact of Teaching Assistants: How Research Challenges Practice and Policy*, London and New York: Routledge.

Cuban, L. (2003) *Oversold and Underused: Computers in the Classroom*, Cambridge, Mass.: Harvard University Press.

—— (2013) *Inside the Black Box of Classroom Practice: Change without Reform in American Education*, Cambridge, Mass.: Harvard University Press.

Dickens, Charles (1854) *Hard Times*, London: Bradbury & Evans.

Fullan, M. and M. Langworthy (2014) *A Rich Seam: How New Pedagogies Find Deep Learning,* London: Pearson. Available online at https://research.pearson.com/articles/a-rich-seam-how-new-pedagogiesfinddeeplearning.html (accessed 9 April 2015).

Griffin, P., B. McGaw and E. Care (2012) *Assessment and Teaching of 21st Century Skills*, New York: Springer.

Grubb, W. N. (2009) *The Money Myth: School Resources, Outcomes, and Equity*, New York: Russell Sage Foundation.

Hattie, J. A. C. (2005) 'The Paradox of Reducing Class Size and Improved Learning Outcomes', *International Journal of Educational Research*, 43 (6): 387–425.

—— (2009) *Visible Learning: A Synthesis of 800+ Meta-Analyses on Achievement*, London and New York: Routledge.

Hattie, J. A. C., M. Anderson, J. Clinton and F. Rickards (2014) 'Developing an Evidence Base Model for the Effects of Teacher Education Programs on Teacher Candidates', in O. S. Tan and W. C. Liu (eds.), *Teacher Effectiveness: Capacity Building in a Complex Learning Era*, Singapore: Cengage Learning Asia.

Jensen, B. (2012) *Better Teacher Appraisal and Feedback: Improving Performance*, Grattan Institute Report No. 2011, 3 April, Melbourne, Australia. Available online at http://grattan.edu.au/report/better-teacher-appraisal-and-feedback-improving-performance (accessed 9 April 2015).

Kozol, J. (2005) *Savage Inequalities: Children in America's Schools*, New York: Harper Collins.

Lillard, A. S., M. D. Lerner, E. J. Hopkins, R. A. Dore, E. D. Smith and C. M. Palmquist (2013) 'The Impact of Pretend Play on Children's Development: A Review of the Evidence', *Psychological Bulletin*, 139 (1): 1–34.

National Center for Education Statistics (2013) *Digest of Education Statistics*, Washington, DC: US Department of Education. Available online at http://nces.ed.gov/programs/digest/2013menu_tables.asp (accessed 23 April 2015).

Nelson, G., A. Westhues and J. MacLeod (2003) 'A Meta-analysis of Longitudinal Research on Preschool Prevention Programs for Children', *Prevention and Treatment*, 6 (1): 16–71.

OECD (2010), PISA 2009 Results: What Students Know and Can Do – Student Performance in Reading, Mathematics and Science (Volume I) http://dx.doi.org/10.1787/9789264091450-en (accessed 5 January 2016).

—— (2012) 'Does Money Buy Strong Performance in PISA?' *PISA in Focus*. Available online at http://www.oecd.org/pisa/pisaproducts/pisainfocus/49685503.pdf (accessed 14 April 2015).

—— (2013), PISA 2012 Results: What Makes Schools Successful? Resources, Policies and Practices (Volume IV), PISA , OECD Publishing. http://dx.doi.org/10.1787/97892642011 56-en (accessed 5 January 2016).

—— (2014a) *Education at a Glance 2014: OECD Indicators*, Paris: OECD Publishing. Available online at http://dx.doi.org/10.1787/eag-2014-en (accessed 21 April 2015).

—— (2014b), PISA 2012 Results: What Students Know and Can Do – Student Performance in Mathematics, Reading and Science (Volume I, Revised edition, February 2014), PISA, OECD Publishing. http://dx.doi.org/10.1787/97892642011 18-en (accessed 5 January 2016).

Robinson, V. M. J., C. Lloyd and K. J. Rowe (2008) 'The Impact of Educational Leadership on Student Outcomes: An Analysis of the Differential Effects of Leadership Types', *Education Administration Quarterly*, 44 (5): 635–74.

Scafidi, B. (2012) *The School Staffing Surge: Decades of Employment Growth*, Indianapolis, Ind.: The Friedman Foundation for Educational Choice. Available online at http://www.edchoice.org/CMS-Modules/EdChoice/FileLibrary/931/The-School-Staffing-Surge-Decades-of-Employment-Growth-in-Americas-Public-Schools.pdf (accessed 9 April 2015).

Schleicher, A. (2012) 'Use Data to Build Better Schools', TED talk, July. Available online at http://www.ted.com/talks/andreas_schleicher_use_data_to_build_better_schools?quote=2054 (accessed 9 April 2015).

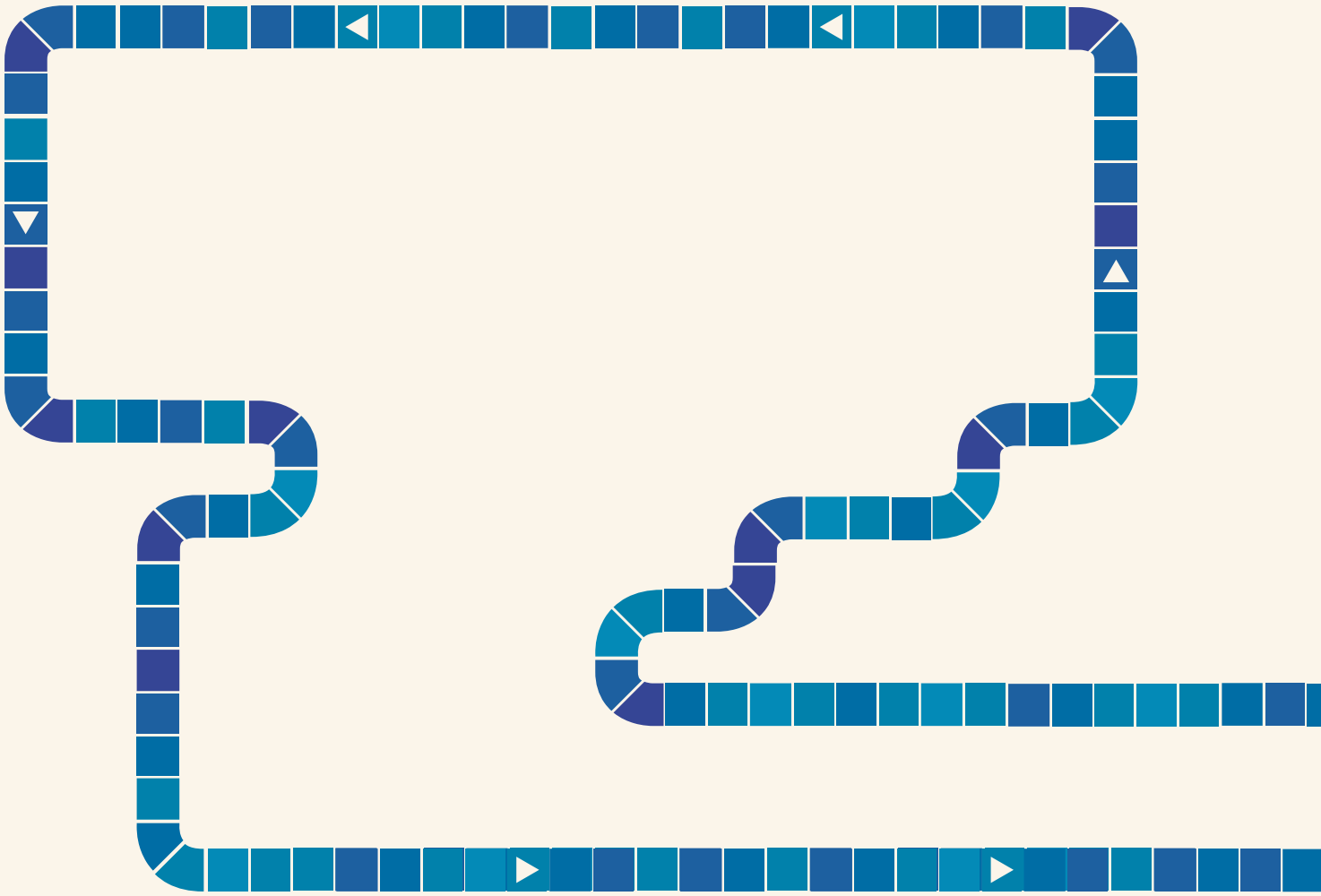
—— (2015) 'Seven Big Myths about Top-Performing School Systems', available online at http://www.bbc.co.uk/news/business-31087545 (accessed 24 March 2015).

Seltzer, M. M., J. S. Greenberg, J. L. Taylor, L. Smith, G. I. Orsmond, A. Esbensen and J. Hong (2011) 'Adolescents and Adults with Autism Spectrum Disorders', in D. G. Amaral, G. Dawson and D. Geschwind (eds.), *Autism Spectrum Disorders*, Oxford: Oxford University Press, pp. 241–52.

Sparling, J., C. T. Ramey and S. L. Ramey (2007) 'The Abecedarian Experience', in M. E. Young (ed.), *Early Child Development: From Measurement to Action – A Priority for Growth and Equity*, Washington, DC: The World Bank, pp. 81–99. Available online at http://siteresources.worldbank.org/INTECD/Resources/Part2-Chapter2-Sparling-CRamey-SRamey.pdf (accessed 9 April 2015).

Tooley, J. and D. Longfield (2015) *The Role and Impact of Private Schools in Developing Countries: A Response to the DFID-Commissioned 'Rigorous Literature Review'*, London: Pearson.

UNESCO (2010) *Outline of China's National Plan for Medium and Long-term Education Reform and Development (2010–2020)*. Available online at http://planipolis.iiep.unesco.org/upload/China/China_National_Long_Term_Educational_Reform_Development_2010-2020_eng.pdf (accessed 24 March 2015).



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