Analysing the UK's PISA results

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The latest PISA findings shine a light on UK performance in maths, science and reading. However, they should be read in context and with caution. **Dorothy Lepkowska** takes a look

The usefulness and veracity of the PISA tests divide opinion in the education world. But, in the UK at least, the international comparisons can offer a useful insight into how our 15-year-olds are performing against each other, and the world.

The main focus of the recently published 2015 PISA tests was science, but students also had to complete questions on maths, reading and problem-solving. The exercise did not test knowledge, but rather students' reasoning and interpretation skills and their ability to solve problems.

The PISA tests, administered by the Organisation for Economic Co-operation and Development (OECD), provide in-depth contextual information about different education systems, schools, teachers, students and how they live, and examine the relationships between these factors and levels of achievement.

> **'Headteachers in England and Scotland were more likely to report teacher shortages, while heads in England and Wales were more likely to cite inadequate or poorly qualified teachers as a concern'**

This information enables governments to inform their own policy-making. However, caution is needed. How students perform could also be down to a range of other factors that are not accounted for in the tests.

The NFER's briefing paper, *Key Insights from PISA 2015 for the UK Nations*, urges caution on how much we can deduce from changes in students' performance.

It states: "Simply looking at whether the score for science, maths or reading is higher or lower than in a previous PISA cycle does not accurately tell us whether achievement has improved, is stable or is in decline."

It is crucial to consider whether a score is statistically significantly different; in other words, that differences have not arisen solely by chance. It cites the example of Northern Ireland, where maths scores went up by six points since 2012 and yet the analysis found that performance had remained stable.

Furthermore, while it might be tempting to focus on rankings when trying to compare achievement between countries, this can be misleading as differences in scores might not be statistically significant. So while England is five positions higher in the rankings than Scotland, their scores are not significantly different.

Science

So how did the home countries' performance compare? The PISA results show that students in England achieved significantly higher scores in science than their peers in the other three nations, with students in Wales scoring significantly lower.

Further analysis of the highest and lowest performers reveals that England had the highest number of top performers at 12 per cent, compared with Scotland at eight per cent, Northern Ireland at seven per cent, and Wales at five per cent.

England also had the lowest percentage of low performers, at 17 per cent, followed by Northern Ireland at 18 per cent, Scotland at 20 per cent, and Wales at 22 per cent. There were no significant gender gaps in performance in any of the four UK countries.

Wales recorded the smallest difference between the highest and lowest achievers, and England the largest – the equivalent of nearly nine years of schooling.

Performance in science had declined in Scotland and Wales since it was last the focus of PISA in 2006, while in England and Northern Ireland there were no significant differences.

Mathematics

In maths, students in England, Northern Ireland and Scotland scored slightly above the OECD average, while in Wales the score was significantly lower.

Once again, England had the highest percentage of top performers at 11 per cent, followed by Scotland at nine per cent, Northern Ireland at seven per cent, and Wales at five per cent.

However, 22 per cent of students in England failed to reach the baseline ability in maths and lower performing students had lower average scores than their peers elsewhere in the UK. The percentage not reaching baseline ability in Northern Ireland was 19 per cent, in Scotland 20 per cent, and in Wales 23 per cent.

Wales had the smallest difference between high and low achievers, while England had the biggest gap, which was equivalent to eight years of schooling. Boys performed better in maths than girls in England and Wales, but this was not a pattern repeated in Northern Ireland or Scotland. Generally, maths scores have remained stable for all UK nations since maths was last the focus for PISA in 2012.

Reading

In reading, no significant differences were recorded in scores in England, Northern Ireland and Scotland, but students in all three scored higher than young people in Wales.

England had the highest average reading score among top performers, followed respectively by Scotland, Northern Ireland and Wales. In England, one in 10 students were deemed as top performers, while in Scotland and Northern Ireland six per cent reached this level and just four per cent in Wales.

At the other end of the scale, 18 per cent of students did not reach the baseline level of ability in England, compared with 15 per cent in Northern Ireland, 18 per cent in Scotland, and 21 per cent in Wales. Once again, Wales had the smallest difference between high and low achievers, and England, the largest, equating to more than eight years of schooling.

Overall, across the home countries, girls were found to be better readers than boys but there has been no major shift in reading performance since 2009, although there has been a decline in Scotland since 2012.

Contextual data

As well as focusing on test scores, PISA seeks to explain how and why students perform as they do in different countries by looking at contextual data. An analysis of socio-economic status (SES), for example, reveals that England has the largest gap in performance of students with high and low SES, and Wales, the lowest. This means that, in Wales, performance has less to do with affluence than in England, and that other factors will also have affected student success.

The school environment may have an impact on outcomes. Headteachers in England and Scotland were more likely than colleagues elsewhere in the UK to report teacher shortages, while heads in England and Wales were more likely to cite inadequate or poorly qualified teachers as a concern. Welsh heads were also most likely to report that teachers being poorly prepared for class was a barrier to learning.

Maths in England

In its report *Is Mathematics Education in England Working for Everyone?*, the NFER analysed PISA data to find out how well England was supporting pupils from disadvantaged backgrounds in the teaching and learning of maths.

It found that, while no worse than in many other OECD countries, the gap between the most and least disadvantaged pupils was equivalent to three years of schooling at age 15. International evidence suggests this is a gap that is hard to plug.

Pupils in England were not found to be lacking in any particular aspect of maths but were weaker in the subject across the board.

In considering recommendations, the report highlighted evidence that grouping pupils by ability can have detrimental effects, and can lead to low-ability children being exposed to less rigorous maths and so fewer opportunities to reach their potential.

The report suggests that new methods of measuring deprivation need to be found and that summer-born children, who were found to be less likely to overcome disadvantage than their autumn-born classmates, need specific strategies to ensure they are not left behind.

Furthermore, new research is needed on those children who beat the odds to perform well, and on the sharing of successful, evidence-based strategies that schools are adopting to support disadvantaged pupils. SecEd

• *Dorothy Lepkowska is a freelance education journalist.*

Further information

You can read NFER's education briefings *Key Insights from PISA 2015 in Scotland* and *Key Insights from PISA 2015 for the UK Nations*, via www.nfer.ac.uk/research/pisa-2015/

Ready for Apprenticeship reform?

How prepared are providers and employers to meet the challenges of the Apprenticeship reforms? **Dorothy Lepkowska** looks at the latest research findings

Apprenticeships are undergoing their biggest reform in decades. Ministers have set an ambitious target of three million Apprenticeships by 2020, with delivery starting in May next year.

The reforms aim to simplify funding, engage employers in the development of standards, offer more flexibility and engagement with employers, increase quality, and include the introduction of an Apprenticeship Levy for businesses with a wage bill larger than £3 million.

But how prepared are providers and employers to meet the timescale – and what do they think of the changes?

A joint report from the National Foundation for Educational Research (NFER) and the Association of Employment and Learning Providers (AELP), – *Providing for the Future: Providers' views on Apprenticeship reform* – examined in depth the views of 15 Apprenticeships providers to find out. Twelve were independent training providers (ITPs), one was a further education college, and two were other types of organisations providing Apprenticeships.

The research took place before more recent announcements on the future of Apprenticeships were made at the end of summer and in the early autumn. These included an additional £60 million of support for disadvantaged areas, a 20 per cent increase in levels of funding for standards for 16 to 18-year-olds, and the introduction of a large-scale scheme to increase the capacity to deliver independent end-point assessment (EPA) in Apprenticeships.

On the question of how well-informed providers were, the 15 interviewees said their organisations were as ready as they could be given the information available. One provider put it particularly succinctly: "I am as well-informed as anyone but I don't know what's going on."

Providers said they accepted that the reforms placed employers at the centre of the new Apprenticeship system and had taken it upon themselves to educate employers about the changes.

However, planning was proving difficult because the rate of release of information from the government was slow, which in turn made engagement with employers "slower and more time-consuming than usual".

Despite this, many were being proactive and holding discussions or staging events to raise awareness. One provider, who worked with 40 companies, said: "It is amazing how many don't see this coming down the line – 38 did not know it (reform) is coming."

Perceptions of the Apprenticeship Levy, meanwhile, were mixed. Providers noted that many employers had not engaged in the details of the Levy and what it would mean for them. Some observed that employers considered it a "tax", while others thought it complicated the system and hoped providers would "deal with the bureaucracy" for them.

On the other hand, several providers viewed the Levy as an opportunity because it could result in some of their larger clients having an increased budget. Additionally, they thought that some larger companies who have previously not employed apprentices at all might now engage with Apprenticeships.

While cognisant of the fact that many standards have not yet been developed, some providers said they were concerned about the lack of qualifications in many standards, and the lack of skills portability and transferability for individual apprentices. These had often been valued more highly by employers and learners than Apprenticeships achievement itself.

Their views on the quality of standards also varied. Some providers thought that the involvement of employers through trailblazers meant that specific skills requirements and competence levels would be met.

However, other providers thought that the content of standards was too specific to the relatively small number of large employers that had been involved in their development and so would be less useful to the wider occupational sector.

One said: "The usual suspects, the big boys, continue to set the agenda. I worry about fitness for purpose for smaller employers."

There were also fears that standards were too brief and could be open to wide-ranging interpretation that might impact negatively on their reputation over time. The ability to negotiate rates for funding, rather than centrally fixing rates, led to concerns that employers will negotiate prices down "to levels that would not support high-quality provision", the report said.

Providers were particularly concerned about the lack of information and understanding of the EPAs, or how this would work, how much it would cost and how quality would be monitored.

"We're happy with the standard but the assessment is not available yet and the funding has not been confirmed which is disappointing, not having all the component parts. This means we can't talk to employers in a meaningful way," one interviewee told researchers.

Some warned that the strong emphasis on EPA would lead to "training to the test". Interviewees said broad standards, poor quality assurance of EPAs and negotiated pricing could all drive down quality – a key point when the EPA is the final decision on whether or not an Apprenticeship has been completed successfully.

The balance between supply and demand of suitable Apprenticeships was another concern for providers, though the report found that young people and their parents were becoming increasingly aware of Apprenticeships, and schools were increasingly promoting them as a viable option for school-leavers.

> **'The ability to negotiate rates for funding, rather than centrally fixing rates, led to concerns that employers will negotiate prices down 'to levels that would not support high-quality provision'**

However, some employers continued to be reluctant to engage in discussion about Apprenticeships, partly due to the lack of information. Providers warned this could lead to reduced opportunities for young people at a time when demand was rising, and a lack of funding meant that 16 to 18-year-olds might not have access to the Apprenticeships they wanted.

But despite the challenges, there was acknowledgement that awareness of Apprenticeships had increased and that employers could select which providers to use, which added to transparency.

Other benefits mentioned included increased funding for maths, English and STEM subjects, the opportunities offered by the levy, and the increase in degree-level Apprenticeships that offered a real alternative to university.

At the same time, providers suggested increased training for employers and providers to make the new system work, enforcing qualifications as part of EPAs, piloting the new standards, and more funding for small and medium businesses.

They also wanted ring-fencing of funding for young people up to the age of 18. As one provider said: "16 to 18-year-olds will be blocked out. They should be funded fully until 18-years-old. They are receiving no careers advice and are rushing into things".

The report said the findings "reflect the changing provider role and that their ways of working have to change in order to bring employers with them".

But it went on: "To do this requires hard information and clarity. Strategic decision-making in a context of policy uncertainty is putting considerable strain on the provider market, without which quality Apprenticeships will not be delivered in the quantity that employers and the economy requires."

The report said there continued to be "significant challenges ahead" if the reforms were to result in high-quality Apprenticeships that offered real value to apprentices, employers and the UK economy.

David Sims, a research director at NFER who led the research project, said: "NFER is always concerned that education policy and practice should be informed by evidence. On this occasion the evidence suggests that, at least for some Apprenticeship providers, they are missing key information about these major reforms, including costs. This is limiting their ability to prepare for the government's given deadline and to engage with employers about the reforms as fully as they would wish."

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Mark Dawe, CEO of the AELP, said: "Providers need clarity and more detail to help them and their employers to strategically plan their future Apprenticeship provision. The government's October announcements may now have given them enough information but the research findings certainly confirm how significant the gaps in required knowledge have been at such a critical juncture of the reform process." SecEd

• *Dorothy Lepkowska is a freelance education journalist.*

Further information

The report, *Providing for the Future: Providers' views on Apprenticeship reform* can be found at www.nfer.ac.uk/publications/APPE01

Keeping hold of your teachers

New research into retention has uncovered some of the reasons why teachers quit the profession as well as those vital 'protective factors' that can help a school to retain, engage and motivate their teachers. Researcher **Sarah Lynch** takes a look

Recruiting and retaining enough teachers to serve growing numbers of pupils is one of the key challenges facing education in England. Many of the policy interventions have focused on teacher recruitment, but far less attention has been paid to retaining teachers currently employed in state schools.

Headteachers and senior leaders have an important role to ensure that when a school employs a good teacher they do their best to retain them. NFER's new research – *Engaging Teachers: NFER Analysis of Teacher Retention* – found that teachers who are well supported and valued by school management are more likely to stay in the profession.

NFER surveyed a nationally representative sample of more than 2,300 teachers over the course of a year and interviewed a small sample of teachers who had either left teaching or were considering leaving.

The research found that while the majority of teachers are not considering leaving the profession, the proportion considering leaving has increased significantly in the last year, from 17 to 23 per cent.

Smaller proportions than this actually leave the profession (10 per cent in 2015 including retirees), but this figure too has increased in recent years, suggesting that retention pressures are growing. The research investigated how engaged and supported teachers feel and analysed how this relates to their intention to remain in or leave the profession.

Keeping teachers engaged is key

Teachers were asked about the extent to which they agreed with 16 statements about school leadership, reward and recognition, resources, school culture and ethos, and their own professional development. Their responses were used to derive a measure of overall teacher engagement.

The research found a relationship between teacher engagement and retention. Around half of teachers were engaged in their role, and the more engaged they were, the less likely they were to consider leaving teaching. While most (90 per cent) of the engaged teachers were not considering leaving, 10 per cent of them were. Losing engaged teachers could be a serious problem for the education sector.

Protecting teachers from the pressures

We interviewed a small sample of 21 teachers who had left the profession or were considering the move. They gave interesting insights into why some teachers may be leaving the profession and workload was at the centre of these.

This was thought to partly stem from trying to keep up with the pace of policy change. One teacher said: "It's ridiculously hard to keep on top of (policy change). I'm not really sure what I'm supposed to be doing and not really sure if I'm doing it right."

Workload was also perceived to result from the pressure to meet the measures in the inspection framework and the effort it took to gather evidence that they were meeting requirements.

School leaders and school governors were identified as having an important role in protecting staff from these pressures, yet this was not always taking place.

Not all teachers had asked for support though, recognising that leaders are under pressure too, or because they were concerned it would show weakness. As one teacher commented: "The pressures for people in leadership are so great it puts a lot more pressure on people lower down."

Teachers wanted more non-teaching time to plan, to reflect on their own practices, and to learn from others. Managing workload had, in their view, prevented them from having spare time for effective planning and reflection.

Many of our 21 teachers reported that they did not feel sufficiently valued for all of their efforts, by government or leaders in their schools. For some, a tipping point was reached, such as stress-related illness. The pressure had taken its toll and they decided to leave the profession.

Protective factors

Further analysis of teachers' responses to the engagement statements revealed a range of "protective factors" which were associated with intent to stay, and are therefore likely to be critical for improving retention.

Unsurprisingly, by far the strongest predictor was job satisfaction, but other significant predictors included being well supported and valued by management. Having an effective governing body in the teachers' school also increased the likelihood of them staying in the profession. These findings strongly suggest that the right support for teachers could help to retain them.

While receiving appropriate pay for their level of responsibility was a protective factor for teachers, a number of those interviewed felt that pay was not the main motivating factor. Rather, they felt other forms of reward and recognition would also make them feel more valued.

How to support teacher retention

Monitor teacher intentions and engagement: The more engaged teachers are, the less likely they are to consider leaving. School leaders should monitor levels of engagement among their staff, either informally or through more formal methods such as teacher surveys. They may be able to improve retention rates by investigating the causes of any ambivalence or low engagement.

Engage (or re-engage) the workforce: School leaders should reflect on the protective factors found to be associated with teacher retention, which could help to engage staff. These include the support they themselves give as managers, but also job satisfaction, having adequate resources, and being paid (or rewarded) appropriately.

Support staff wellbeing: A greater focus should be placed on staff wellbeing. This could include schools having a governor or trustee responsible for staff welfare, or a member of the management team with specific time and responsibilities in this area. Mentoring and/or mental health provision could be beneficial for some staff. School leaders have a key role to play in protecting staff from what was described as a "tsunami of change". This should include being able to distil policy without it becoming burdensome for staff. School leaders should also help staff to juggle their responsibilities, including by looking more closely at how flexible working opportunities could be implemented more widely and effectively, to ensure that they benefit both teachers and the school.

Value and trust teachers: Too much negativity about the profession and too little support can lead to teachers feeling undervalued. Methods of engaging teachers need to take place within a positive narrative, to ensure they feel valued and trusted. SecEd


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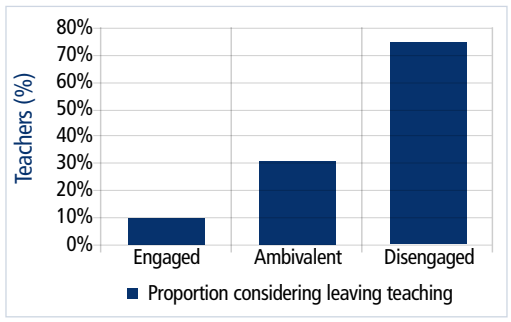
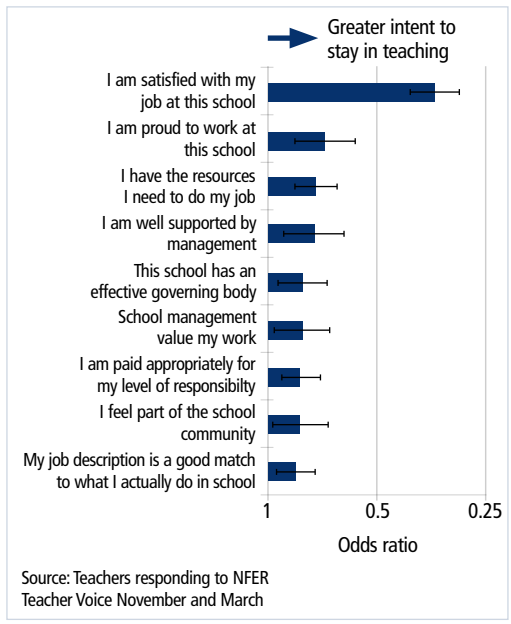




Source: Teachers responding to NFER Teacher Voice November and March

Should I stay or should I go? The relationship between teacher disengagement and their desire to leave the profession (left) and the 'protective factors' that lead to teachers remaining in the profession (right) as discovered in NFER's research

• *Sarah Lynch is a senior research manager at the National Foundation for Educational Research (NFER) and is part of a team of researchers who have been investigating the challenge of teacher retention.*

Further information

The full report, *Engaging Teachers: NFER Analysis of Teacher Retention*, is available for free via www.nfer.ac.uk/publications/LFSB01/

The key question on academies

Does academy conversion raise standards? This key question has been long argued over, especially since 2010. New research from NFER attempts to provide some answers. **Jack Worth** looks at the findings

More than 5,000 local authority-maintained schools in England have become academies over the last 15 years, most since 2010, in the largest structural change to the school system in decades.

Academies are now an established part of the English school landscape, and the government announced an ambition for every school to become an academy in its 2015 *Educational Excellence Everywhere* White Paper.

Measures to encourage more schools to become academies are expected to be included in the Education for All Bill expected later this term.

More than half of secondary schools are already academies compared to only one in five primary schools, so the vast majority of new academies are likely to be primary schools.

However, the legislation is expected to focus on maintained schools in local authorities that "can no longer viably support (their) remaining schools because a critical mass of schools in that area has converted", and "where the local authority consistently fails to meet a minimum performance threshold across its schools".

While the detail of these proposals is not yet known – it is certainly expected that many local authority-maintained secondary schools will be affected by such measures. But what impact has academy status had on the attainment of pupils in the secondary schools that have become academies so far?

Much of the existing evidence on the effect that academy status has had on pupil attainment is based on the experience of schools that became academies before 2010.

However, NFER's recent research on academies has looked at attainment in the more recent set of schools that became academies since 2010. We analysed the 2015 key stage 4 results of sponsored and converter academies that have been open for at least five years, and compared them with groups of similar local authority-maintained schools that have not become academies.

As you will know, converter academies are schools with "good" or "outstanding" Ofsted ratings that chose to convert to academy status, while sponsored academies are mostly underperforming schools that converted to academy status and are run by sponsors such as businesses, universities, other schools, faith groups or voluntary groups, who have majority control of the academy trust.

Comparing attainment between schools to tease out what difference the school structure makes is challenging because of the many other things that make those schools different. Converter academies tend to have higher attainment on average than the typical maintained school, but as their attainment was higher before they became an academy it is difficult to identify what effect becoming an academy had on attainment.

On the other hand, sponsored academies tend to have lower levels of attainment, but also had lower levels of attainment before converting. Comparing the average attainment in schools of different types does not compare like with like.

We carefully selected maintained schools that we could use to make comparisons with academies that are as fair as possible: schools that had the same level of attainment, Ofsted rating, proportion of free school meal pupils, and number of pupils at the time that the academies converted.

We also took account of the intake ability of pupils sitting key stage 4 exams in 2015, measuring the amount of "value added' progress they made between key stage 2 and 4.

The results of our comparisons are somewhat mixed, but show that attainment was generally slightly higher in academies than in similar maintained schools.

For example, the proportion of pupils achieving five A* to C grades at GCSE including English and maths was 2.7 percentage points higher in sponsored academies than in similar maintained schools, and 1.1 percentage points higher in converter academies than in similar maintained schools.

However, there was no difference between academies and similar maintained schools in terms of their average capped GCSE point score, excluding equivalent qualifications.

We also found some evidence of a trend towards greater improvement the longer a sponsored academy has been open, but there could be several explanations for this. It could reflect academy status taking time to "bed-in" before having an effect on pupil attainment.

On the other hand, the amount of Department for Education (DfE) funding available to sponsors when a school became a sponsored academy reduced by 83 per cent between 2010 and 2014 (according to the National Audit Office).

The sponsored academies that opened earlier received more start-up funding when they became academies, and this investment could have given these schools a one-off attainment boost that won't continue to accumulate over time.

The policy implications

Based on the performance of existing academies, this evidence suggests that making all remaining local authority-maintained schools into academies could make a small difference to pupil performance in the first few years.

However, the average differences in attainment between sponsored and converter academies and similar maintained schools are very small compared with how much attainment varies between schools, which raises some questions about whether all schools becoming academies is the best use of government resources.

This conclusion comes from comparing the performance of different school types at the same point in time. We are not able to measure what the system-wide impact of more schools becoming academies has been on attainment, either in the short-term or what it is likely to be in the longer term.

What should my school do?

The average differences in attainment between academies and similar maintained schools are very small when compared with how much attainment varies between all schools. Academy status explains very little of the variation in pupil progress between schools.

Each school's experience of academy status is likely to be quite different to that of others, and little research has so far been conducted to determine which schools are making academy status work best for them, and how.

Each school's own decision of whether or not to become an academy encompasses a wide set of considerations and will depend on its context (if indeed it has the choice – measures in the Education and Adoption Bill mean that all schools rated inadequate by Ofsted will become academies, and Regional Schools Commissioners have the discretionary power to impose an academy order on schools defined as "coasting").

Governors and school leaders should carefully consider the pros and cons of how being an academy might affect how it operates, and thereby enable it to, or hinder it from, delivering the best quality education for its pupils.

Schools that are already academies may have further structural decisions to make as well. The 2015 White Paper made clear that the government expects "most schools will form or join multi-academy trusts (MATs)".

Joining a MAT has been described by many as like a marriage with no prospect of divorce. The DfE describes MATs as "the best long-term formal arrangement for stronger schools to support the improvement of weaker schools".

Schools considering joining a MAT should assess what benefits might come from a formal grouping, alongside carefully considering whether they share the same vision of education as the other schools.

Executive headteachers: What's in a name?

This NFER report released in July 2016 found that the number of executive headteachers (EHTs) in England is rapidly increasing, even though their responsibilities are largely undefined. Key findings from the report are:

- As schools continue to form groups, demand for EHTs is likely to increase.
- There is currently no legal definition for EHTs, leading to multiple sector interpretations of the role.
- EHTs need high levels of strategic thinking, and skills in coaching and delegating. They need to ensure consistency and collaboration across their schools and have a strong capacity to look outward.

• *You can view the full report – entitled* Executive Headteachers: What's in a name? *– at www.nfer.ac.uk/publications/EXEC01/EXEC01_home.cfm*

Image: Adobe Stock

A formal grouping of schools also needs a leader, usually an executive headteacher, with the right skills and a remit and responsibilities that match the schools' strategic priorities (see panel, below, for news of research findings into this emerging role).

In short, structural change within the school system is set to continue, potentially affecting both maintained schools and academies not already part of a MAT.

School leaders and governors will need to regularly review what structure will best enable them to deliver high quality education for pupils. SecEd

• *Jack Worth is a research manager at NFER's Centre for Statistics.*

Further information

- You can download the full NFER research report – entitled *Analysis of Academy School Performance in 2015* (published June 2016), at www.nfer.ac.uk/publications/LGGG01/LGGG01.pdf
- The NFER's academies webpage, which features a range of research and information, can be found at www.nfer.ac.uk/research/academies/

Effective school-to-school partnerships

Enabling the teaching profession to instigate, develop and lead school improvement is seen as an effective way of embedding educational reforms. **Robert Smith** explains how this has worked in Wales through school-to-school partnerships

In Wales, policy-makers have been keen for the most successful schools to take a lead in transformation and school improvement through partnership and collaboration with colleagues in other primaries and secondaries.

For the past three years, the National Foundation for Educational Research (NFER) has been analysing the impact of the Lead and Emerging Practitioner Pathfinder Project, or "The Pathfinder", which was carried out in two tranches, the first in 2014 and a second in 2015.

The Pathfinder aimed to raise the standards within primary and secondary schools in Wales by facilitating school-to-school support to accelerate improvement.

Lead Practitioner Schools are high-performing primary and secondary schools with a proven leadership track record that has resulted in high levels of performance and/or improvement over a sustained period.

Emerging Practitioner Schools have already shown an early improvement in pupil outcomes but some of these schools have a mixed record of in-school variability over the last two to three years and the support of the Lead Practitioner School is designed to assist with stabilising this variability.

A report into Tranche 2 of the project examined how school-to-school support raises the standards of educational practice and attainment. Overall, researchers looked at 20 schools – four matched pairs of secondary schools and six of primary schools.

The analysis found that most schools believed their partnerships improved standards of teaching and learning, and had raised pupil performance in maths and numeracy. There was also evidence that leadership at senior and middle leader level had been enhanced and that schools' data tracking and assessment systems had been strengthened.

The headteacher of one Emerging Practitioner School said he felt he "could really benefit from having a critical friend in an experienced, successful headteacher who I could learn from and who could support me to address the improvements I wanted in my school".

Most of the pairings of schools decided to work on a small number of priorities, the report said, so they were not over-stretched and were able to devote the resources, time and effort needed to make positive changes.

Most of the staff noted the positive impact of the partnerships, with "mutual trust, willingness and respect between the schools which had facilitated effective collaboration". However, there were some factors which might have constrained the relationships, including proximity and differences in pupils cohorts and characteristics.

One Lead Practitioner School headteacher told researchers: "The key for us in the beginning was trust and we are now in the situation where we are very open with each other, friendly ... it was about developing relationships, going slowly, getting to know each other and having the confidence to be open and honest."

Teachers who were involved in the project reported that they had refined approaches to teaching and learning, which had had a big impact on the work done. Teachers felt more confident to try different approaches and to experiment with techniques that they may not have used previously.

As a result, lessons become more dynamic and interactive, inviting students to become active participants. Quality of feedback was improved and teachers changed the way they asked questions, allowing them to elicit answers which delved into how well learners understood concepts and issues.

Some schools had also used the Pathfinder to look at how they might deliver the curriculum more effectively, including focusing on the National Literacy and Numeracy Framework.

Teachers told the NFER researchers that being involved in a partnership made them more reflective of their own practice, and that they had looked at different ways of learning. This included examining how they used data as part of teaching and learning to suit the individual needs of classes of individual pupils.

In secondary schools, most heads and teachers said that participation in the Pathfinder had had a positive effect on teaching, with one senior leader describing it as a "journey of improvement". Teachers said they had more opportunities to self-evaluate their own classroom practice and were developing an "extended repertoire of teaching, assessment and tracking skills".

This was achieved by discussing different methods and approaches, sharing schemes of work and methods of tracking and using data, as well as lesson observations. Teachers said they also gained the skills to teach smaller classes and of working with individual pupils.

The report said: "Most senior leaders and teachers considered that classroom practice was improving as a result of the increased interaction between staff within and between schools, which had raised staff awareness of alternative approaches when planning, teaching and assessing."

At whole-school level, NFER found that what happened in one primary or secondary school in the partnership often influenced how things were done in the other. Headteachers became more reflective of their own leadership styles and in some cases, leadership teams were restructured as a result of the partnership. There were also changes among some middle leadership teams, with some middle leaders taking on new responsibilities.

The use of data was also strengthened, with schools changing how they collected data and how they then used this to support teaching and learning, in particular in supporting individual pupils. NFER researchers noted that in some partnerships the staff at the Emerging Practitioner School raised their expectations of what learners could achieve.

At the same time, the report said, pupils were made more aware of their targets and the level at which they should be working. This had the knock-on effect of making them reflect on their own needs, even setting down their own success criteria. Partnership schools used pupils' work from both settings to standardise judgements for assessment and moderation. In some cases, work from the Lead Practitioner School was adapted for use in the Emerging Practitioner School.

However, what did not work was an approach based on transferring practice directly from one school to another, or where school leaders assumed that what worked in their school would be effective practice elsewhere.

As a result of all this, NFER found that: "Learners' motivation improved and they were more engaged with teachers and the learning process. All of these changes were related to work to strengthen learners' voices, through formal processes for them to make their views known about their own learning and other work to nurture their independence and their enjoyment of their work."

The most lasting changes, researchers found, came about when there was a shift in attitude and culture, and this was needed alongside structural and procedural changes if reforms were to work. The Pathfinder appears to have helped schools to make sustained improvements. The study concluded that the partnerships had been effective in supporting and speeding up changes in participating schools. This was achieved partly through matching up schools effectively, the support that was given by the Welsh government and the Project Champion, and the "emotional intelligence" shown by senior leaders in getting their staff on board with the project while being mindful of their emotions and sensibilities. SecEd

• Robert Smith is a research manager at NFER and has extensive experience of designing and leading a range of research and evaluation projects, mostly in Wales.

Recommendations

NFER recommends the following to enable sustained improvement in school-to-school collaboration.

- Ensure there is a coordinated strategy for school improvements that responds to the needs of schools, but that different initiatives should be mutually supportive and not lead to overload or duplication.
- Embed CPD across Wales to build on the success of the Pathfinder. In particular, school leaders should develop the skills needed to work with other schools.
- Facilitate the sharing of good practice identified in the Pathfinder so it has the maximum impact in Welsh schools.
- Encourage further collaboration between schools as the Pioneer Schools start reforms to the curriculum and professional development arrangements across Wales.
- Schools should ensure that any specific improvement work forms part of a joined-up approach to overall school improvement plans.
- Schools should continue to gather and share evidence on what works locally and nationally.

Image: Adobe Stock

Further information

- *Mid-point Evaluation of the Lead and Emerging Practitioner School Tranche 1 Pathfinder Project*, NFER, July 2014: www.nfer.ac.uk/path1s
- *Evaluation of Tranche 2 of the Lead and Emerging Practitioner School Pathfinder Project*, NFER, March 2016: www.nfer.ac.uk/path2s
- NFER Self-Evaluation Toolkit: This free tool was developed to help schools evaluate and evidence the work they had been doing as part of the Lead and Emerging Practitioner Schools Pathfinder Project. Visit www.nfer.ac.uk/ses
- For in-depth case studies of schools involved in Tranche 1 of the Pathfinder that showed signs of developing and sharing good practice, visit www.nfer.ac.uk/csis

Engaging with potential NEETs

How can schools inspire key stage 4 students who can't see the value of going to school or getting good grades – and who risk becoming NEET? **Dr Susie Bamford** outlines some successful strategies

In England today we have a group of young people who are not able to see the value of going to school or getting good grades. These youngsters are NEET (not in education, employment, or training).

Latest figures show that the proportion of 16 to 24-year-old young people in England who are NEET was 11.6 per cent (actual number 690,000) as of December 2015.

But the majority of these young people are not facing complex barriers to learning such as teenage pregnancy or having social care involvement – they've simply become disengaged. Given appropriate support at the right stage these youngsters could go on to achieve the grades they need, find a job or training that they enjoy, and make a contribution to society. But without this, they could slip through the net to become NEET and remain NEET into later adulthood.

So what can be done to re-engage these young people? To inspire them and to help them see the importance of getting a good education? NFER has been trying to find out.

> **"The group dynamics and the support the students gave each other played an important role. Students formed friendships and gained from peer support and challenge that would not have otherwise been available"**

Assessing different support programmes

The NFER has been running a longitudinal study to investigate the impact of five different support programmes aimed at re-engaging such students at key stage 4. We have tracked 41 students involved in these programmes across two years from the beginning of year 10 to the end of year 11.

We have undertaken in-depth interviews with the programme leads, carried out focus groups with the students, conducted interviews with partner organisations (programme deliverers or work experience providers), and examined the students' attendance and attainment data.

Each student completed one of the programmes described below, all of which were delivered in England and all incurred a financial cost.

Employer or business-focused support

- Extended employer work experience: over the two years students attended work experience placements for one to three days per week and during the remaining days in school they focused on key subjects such as mathematics, English, science, work skills and vocational qualifications.
- Social enterprise qualification: students worked towards a qualification over the course of one or two years by working in small groups to identify a local issue and then set up a social enterprise to generate money to help solve or improve the identified issue.

Pastoral or academic-focused support

- City Year: students were mentored by graduate volunteer mentors on a one-to-one basis over the two years. The mentors supported the students in lessons and outside of class time by discussing the learners' personal targets and support needs.
- Do Something Different: students completed a six-week behavioural intervention where they were encouraged to try new behaviours through an individually tailored online support programme. The students met in a weekly group session to discuss their progress and provide each other with support.

Combined approaches

- Raising the Participation Age: this project ran over two years and combined careers guidance, mentoring, team enterprise activities in small groups, and work experience opportunities to provide students with well-rounded support.

Impact of the support programmes

We have now completed our project and our final report is free to download. Overall, the students' engagement in learning had improved compared to the beginning of year 10 and the majority were still engaged in learning in the autumn following their GCSEs.

The young people's attitudes to school improved over time too and in the majority of cases project leads reported that key stage 4 attainment was better than expected. Students had developed skills that helped them to remain in learning and prepare them for the world of work. Most notably, seeing the relevance of their school work to the world of work, improved attendance, enhanced confidence and communication skills, and improved teamwork.

Of course, we cannot be sure that these positive changes are solely due to the support programmes as we were not running a randomised controlled trial and we cannot know what might have happened without these programmes.

However, interviews with the programme leads revealed that there was an overwhelming belief that the students would not have done as well as they did without the additional support and this opinion was reflected by many of the students themselves. For example, one student said the programme "helped me realise school is key and education is a thing that will help you move forward".

The key elements

While the programmes have their differences we identified some common elements that the leaders believed contributed to the success of the interventions.

Mentoring: This was key in all the programmes. In some cases it was an overt part of the support with carved out mentoring time. In other cases the leads described "mentoring by stealth", the act of providing support and advice within the group sessions or simply being available for students when they needed it.

A consistent, dedicated project lead: What was clear was the positive effect on young people's attitudes of the programme leads. Linked to the mentoring aspect, all leads provided a consistent and supportive point of contact for the young people, whom they could trust and turn to for advice – a port in the storm. It is worth noting that the programme leads were all going "above and beyond" to support the students.

Group support: The group dynamics and the support the students gave each other played an important role. Students formed friendships and gained from peer support and challenge that would not have otherwise been available. They also learned to work effectively in a team which improved their behaviour and added to their employability skills.

Relevance to the world of work: Students reported that the parts of the programmes that allowed them to see the relevance of their studies to work were pivotal in helping them to re-engage. For example, using maths during work experience to plan business activities showed them that they were learning something important and relevant to later life. Once they could see relevance they were much happier to engage.

Flexibility: The programmes had an element of flexibility which allowed them to adapt to the students' needs, to offer support during lunchtimes and after school, and to fit around students' abilities and timetables.

Going forward

The NFER has produced a guide on how to recognise those young people most in need of help, identified key features of successful support programmes, and compiled top tips for running a programme in your school. We have seen that with the right support, students at risk of becoming NEET can be re-engaged, re-inspired and go on to have bright futures.

Top tips for schools

If you want to run a programme like the ones described above to re-engage your students here are our tips for success:

- Identify the youngsters: we have produced a free checklist of indicators, based on evidence, to help schools identify young people at risk of disengaging, profile the individual characteristics of the young person, and to inform the selection of the right support (see further information).
- Choose or develop a programme that has the key elements: mentoring, group support, relevance to work, and flexibility. Appoint a dedicated programme lead. Make sure the programme lead has adequate support and time to run the programme.
- Monitor your intervention: where possible keep track of your students' behaviour, attendance and (predicted) grades. Comparing these before, during and after the intervention can help to identify what is working.

Image: iStock

• Dr Susie Bamford is a quantitative researcher and statistician in the NFER's Centre for Evaluation and Consultancy.

Further information

- *NEET Prevention: Keeping students engaged at key stage 4* (final case study report), McCrone & Bamford, NFER, April 2016: www.nfer.ac.uk/IMP4
- *Reading the Signs: A discussion aid for identifying the reasons why young people may disengage*: www.nfer.ac.uk/IND2
- *NEET Prevention: Top tips for senior leaders*: www.nfer.ac.uk/IMP3

Flipping their learning

Jennie Harland reports on new research into flipped learning and identifies what this approach can offer students in terms of more active and personalised learning and improved progress

With increasing and more demanding curriculum content, teachers face the challenge of how to make the best use of the time they spend with their students.

Some pioneering teachers have been harnessing digital technology to "flip" the direct instruction of new concepts from lesson time to homework time, thus freeing up lessons for more active learning, extension activities and individual support.

The National Foundation for Educational Research (NFER) and Nesta were keen to understand more about the pros and cons for schools of using this innovative approach to teaching and learning.

Image: iStock

To this end, they supported nine schools in England and Scotland to trial a flipped learning approach in mathematics with one of their classes of 11 to 14-year-old students.

The schools were provided with support and materials including, if they wished, free Khan Academy videos and exercises to incorporate into their mathematics curriculum teaching for half a term.

Researchers worked with the schools to qualitatively evaluate their experiences and explore the impact of flipped learning. What came out of this research was a report and a practitioner guide to support schools implementing a flipped learning approach.

Impact of flipped learning

The report concluded that, where flipped learning was implemented successfully, there were a range of benefits for teaching and learning. The time that students spent at home undertaking online instruction resulted in them coming to lessons with a higher level of understanding and knowledge of concepts and topics than in traditional approaches. This freed up time for teachers to spend on a range of other beneficial activities for students including:

- Practising and applying knowledge and skills.
- Collaborative learning.
- Independent and student-led learning.
- Individualised coaching support from the teacher.

One of the case study teachers explained how flipped learning helped her to make the best use of her time with students during lessons: "It makes better use of me. Rather than sitting here while they copy stuff off the board, they can ask questions about things they are struggling with and there is more discussion as a result of flipped learning."

Another teacher explained how flipped learning had encouraged students to take responsibility for their learning and develop independent learning skills.

As this teacher reported: "Flipped learning is a really good way of getting students to be more independent. It encourages a culture of independence as the other students see those who 'get it' doing well and getting ahead and they want to do the same."

In addition, as a result of students coming to lessons with prior knowledge, lessons moved at a faster pace allowing students to deepen their knowledge and understanding, increase their confidence and, ultimately, make faster progress.

As one of the case study students explained: "The flipped learning approach means that you get more out of the lesson because you already have a bit of knowledge before you go in. The teacher would usually have to explain for most of the lesson if she's starting a new topic, so she doesn't have to do that as much, so we get more done and get onto harder questions."

Challenges of flipped learning

The report also sets out the challenges associated with flipped learning. Insufficient and inadequate access to technology is an obvious barrier to the success of this approach, which relies upon all students being able to access digital technology effectively at home, or out of scheduled lesson time.

There is an impressive wealth of digital resources available to support a flipped learning approach, particularly in mathematics (such as those used by schools in this study – Khan Academy, Hegarty Maths, MathsWatch, MyMaths, YouTube, BBC Bitesize, the National Centre for Excellence in the Teaching of Mathematics, and Mathsrevision.com).

However, teachers have a significant job to do in identifying which of these are appropriate to the curriculum they are teaching and to their students' learning needs, and which match their teaching style.

Another challenge that emerged was that some class teachers feel uncomfortable delegating responsibility for the initial instruction their students receive on a topic. They prefer to retain responsibility for ensuring consistent explanations of topics and concepts and for tackling misconceptions.

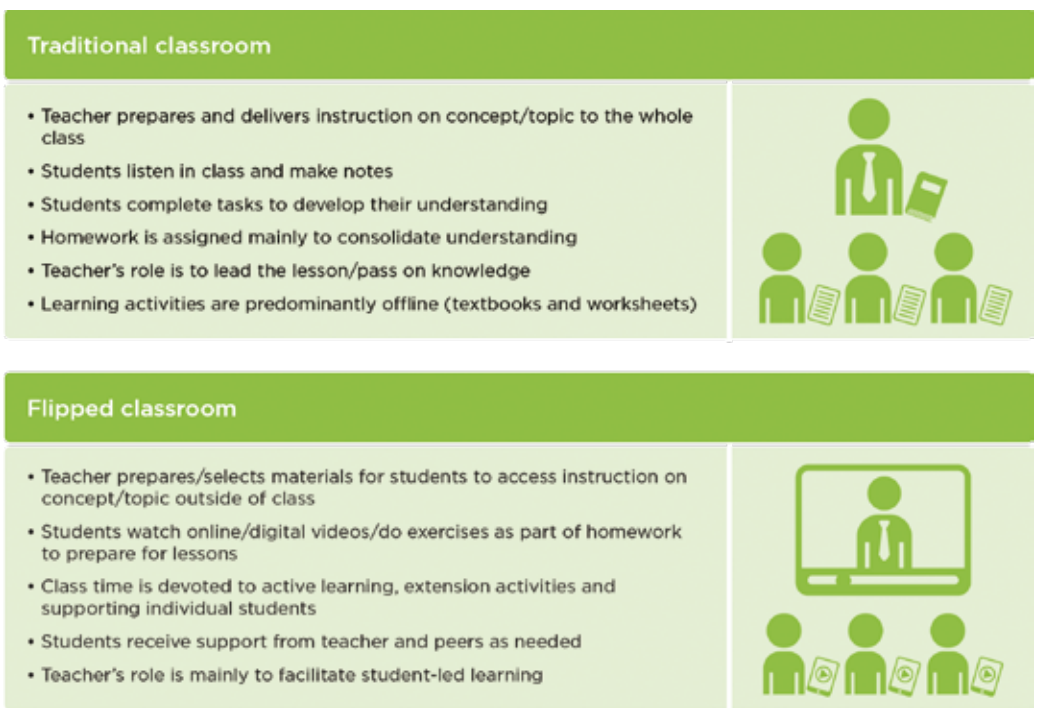
Flipped learning can also be less successful if students are not used to participating in homework and independent learning. In this case, any potential saving of time in lessons can be lost if the teacher has to spend time recapping content for students who have not completed the preliminary homework task.

In addition, some students may lose confidence and interest if they do not understand a topic they are meeting for the first time at home, where they are unable to ask the teacher questions to clarify their understanding along the way.

The report concludes that, where flipped learning is implemented effectively and the challenges it presents are surmounted, there are a range of positive effects for teaching and student learning.

Most teachers in the study saw flipped learning as just one approach in a varied repertoire of teaching strategies and intended to continue using it in this way.

All change: A diagram from the NFER/Nesta practitioner guide showing flipped learning vs traditional classroom approaches



Implementing flipped learning

In addition to the practitioner's guide, produced as part of the research project, any teachers considering flipped learning and the issues and challenges it poses can turn to the research report itself for some "top tips". For instance:

- Consider the attitudes and capabilities of students: where students are less confident with taking responsibility for their own learning outside of lessons, teachers can first introduce the online resources in class in a more supported and guided environment.
- Encourage peer-to-peer learning: students who have not completed the homework, or are struggling to understand concepts, can be paired in lessons with those who have completed the preliminary homework or have a more secure grasp of the topic.
- Identify appropriate video/digital resources: resources that provide teachers with feedback and data on student participation and performance can be used to plan and structure lessons, including differentiated activities for pupils with varying levels of understanding.

> **As a result of students coming to lessons with prior knowledge, lessons moved at a faster pace allowing students to deepen their knowledge and understanding**

- Ensure access to technology: where pupils are unable to access the resources at home, school computer facilities should be made available in break or in after-school clubs.
- Encourage homework participation: teachers may need to place greater emphasis on homework completion, which is essential preparation for subsequent lessons in a flipped learning approach
- Manage the change to flipped learning: teachers need to plan for how they will capitalise on additional lesson time gained through students coming in more prepared. SecEd

• Jennie Harland is a research manager at the National Foundation for Educational Research.

Further information

To download the report, practitioner guide and Khan Academy companion handbook and curriculum resources, visit http://bit.ly/1RSiMDE

The building blocks of Pupil Premium success

Drawing on the work of more than 1,300 schools, new research into the Pupil Premium has identified the common successful strategies and the key 'building blocks' for their implementation. **Dorothy Lepkowska** reports

How to break down the cycle of underachievement by pupils from disadvantaged backgrounds and narrow the achievement gap has been an issue of debate for years. However, with the Pupil Premium funding came an element of accountability and an expectation that schools will use the money effectively to achieve the best outcomes possible for those most in need. But, with limited time and resources, how can schools be sure that a certain strategy or approach will work?

The National Foundation for Educational Research (NFER) has published a research report entitled *Supporting the Attainment of Disadvantaged Pupils: Articulating success and good practice*.

Commissioned by the Department for Education last year, the report found that schools had adopted an average of 18 different methods of trying to narrow this gap. It also identified common ground between schools on what strategies are effective, and highlights the experiences of the more successful schools.

Effective strategies

The report draws on the responses to a questionnaire sent out to school leaders about the strategies they have used. The most commonly used strategies were also viewed as the most effective and included:

- Paired or group teaching.
- Improving feedback between teachers and pupils.
- One-to-one tuition.
- Initiatives introduced earlier, allowing them to bed in to the ethos of the school.

Compared with less successful schools, more successful schools had introduced their most effective strategy earlier. More and less successful schools also differed in their implementation of similar strategies.

For example, when it came to small group teaching, one more successful school took pupils of similar ability out of non-core subjects for additional support. This contrasted with a less successful school which removed pupils from English lessons to use an online tool, supervised by teaching assistants who had no specific training.

Furthermore, as part of their feedback to pupils, the more successful schools had implemented detailed consistent marking schemes to recognise pupils' achievements and identify the next steps in their learning and time was set aside specifically for discussion between the pupil and teacher. The researchers found that the more successful schools emphasised teaching and learning alongside emotional and social support, too. They also had highly effective assessment for learning systems which were straightforward to administer, provided clear feedback for pupils and contributed to each pupil's tracking and monitoring.

Tailoring strategies by responding to the needs of pupils was another characteristic of more successful schools. The study found that these schools "had adapted interventions or developed new ones based on their experience and understanding of what they were trying to achieve". It continues: "Their adaptations and developments were based on clear use of evidence, direct experience and observations of the initiative in practice. Less successful schools were more likely to be using 'off the shelf' interventions and less likely to be deviating from the prescribed approach."

The effectiveness of approaches used by different schools was not, therefore, simply a matter of implementing targeted strategies but relied on them being "embedded in a whole-school ethos of aspiration and attainment".

The seven building blocks

Crucially, the study identified seven "building blocks" that are common in schools that have achieved more success in raising standards among disadvantaged pupils. The first is a whole-school ethos of attainment for all, which meant the avoidance of stereotyping disadvantaged pupils as having less potential to succeed or as having similar barriers in the way of learning.

The head of one less successful school said: "Whatever we throw at these disadvantaged children, some of them are still struggling to make that progress. They just haven't got it. That sounds awful, but it's a fact of life. So we don't throw loads at these children. They make the progress that I think they are capable of."

The leader of a more successful school, however, said: "When I am talking about our disadvantaged students I am absolutely determined that I see each of them as an individual rather than generalising them and moulding them together."

The second building block is a clear strategy relating to behaviour and attendance, incorporating strong pastoral care in the form of social and emotional support and a quick response to non-attendance, as well as working closely with families.

The report found that "the features associated with less successful schools offer some potential insight into opportunities to improve outcomes for disadvantaged pupils: in particular, the finding that higher levels of pupil absence were associated with poorer outcomes for disadvantaged pupils in both primary and secondary schools".

More successful schools had designated staff to offer pastoral support and had employed strategies to ensure children attended school – such as calling home in the event of an absence, funding or sending out transport, and working with families, often in the home, to address the barriers they face in getting their children to school.

They also understood the link between behaviour and absence and emotional support, and had put extensive social and emotional support strategies in place including strong links with local mental health services.

Another building block is a commitment to high-quality teaching for all alongside consistently high standards and expectations of teachers and pupils, monitoring performance and sharing best practice in the school.

In the more successful schools, staff were able to meet the learning needs of individual pupils, which required them to know every child's challenges and interests, and to look closely at ways of supporting them to achieve their very best.

Rather than bolt-on strategies and activities outside school hours, in some more successful schools, pupils had bespoke timetables based on their needs. Children with specific learning needs were given the appropriate support, which might include group support for pupils with similar needs.

The effective deployment of teaching staff is seen as vital in raising standards among disadvantaged pupils, with the best teachers working with those who need most support, and using teaching assistants to support pupils' learning.

Appropriate training is deemed vital by the more successful schools, many of whom had trained a teaching assistant in pedagogy so they understood the drivers for educational practice, how to provide quality questioning and give appropriate feedback.

One school leader said: "Before, teaching assistants would simply follow around students on the SEN register from lesson to lesson. They were as transient as the students. What we did instead was we made every teaching assistant a subject-specific teaching assistant, so they only worked within one subject. They became deployed by the subject leaders and had high-level knowledge."

Effective use of data by staff and responding to evidence is a hallmark of more successful schools too and enabled teachers to identify individual children's needs, review progress regularly and swiftly address underperformance. Such schools were those with manageable assessment for learning systems, allowing teachers to give pupils clear feedback. Where schools used evidence to support their strategies they were able to make effective decisions about what worked best.

Successful schools monitored children regularly and scrutinised their progress. They also scrutinised the effectiveness of their strategies.

Finally, the most effective schools benefited from strong and clear leadership from headteachers who lead by example and set high aspirations. Senior leaders held their staff accountable, rather than accepting low attainment and variable performance. They shared their thinking and invested in staff training.

The report said: "Senior leaders in more successful schools said that deciding to alter or stop strategies that were proving ineffective was as important as deciding to adopt them in the first place."

The seven building blocks

The NFER research identified seven key building blocks for Pupil Premium interventions. They are:

- Whole-school ethos of attainment for all
- Addressing behaviour and attendance
- High-quality teaching for all
- Meeting individual learning needs
- Deploying staff effectively
- Data-driven and responding to evidence
- Clear, responsive leadership

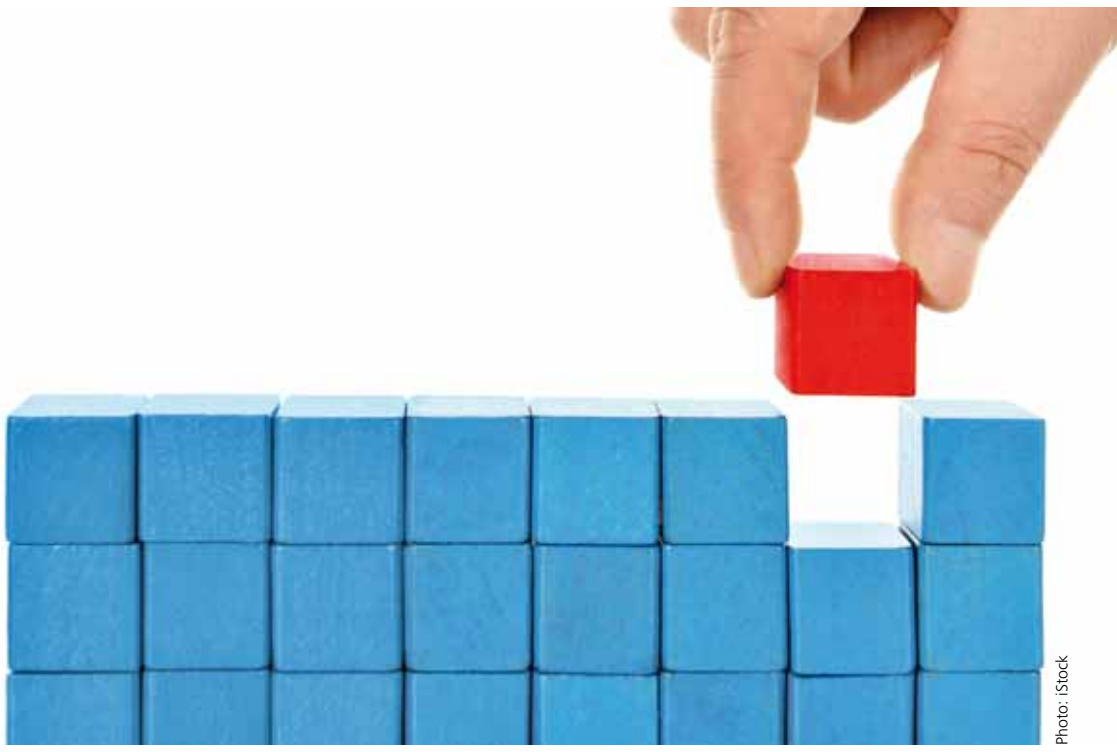


Photo: iStock

Conclusions

Overall, the report concludes that schools are able to improve disadvantaged pupils' performance and make a positive difference to their life chances. There is no single strategy that will make this difference. Schools need to select the strategies that work best for their pupils and their school's circumstances.

In doing so, they need to bear in mind that the quality of their implementation of strategies is as important as their choice of strategies. Even with all of these building blocks, implementing change and reaping the benefits takes time. More successful schools reported that it took "around three to five years for changes to 'bed in' and lead to a sustained change in pupils' attainment". SecEd

• *Dorothy Lepkowska is an education writer.*

Further information

To download the full NFER research paper and findings, visit www.nfer.ac.uk/spp