Department for Education

Supporting the attainment of disadvantaged pupils: articulating success and good practice

Research report

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Executive Summary

Introduction, aims and objectives

The performance gap between pupils from more and less advantaged backgrounds in England is one of the largest among OECD countries (OECD, 2014). The pupil premium was introduced by the coalition government in 2011 to increase social mobility and reduce the gap in performance between pupils from disadvantaged backgrounds and their peers. Schools receive funding for each disadvantaged pupil and can use the funding flexibly, in the best interests of eligible pupils.

In November 2014, the Department for Education commissioned the National Foundation for Educational Research (NFER) to investigate the differences between schools in the performance of pupils from disadvantaged backgrounds. The study aimed to identify:

1. Whether there are any common features of schools that have narrowed the gap successfully.

2. Whether there are any possible groups/clusters of schools that have narrowed the gap, and why this is the case.

3. What are schools that have narrowed the gap doing compared to other schools? What leads to them doing well? What lessons can be learnt from them?

For the purpose of this study, disadvantaged pupils are identified in the national school datasets used in this analysis based on their eligibility for the pupil premium. This includes pupils eligible for free school meals at any point within the past six years (Ever 6 FSM) and pupils looked after by the local authority[1].

Key findings

What are schools doing to improve the performance of disadvantaged pupils?

The survey found that schools had used a large number of strategies (18 per school, on average) in order to raise the attainment of disadvantaged pupils since 2011. The most popular strategies, and those that schools considered to be the most effective, focused on teaching and learning, especially: paired or small group additional teaching; improving feedback; and one-to-one tuition. These strategies are all supported by evidence of

[1] This definition of disadvantaged pupils was used to define pupil premium eligibility prior to April 2014 and includes pupils looked after by the local authority for more than six months. In April 2014, eligibility for the pupil premium changed to include pupils who have been in local authority care for one day or more and pupils who have left local authority care because of one of the following: adoption; a special guardianship order; a child arrangements order.

effectiveness in the Sutton Trust/Education Endowment Foundation (EEF) Teaching and Learning Toolkit[2].

Most schools (93.1 per cent) had received support from governors for their plans to improve disadvantaged pupils' performance and over half (54.2 per cent) had received such support from local authorities.

Although schools tended to be using similar strategies, more successful schools[3] had introduced the strategy they identified as their 'most effective' strategy earlier than less successful schools (before 2011 – though they were still using it in 2014). Further analysis found that schools were using certain groups of strategies overall, and that these were related to success in raising the attainment of disadvantaged pupils.

- More successful schools were more likely to be using metacognitive[4]/independent learning and peer learning strategies (although this relationship was only statistically significant in secondary schools).

Metacognitive and peer learning strategies have independent evidence of effectiveness (see the Sutton Trust/EEF Teaching and Learning Toolkit).

The research found some statistically significant relationships between primary schools with less success in raising the attainment of disadvantaged pupils and the strategies they adopted.

- Less successful primary schools were more likely to be using strategies to improve attendance, behaviour or pupil engagement in the curriculum, or to have made improvements to the classroom/school environment.
- Less successful primary schools more likely to: employ additional teaching assistants (TAs) or increase TA hours to work specifically with disadvantaged pupils; introduce new literacy and numeracy programmes; and use paired/small group additional teaching.

However, rather than suggesting that these strategies are ineffective, these findings may be a reflection of differences in schools' stages of development. It is possible that more successful schools had already embedded these approaches in their practice and therefore did not identify them as specific strategies for raising disadvantaged pupils' attainment introduced after 2011.

[2] See: The Sutton Trust/Education Endowment Foundation (EEF) Teaching and Learning Toolkit.

[3] More successful schools are those where the attainment of pupils eligible for free school meals or looked after by the local authority was better than expected, after taking account of the characteristics of the school and the pupil cohort.

[4] Metacognitive strategies are designed to help pupils to learn how to learn, by encouraging them to think about their own learning more explicitly. This can be achieved by teaching pupils specific strategies to set goals, and monitor and evaluate their own academic development.

How are schools raising the attainment of disadvantaged pupils?

Leaders in schools that were more successful in raising the attainment of disadvantaged pupils emphasised that there was no single intervention that had led to success. Rather, more successful schools appeared to be implementing their strategies in greater depth and with more attention to detail. By comparing more and less successful schools, the study identified seven building blocks for success.

1. Promote an ethos of attainment for all pupils, rather than stereotyping disadvantaged pupils as a group with less potential to succeed.
2. Have an individualised approach to addressing barriers to learning and emotional support, at an early stage, rather than providing access to generic support and focusing on pupils nearing their end-of-key-stage assessments.
3. Focus on high quality teaching first rather than on bolt-on strategies and activities outside school hours.
4. Focus on outcomes for individual pupils rather than on providing strategies.
5. Deploy the best staff to support disadvantaged pupils; develop skills and roles of teachers and TAs rather than using additional staff who do not know the pupils well.
6. Make decisions based on data and respond to evidence, using frequent, rather than one-off assessment and decision points.
7. Have clear, responsive leadership: setting ever higher aspirations and devolving responsibility for raising attainment to all staff, rather than accepting low aspirations and variable performance.

More successful schools saw raising the attainment of disadvantaged pupils as part of their commitment to help all pupils achieve their full potential. They prioritised quality teaching for all, seeing attendance, behaviour and emotional support as necessary but not sufficient for academic success. They made every effort to understand every pupil as an individual and tailored their programmes accordingly. They linked teaching and learning interventions to classroom work, monitored attainment and intervened quickly to address learning needs. They ensured TAs had the necessary training and expertise to deliver interventions, provide feedback and monitor progress.

Senior leaders in less successful schools identified a number of barriers to success. Some had low expectations for what it was possible for these pupils to achieve. They felt it would be impractical to develop individual plans to meet pupils' learning needs. Leaders in schools with fewer disadvantaged pupils pointed out that they had less funding and could therefore not afford to introduce more expensive changes, and some leaders felt constrained by the need to demonstrate they had spent the funding exclusively on eligible pupils.

How do school characteristics relate to success for disadvantaged pupils?

The study identified several common features of schools where disadvantaged pupils (identified in the national datasets used in the analysis as those eligible for free school meals (FSM) or looked after by the local authority[5]) have achieved better or less well than expected, in relation to the performance of disadvantaged pupils nationally. There was considerable consistency between the characteristics associated with a school's level of success in the most recent year and improvement in schools' results over time. (But note that these are correlations and do not necessarily imply causal relationships.)

- Schools with higher levels of pupil absence had lower performance among disadvantaged pupils than schools with otherwise similar characteristics.
- Primary schools with disadvantaged pupils who had previously achieved higher results at Key Stage 1 had higher results for disadvantaged pupils at Key Stage 2. Similarly, secondary schools with disadvantaged pupils who had achieved higher results at Key Stage 2 performed better at Key Stage 4.
- Schools with a higher proportion of disadvantaged pupils were associated with higher performance among disadvantaged pupils (and schools with a lower proportion of disadvantaged pupils were associated with lower performance among disadvantaged pupils).
- Schools with larger year groups overall (including both disadvantaged and non-disadvantaged pupils) were associated with lower performance among disadvantaged pupils.
- Primary schools with higher proportions of pupils with special educational needs (SEN) were associated with lower performance among disadvantaged pupils.
- Schools with a higher proportion of pupils from white British ethnic backgrounds were associated with lower performance among disadvantaged pupils.
- Schools located in certain areas (especially the South East, South West, East of England and North West) had poorer results, compared with schools in London or the North East[6].
- Rural secondary schools[7] had lower results among disadvantaged pupils, compared with schools with otherwise similar characteristics.

[5] This is the definition of eligibility for the pupil premium that was used prior to April 2014 (also see footnote 1 on page 8).

[6] The research allocated schools to one of nine areas, based on the former Government Office Regions – see The Office for National Statistics Administrative Geography Maps

[7] Note that a large number of rural primary schools could not be included in the analysis due to the small numbers of disadvantaged pupils in each school.

In relation to school type, the study found that:

- Converter academies[8] were associated with higher attainment among disadvantaged pupils at both primary and secondary level, and greater improvement over time at primary level.
- There were mixed findings for sponsored[9] academies, which were associated with poorer performance at primary level, but better performance and improvement at secondary level.
- Selective schools and Teaching Schools were associated with higher performance among disadvantaged pupils even after taking account of the influence of a high-performing intake and other characteristics that were associated with pupil progress.

The study found no evidence of a statistically significant relationship between positive performance among disadvantaged pupils and being a member of a Teaching School Alliance (TSA). Being a member of an academy group was not associated with performance at primary level, but there was a small positive relationship between disadvantaged pupils' performance among secondary schools that were members of a small academy group. (Please note that the analysis did not take account of the length of time a school had been a member of a TSA or part of an academy group.)

Discussion and conclusion

This study found that between one- and two-thirds of the variance between schools in disadvantaged pupils' attainment can be explained by a number of school-level characteristics. This suggests that schools' intake and circumstance are influential but they do not totally determine pupils' outcomes. It therefore implies that schools have meaningful scope to make a difference. The research went on to identify a number of actions associated with schools that were more successful in raising disadvantaged pupils' attainment – both in what they do and the way they do it.

More successful schools have been focusing on disadvantaged pupils' performance for longer and appear to have developed more sophisticated responses over time. Leaders in more successful schools said it had taken a period of around three to five years to see the impact of changes they had introduced feed through to pupils' results.

Taken together, the findings suggest that schools which have been more successful in raising the performance of disadvantaged pupils have put the basics in place (especially addressing attendance and behaviour, setting high expectations, focusing on the quality of teaching and developing the role of TAs) and have moved on to more specific improvement strategies. These schools were 'early adopters'. Schools that are earlier in

[8] A school formerly maintained by the local authority, which has voluntarily converted to academy status.

[9] A school formerly maintained by the local authority, which has been transferred to academy status as part of a government intervention strategy.

the improvement journey are more likely to have smaller proportions of disadvantaged pupils and/or to have larger year groups. In order to make further progress, the research indicates that they need to support pupils' social and emotional needs, address individual pupils' learning needs; help all staff to use data effectively and improve engagement with families. Once these strategies are in place, the next steps on the improvement journey include focusing on early intervention, introducing metacognitive and peer learning strategies and improving their effectiveness in response to data on individual pupils' progress. Schools which have made the greatest progress in improving the attainment of disadvantaged pupils are in a position to set even higher expectations and to spread good practice through working with neighbouring schools and well as continuing to learn from and contribute to national networks.

Overall, this research suggests that there is no 'one size fits all' solution to closing the attainment gap. Instead, a number of measures are required, tailored to each school's circumstances and stage on the improvement journey. These measures include setting a culture of high expectations for all pupils, understanding how schools can make a difference, selecting a range of evidence-based strategies tailored to meet the needs of individual schools and pupils, and implementing them well.

Further research

The research identified several associations which would benefit from further investigation. The research team has selected three areas where further research would have the greatest value.

1. Further research into the relationship between absence and attainment for disadvantaged pupils, to investigate the reasons underlying the association and understand whether improving attendance for all pupils is likely to be an effective strategy for closing the attainment gap.
2. Further research into the relationships between disadvantaged pupils' performance and geographical regions, including investigating the relationships at pupil level.
3. Further research investigating the utility of the 'pathway to success'. Does this have resonance with schools? If less successful schools are supported to move to the next step on the pathway, does this result in improved outcomes for disadvantaged pupils?

Research design

The research took place in three phases between December 2014 and April 2015.

Phase 1 investigated the relationship between school characteristics and outcomes for pupils from disadvantaged backgrounds. It used school-level data from school performance tables (available on the Department for Education website[10]) to construct a

[10] http://www.education.gov.uk/schools/performance/

number of quantitative models which included school descriptors (such as its type and region) and the characteristics of the cohort of pupils who were assessed in the relevant years (such as their prior attainment, cohort size, proportion of pupils eligible for FSM, SEN and ethnic composition). By estimating the relationship between these characteristics and the outcome variable (i.e. the school-level performance of pupils from disadvantaged backgrounds) it was possible to account for some of the differences between schools in the performance of disadvantaged pupils. The statistical models used in this research were able to account for between 30.5 and 62.3 per cent of the variance between schools in disadvantaged pupils' performance.

Phase 2 focused on the strategies schools were using to improve the attainment of disadvantaged pupils. It comprised a survey of 759 primary and 570 secondary schools in England (the response rate was 21.9 per cent). The survey was sent to a sample of schools selected from Phase 1 to represent those where disadvantaged pupils had attained higher or lower results than expected, given the characteristics of the school.

Phase 3 focused on how schools were implementing their strategies and approaches. It comprised telephone interviews with senior leaders in 49 schools (eight special schools, 20 primary schools and 21 secondary schools). The interview sample was chosen to represent schools where disadvantaged pupils had attained higher or lower results than expected, given the characteristics of the school. Interviews were semi-structured and lasted about an hour. Interviewers wrote up notes into a template, using audio recordings to check the accuracy of verbatim quotes.

1 Introduction

This research set out to explore what might account for the differences between schools in the performance of pupils from disadvantaged backgrounds. It focused on the contribution of school characteristics, their strategies and approaches, to their success in promoting attainment among disadvantaged pupils.

1.1 Policy context

Although many countries have a gap in performance between pupils from rich and poor backgrounds, the gap in the UK is relatively large (OECD, 2014). The coalition government introduced the pupil premium to provide publicly funded schools with additional funding to raise the attainment of disadvantaged pupils and close the attainment gap between them and their peers. Other aims included increasing social mobility and enabling pupils from disadvantaged backgrounds to get to the top universities.

When announcing this initiative to the House of Commons in 2010, the Chancellor George Osborne said:

> *We will also introduce a new £2.5 billion pupil premium, which supports the education of disadvantaged children and will provide a real incentive for good schools to take pupils from poorer backgrounds. That pupil premium is at the heart of the coalition agreement, and at the heart of our commitment to reform, fairness and economic growth.*
>
> (Jarrett and Long, 2014, p. 3)

The pupil premium is currently paid for each pupil who is eligible for FSM within the last six years, pupils who have been in local authority care for one day or more and pupils who have left local authority care because of one of the following: adoption; a special guardianship order; a child arrangements order. It is also paid for pupils continuously looked after by the local authority for more than six months. In addition, children with parents in the armed services are eligible for the service premium.[11] This definition was introduced in April 2014. This report draws on national datasets from 2011 to 2014, meaning that the pre-April 2014 definition is the basis for the analysis throughout this report. Before April 2014, pupils were eligible for the pupil premium if they were eligible for FSM within the last six years or were continuously looked after by the local authority for more than six months.

The pupil premium was first implemented in English schools from September 2011. Schools received £488 per FSM-eligible pupil in the 2011-12 financial year and £623 per FSM-eligible pupil in 2012-13. In 2013-14, primary schools received £953 for each FSM-eligible pupil and secondary schools £900. At this point, primary schools began to receive more funding in recognition of the influence of early learning on later performance (GB.

[11] See Government publication detailing the service premium.

Parliament. HoC. Education Committee, 2014). Children looked after by the local authority were eligible for £430 in 2011-14, £600 in 2012-13 and £900 in 2013-14.

Over the last four years, the Department has given £6.0 billion to schools under the pupil premium policy. However, the National Audit Office (2015) pointed out that other real-terms reductions in school funding mean the pupil premium has not always increased school budgets.

It is up to headteachers to decide how to spend pupil premium money, as the Government considers them to be best placed to understand the educational needs of their eligible pupils. However, schools must publish details of how they spend the pupil premium and the effect this has had on the attainment of the pupils who attract the funding. In July 2014, Ofsted revised its inspection framework to include a greater focus on the attainment and progress of disadvantaged pupils who attract the pupil premium. Ofsted may recommend that schools commission a Pupil Premium Review[12] from an experienced school leader to help them improve the performance of disadvantaged pupils.

In addition to being subject to scrutiny by Ofsted, schools maintained by the local authority may receive a warning and subsequent intervention from their local authority if the attainment or progress of their disadvantaged pupils is unacceptably low (DfE, 2015c). The Regional Schools Commissioners have similar responsibilities for academies and free schools.[13]

In order to help schools make informed decisions about their use of pupil premium funding, the Sutton Trust and the Education Endowment Foundation (EEF) commissioned the Teaching and Learning Toolkit (Higgins *et al*., 2014). First published in May 2011, the Toolkit aims to provide an accessible summary of research on the effectiveness of a range of strategies schools could use to raise the attainment of disadvantaged pupils. In 2015, the EEF launched the Families of Schools database[14] to help schools identify how the performance of their pupils, particularly disadvantaged pupils, compares with other schools with similar pupil characteristics, in similar contexts, and learn from each other.

The Government has also set out its vision for ensuring good standards and sharing good practice between schools through system leadership and school networks (DfE, 2010). These mechanisms include Teaching School Alliances, National Leaders of Education and academy chains. Other mechanisms for spreading good practice related

[12] This is a structured review commissioned by a school and conducted by an independent, experienced school leader. See Government publication offering guidance on pupil premium reviews.

[13] See Gov.UK School Commissioners Group homepage.

[14] Available at Education Endowment Foundation Families of Schools Database.

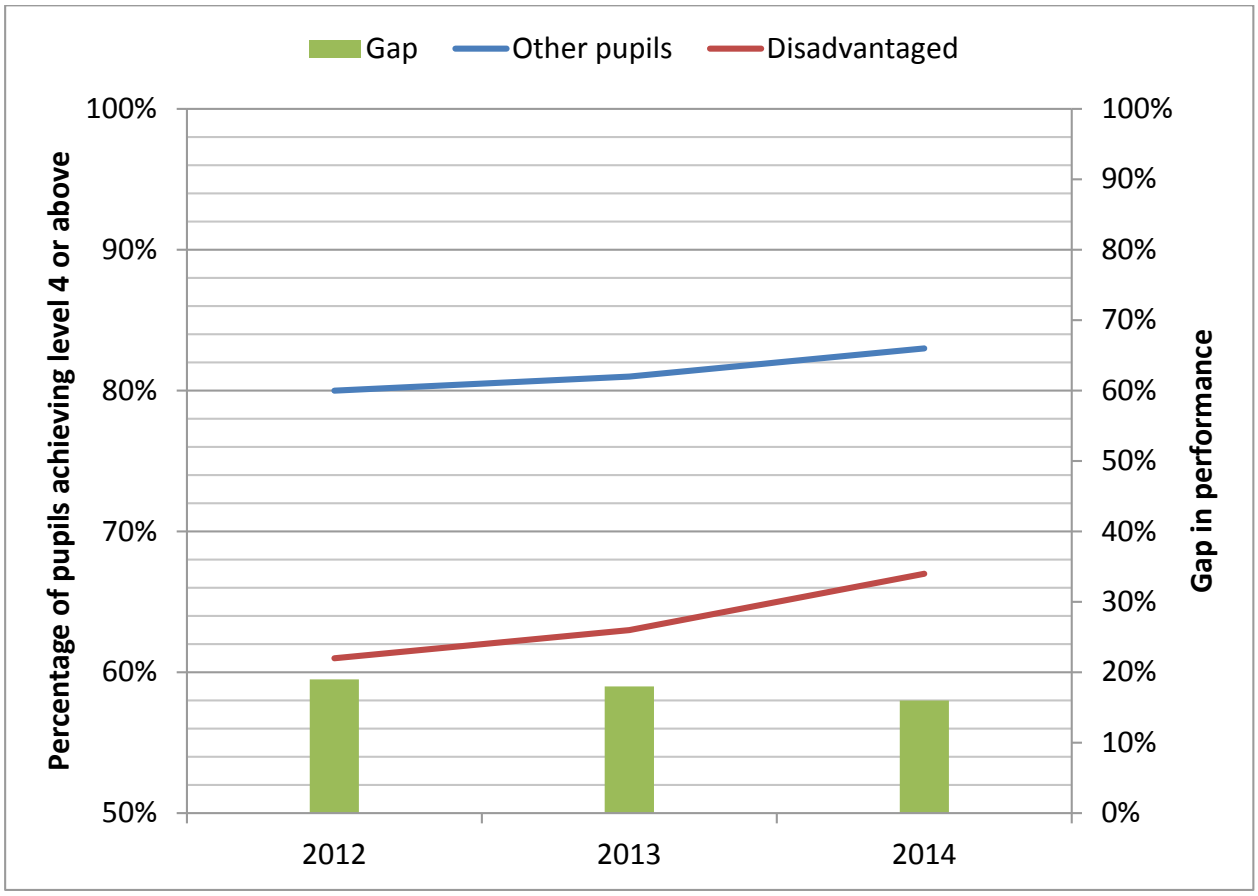
specifically to the pupil premium include the Pupil Premium Awards[15] and Research Schools.[16]

Although generally welcomed by schools (Carpenter *et al*., 2013), the pupil premium has recently been criticised by the teacher union NASUWT (2015) for being poorly communicated and burdensome.

1.2 Trends in the attainment gap over time

According to national data, the gap in attainment of disadvantaged pupils (i.e. those eligible for the pupil premium[17]) has closed slightly in recent years. Figure 1 shows the attainment of disadvantaged 11-year-olds in relation to all other pupils between 2012 and 2014.

Figure 1 Percentage of pupils achieving level 4 or above in reading, writing and maths at Key Stage 2



The gap between the proportion of disadvantaged and other pupils achieving the expected level of attainment by the end of primary school was 19 per cent in 2012. In

[15] The Pupil Premium Awards reward schools that have introduced evidence-based interventions to improve outcomes for their disadvantaged pupils. See The Pupil Premium Awards website.

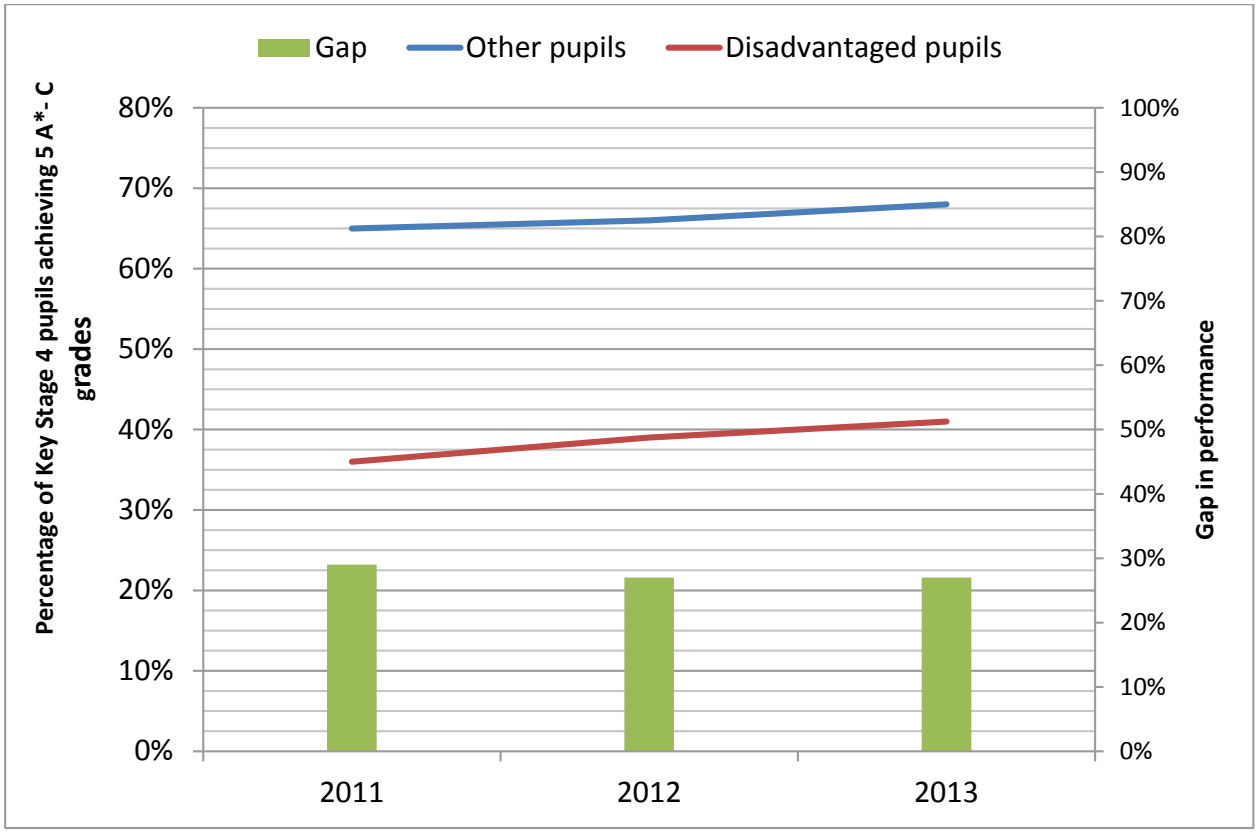
[16] Announced in 2015, grants are available for up to ten schools to translate and support the use of evidence and raise the performance of pupils from disadvantaged backgrounds. See Gov.UK Guidance on The Education Endowment Foundation Research Schools funding.

[17] According to the eligibility criteria for the pupil premium used before April 2014.

2013 the gap reduced slightly (18 per cent) and it reduced slightly again in 2014 (to 16 per cent).

The trend in attainment at Key Stage 4 is less clear and differs according to the measure used. Figure 2 shows the attainment of disadvantaged pupils at Key Stage 4 in relation to all other pupils between 2011 and 2013. Note that the period shown is 2011 to 2013 as this is the period covered in this research and the method for calculating Key Stage 4 performance nationally changed in 2014.

Figure 2 Percentage of pupils achieving 5 A*- C grades including maths and English at Key Stage 4

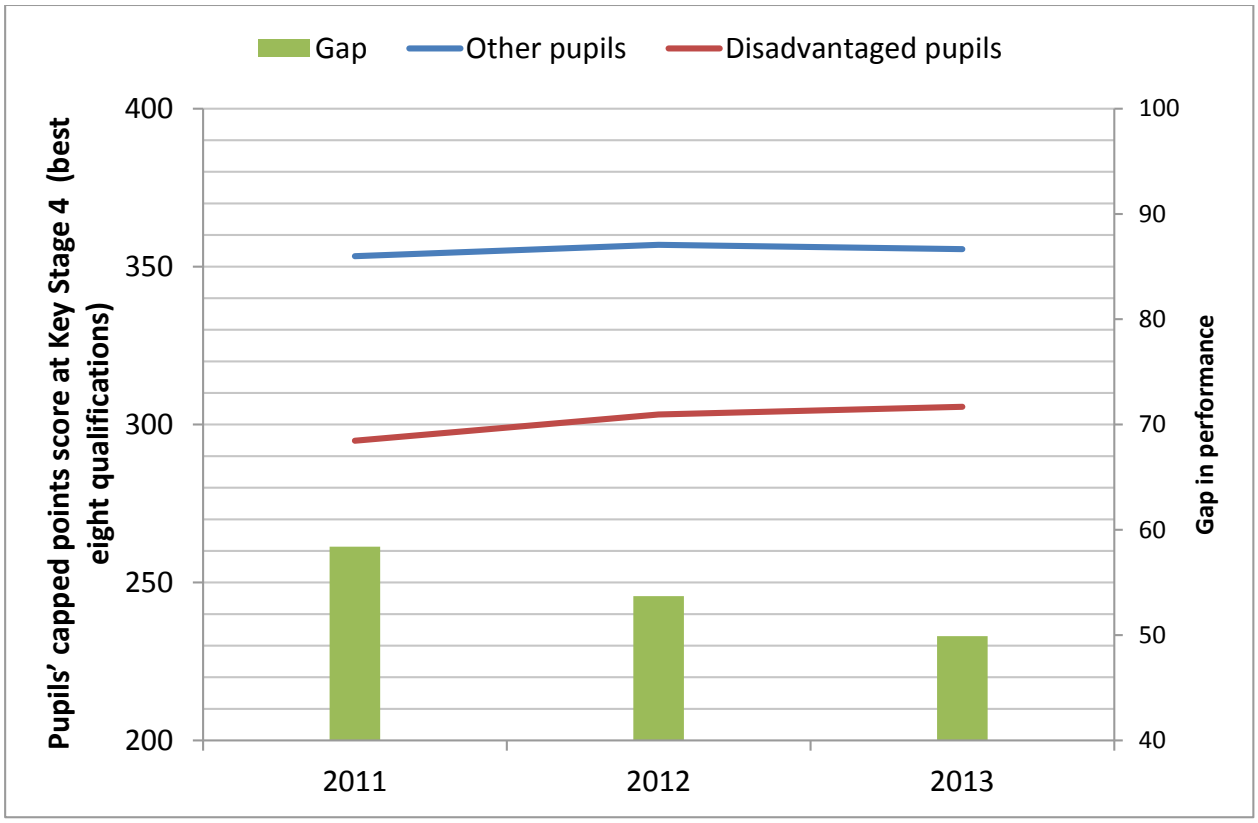


The gap in performance using the five A*-C (GCSE) measure was 29 per cent in 2011. It reduced slightly (to 27 per cent) in 2012 but remained at the same level in 2013.

Another measure (the capped points score[18]) gives a slightly different picture, as shown in Figure 3.

[18] This represents a pupil's best eight scores in GCSE or equivalent qualifications. It does not have to include English and maths.

Figure 3 Pupils' mean capped points score at Key Stage 4



By using the total points score as the outcome measure, the attainment gap between disadvantaged and other pupils appears to be closing each year from 58 points in 2011 to 54 points in 2012 and 50 points in 2013.

The reason for the different trends at Key Stage 4 shown in Figures 2 and 3 is that the measures reflect different aspects of performance. The first represents the percentage of pupils reaching a threshold (five A*-C grades at GCSE) and includes English and maths. Progress at lower grades does not count, and GCSEs in English and Maths are required. The second (capped points score) is a continuous measure of a pupil's total points from their best eight results, not necessarily including English and maths and it therefore captures a wider range of progress in attainment.

As mentioned earlier, the Key Stage 4 measure changed in 2014 so the results are not directly equivalent to those in previous years. Using the 5 A*-C measure, the 2014 achievement gap appeared to be 'broadly the same' as that in 2013 (DfE, 2015a). However, the Department (DfE, 2014) recommends using an index to measure the attainment gap over time, using performance in English and mathematics only. The proposed methodology is to place all pupils' point scores in order and derive a mean rank for all disadvantaged pupils compared with a mean rank for all non-disadvantaged pupils. Using this 'Disadvantaged Pupils Attainment Gap Index', the attainment gap closed by 1.8 per cent between 2013 and 2014.

1.3 Schools' priorities in spending the pupil premium

Schools' priorities for spending the pupil premium appear to have changed since the initiative was first introduced. The Sutton Trust commissioned NFER to conduct a series of teacher surveys on the subject.[19] The first (Lewis and Pyle, 2010) took place in 2010 before the introduction of the funding. At this time, teachers said their top priorities for spending the additional funding would be reducing class sizes, increasing teacher numbers and increasing support staff. The next survey (Cunningham and Lewis, 2012) took place during the first year of funding. It identified a greater range of priorities including early intervention, reducing class sizes, more one-to-one tuition, additional teaching assistants (TAs) and offsetting budget cuts elsewhere. In the following NFER survey (Ager and Pyle, 2013), nearly a third (30 per cent) of the 1,587 responding teachers said that they did not know their school's priorities. In 2014 (NFER, 2014), teachers reported their schools' top priorities as: early intervention schemes, one-to-one tuition and pupil feedback. The proportion of respondents saying they did not know their school's priorities had reduced but still represented a fifth (21 per cent). Surprisingly perhaps, these surveys found few statistically significant differences between pupil premium priorities reported by teachers in primary and secondary schools.

The Boston Consulting Group (2012) investigated the views of teachers and schools on what initiatives could make most impact on the educational attainment of pupils in receipt of FSM attending schools below government floor targets. The report identified the following five areas as key for development.

1. Improved literacy and numeracy in primary school, with phonics playing an important part in early reading, but recognising the need to make an impact on wider communication skills and numeracy. Early years work needs to be well focused to help children from disadvantaged backgrounds prepare for school.
2. Transition from primary to secondary school assisted by family liaison officers and close working between schools in both phases.
3. Literacy and numeracy programmes in secondary schools that make the basics relevant to life skills or the wider curriculum.
4. Sharing best practice between schools to boost the teaching practice and leadership skills of those in the target schools.
5. Improved initial teacher training and professional development as the quality of teaching is recognised to be the biggest factor in school improvement.

Ofsted (2012) investigated the initial responses of schools to the funding through questions to 262 school leaders during inspections, with a follow-up telephone survey of a further 119 schools, in April – May 2012. They reported that most schools said it was making a difference, but only about ten per cent considered that this was significant, and

[19] Please note that the literature referred to in this section was not identified as part of a systematic review. However, the authors have endeavoured to identify the best evidence available on topics of relevance to this study.

these were schools with a high proportion of eligible pupils. The most common use of the pupil premium funding was to pay teaching assistants (TAs), with more than two-fifths of school leaders reporting they used the pupil premium to fund existing or new TAs. Proportionally this was higher in primary schools. A further quarter of schools had used the funding on existing or new teachers. This was typically to provide additional literacy or numeracy support for low-attaining pupils. About a third of schools had used pupil premium funding to subsidise or pay for educational trips and visits.

In September 2012, Ofsted visited 68 primary and secondary schools to review the effectiveness of their pupil premium spending (Ofsted, 2013). The report concluded that successful schools shared many of the following characteristics. They ring-fenced the funding for the target group of pupils and did not confuse eligibility for the pupil premium with low ability. They identified which pupils were underachieving, particularly in English and maths. Schools drew on research evidence (such as the Sutton Trust-EEF Toolkit) and wider evidence from their own and others' experience to allocate funding for activities that they thought were most likely to have an impact on improving achievement. Ofsted noted that these schools allocated their best teachers to teach intervention groups to improve maths and English, or employed new teachers who had a good track record in raising attainment in those subjects. Schools used achievement data to check whether their approaches were effective and made adjustments accordingly. They made sure that support staff, particularly TAs, were trained and understood their role in helping pupils. Good schools had an effective communication strategy with a designated senior leader who had a clear overview of how the funding was being allocated and the difference it was making, as well as ensuring that class and subject teachers knew which pupils were eligible for the pupil premium.

Ofsted released a further update (Ofsted, 2014a) based on evidence from more recent inspections combined with national performance data for 2013. This identified an association between the overall effectiveness of the school and the impact of the pupil premium, finding that good and outstanding schools are committed to closing the attainment gap by targeting interventions and using robust tracking systems.

The Department for Education commissioned a team from Manchester and Newcastle universities to evaluate schools' early use of the pupil premium (Carpenter *et al*., 2013). Telephone interviews were conducted with a sample of 1,240 schools from October to December 2012. All schools in the survey reported providing a range of different types of support to help pupils they considered to be disadvantaged including:

- additional support both inside and outside the classroom (including one-to-one tutoring and small group teaching)
- additional staff such as TAs, extra teachers, learning mentors and family support workers
- a range of other support such as subsidising the cost of school trips, out-of-hours activities, provision of materials or resources, parental support and support from specialist services.

Similar findings were reported by Abbott *et al.* (2013), who found that more successful headteachers placed a strong emphasis on identifying individual pupils' needs for targeted interventions, with a significant emphasis on literacy and other basic skills. Mentoring and tutoring were identified as the key strategies.

The National Audit Office (2015) focused on funding for disadvantaged pupils. It found that the introduction of the pupil premium had caused headteachers to focus on improving outcomes for disadvantaged pupils. However, it raised some questions about the effectiveness of the spending, stating that many schools spend some of the pupil premium on approaches that may not be cost-effective, based on current evidence, thereby reducing the funding's impact.

The research literature has also identified a number of issues arising from the implementation of the pupil premium. For example, Carpenter *et al.* (2013) pointed out that pupil premium funding needs to be considered in the context of school funding more broadly. They found evidence of a 'lack of clarity' over whether schools are free to use the pupil premium in the interests of their pupils, or whether they are expected to use it only for officially approved purposes. The authors also drew attention to a variation in the ability of schools' data management systems to identify pupils' learning needs and monitor the effectiveness of strategies.

Wider research has looked at the characteristics of schools that influence pupil performance, including the performance of pupils from disadvantaged backgrounds. One of the most influential variables is the attainment of disadvantaged pupils on school entry (Save the Children, 2012). Ethnic background is also influential, with pupils from white, working-class backgrounds performing less well than any other group (GB. Parliament. HoC. Education Committee, 2014). Attendance at school is also related to performance, with higher attendance rates associated with higher attainment (Taylor, 2012).

One of the school characteristics known to be related to pupil performance is the school's geographical location (Ofsted, 2014a and b). In particular, researchers have investigated the improvement in secondary school performance in London between 2000 and 2014. This was initially ascribed (Baars *et al*., 2014) to five main causes: London Challenge; Teach First; the academies programme; improved support from the local authority; and strong leadership. However, subsequent research identified changes in the characteristics of pupils attending London schools which offered a different explanation for the improvement. Greaves *et al*. (2014) drew attention to the influence of improvements in pupils' attainment at primary school on their subsequent performance in London's secondary schools. Burgess (2014) identified an increase in the proportion of pupils from Black and minority ethnic backgrounds as a key change associated with the observed improvement in performance among London's secondary schools.

A review by Hanushek (2003) investigated the influence of school funding and found no strong or consistent relationship between school resources and pupil achievement.

The type of school may have an influence on pupil performance, including the performance of disadvantaged pupils. The contribution of academies and free schools to

pupil performance is not clear cut. As the Education Select Committee enquiry into academies said:

> *There is a complex relationship between attainment, autonomy, collaboration and accountability. Current evidence does not allow us to draw conclusions on whether academies in themselves are a positive force for change. This is partly a matter of timing but more information is needed on the performance of individual academy chains.*
>
> (GB.Parliament. HoC. Education Committee, 2015, p. 3)

There are two types of academies: converter and sponsored academies. Converter academies are likely to be performing better than others at their inception because only schools that are considered to be performing well according to their exam results or Ofsted grade are allowed to apply for converter academy status. Conversely, sponsored academies are more likely to be performing less well at their inception because local authority schools that were underperforming were encouraged to transfer to sponsored academy status. Recent research by NFER (Worth, 2014) found that secondary sponsored academies had greater progress in attainment after two years compared to similar non-academy schools, but there was no significant difference between converter academies and similar non-academy schools.

In addition to school characteristics, one of the key features commonly identified in 'more effective' schools is school leadership. The Ofsted reports on the pupil premium (Ofsted 2013 and 2014a) emphasise the importance of leadership in promoting good progress among disadvantaged pupils. This is consistent with the wider literature on school leadership (Bloom *et al*., 2014; Fullan, 2014; Hattie, 2009; Seashore Louis *et al*., 2010; Leithwood and Seashore Lewis, 2012; Robinson *et al*., 2009) which highlights the importance of leadership focused on learning, including the following behaviours of headteachers and senior leaders:

- setting values and goals, and instilling a sense of urgency to achieve them
- creating a commonly owned plan for success and empowering staff to take collective leadership for achieving success
- focusing on high quality teaching and identifying the learning needs of individual pupils
- using resources effectively, including staff resources
- installing strong data systems, analysing results and making sure everyone acts on them
- being willing to challenge the status quo, take risks and explore innovations
- being outward looking, including building external networks and partnerships.

1.4 Research aims and methods

This research aimed to identify:

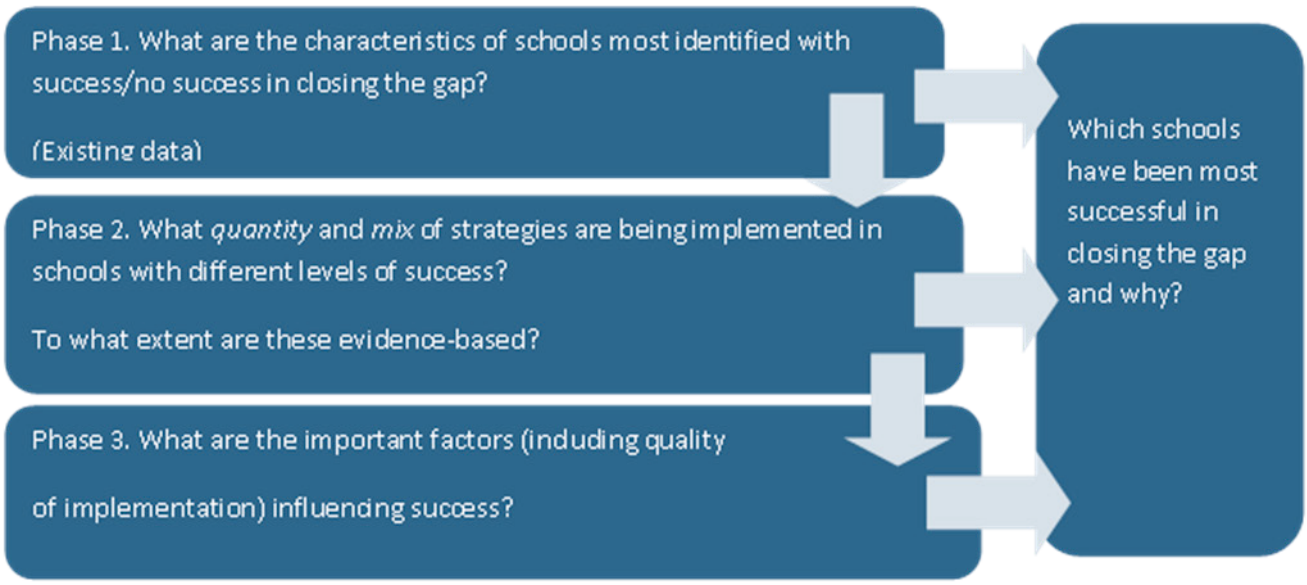
1. Whether there are any common features of schools that have narrowed the gap successfully.
2. Whether there are any possible groups/clusters of schools that have narrowed the gap, and why this is the case (e.g. geographical or organisational).
3. What schools that have narrowed the gap are doing compared to other schools. What leads to them doing well? What lessons can be learnt from them?

Research questions addressed were:

- What are the characteristics of more/less successful schools?
- What are schools doing to narrow the gap?
- What barriers and challenges exist for schools that are less successful in closing the gap?
- How are these barriers and challenges overcome by more successful schools?

The study took place between December 2014 and April 2015. It used mixed methods to identify the relative influence of school characteristics, strategies and approaches on the attainment of disadvantaged pupils. The study took place in three phases, as shown in Figure 4.

Figure 4 Study design



Phase 1 of the research considered the influence of schools' characteristics (i.e. *what schools are*). It used data from the National Pupil Database to identify the characteristics of schools – such as school type, location and pupil characteristics – and analyse whether these were related to the attainment of pupils from disadvantaged backgrounds.

Phase 2 explored the strategies schools were using to improve the attainment of disadvantaged pupils (i.e. *what schools do*). The research team identified schools where disadvantaged pupils were performing better or worse than predicted given their characteristics, and drew a national sample of schools from these groups to receive a short survey asking about their strategies.

Phase 3: explored *how* schools were implementing their strategies and whether there were any differences between schools that were more or less successful in promoting high attainment among disadvantaged pupils. The team identified a sample of schools where disadvantaged pupils were performing more or less well. The interviews focused on why schools had selected certain strategies, how they had implemented them and what school leaders considered to be the most important influences on their success.

1.4.1 Geographic scope of study

The study focused on schools in England and refers to the regions in England as shown in the Administrative geography maps provided by the Office for National Statistics[20].

1.4.2 Study limitations

There are a number of limitations to bear in mind when considering the implications of the study findings. The evidence of relationships between the attainment of disadvantaged pupils and school-level variables is based on correlations and does not constitute evidence of causal relationships. The findings are based on a single point in time, which can lead to difficulties in interpretation because recently adopted strategies may not have had time to feed through to attainment results. Also, analysis of trends over time can be affected by 'regression to the mean': if a variable is at an extreme on its first measurement, it will tend to be closer to the average on its second measurement, and this can lead to misinterpretation. Finally, because the interviewers in Phase 3 knew which schools had been identified as more or less successful, this could have introduced an element of bias into the analysis.

1.5 Report structure

The rest of this report presents the findings from these three phases of the research.

Chapter 2 focuses on the findings from Phase 1 and examines the relationship between disadvantaged pupils' attainment and school characteristics.

Chapter 3 presents the findings from Phase 2, which focuses on schools' strategies to raise the attainment of disadvantaged pupils and their relationship with success.

[20] The Office for National Statistics Administrative Geography Maps.

Chapter 4 presents the findings from Phase 3, which investigated the views and experiences of headteachers and senior leaders in raising the attainment of disadvantaged pupils.

Chapter 5 provides an overview of the findings together with a discussion, conclusion and recommendations.

The report also has three appendices. Appendix A provides further information on the study methods and analysis. Appendix B provides a full set of responses to the survey questions and Appendix C contains further details of the statistical models.

2 Characteristics of schools related to the attainment of disadvantaged pupils

2.1 Summary

This chapter found a number of significant positive and negative relationships between school characteristics and the attainment of disadvantaged pupils. These are summarised below.

Primary schools (Key Stage 2 measure)

School-level factors

Positive association:

- London and the North East
- Teaching Schools and strategic partners in Teaching School Alliances (TSAs)
- Converter academies

Negative association:

- South East, South West, East of England, East Midlands, West Midlands, Yorkshire and Humberside, North West
- Sponsored academies*

Pupil cohort factors

Positive association:

- Higher proportion of pupils from Asian and other white minority ethnic groups
- Higher proportion of disadvantaged pupils
- Higher prior attainment by this group of disadvantaged pupils

Negative association:

- Larger number of pupils in the year group
- Higher proportions of pupils with special educational needs (SEN)
- Higher levels of pupil absence

Secondary schools (CAPS measure)

School-level factors

Positive association:

- London*, North East, Yorkshire and Humberside^
- Teaching Schools and strategic partners in TSAs
- Faith* and selective schools
- Converter* and sponsored academies

- Part of a small or large* academy group

Negative association:

- South East*, South West*, East of England and North West
- Rural areas

Pupil cohort factors

Positive association:

- Higher proportion of Asian* and mixed* ethnicity
- Higher proportion of disadvantaged pupils
- Higher prior attainment by this group of disadvantaged pupils

Negative association:

- Larger number of pupils in the year group*
- Higher levels of pupil absence

* Associated with attainment in the most recent year, but not improvement over time
^ Associated with improvement over time, but not attainment in the most recent year

2.2 Introduction

This chapter examines the hypothesis that certain school characteristics are related to success in improving the attainment of disadvantaged pupils (identified in national datasets used in this analysis as pupils eligible for FSM in the last six years and looked after by the local authority)[21]. The research team investigated this by constructing multiple linear regression models[22] to analyse the relationship between the attainment of disadvantaged pupils at school level and specific characteristics of their schools, and the characteristics of the pupil cohort. The models indicate whether a variable has a positive or negative relationship with the outcome after taking account of the influence of other variables included in the model.

The team considered success in two ways:

- **Schools' current attainment** of disadvantaged pupils. This identified the gap between the attainment of disadvantaged pupils at the school and the national

[21] For the statistical modelling, the team identified disadvantaged pupils in the national datasets which were those eligible for free school meals at any point within the past six years (Ever 6 FSM) and pupils looked after by the local authority. This definition is based on the eligibility criteria for the pupil premium used before April 2014. The team used the attainment of pupils from disadvantaged backgrounds in each school as the outcome measure rather than identifying the gap in performance between disadvantaged and other pupils within a school.

[22] Multiple linear regression is a statistical technique used to analyse the relationship between a number of explanatory variables and the outcome of a response variable (in this case the school-level performance of pupils from disadvantaged backgrounds). The analysis produces estimated coefficients that describe the relationship between the outcome variable and each of the explanatory variables individually. This means that the coefficient for a given explanatory variable describes the expected difference between two subjects which differ only in that specific variable, while being comparable in all other characteristics included in the analysis.

average attainment for all disadvantaged pupils. The analysis was based on the most recent results available at the time (December 2014). This was 2014 for primary schools and 2013 for secondary schools.

- **Schools' improvement over time** in the attainment of disadvantaged pupils. For primary schools the relevant time period was 2012 to 2014 and for secondary schools it was 2011 to 2013.

The statistical models used the following outcome measures:

- the percentage of disadvantaged pupils achieving level 4 or above in reading, writing and maths at Key Stage 2
- capped average points score (CAPS) achieved by disadvantaged pupils at Key Stage 4
- the percentage of disadvantaged pupils achieving five A*-C in GCSEs and equivalent qualifications, including English and maths at Key Stage 4.

The team identified school characteristics of potential interest to the research that were available for study in the national datasets. The characteristics can be divided into two broad categories relating to characteristics of the school and the cohort of pupils (i.e. the pupils who were assessed in the relevant year). These are set out in Table 1 and Table 2 below.

The research team also considered including the level of school funding. However, the inclusion of this variable failed to substantially increase the explanatory power of the analysis and it was highly correlated with the effects of other variables (particularly region and the proportion of pupils with FSM and SEN). For these reasons, the research team decided not to include it in the analysis (see Appendix A for further explanation). The influence of pupil gender was considered but following investigation it was found that data on the number of boys and girls in the relevant cohort was missing or unreliable in a large number of cases, so this variable was not included in the models reported here[23]. Finally, a large number of rural primary schools had to be excluded from the analysis, due to the small numbers of disadvantaged pupils in each school (see Appendix A for further details).

[23] Note that the team constructed models including the percentage of female pupils as an additional explanatory variable, for those schools with reliable data. These indicated a significant relationship between gender and the outcomes of interest (a higher percentage of female pupils was positively correlated with better school-level results). However, the inclusion of the gender variable did not significantly affect the estimates for the other variables included in the models. The research team therefore decided not to include this variable in the final models.

Table 1 School characteristics included in the models: School variables

School variable
• Region of school location (eight regions) compared with London (the reference group). • Type of school - i.e. whether a school is maintained by the local authority (reference group), is a converter academy, a sponsored academy or a free school, as well as indicators for faith schools and selective schools. • Rurality of school (a school was classified as rural if located in a village or hamlet and isolated dwelling, based on the classification reported in Edubase). • Membership of multi-academy trust/group - i.e. whether or not a school is a member of a small academy group (up to five schools) or large academy group (with six or more schools) compared with all other schools that are not members of such a group. • Teaching School Alliance (TSA) - i.e. whether a school is a Teaching School, a strategic partner in a TSA or a member of a TSA. • School-level attainment of disadvantaged pupils in a previous cohort - i.e. the attainment of the previous cohort (year group) of disadvantaged pupils who took their Key Stage 2 (KS2) or Key Stage 4 (KS4) assessments three years earlier.

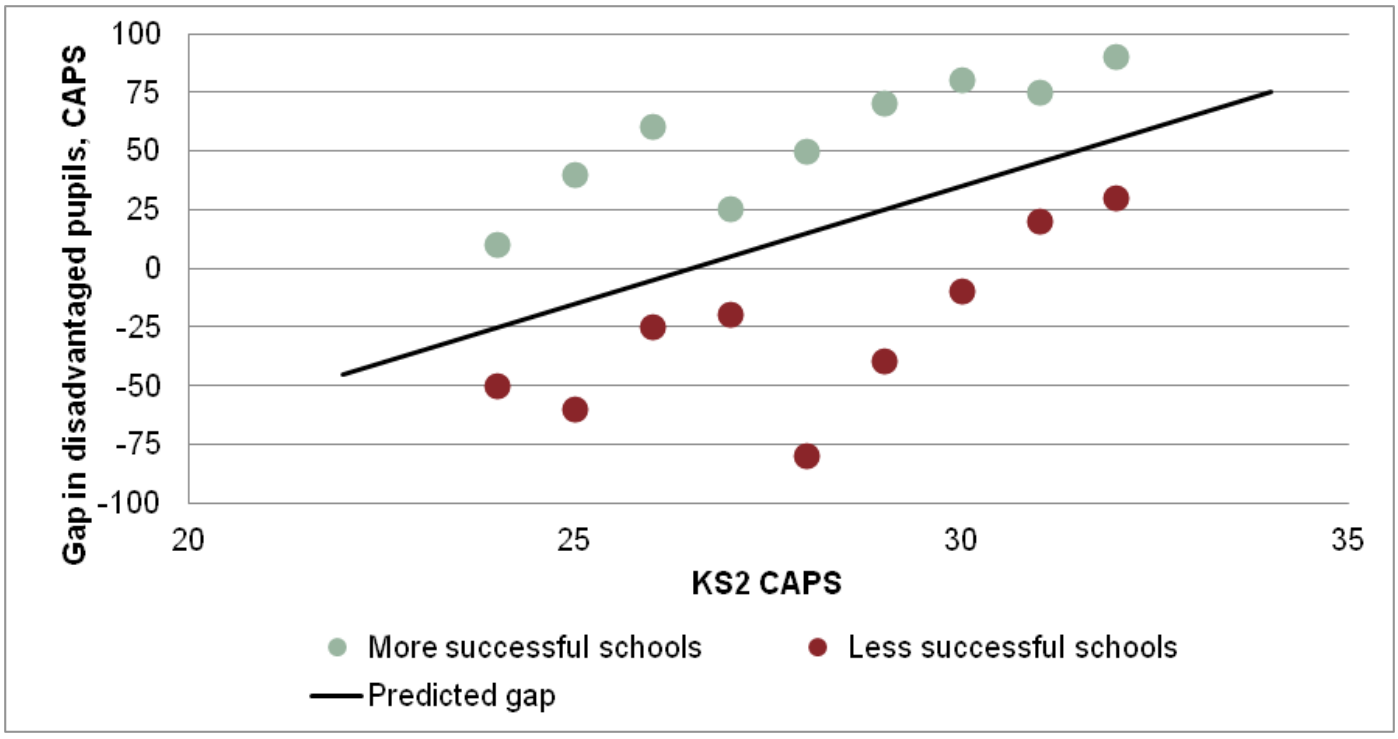
Table 2 School characteristics included in the models: Pupil cohort variables

Pupil cohort variables i.e. the year group of pupils taking Key Stage 2 or Key Stage 4 assessments
• Size of the pupil cohort in the school (i.e. total number of pupils in the relevant year group). • Prior attainment of disadvantaged pupils - i.e. the attainment of the current cohort of disadvantaged pupils at the previous key stage. • Level of pupil absence in the cohort. • Proportion of pupils eligible for FSM in the cohort. • Proportion of pupils with special educational needs (SEN) in the cohort. • Proportion of pupils with English as an additional language (EAL) in the cohort. • Ethnicity of pupils in the cohort (based on six categories: Black, Asian, Chinese, mixed, other ethnic group and other non-British white background) compared with pupils from a white British background (the reference group).

The analysis presented in this chapter is based on correlations: it is possible to establish whether certain school characteristics are related to the outcome variable (having taken account of the influence of other variables included in the model), but not what is responsible for causing the observed relationships.

The research team sought to identify schools' success in improving disadvantaged pupils' attainment in relative terms by comparing a school's actual results with the expected results for schools with similar characteristics. Schools' outcomes were measured taking account of the influence of all the variables listed above. Figure 5 provides a simplified illustration of how more and less successful schools were identified using two variables. In this illustration, the diagonal line represents the expected outcome at Key Stage 4 and shows the predicted gap between the school's performance and the national average for disadvantaged pupils given a certain level of pupils' prior attainment (the average score of this cohort of pupils at Key Stage 2).

Figure 5 Illustration of the relationship between more and less successful schools



The pale green dots above the diagonal line represent more successful schools where disadvantaged pupils have achieved better than expected outcomes, compared to other schools with similar levels of pupils' prior attainment. The dark red dots below the line show less successful schools in which disadvantaged pupils have performed less well compared with schools where disadvantaged pupils achieved a similar level of performance at Key Stage 2. In this example, two of the 'less successful' schools (represented by the red dots on the extreme right-hand side of the chart) may actually have better results than a 'more successful' one (represented by the pale green dot on the extreme left), but they are categorised as less successful because they were expected to achieve higher results, based on their pupils' previous performance.

2.3 Primary school characteristics and disadvantaged pupils' performance

How to read the remaining charts in this chapter

- Each school characteristic included in the model is represented by a 'bubble'. These are colour-coded to represent the statistical significance of the relationship (light green for more successful, dark red for less successful and grey for no statistically significant relationship).
- The Y-axis represents the strength of the relationship between a given characteristic and the outcome measure, after taking account of the influence of other characteristics included in the model. It uses effect size as a 'common currency' to represent the difference made by a given characteristic, in terms of the standard deviation in the outcome variable. For example, an effect size of 0.5 would mean that the relationship represents half a standard deviation in the attainment of disadvantaged pupils at school level.
- The higher the bubble is above '0' (the middle horizontal line) the larger the positive difference associated with the characteristic. The lower the bubble is below '0', the larger the negative difference.
- The size of the bubble represents the consistency of the relationship between a school characteristic and the outcome. The larger the bubble the more consistent and systematic the relationship is, and the more accurate the correlation estimate.

2.3.1 Characteristics associated with success at KS2

Figure 6 shows the relationship between primary school characteristics and their success in achieving positive outcomes for disadvantaged pupils at Key Stage 2.

Figure 6 Characteristics associated with success for disadvantaged primary pupils at Key Stage 2

Source: NFER modelling of school performance data, 2015

This model included results for 9,209 primary schools nationally and explained 30.5 per cent of the variance between schools in the Key Stage 2 outcomes for disadvantaged pupils.

The variable with the strongest positive relationship with disadvantaged pupils' attainment at Key Stage 2 was their attainment at Key Stage 1. This is indicated by the position of this variable above the 0 mid-line. The relationship between disadvantaged pupils' attainment at Key Stage 1and their attainment at Key Stage 2 was equivalent to 0.88 of a standard deviation in the Key Stage 2 results at school level. Translating this into points, a difference of one point of prior attainment among disadvantaged pupils is associated with a difference of 6.3 percentage points in disadvantaged pupils' attainment at Key Stage 2 for otherwise similar schools (See Appendix C). Note that schools' success in improving disadvantaged pupils' attainment is measured in relative terms by comparing a school's actual results with the expected results for schools with otherwise similar characteristics.

The relatively large size of the bubble indicates that this is a consistent and systematic relationship found across schools in the sample. This relationship might be expected because it should be easier for schools to promote high attainment among pupils who have already achieved a good standard of performance.

Some of the significant relationships between success and school type are predictable because high levels of performance were required of these schools. For example, schools applying to become a Teaching School need to demonstrate 'consistently high levels of pupil performance and progress' including the 'progress and attainment of disadvantaged pupils in comparison to their peers' (National College for Teaching and Leadership, 2015). Similarly, schools that partner with Teaching Schools to lead a Teaching School Alliance (TSA) are likely to have high levels of attainment. Single schools converting to academy status had to be rated as 'outstanding' or 'good with outstanding features' in their most recent Ofsted inspection (DfE, 2015b) to be eligible for conversion. On the other hand, sponsored academies may have been required to become academies due to poor performance.

The analysis included some variables indicating groups of schools, in order to test the hypothesis that schools which were part of a wider group of schools working collaboratively and sharing best practice were more likely to be successful in promoting the performance of disadvantaged pupils. The analysis shows a pattern of positive associations between membership of a TSA or of a multi- academy group and attainment of disadvantaged pupils. However, the relationships are weak and not statistically significant.[24]

Schools with higher proportions of minority ethnic pupils in the cohort achieved higher results among disadvantaged pupils compared to schools with otherwise similar characteristics. The two groups with the strongest positive correlation with performance

[24] The model only controlled for current membership of a Teaching School Alliance or a multi-academy group and did not take into account how long schools had been members of these groups.

of disadvantaged pupils at Key Stage 2 are those from Asian and other (non-British) white ethnic backgrounds. The size of the negative relationship between the proportion of pupils from a white British background and attainment was quite weak overall (around 0.5 of a percentage point difference in attainment at Key Stage 2 for a ten percentage point difference in the proportion of white British pupils).

The analysis also found that schools with higher proportions of disadvantaged pupils were associated with higher performance among disadvantaged pupils (and schools with lower proportions of disadvantaged pupils were associated with lower performance).

In terms of location, the analysis compared the performance of schools located in eight regions with the performance of schools in London, and found that primary schools located in London had much higher performance among disadvantaged pupils than expected, given their other characteristics. The performance of disadvantaged pupils in London schools at Key Stage 2 was around five percentage points higher than in other areas (after controlling for other characteristics, including prior attainment and ethnicity at cohort level). Primary schools located in the North East, however, were not performing significantly differently from those in London. Schools in all other seven areas of England had significantly lower than expected attainment among disadvantaged pupils.

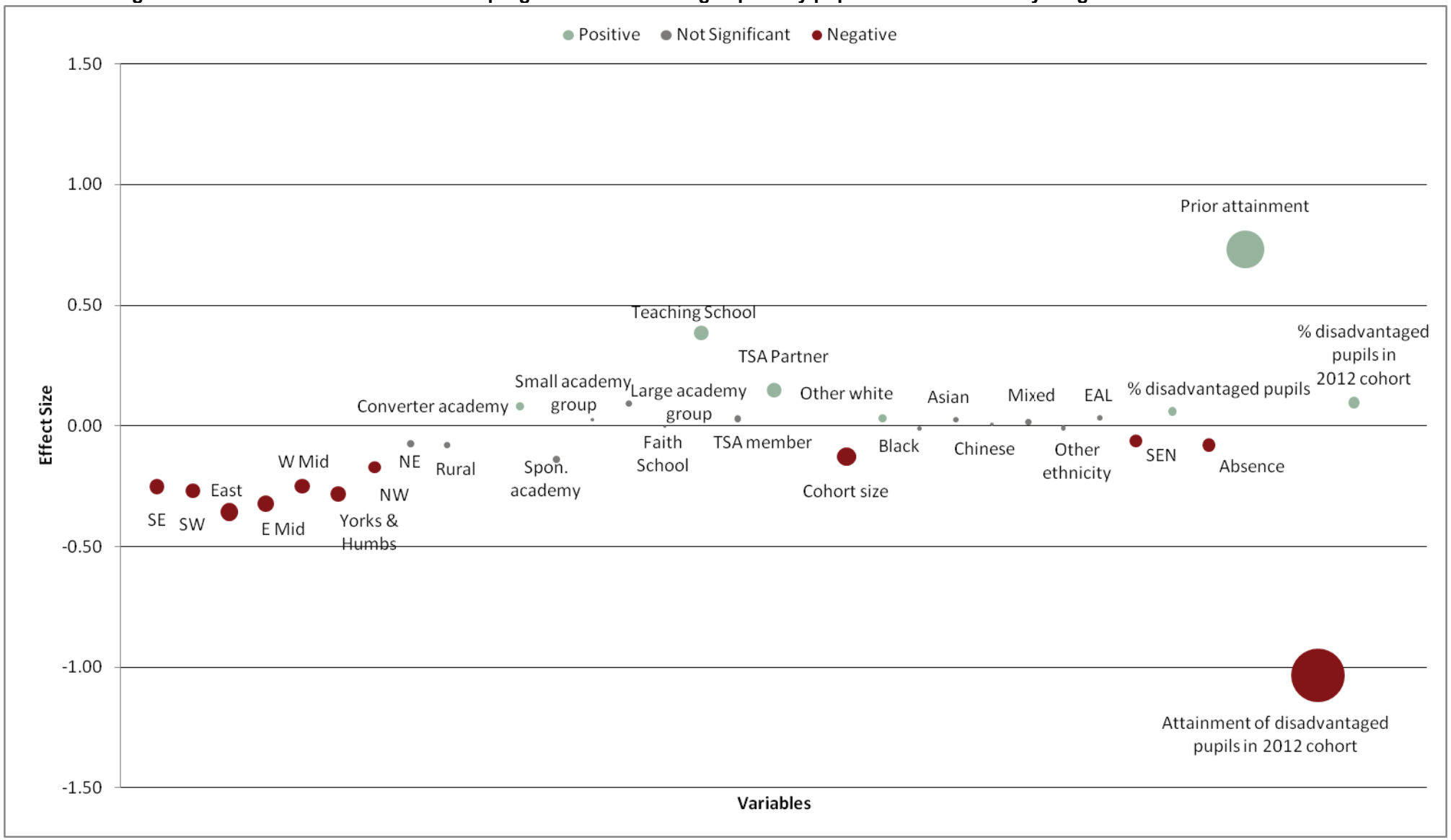
The following characteristics were associated with **less success** in the attainment of disadvantaged pupils at Key Stage 2 in 2014:

- schools located in the South East, South West, East of England, East Midlands, West Midlands, Yorkshire and Humberside and North West
- larger pupil cohorts
- higher levels of pupil absence
- higher proportions of pupils with SEN
- sponsored academies.

2.3.2 Characteristics associated with improvement at KS2

The association between primary school characteristics and improvement in attainment at Key Stage 2 between 2011-12 and 2013-14 is shown in Figure 7.

Figure 7 Characteristics associated with progress in disadvantaged primary pupils' attainment at Key Stage 2 between 2012 and 2014



Source: NFER modelling of school performance data, 2015

This model of improvement over time included results for 7,429 primary schools in England and explained 51.6 per cent of the variance between schools in their Key Stage 2 outcomes (see Appendix C for more details). Primary schools that were successful in improving the attainment of disadvantaged pupils over a three-year period had very similar characteristics to those associated with higher attainment in 2014, after controlling for the initial level of attainment in 2012.

As the Figure shows, there is a strong negative relationship between the starting level of attainment and the subsequent improvement, meaning that schools which had lower levels of attainment among disadvantaged pupils in 2012 tend to show larger improvements over the three-year period. This could be because they had the greatest 'room to improve', but this result could also be affected by 'regression to the mean', rather than reflecting the true extent of improvement nationally among schools where disadvantaged pupils had performed poorly in 2012.

Schools whose 2014 cohort of disadvantaged pupils had higher levels of attainment at Key Stage 1 achieved greater than expected improvement in disadvantaged pupils' attainment between 2012 and 2014. In this case, a one point difference at Key Stage 1 for this cohort of disadvantaged pupils relates to a 5.9 percentage point difference in disadvantaged pupils' attainment at Key Stage 2.

Schools with Teaching School status, or strategic partners in a TSA, were more successful in improving disadvantaged pupils' attainment over the three-year period. A school's membership of a TSA, or of small or large academy chains, was positively associated with progress over time, but these relationships were not statistically significant.

Primary schools that were located in London were more successful in improving the performance of their disadvantaged pupils over the three-year period, and schools located in seven other areas of the country were associated with significantly less improvement in disadvantaged pupil attainment over time. Schools located in the North East performed similarly to schools located in London.

The characteristics of primary schools associated with **less improvement** over time in their Key Stage 2 results were:

- schools located in the South East, South West, East of England, East Midlands, West Midlands, Yorkshire and Humberside, and North West
- larger pupil cohorts
- higher levels of pupil absence
- higher proportions of pupils with SEN.

There are **a few differences** apparent in the two models (looking at attainment in 2014 and improvement between 2012 and 2014).

A larger proportion of disadvantaged pupils and a primary school's status as a converter academy were identified as characteristics of primary schools which were more

successful in improving the performance of their disadvantaged pupils between 2012 and 2014. However, the strength of the correlation of both these characteristics is lower than identified in the model focusing on performance in 2014 only.

The picture is more mixed when looking at the correlation between schools' proportions of minority ethnic pupils, with some groups showing a negative correlation with progress over time. However, the only ethnic group with a significant negative correlation with improvement over time in Key Stage 2 results among disadvantaged pupils was the 'other white' group.[25]

2.4 Secondary school characteristics and disadvantaged pupils' performance

2.4.1 Characteristics associated with success at KS4

The research team used two measures of disadvantaged pupil attainment in secondary schools, as these have been found to show different trends (see Chapter 1):

- Capped average points score (CAPS) for disadvantaged pupils. This is average points achieved by pupils in their best eight GCSEs (or equivalent qualifications). [26]
- The percentage of disadvantaged pupils achieving five A*-C in GCSEs and equivalent qualifications including English and maths.

Findings of the analysis using the CAPS measure of attainment are discussed first. This is followed by a consideration of any different results identified using the five A*-C GCSE outcome measure. Full details of the outcomes for both models can be found in Appendix C.

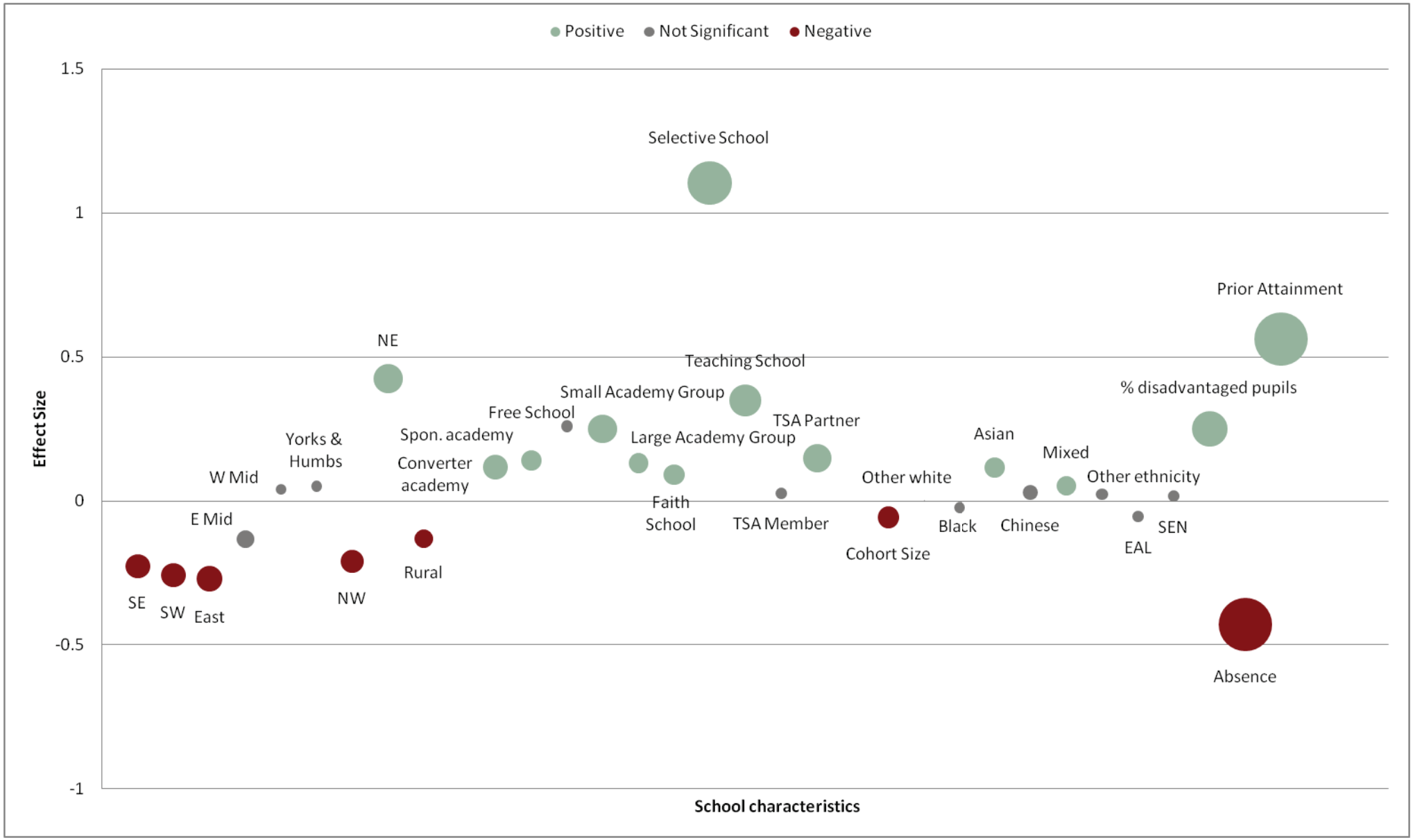
Figure 8 below illustrates the results of the model of relationship between secondary school characteristics and CAPS attainment in 2013.

The Key Stage 4 models included three additional school characteristics, namely selective schools, free schools and schools in rural areas.

[25] This group includes all pupils from a white ethnic background originating from outside of Britain.

[26] If a pupil is entered for ten GCSEs, their lowest two grades are ignored and the points from the other eight are summed. There is no requirement for the 'best eight' qualifications to include English and maths.

Figure 8 Characteristics associated with success for disadvantaged secondary pupils at Key Stage 4 (CAPS)



Source: NFER modelling of school performance data, 2015

The CAPS model was based on results from 3,438 secondary schools nationally and explained 49.4 per cent of the variance between schools in results for disadvantaged pupils in 2013.

Figure 8 shows that secondary schools which have more control over their pupil admissions and intake (i.e. selective and faith schools) were associated with higher attainment among disadvantaged pupils. Schools' success in improving disadvantaged pupils' attainment is measured in relative terms by comparing a school's actual results with the expected results for schools with similar characteristics. This was particularly true for selective schools, which had the strongest positive correlation with the outcome, even after controlling for the prior attainment of the pupils. The difference for disadvantaged pupils attending a selective school is equivalent, on average, to 39 more points in the CAPS measure. As the difference between most GCSE grades is six points[27], disadvantaged pupils attending a selective school would be expected to achieve about one and a half grades higher per qualification, than disadvantaged pupils in non-selective schools with otherwise similar characteristics. .

Secondary schools which have a history of high levels of pupil performance, such as converter academies, Teaching Schools or strategic partners in TSAs, were also associated with higher attainment among disadvantaged pupils at Key Stage 4.

Sponsored academies were also associated with higher attainment for disadvantaged pupils, after taking account of other characteristics included in the model.

A number of pupil characteristics were associated with higher outcomes at school level. Disadvantaged pupils' performance at Key Stage 2 is strongly associated with success at Key Stage 4. A one point difference in Key Stage 2 average prior attainment is associated with a seven points difference in CAPS (a school with an intake of disadvantaged pupils scoring one point higher at Key Stage 2 could expect to achieve about one grade higher in one qualification at Key Stage 4, on average, than schools with otherwise similar characteristics).

Schools with larger proportions of disadvantaged pupils tended to achieve higher outcomes. A ten percentage point difference in the proportion of disadvantaged pupils is associated with a 3.6 points higher CAPS measure. While this is not a large overall effect, the size of the bubble shows it is fairly consistent across schools, after controlling for their other characteristics.

The ethnic profile of pupils in the cohort shows a generally positive correlation between the proportion of minority ethnic pupils and attainment of disadvantaged pupils. However, only the Asian and the mixed background groups were found to be significantly correlated with higher outcomes. Being a member of an academy chain was associated with higher performance among disadvantaged pupils (compared with all other schools).

The performance of schools in eight regions was compared with schools in London. Although not shown on the Figure, London schools achieved levels of performance

[27] Apart from the difference between a U grade (0 points) and a G grade (16 points).

among disadvantaged pupils of around five points higher in the CAPS measure than schools in the rest of the country. This was the case after controlling for other characteristics of the cohort such as prior attainment and ethnicity.[28] Schools based in the North East achieved even higher attainment among disadvantaged pupils, when compared to schools in London with otherwise similar characteristics.

While the higher performance of London schools is well known, schools in the North East are not known to be associated with higher performance. This may be because the North East has one of the highest percentages of pupils eligible for FSM, which contributes to a lower performance level overall (i.e. when the results of disadvantaged pupils are combined with those from non-disadvantaged pupils). There are two main reasons for the higher performance of schools in the North East revealed in this study. First, the analysis showed that schools in the North East were associated with higher performance among disadvantaged pupils than expected, once their other characteristics had been taken into account. Second, schools in the North East performed better in qualifications equivalent to GCSE, as opposed to GCSEs specifically, which contributed to their disadvantaged pupils' higher performance in the CAPS measure.

Characteristics associated with **less success** in secondary schools in 2013 (using the CAPS measure) were:

- schools in the South East, South West, East of England and North West
- schools in rural areas
- larger pupil cohorts
- higher levels of pupil absence
- higher proportions of pupils from white British backgrounds.

The research team constructed **a second model** representing the proportion of disadvantaged pupils achieving five A*-C in GCSEs or equivalent qualifications including English and maths. This model explained 62.3 per cent of the variance in findings and confirmed the majority of results identified in the analysis using the CAPS attainment measure. Almost all of the same key characteristics were found to be strongly associated with more successful schools. However, using the five A*-C measure, although schools in London were more successful than schools in most of the rest of the country, the difference between schools in the North East and schools in London was not statistically significant (i.e. schools in both areas performed equally well). Sponsored academies were no longer more likely to be successful than schools maintained by the local authority. Finally, although the proportion of white British pupils was again associated with lower performance, there were some minor differences in the relationship between ethnic composition and attainment of disadvantaged pupils, with the proportion of Asian pupils no longer significantly correlated with higher attainment, and the proportion of

[28] This does not necessarily contradict the findings of Burgess (2014) or Greaves *et al*. (2014) concerning the influence of pupil characteristics on attainment in London schools at Key Stage 4, because the analysis reported here was conducted at school cohort level rather than at pupil level.

Black pupils being positively and significantly correlated with higher attainment among disadvantaged pupils. This latter finding could be related to the higher levels of attainment associated with London schools, which also tend to have higher percentages of Black pupils than schools in the rest of the country.

2.4.2 Characteristics associated with improvement at KS4

The team constructed a model to examine secondary schools' improvement in the attainment of disadvantaged pupils over a three-year period, using performance data from 2011 to 2013. The analysis used the same two measures of disadvantaged pupil attainment at Key Stage 4.

Figure 9 shows the relationship between secondary school characteristics and progress in their pupils' CAPS results between 2011 and 2013.

Figure 9 Characteristics associated with progress for disadvantaged secondary pupils at Key Stage 4 (CAPS) between 2011 and 2013

Source: NFER modelling of school performance data, 2015

This model included 3,124 secondary schools nationally and explained 50.9 per cent of the variance in results between schools.

A range of school characteristics were associated with greater improvement in disadvantaged pupils' CAPS attainment between 2011 and 2013. (The 'bubbles' representing the proportion of pupils with SEN, EAL and 'other ethnicity' are hard to see because they are small and overlap with the 0 mid-line.)

The analysis found that schools with lower attainment among disadvantaged pupils in 2011 were associated with greater improvement over the three-year period. As in the similar analysis at Key Stage 2, this association is likely to be influenced by the greater room for lower performing schools to improve, but could also be affected by regression to the mean. Selective schools achieved greater progress in disadvantaged pupils' outcomes over three years. Schools with a larger proportion of disadvantaged pupils were also strongly associated with greater progress in disadvantaged pupils' outcomes over time.

Schools where the 2013 cohort of disadvantaged pupils had higher attainment at Key Stage 2 were associated with greater improvement in attainment among disadvantaged pupils over three years. Sponsored academies were associated with greater progress in the attainment of their disadvantaged pupils over time. These schools may have become academies because of a low level of pupil performance. Teaching Schools and strategic partners in TSAs were also associated with greater improvement in results of disadvantaged pupils over time.

Secondary schools that were part of a small academy chain were significantly more likely to make greater improvement in their disadvantaged pupils' attainment over time compared to other schools.

Schools located in the North East of England and Yorkshire and Humberside were associated with higher improvement in disadvantaged pupils' attainment over time.

The characteristics of secondary schools associated with **less improvement** in disadvantaged pupils' attainment over time (using the CAPS measure) were:

- schools in the East of England[29] and North West
- schools in rural areas.

The team also analysed the relationship between school characteristics and the improvement in attainment of disadvantaged pupils between 2011 and 2013 using **a second attainment measure**: the percentage of disadvantaged pupils achieving five A*-C in GCSEs and equivalent qualifications including English and maths. This model explained 56.1 per cent of variance and found a similar range of characteristics associated with schools which made greater progress as those identified using the CAPS outcome measure.

[29] Note that there may be an overlap between the effect of two variables in this case: the East of England had the second highest rural population in England in 2011 according to the Office for National Statistics (2013).

However, there were some differences between the two models using the different outcome measures. In addition to the North West and East of England, schools in the East Midlands, South East and South West were all significantly associated with less improvement in the five A*-C GCSE measure compared with schools in London. Also, schools with higher proportions of white British pupils were associated with significantly less improvement in the attainment of disadvantaged pupils over time using this outcome measure. Unlike the CAPS model, schools in the North East and Yorkshire and Humberside were not significantly associated with greater improvement over time in the proportion of disadvantaged pupils attaining five A*-C GCSEs.

2.5 What has this study revealed about school characteristics and disadvantaged pupils' outcomes?

Overall, the evidence indicates that the attainment of disadvantaged pupils is significantly associated with a number of school characteristics. The results identify the strength of association between certain school characteristics and the attainment outcomes of disadvantaged pupils, taking account of the influence of other characteristics included in the model. This is not the same as identifying the causal relationships between certain characteristics and pupils' attainment.

Pupil intake is strongly related to the attainment of disadvantaged pupils in terms of the profile of pupils within a school. In both primary and secondary education, higher prior attainment of disadvantaged pupils is strongly related to higher attainment at the next key stage, suggesting that it is easier for schools to promote high attainment among disadvantaged pupils who are already performing well. In addition, schools with higher proportions of disadvantaged pupils are associated with higher outcomes and schools with lower proportions of disadvantaged pupils are associated with lower outcomes, after taking account of the influence of other variables included in the model. To give some indication of the scale of this finding, 41.3 per cent of disadvantaged pupils were in primary schools with a proportion of disadvantaged pupils within the top 40 per cent nationally and 14.9 per cent of disadvantaged pupils were in schools with a proportion of disadvantaged pupils within the lowest 40 per cent nationally.[30] At secondary level, 61.6 per cent of disadvantaged pupils were in schools with a proportion of disadvantaged pupils within the top 40 per cent nationally and 20.1 per cent of disadvantaged pupils were in schools with a proportion of disadvantaged pupils within the lowest 40 per cent nationally.

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.

[30] This is based on dividing the schools in the analysis sample into quintiles representing the national distribution of the proportion of pupils from disadvantaged backgrounds. It may over-represent the proportion of disadvantaged pupils in schools with very low proportions of disadvantaged pupils, as schools with very small numbers of disadvantaged pupils were not included due to suppressed or unreliable data.

A school's location is associated with the attainment of disadvantaged pupils in several models. Schools in two regions (London and the North East) are commonly associated with higher outcomes among disadvantaged pupils than schools in the seven other English regions (but especially the South East, South West, East of England and North West), even after taking account of the influence of characteristics of schools in different regions. Further investigation of the regional variation in disadvantaged pupils' scores indicates that this is related to lower average performance among all pupils (both disadvantaged and non-disadvantaged) in these schools, suggesting that this finding could be part of a wider issue of underperformance in schools in these areas.

The models also found a relationship between rural secondary schools[31], poorer performance among disadvantaged pupils in 2013 and less improvement in disadvantaged pupils' results between 2011 and 2013.

The majority of the regression models explained about half the variation between schools' outcomes in the attainment of disadvantaged pupils. The exception was the model focusing on primary schools' outcomes in 2014 (which explained just under one third of the variation). It is likely that the lower explanatory power of this model is influenced by the smaller pupil cohort sizes in individual primary schools which generally leads to greater variability in attainment outcomes.

The following chapters investigate the impact of schools' actions (what they do and how they do it) which may help to explain some of the remaining variance between schools in the achievement of disadvantaged pupils.

[31] Note that it was not possible to include many rural primary schools in the analysis, due to the small number of disadvantaged pupils in each school. As a consequence, the relationship between rural location and disadvantaged pupils' attainment in primary schools could not be properly investigated.

3 Strategies used by schools to raise the attainment of disadvantaged pupils

3.1 Summary of survey findings

- Between September 2011 and September 2014, schools used an average of 18 different strategies to raise the attainment of disadvantaged pupils.
- Teaching and learning strategies were the most popular amongst both primary and secondary schools, especially paired or small group additional teaching (95.2 per cent); improved feedback between teachers and pupils (86.5 per cent); and one-to-one tuition (85.3 per cent).
- Most schools (64.3 per cent) had sourced the strategy they identified as the 'most effective' from within their own schools, although over a quarter had sourced it from the EEF/Sutton Trust Teaching and Learning Toolkit (30.5 per cent) or another school (24.2 per cent). Relatively few schools identified guidance from official bodies such as Ofsted (14.4 per cent), an academy chain or local authority (7.6 per cent) as the source of their most effective strategy.
- Their choices were most strongly influenced by the degree of impact they expected it would have on disadvantaged pupils' attainment. Almost all (92.3 per cent) schools reported their most effective strategy was wholly or partially funded by the pupil premium.
- Almost all (93.1 per cent) schools had received support from school governors in improving the attainment of disadvantaged pupils. Over half (54.2 per cent) had received support from their local authority. Only a minority of schools had received support from a Teaching School Alliance (19 per cent) or an academy sponsor (10.3 per cent).

Strategies associated with more and less successful schools

- Compared with less successful schools, more successful schools had introduced their most effective strategy earlier – before 2011, though they were still using it in 2014. They were more likely to have funded their most effective strategy through the pupil premium; targeted it on a wide range of specific pupil groups (including high-attaining pupils); and used pupil performance and/or independent evaluation data to evidence its impact.
- Further analysis identified groups of schools adopting specific combinations of strategies. There were some statistically significant associations between the performance of disadvantaged pupils and the combination of strategies used by schools:

➢ More successful primary schools were less likely to provide additional staff to work specifically with disadvantaged pupils, or to say they had used strategies to improve behaviour, attendance and engagement. It seems likely that these associations are due to more successful primary schools addressing behaviour, attendance and

engagement issues prior to 2011, rather than suggesting that using these strategies had contributed to less successful schools' lack of success.

- More successful secondary schools were more likely to have supported disadvantaged pupils by using metacognitive/independent learning, collaborative or peer-to-peer learning (all strategies which are supported by evidence of effectiveness).

3.2 Introduction: overview of the headteacher survey

This chapter explores the range of strategies that schools have used to raise the attainment of disadvantaged pupils, based on survey responses from headteachers and other senior leaders in 759 primary and 570 secondary schools across England. It considers how many and what type of strategies schools have used and the strategies that they identify as the most effective.

The survey took place in January to March 2015 and was sent to a sample of primary and secondary schools identified in the national data analysis as either more or less effective (see Chapter 2). For the purpose of this research schools were identified as:

- 'more successful' if their disadvantaged pupils achieved better than expected outcomes[32], compared to other schools with similar characteristics in either the most recent year *or* in terms of their improvement over a three-year period
- 'less successful' if their disadvantaged pupils performed less well than other schools with similar characteristics in the most recent year *or* in terms of their improvement over a three-year period.[33]

The survey was relatively short and administered both on paper and online. In order to reduce the possibility of bias when asking about a 'high stakes' funding initiative, questions focused on 'strategies to improve the attainment of pupils from disadvantaged backgrounds', with only one question at the end of the survey directly focused on the pupil premium. The survey achieved a response rate of 21.9 per cent (see Appendix A for further details of the sample and Appendix B for a full record of the survey responses).

Primary and secondary schools received the same survey and most of their responses were similar. Key differences between the responses of primary and secondary schools are reported below.

[32] This was solely based on attainment and did not take account of the outcome of Ofsted inspections.

[33] Any schools which were in opposite categories for recent success and improvement over time were excluded from the sample.

3.3 Strategies used by schools to raise the attainment of disadvantaged pupils

3.3.1 Number and type of strategies

The survey asked schools to select the strategies they had used to raise the attainment of disadvantaged pupils[34] in the three years between September 2011[35] and September 2014. Schools could choose from a list of 37 possible strategies which were grouped into three broad categories: teaching and learning; additional resources; and social and emotional support. The strategies included in the survey were based on those included in the Sutton Trust/EEF Teaching and Learning Toolkit, together with the findings from previous research into how schools were using the pupil premium (Lewis and Pyle, 2010; Cunningham and Lewis, 2012; NFER, 2014; Carpenter *et al*., 2013).

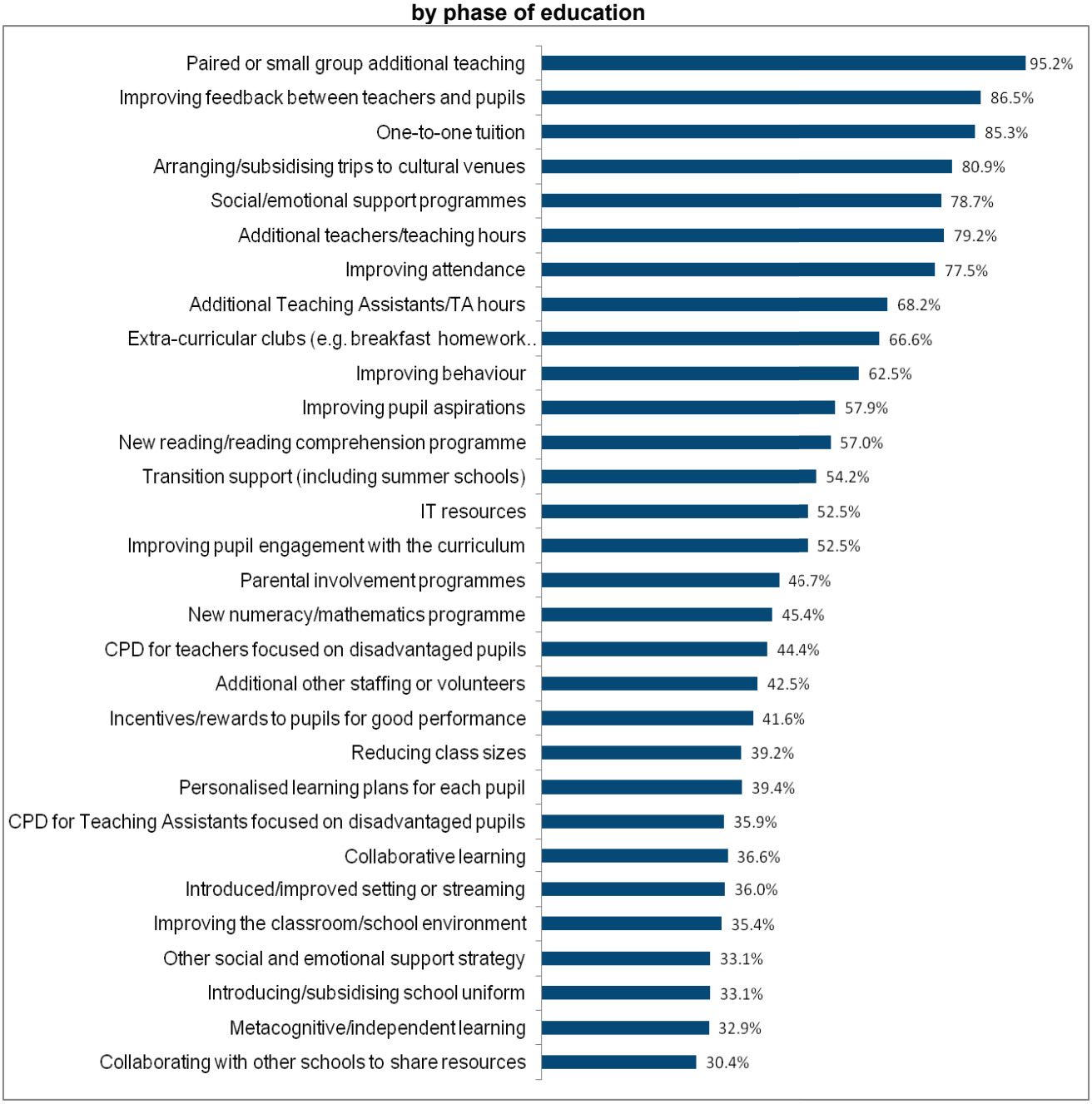
The survey revealed that schools were using a large number of strategies to improve disadvantaged pupils' attainment. Between September 2011 and September 2014 schools had used an average of 18 different strategies.

Figure 10 shows the strategies used by schools, in order of popularity.

[34] Defined in the same way as pupils eligible for the pupil premium from April 2014, i.e. pupils eligible for free school meals at any point within the past six years (Ever 6 FSM), those looked after by the local authority, adopted children, care leavers and children of service families.

[35] 2011-12 was the first year in which schools received pupil premium funding to help them support eligible pupils to close the attainment gap between them and their peers.

Figure 10 Most popular strategies used by all schools to raise attainment of disadvantaged pupils, by phase of education



More than one answer could be given so percentages do not sum to 100.
A total of 1,325 respondents answered at least one item in this question
Source: NFER Survey of Headteachers, 2015

Figure 10 shows the 30 most popular strategies, each used by 30 per cent or more of schools in the sample (details of responses to all 37 strategies[36] can be found in Appendix B).

Schools had used a range of different types of strategies, most of which focused on teaching and learning. The most common strategies were paired or small group additional teaching; improved feedback between teachers and pupils and one-to-one

[36] The seven least popular strategies were: peer-to-peer tutoring, new homework strategy, other teaching and learning strategy, extending school time, other resources, new speaking and listening programme and other strategy (unspecified).

tuition. In addition, trips to cultural venues, additional teachers and social/emotional strategies were also used by most schools.

On the whole, the strategies adopted by the largest number of schools are also those identified as most effective in the Sutton Trust/EEF Teaching and Learning Toolkit. However, metacognition and collaborative learning[37], although identified as highly effective in the Toolkit, were less popular amongst the schools surveyed for this research.

A few of the strategies adopted by schools are not currently well supported by evidence of effectiveness in the Sutton Trust/EEF Teaching and Learning Toolkit, namely improving pupil aspirations (0 months of progress); setting/streaming (-1 month of progress); and improving the classroom/school environment (0 months of progress). Others, such as improving attendance, continuing professional development (CPD) and improving engagement in the curriculum are not currently included in the Toolkit.

Results were similar for primary and secondary schools, although there were some relatively large and statistically significant differences[38] in their answers to this question.

A statistically significantly higher proportion of primary schools said they supported their disadvantaged pupils through employing extra teachers and/or teaching hours (84.5 per cent, compared with 72.1 per cent of secondary schools); extra TAs and/or TA hours (82.5 per cent, compared with 49.3 per cent of secondary schools); improving the classroom/school environment (40.8 per cent compared with 28.3 per cent of secondary schools); and improving pupil engagement with the curriculum (58.1 per cent compared with 45.1 per cent of secondary schools).

A statistically significantly higher proportion of secondary schools provided peer tutoring[39] (46.8 per cent compared with 15.3 per cent of primary schools); introduced or subsidised school uniform (48.4 per cent compared with 21.6 per cent of primary schools); reduced class sizes (51.4 compared with 30.0 per cent of primary schools); and provided CPD for teachers focused on disadvantaged pupils (55.6 per cent compared with 36.0 per cent of primary schools). A higher proportion of secondary schools also extended school time[40] (34.6 per cent compared with 17.7 per cent of primary schools), and provided incentives to pupils for good performance (53.9 per cent compared with 32.4 per cent of primary schools). They were also more likely to report that they used strategies to improve pupils' aspirations (73.0 per cent, compared to 46.6 per cent of primary schools), behaviour

[37] The Toolkit defines metacognition and self-regulation (similar to independent learning) as follows: 'Metacognition (sometimes known as 'learning to learn') and self-regulation approaches aim to help learners think about their own learning more explicitly.' It has one of the highest potential impacts listed in the Toolkit (an average increase of eight months of progress). Collaborative learning is defined as: 'Learning tasks or activities where students work together in a group small enough for everyone to participate on a collective task that has been clearly assigned and can result in an average increase of five months'. See: The Education Endowment Foundation Teaching and learning Toolkit.

[38] The differences highlighted here were all statistically significant (p=<0.001).

[39] Note that peer tutoring does not appear in Figure 10 because it was adopted by only 28.8 per cent of schools overall.

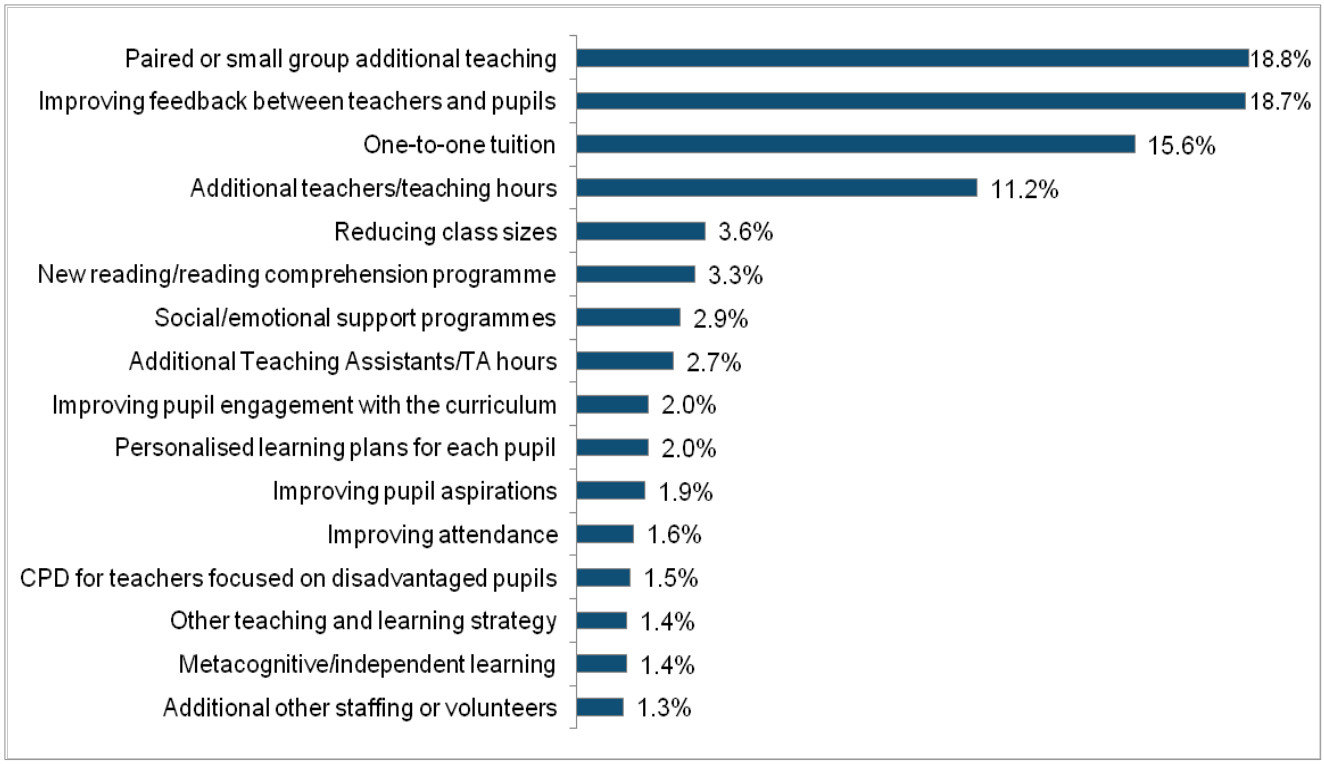
[40] Extended school time does not appear in Figure 10 either because only 24.9 per cent of all schools indicated they used this strategy.

(69.5 per cent compared with 57.2 per cent of primary schools) and attendance (83.9 per cent compared with 72.7 per cent of primary schools).

3.3.2 Most effective strategies

Schools were asked to identify which one of the listed strategies they considered to be the most effective in increasing disadvantaged pupils' attainment (see Figure 11).

Figure 11 Strategies identified as most effective in raising the attainment of disadvantaged pupils



A total of 1,180 respondents answered at least one item in this question.
Source: NFER Survey of Headteachers, 2015

Schools identified their most effective strategies as paired or small group additional teaching and improving feedback between teachers and pupils. One-to-one tuition was also commonly identified among the most effective strategies. These strategies are all supported by evidence of effectiveness in the Sutton Trust/EEF Teaching and Learning Toolkit.

Most of the strategies identified as the most effective were also among those used by the majority of schools (see Figure 11). However, there were a few strategies (especially trips to cultural venues, extra-curricular clubs and strategies to improve behaviour) that were used by a majority of schools, but were identified by less than one per cent as their most effective strategy.

There were two statistically significant differences ($p =<0.05$) between primary and secondary schools in the answers to this question. A significantly higher proportion of primary schools identified additional teachers/teaching hours as their most effective strategy (14.2 per cent of primary schools identified this as their most effective strategy compared with 7.3 per cent of secondary schools). A significantly higher proportion of

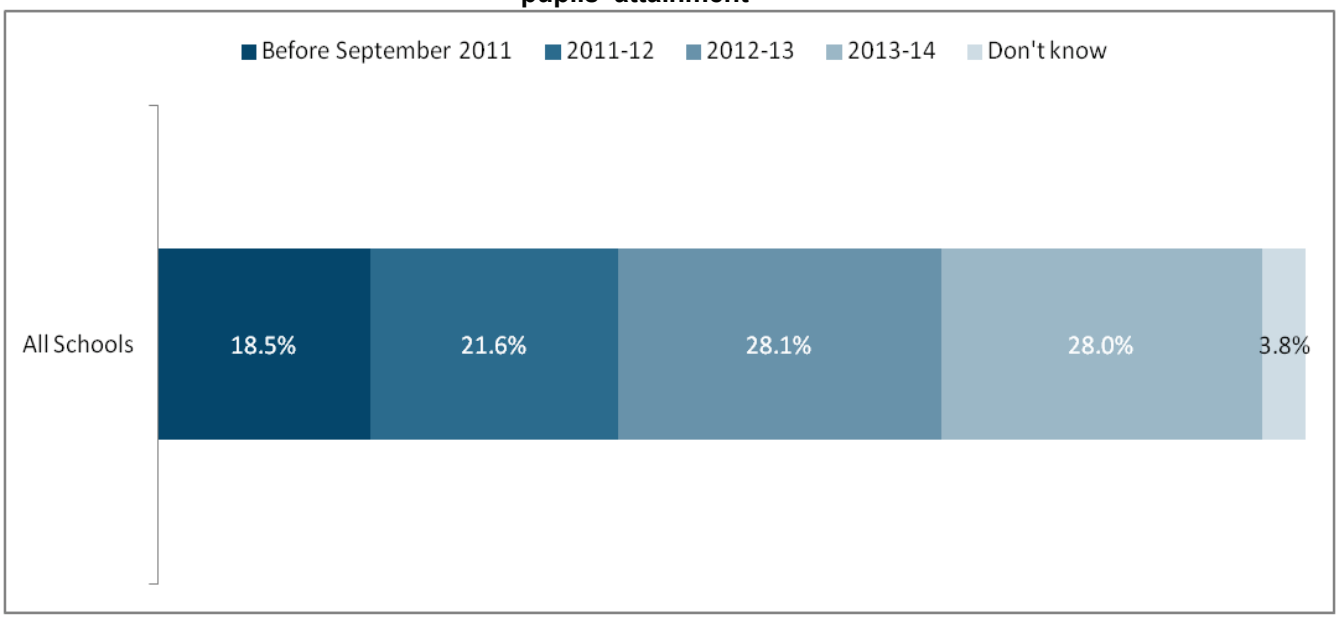
secondary schools identified one-to-one tuition as their most effective strategy (18.5 per cent compared with 13.3 per cent of primary schools).

3.3.3 Implementation of most effective strategies

The survey asked schools for further details about the implementation of the strategy they identified as most effective. Schools were asked about: the timing of its introduction; whether they targeted specific groups; influences on, and the source of inspiration for, their choice of strategy; and the role of the pupil premium in funding it. In addition, schools were asked to rate the success of their most effective strategy and identify how they assessed its success.

Figure 12 shows when schools had introduced their most effective strategy. The survey used September 2011 as a starting point because this coincided with the introduction of the pupil premium.

Figure 12 Year in which schools introduced their most effective strategy for raising disadvantaged pupils' attainment



A single response item.
A total of 1,314 respondents gave an answer to this question.
Source: NFER Survey of Headteachers, 2015

Schools had been using their most effective strategy for different lengths of time, with 18.5 per cent saying they had introduced it before September 2011 (i.e. before the pupil premium was introduced).

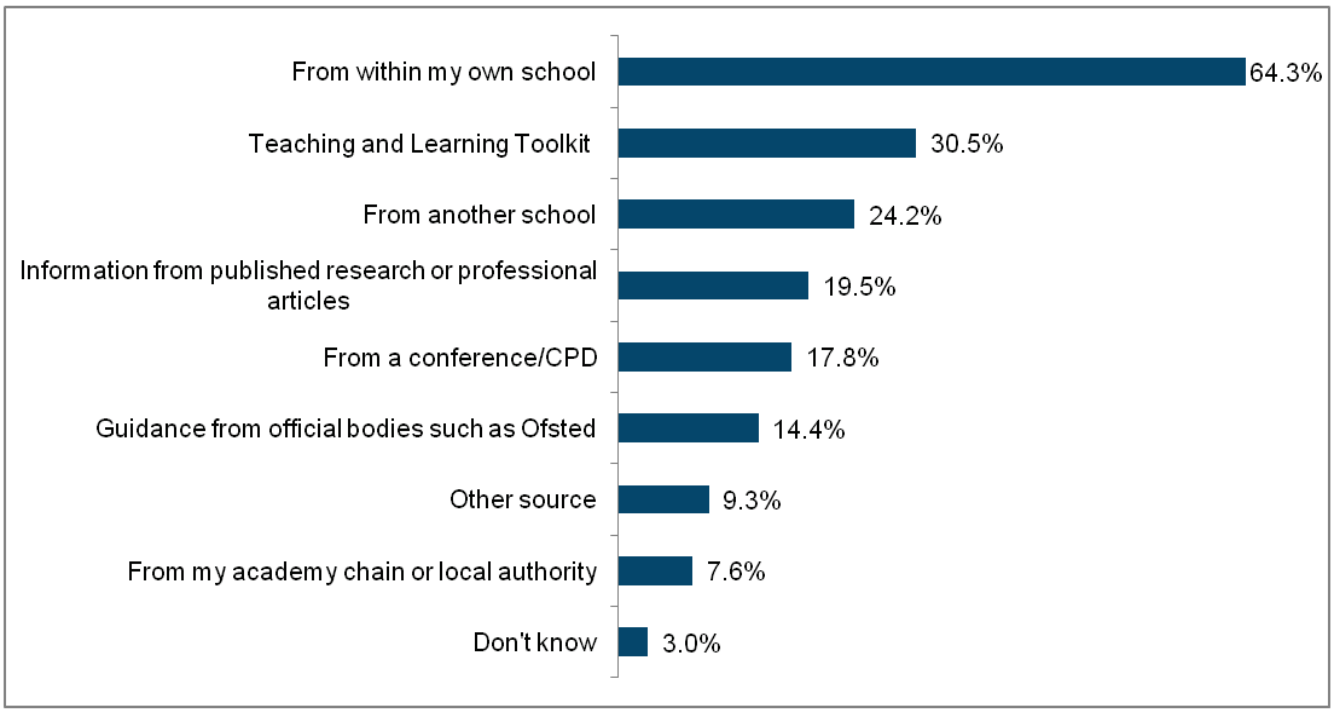
A higher proportion of primary schools[41] reported that they had used their most effective strategy for longer (42.3 per cent of primary schools introduced their most effective strategy in or before 2011-12 compared to 37.2 per cent of secondary schools).

[41] Note that as the main point of interest was differences in performance within the same key stage, the team did not conduct tests of statistical significance for differences between primary and secondary schools in relation to the implementation of their most effective strategy. Large differences between primary and secondary schools, in relation to the implementation of their most effective strategy, are reported for interest.

Answers to a separate question revealed that schools' choice of their most effective strategy was most strongly influenced by the degree of impact they considered it would have on the attainment of their disadvantaged pupils (95.3 per cent of schools said this was very important). In addition, 61.6 per cent said it was very important that the strategy 'aligned with our professional experience'. About half identified three other influences as very important in their decision to adopt the strategy: the fact that it was backed by academic research (50.9 per cent); its popularity with pupils (49.8 per cent); and its fit with their existing practices (48.5 per cent).

Figure 13 shows schools' responses to a question about the source(s) of the strategy they identified as the most effective.

Figure 13 Source of idea for most effective strategy



More than one answer could be given so percentages do not sum to 100.
A total of 1,326 respondents answered at least one item in this question.
Source: NFER Survey of Headteachers, 2015

As the Figure shows, most schools said they had got the idea for their most effective strategy from within their own school. Some schools had used sources based on research evidence, including the Sutton Trust/EEF Teaching and Learning Toolkit (cited by 30.5 per cent) and published research or professional articles (19.5 per cent). About a quarter (24.2 per cent) had got the idea from another school.

In contrast, relatively few schools identified guidance from official bodies such as Ofsted, an academy chain or local authority as the source of their most effective strategy.

There were a few clear differences between primary and secondary schools in their answers to this question. A higher proportion of secondary schools reported sourcing their idea from the Sutton Trust/EEF Teaching and Learning Toolkit (38.4 per cent of secondary schools compared to 24.6 per cent of primary schools) and published

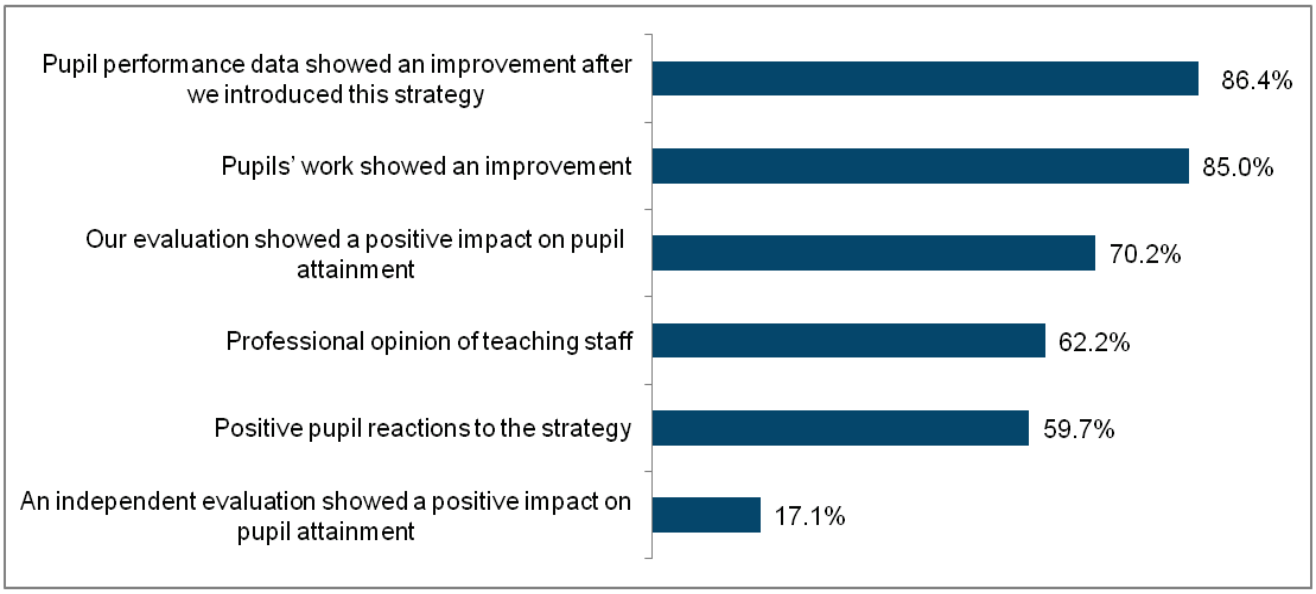
research or professional articles (21.9 per cent of secondary schools compared to 17.7 per cent of primary schools).

The survey asked whether schools had targeted their most effective strategy on specific groups (such as disadvantaged pupils; higher, middle or lower attaining pupils; pupils with SEN or English as an additional language; boys or girls; and specific year groups). The majority (950 schools representing 73.1 per cent of survey respondents) said they had done so. The most common group targeted was disadvantaged pupils (90.5 per cent of those who targeted their strategy on specific groups) and over half (66.3 per cent of those who targeted their strategies on specific groups) targeted the strategies on lower performing pupils – a group which is likely to contain both disadvantaged pupils and those from non-disadvantaged backgrounds.

Over a third of schools (37.8 per cent of those who targeted their strategies) said they targeted specific year groups – most commonly the year groups approaching end-of-key-stage assessments. Specifically, 86.0 per cent of primary schools which targeted specific year groups focused on Year 6, while 88.3 per cent of secondary schools which targeted specific year groups focused on Year 11. This corresponds to 24.2 per cent of all primary schools and 22.5 per cent of secondary schools in the survey targeting year groups at the end of the relevant key stage (see Appendix B for further details).

Almost all schools considered their most effective strategy to have been either 'highly successful' (38.4 per cent) or 'fairly' successful (49.8 per cent). The next question asked schools how they evaluated the success of their most effective strategy – see Figure 14.

Figure 14 Method used to assess success of most effective strategy



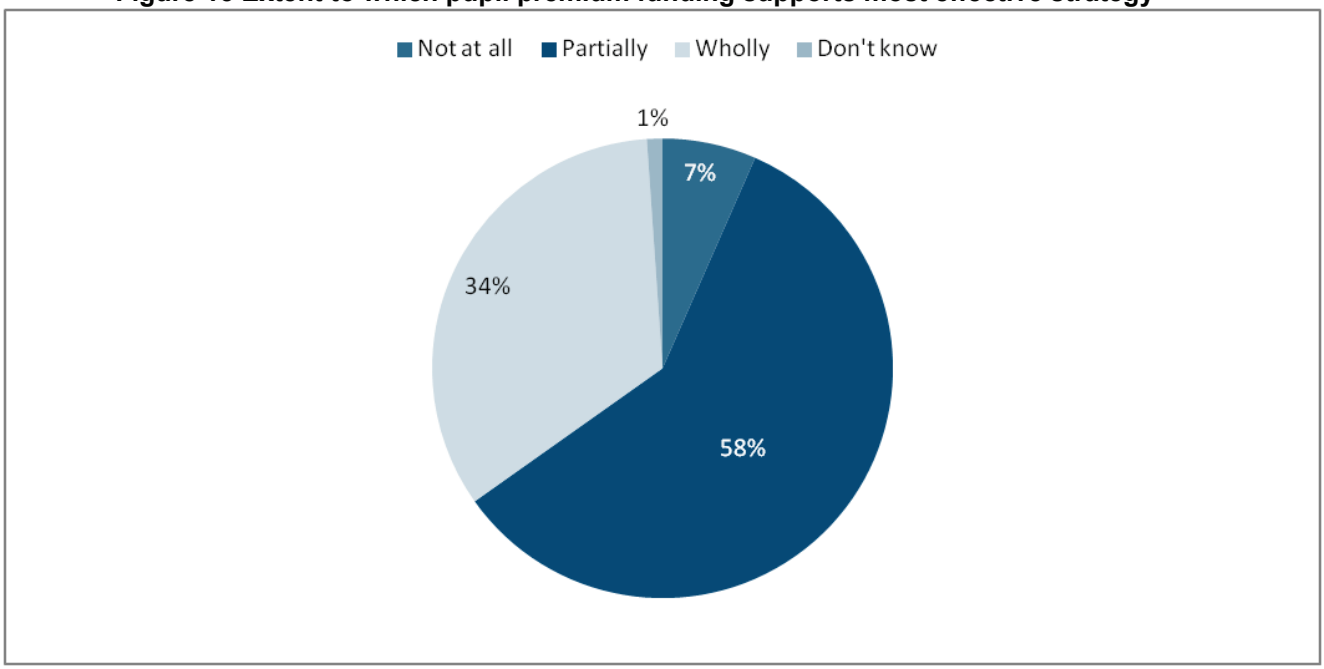
More than one answer could be given so percentages do not sum to 100.
A total of 1,328 respondents answered at least one item in this question.
Source: NFER Survey of Headteachers, 2015

The two most common methods used by schools to judge the success of their strategies were pupil performance data and pupils' work. However, a majority of schools also said they conducted their own evaluations. In addition, a majority also said they judged their

strategy's success by the professional opinions of teaching staff and/or positive pupil reactions. A higher proportion of primary schools judged the success of their most effective strategy by improvements in pupils' work (90.3 per cent compared to 77.9 per cent respectively).

The survey asked schools to what extent their most effective strategy was funded by the pupil premium. The answers to this question are shown in Figure 15.

Figure 15 Extent to which pupil premium funding supports most effective strategy

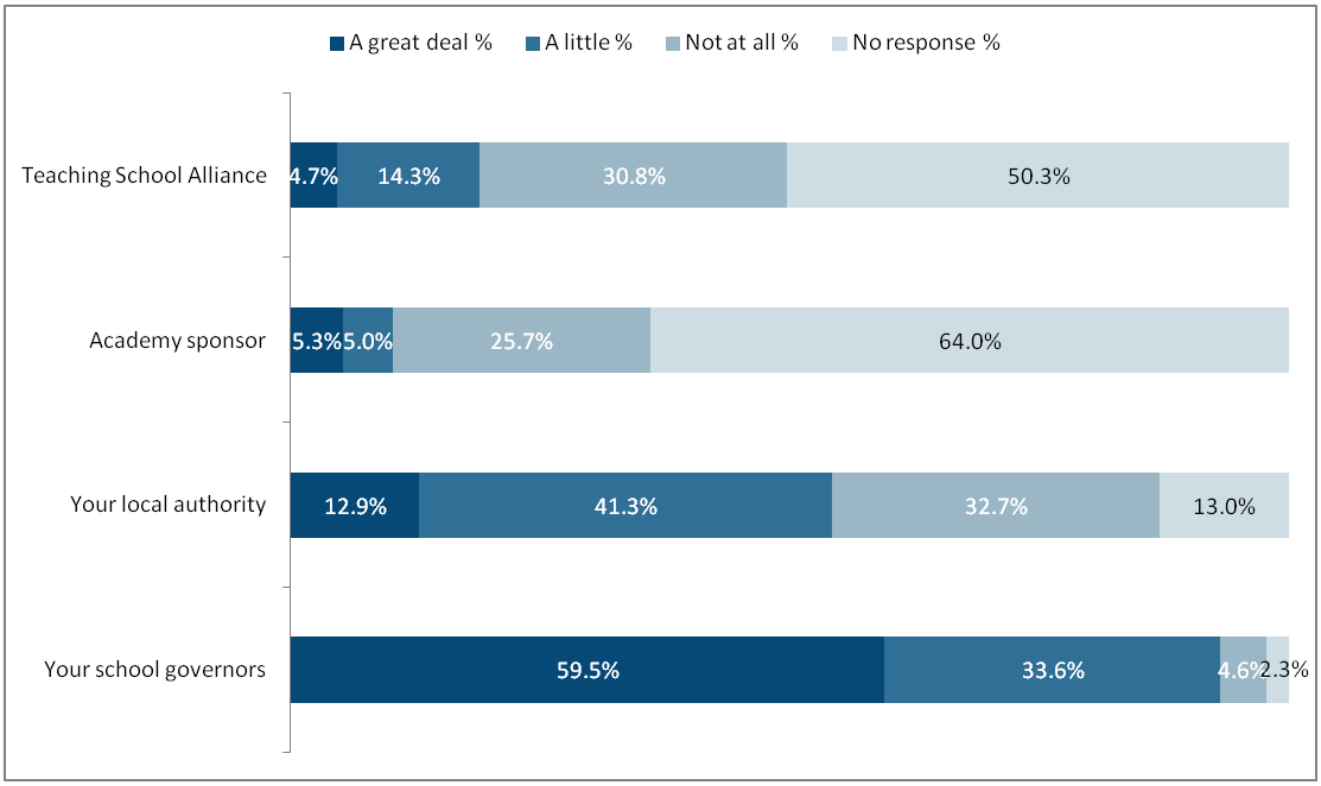


A single response item.
A total of 1,322 respondents gave an answer to this question.
Source: NFER Survey of Headteachers, 2015

The Figure shows that the majority of schools used pupil premium funding to support the implementation of their most effective strategies, with 92.3 per cent saying the pupil premium had funded the strategy, either partially or wholly.

A final question asked schools about their sources of support for improving the attainment of disadvantaged pupils (in general, not specifically related to their 'most effective' strategy).Their responses to this question are shown in Figure 16 below.

Figure 16 Support provided by different people/organisations



A series of single response items.
A total of 1,311 respondents answered at least one item in this question.
Source: NFER Survey of Headteachers, 2015

A majority of schools identified school governors as their main source of support for their plans to improve the performance of disadvantaged pupils, with 59.5 per cent indicating that this group had provided 'a great deal' of support, and a further 33.6 per cent indicating that school governors had provided 'a little' support. A majority had received support from their local authority (41.3 per cent indicated they had received a little support and a further 12.9 per cent had received a great deal of support from their local authority). Fewer schools (19.0 per cent) said they had received a little or a great deal of support from a Teaching School Alliance or from an academy sponsor (10.3 per cent).

A higher proportion of primary schools said that their school governors had provided a great deal of support for their plans to improve the performance of disadvantaged pupils (62.6 per cent of primary schools compared to 55.4 per cent of secondary schools).

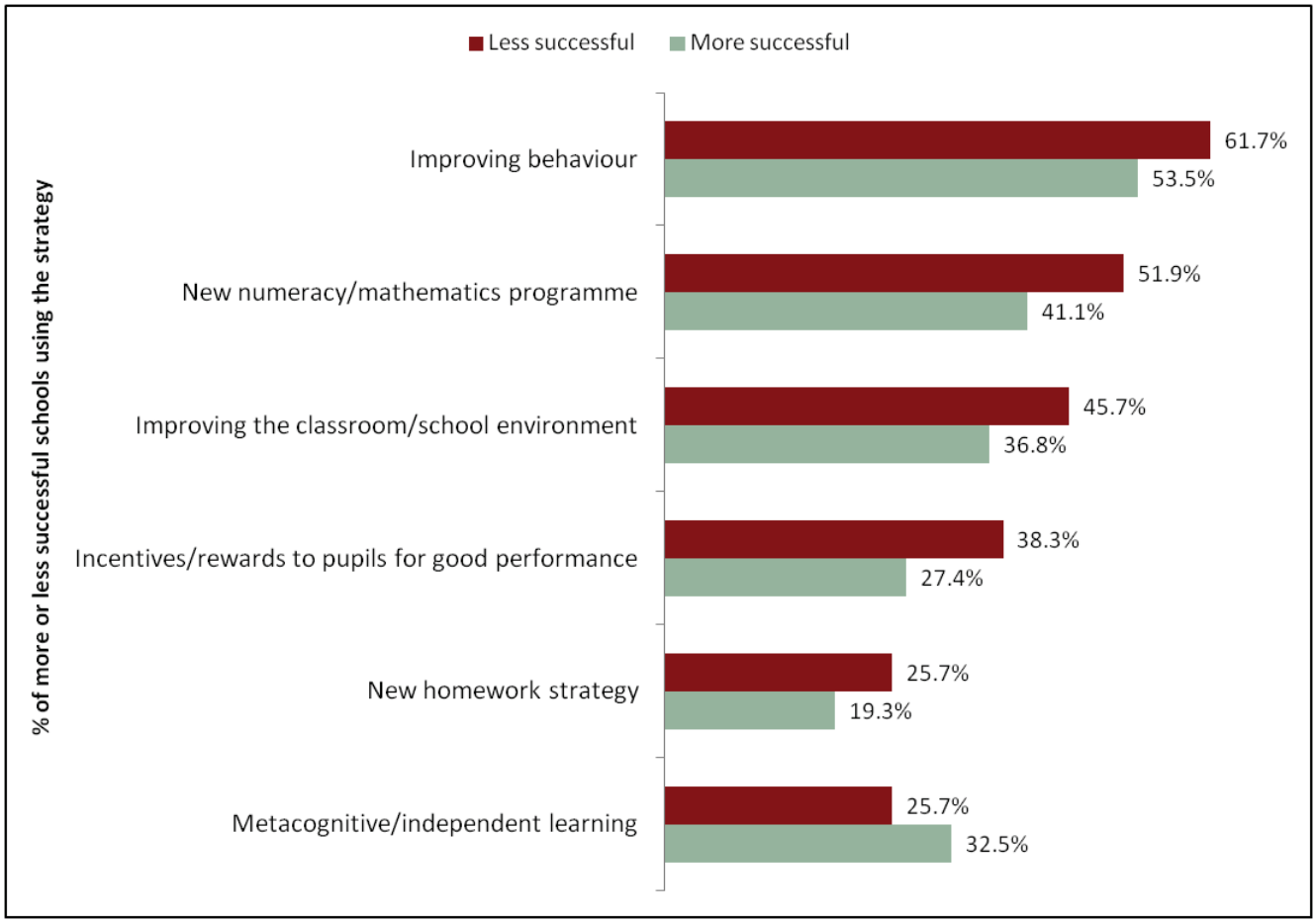
3.4 Strategies adopted by more and less successful schools

The research team analysed schools' survey responses in relation to their relative levels of success in raising disadvantaged pupils' attainment, conducting separate analyses for primary and secondary schools. These analyses are based on correlations: they indicate whether there is a relationship between two variables but cannot attribute causation. For this reason, a significant relationship between success in terms of the attainment of disadvantaged pupils and using a specific strategy should not necessarily be interpreted as meaning that schools were more successful (or less successful) as a result of adopting that strategy.

3.4.1 Strategies used by more and less successful primary schools

There were a number of statistically significant relationships between the strategies used by primary schools that were more or less successful in raising the attainment of disadvantaged pupils. These relationships are shown in Figure 17.

Figure 17 Differences in the strategies used by more and less successful primary schools



More than one answer could be given so percentages do not sum to 100.
A total of 758 primary respondents answered at least one item in this question
Source: NFER Survey of Headteachers, 2015

More successful primary schools were statistically significantly **less** likely than less successful primary schools to use several of the listed strategies to support disadvantaged pupils. However, as noted above, this does not necessarily mean that schools are less successful because they adopted these strategies. In fact, although the Sutton Trust/EEF Teaching and Learning Toolkit identifies improving the physical environment as ineffective, it identifies both improved behaviour interventions and homework as effective (contributing an average of four months of additional progress for behaviour interventions and one month for homework in primary schools).[42]

It is possible that more successful schools had adopted some of these strategies earlier (before 2011) so they had already addressed poor behaviour and homework, and these schools have moved on to providing metacognitive and independent learning strategies (which the Teaching and Learning Toolkit identifies as highly effective). This possibility is explored further in the following chapter, based on interviews with senior leaders.

In support of the idea that more successful schools had already addressed some of the barriers to disadvantaged pupils' progress, the analysis revealed that more successful primary schools were statistically significantly more likely to have introduced their most effective strategy earlier and used it for longer than less successful schools. In fact, 23.5 per cent of more successful primary schools said they had introduced their most successful strategy before September 2011, and only 17.9 per cent reported introducing it in 2013/14, compared to 16.4 per cent and 35.8 per cent respectively for less successful schools.

More successful primary schools were also statistically significantly more likely to draw upon their own staff knowledge to identify the most effective strategy[43] and to have wholly supported it using pupil premium funding.[44]

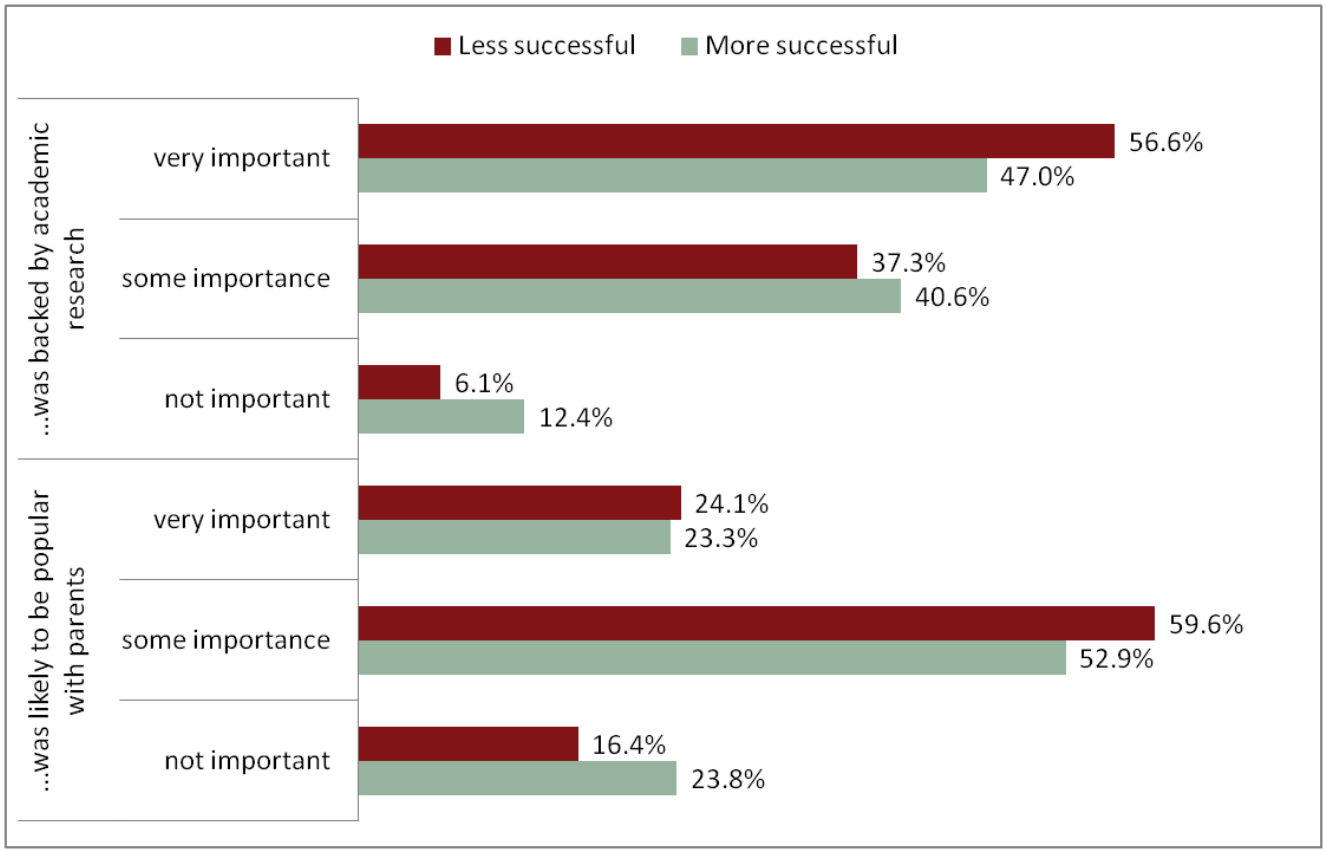
Primary schools also differed in their answers to a question about the influences on their decision-making when introducing their most effective strategy. The statistically significant differences in these answers are presented in Figure 18.

[42] Numeracy interventions and incentives for good performance are not currently included in the Teaching and Learning Toolkit.

[43] 65.9 per cent of more successful schools compared to 57.8 per cent of less successful schools.

[44] 36.4 per cent of more successful schools compared to 30.7 per cent of less successful schools.

Figure 18 Differences in influences on decision-making between more and less successful primary schools

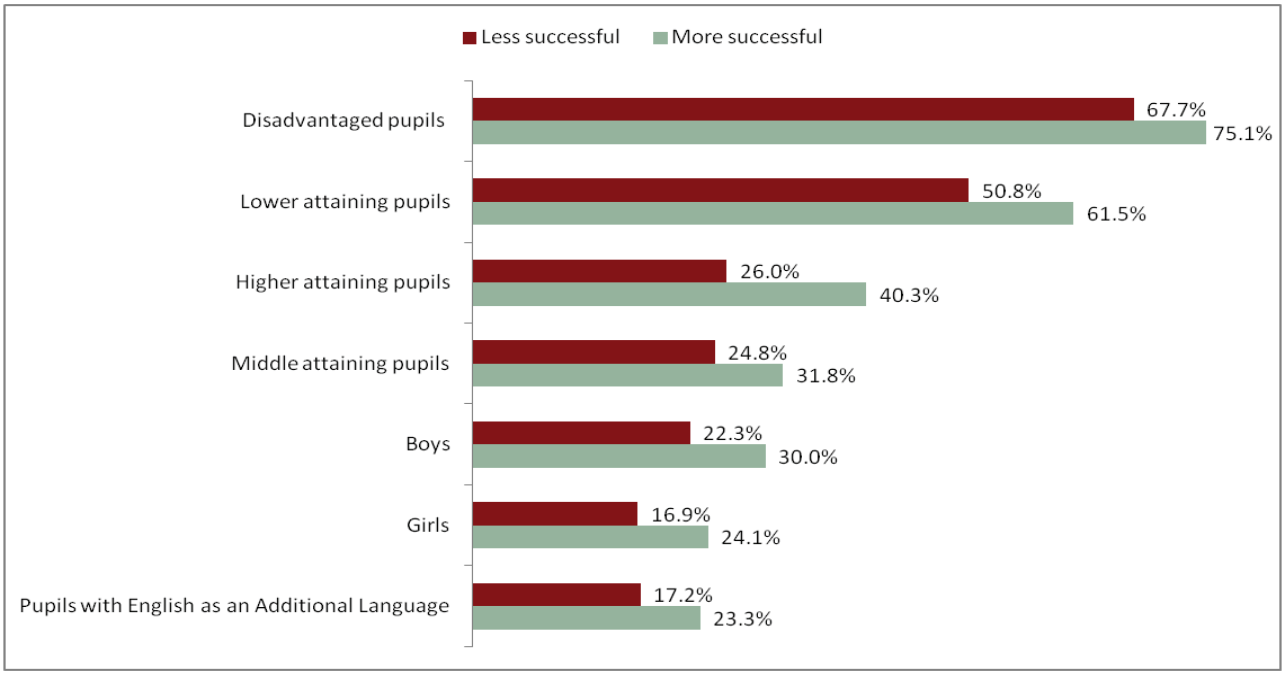


A series of single response items.
A total of 723 primary respondents gave an answer to '...was likely to be popular with parents'.
A total of 731 primary respondents gave an answer to '...was backed by academic research'.
Source: NFER Survey of Headteachers, 2015

As Figure 18 shows, the popularity of a strategy with parents was of less concern among more successful primary schools. Perhaps surprisingly, more successful primary schools were also less likely than less successful primary schools to be influenced by the fact that the strategy was backed by research. However, this could be related to the finding that more successful primary schools were more likely to have introduced their most effective strategy earlier, before the publication of the Sutton Trust/EEF Teaching and Learning Toolkit, or before it became widely used.

A statistically significantly higher proportion of more successful primary schools targeted their most effective strategy on specific groups of pupils (74.9 per cent of more successful schools compared to 70.4 per cent of less successful schools.). Figure 19 shows the statistically significant differences in approach to targeting among more and less successful primary schools.

Figure 19 Differences in targeting strategies by more and less successful primary schools

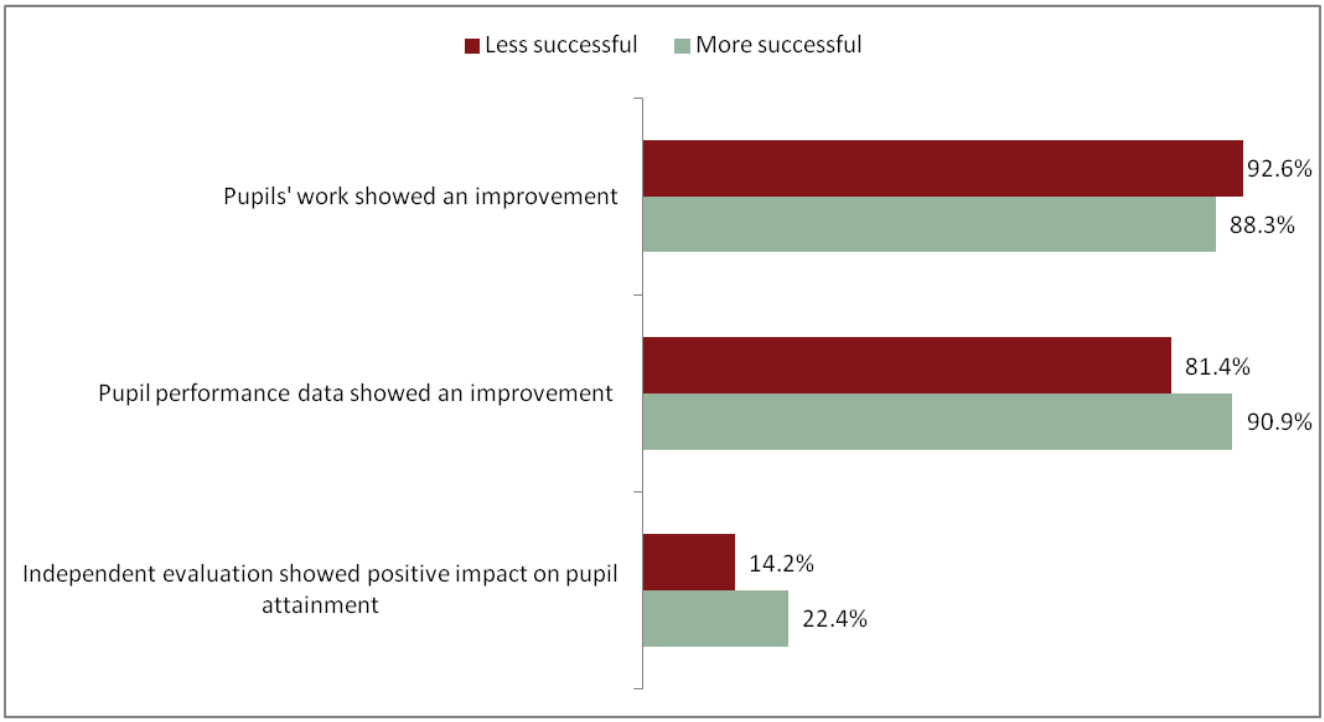


More than one answer could be given so percentages do not sum to 100.
All those who targeted most effective strategy on specific pupils.
A total of 709 primary respondents answered at least one item in this question.
Source: NFER Survey of Headteachers, 2015

A higher proportion of more successful primary schools said they targeted their strategy on a range of specific groups of pupils. As noted earlier, some of these groups are likely to contain both disadvantaged and non-disadvantaged pupils. This suggests that they were tailoring their strategies to address the needs of different groups of pupils, including disadvantaged pupils with middle and high levels of attainment. Further analysis found that a higher proportion of more successful primary schools targeted Reception, Year 1 and/or Year 2 (as well as, or instead of Year 6), but the difference between more and less successful schools was not statistically significant at the five per cent level.

Figure 20 shows the statistically significant differences between more and less successful primary schools in the methods they used to assess the impact of their most effective strategy.

Figure 20 Differences in methods used to assess the success of strategies between more and less successful primary schools



More than one answer could be given so percentages do not sum to 100.
A total of 758 primary respondents answered at least one item in this question.
Source: NFER Survey of Headteachers, 2015

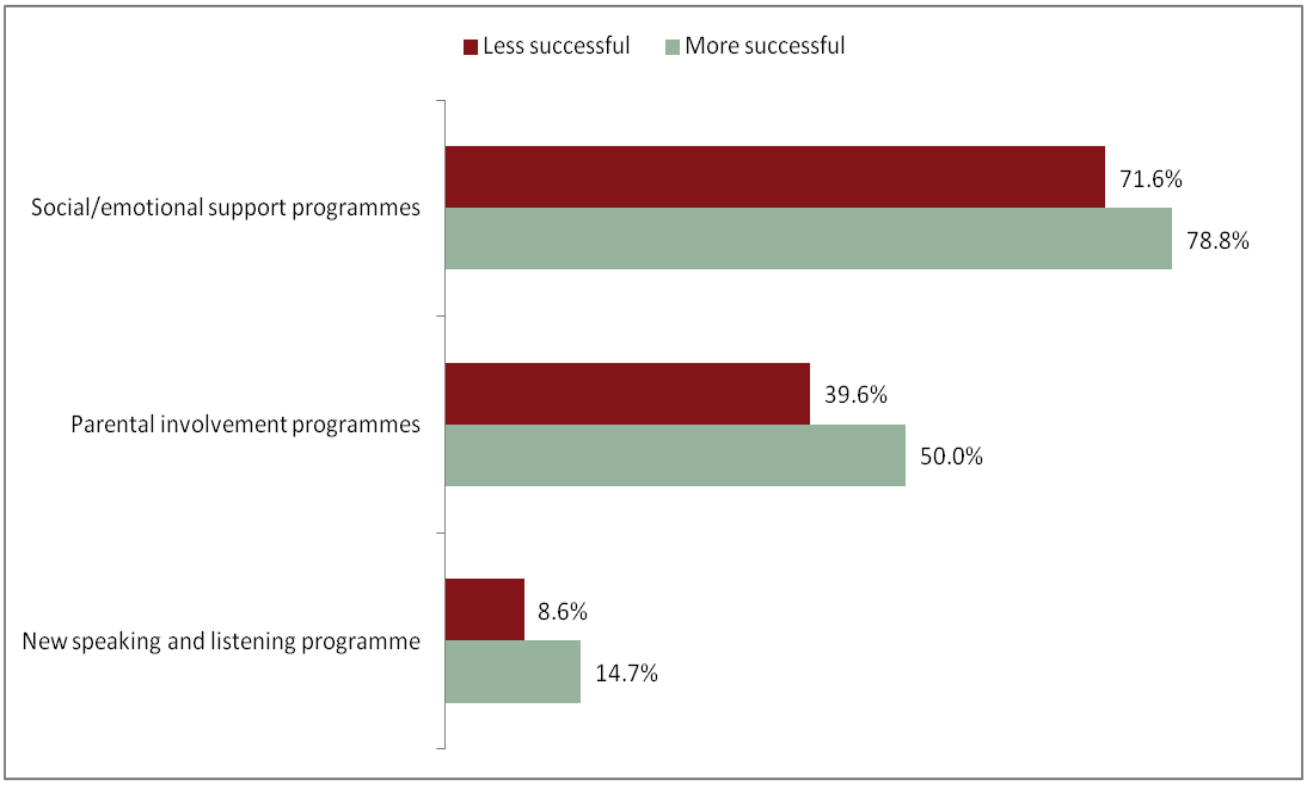
A high proportion of all responding primary schools used pupil performance or evaluation data to evidence the success of their most effective strategy. However, more successful primary schools were statistically significantly more likely than less successful primary schools to use performance data and/or to have independent evidence of the impact of their most effective strategy on pupil attainment. In contrast, less successful primary schools were more likely to judge impact by seeing improvements in pupils' work.

A statistically significantly higher proportion of more successful primary schools rated their most effective strategy as highly successful (63.9 per cent of more successful schools compared to 26.4 per cent of less successful schools).

3.4.2 Strategies used by more and less successful secondary schools

There were fewer statistically significant differences between more and less successful secondary schools. Figure 21 shows the statistically significant differences between more and less successful secondary schools in the strategies they used to raise disadvantaged pupils' attainment.

Figure 21 Differences in the strategies used by more and less successful secondary schools



More than one answer could be given so percentages do not sum to 100.
A total of 567 secondary respondents answered at least one item in this question.
Source: NFER Survey of Headteachers, 2015

A statistically significantly higher proportion of more successful secondary schools included social and emotional programmes, parental involvement programmes and strategies designed to improve pupils' speaking and listening skills among the range of strategies they had used since September 2011. As this analysis is based on correlations, this does not necessarily mean that secondary schools were more successful because they had introduced these strategies since 2011.

Turning to their most effective strategy, a statistically significantly higher proportion of more successful secondary schools had introduced their most effective strategy earlier than less successful schools. In fact, 19.4 per cent of more successful secondary schools said they had introduced their most successful strategy before September 2011, and only 22.8 per cent reported introducing it in 2013/14, compared to 12.7 per cent and 39.1 per cent respectively for less successful schools.

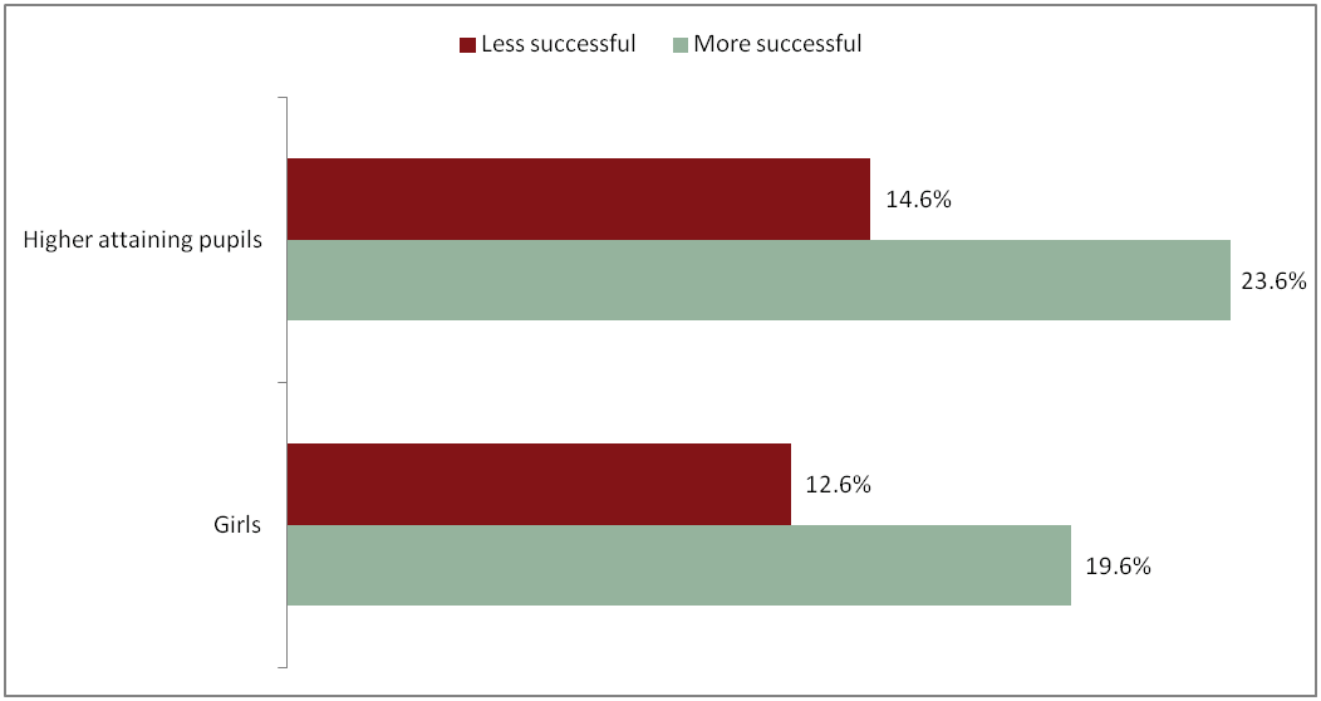
Compared with less successful secondary schools, more successful secondary schools were statistically significantly **less likely** to have sourced the idea for their most effective

strategy from the Sutton Trust-EEF Teaching and Learning Toolkit. A third (33.9 per cent) of more successful schools had used the resource to identify their most successful strategy compared to more than two-fifths (43.2 per cent) of less successful schools. This could be influenced by the fact that a higher proportion of more successful schools implemented their most successful strategies before September 2011 (i.e. before the Toolkit was published or became widely used).

Almost all secondary schools said they had chosen their most effective strategy because it 'would have the greatest impact'. However, a statistically significantly lower proportion of more successful secondary schools cited this as a reason for selecting their most effective strategy (94.3 per cent of more successful schools compared to 97.8 per cent of less successful school).

More and less successful secondary schools also differed in the extent to which they targeted their most effective strategy on specific groups of pupils. Figure 22 presents the statistically significant differences between more and less successful schools' approaches.

Figure 22 Differences in targeting by more and less successful secondary schools



More than one answer could be given so percentages do not sum to 100.
A total of 395 secondary respondents targeted their most effective strategy on specific pupils
Source: NFER Survey of Headteachers, 2015

As Figure 22 shows, more successful secondary schools were statistically significantly more likely than less successful secondary schools to have targeted their most effective strategy on higher attaining pupils. The analysis also suggested that gender-differentiated strategies were more likely to be used by more successful secondary schools. However, the difference between more and less successful schools was statistically significant only for strategies targeted towards girls. In addition, a higher

proportion of more successful schools reported targeting Year 7 (as well as, or instead of Years 10 and 11), but the difference between more and less successful schools was not statistically significant at the five per cent level.

3.4.3 Features of more and less successful schools

This section considers whether there are any underlying patterns in schools' survey responses and whether it is possible to identify groups of more successful schools that share similar responses and characteristics. It is based on a combined analysis of schools' survey responses and the outcomes of the regression models which explored the relationship between schools characteristics and their relative levels of success in raising disadvantaged pupils' attainment.[45]

The research team conducted two main types of further analysis to identify clusters or groups within a larger population, namely: factor analysis and latent class analysis[46] (see Appendix C for further details).

3.4.3.1 Patterns in the strategies used by primary schools

Factor analysis was carried out for primary and secondary schools separately, to see whether there were any patterns in responses which may indicate the presence of underlying differences (or 'factors'). The outcome of the factor analysis for **primary schools** identified three[47] main groups of strategies used by schools to raise the attainment of disadvantaged pupils based on their survey responses. This is shown in Figure 23.

[45] The team also incorporated factor analysis scores into the regression models presented in Chapter 2 and repeated the regression analysis for the sample of schools that responded to the survey. However, this did not add any further insights to the simpler interpretation of factor analysis results presented here.

[46] Factor analysis is based on continuous variables, whereas latent class analysis is based on categorical variables.

[47] A fourth factor emerged from the analysis, based solely on schools' use of 'other strategies' but, given the lack of meaningful description that this factor can provide, it is given no further consideration here.

Figure 23 Groups of primary schools identified from the survey

The analysis identified a clear relationship between the groups of strategies and success in raising attainment among disadvantaged pupils. Specifically, **less successful primary schools** were statistically significantly more likely to have used the following combination of strategies:

- strategies to improve behaviour, attendance, aspirations, the classroom/school environment and pupil engagement in the curriculum (Group P1)
- additional staff resources to work specifically with disadvantaged pupils, new literacy or numeracy interventions and paired/small group additional teaching (Group P3).

On the other hand, more successful schools were more likely to have used the strategies identified in Group P2. However, the difference between more and less successful schools was not statistically significant at the five per cent level.

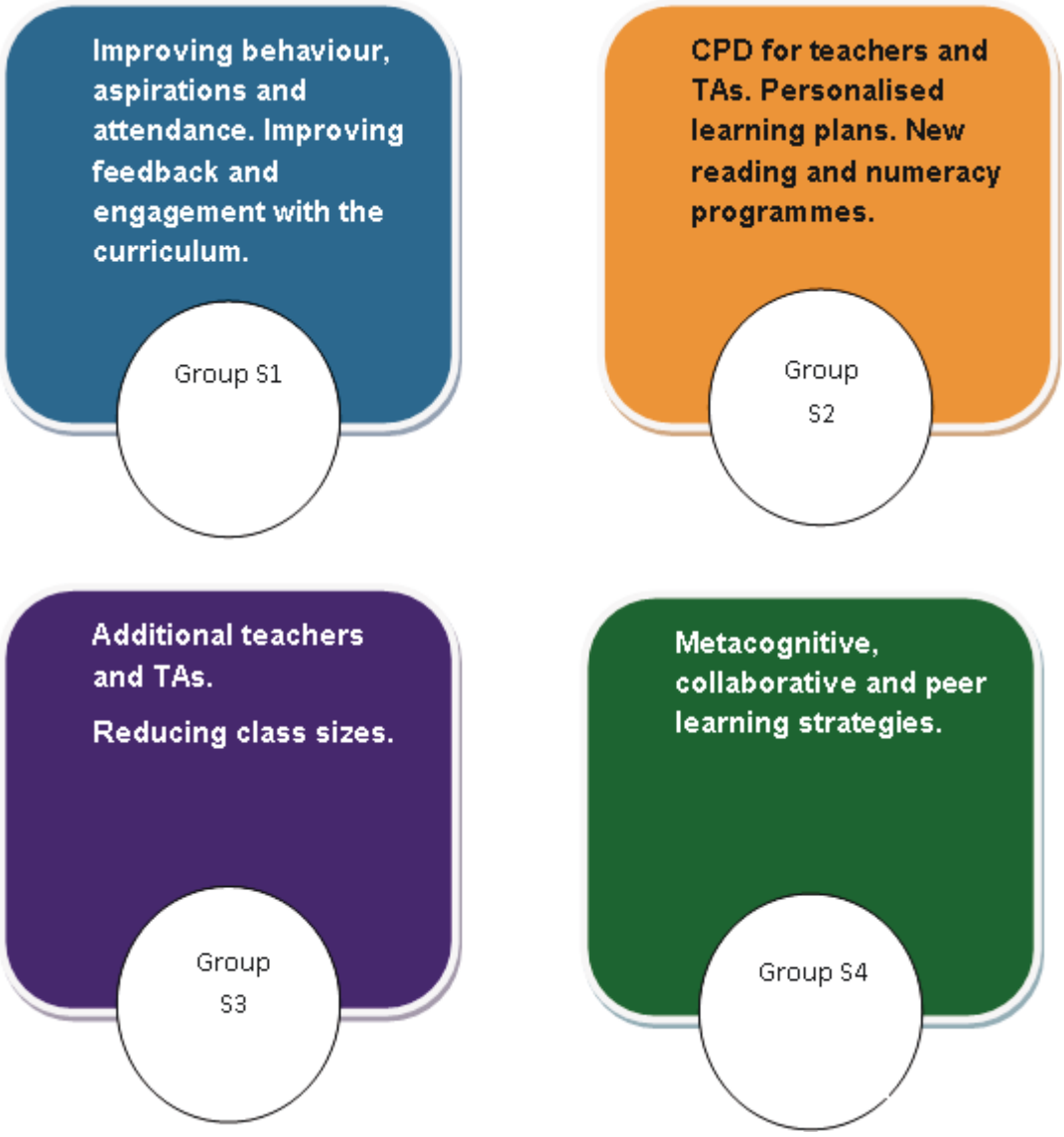
It seems likely that the results of this analysis could have been affected by the fact that more successful schools introduced their strategies earlier and therefore may no longer have needed to continue with certain strategies (such as those in Group P1) after 2011.

The analysis identified one further statistically significant relationship among the groups of schools adopting these strategies. Primary schools whose disadvantaged pupils had achieved higher levels of prior attainment in Key Stage 1 were significantly less likely to have used the strategies characteristic of Group P1. It seems likely that these schools did not need to introduce strategies to improve attendance, behaviour or engage pupils in learning as their disadvantaged pupils were already performing relatively well (and/or because the school had already addressed these issues before 2011).

3.4.3.2 Patterns in the strategies used by secondary schools

In **secondary schools** the factor analysis identified four main groups of strategies used by schools to raise disadvantaged pupils' attainment. These were similar to the groups identified among primary schools (see Figure 24).

Figure 24 Groups of secondary schools identified from the survey



An analysis of relationships between these factors and more and less successful schools identified one statistically significant relationship: more successful secondary schools were **more** likely to use the following group of strategies:

- metacognitive/ independent, collaborative and peer-to-peer learning strategies (Group S4).

These strategies are supported by evidence of effectiveness (see the Sutton Trust/EEF Teaching and Learning Toolkit).

Two groups of strategies (S1 and S2) were associated with less successful schools, but these relationships were not statistically significant at the five per cent level.

The study found a number of relationships between the factor scores and school characteristics. Converter academies were statistically significantly associated with Group S4. Secondary schools with medium or large cohorts of disadvantaged pupils were more likely to use the strategies in Groups S1 or S3. Secondary schools located in the South East, South West, East or West Midlands were more likely to use the combination of strategies in Group S2.

3.4.3.3 Patterns in the strategies used by both primary and secondary schools

In addition to the factor analysis, the research team also used latent class analysis to check for the existence of potential groups of more successful schools (i.e. looking for clusters within the more and less successful schools, rather than looking for clusters within the survey responses and then testing their relationship with success). However, the outcomes of the latent class analysis failed to identify any particularly well-defined clusters. Nevertheless, it did find that more successful primary and secondary schools were more likely to have used fewer of the strategies listed in the questionnaire (and conversely less successful schools were more likely to have adopted a larger number of strategies between 2011 and 2014). Again, this could reflect the fact that more successful schools were more likely to have introduced their more successful strategies earlier (before 2011), and/or that less successful schools may have changed their strategies since 2011 in response to poorer results.

3.4.4 What did the study reveal about schools' strategies to raise disadvantaged pupils' attainment?

Schools reported that they have used a number of different strategies to raise disadvantaged pupils' attainment since 2011. Overall, teaching and learning is the key theme of the strategies that schools identified as their most effective route to achieving better outcomes for disadvantaged pupils.

The findings suggest that schools are largely investing in strategies which have evidence of effectiveness, although fewer schools are using metacognition/independent learning or

collaborative learning strategies and a few schools have adopted strategies which were not well supported by research evidence.

The study found some relationships between a school's level of success in achieving better than expected results for disadvantaged pupils and their survey responses. Some of these appear to signal a difference in starting points, suggesting that more effective schools could have invested in certain of these strategies, but this occurred before 2011 and the 'problem' being focused on (such as poor attendance or pupil behaviour) has been addressed.

More effective schools have adopted metacognitive, collaborative and peer learning strategies (although the relationship with success was not statistically significant in primary schools). Taken together, these findings suggest that there is no overwhelming distinction between the strategies adopted in more and less successful schools. However, the finding that more successful schools adopted their most effective strategy earlier could indicate that these schools may be at a more advanced state of 'maturity' in relation to some aspects of provision, rather than their success being the result of their recent decisions on strategies for disadvantaged pupils. This suggestion is explored further in Chapter 4.

4 How are schools raising the attainment of disadvantaged pupils?

4.1 Summary

Interviews with schools that were more or less successful in raising the attainment of disadvantaged pupils indicate there is no single intervention that ensures success. That said, more successful schools appeared to be implementing their strategies in greater depth and with more attention to detail. The research team identified the following building blocks for success:

1. **Whole-school ethos of attainment for all**
- Indicated by a personal commitment to improving disadvantaged pupils' attainment versus external obligation and stereotyping
- Seeing material and pastoral compensation for deprivation as necessary but not sufficient for promoting attainment, versus seeing compensation as the main objective.
2. **Addressing behaviour and attendance**
- Investing in individualised problem-solving and emotional support versus providing access to generic support.
3. **High quality teaching first**
- Focus on improving the quality of classroom teaching first versus a focus on bolt-on strategies and activities outside school hours.
4. **Meeting individual learning needs**
- Differentiated responses for individuals versus 'one size fits all'
- Focus on outcomes for pupils versus focus on providing strategies.
5. **Deploying staff effectively**
- Developing skills and roles of existing teachers and support staff versus employing additional teachers who do not know the pupils.
6. **Data driven and responding to evidence**
- Frequent versus one-off assessment and decision points
- Focus on early intervention versus focus on end-of-key-stage.
7. **Clear, responsive leadership**
- Setting ever higher aspirations and devolving responsibility versus accepting low aspirations and variable performance
- Adaptive versus static responses to improving attainment
- More successful schools described an improvement 'journey' which took three to five years to achieve. Less successful schools seemed to be at an earlier stage of development, still tackling issues that more successful schools already appeared to have overcome.

4.2 Introduction: overview of school interviews

This chapter presents findings from interviews with 49 headteachers and senior leaders in schools where pupils from disadvantaged backgrounds had achieved better or less well than expected, given the characteristics of the school (see Chapter 2). The sample comprised 20 primary and 21 secondary schools identified as more or less effective in the modelling analysis for this research, together with eight special schools which had achieved a Pupil Premium Award[48] for their success in working with pupils from disadvantaged backgrounds (see Appendix A for further details).

The interview sample represented a wide range of schools: some with high levels of FSM whose whole catchment area was highly deprived, some in suburbs with low proportions of pupils from disadvantaged backgrounds, some with high levels of pupils with SEN, and some facing very particular local challenges.

Although each school was responding to its local circumstances, there were some clear differences between less and more successful schools regardless of whether they were primary, secondary or special schools. This chapter sets out these differences, starting by focusing on specific strategies before moving to the principles or building blocks for success. The chapter then considers the barriers identified in less successful schools and ends by describing the 'improvement journey' taken by schools which have experienced greater success.

4.3 Implementing the same strategies differently

Staff in more successful schools emphasised that there is no simple answer to helping disadvantaged pupils achieve success. None of the headteachers and senior leaders in more successful schools felt able to identify a single approach which they believed had led to raising attainment among disadvantaged pupils.

Both the survey and the interviews found that most schools were using a range of strategies, many of which are recommended by the Sutton Trust/EEF Teaching and Learning Toolkit. However, there appeared to be some differences in the way more and less successful schools were using the same strategies.

Table 3 provides some examples of how more and less successful schools were adopting similar strategies but differed in the depth, quality and detail of implementation.

[48] See The Pupil Premium Awards website. The research team included these schools in the 'more successful' group.

Table 3 Differences in how schools were adopting the same strategies

Strategy: Small group additional teaching

- Less successful school: Struggling pupils are taken out of English lessons to work on an online literacy programme, supervised by a TA who has received no specific training.
- More successful school: Pupils with similar needs are withdrawn from alternating non-core curriculum lessons for tailored support from a TA trained in literacy interventions.

Strategy: Improving feedback between teachers and pupils

- Less successful school: Teachers give pupils grades for their work.
- More successful school: The school has developed detailed marking schemes which identify each pupil's strengths, areas to focus on and next steps. Pupils have time allotted during the lesson or tutor time to respond to the feedback and discuss it with teachers.

Strategy: Metacognitive/independent learning

- Less successful school: 'Metacognition - what's that? I imagine we're probably doing it.'
- More successful school: All staff are trained in Assessment for Learning, encouraging pupils to think through what and how they are learning and making links between their learning in different subjects.

Strategy: Parental involvement

- Less successful school: Staff provide pupils with homework books showing the day's assignments. Pupils take the book home. There is space for teachers and parents to leave comments about pupils' progress.
- More successful school: Higher level teaching assistants (HLTAs) go to community centres to talk to parents about the importance of learning and aspirations. They show parents the curriculum pupils are covering and how to support their child.

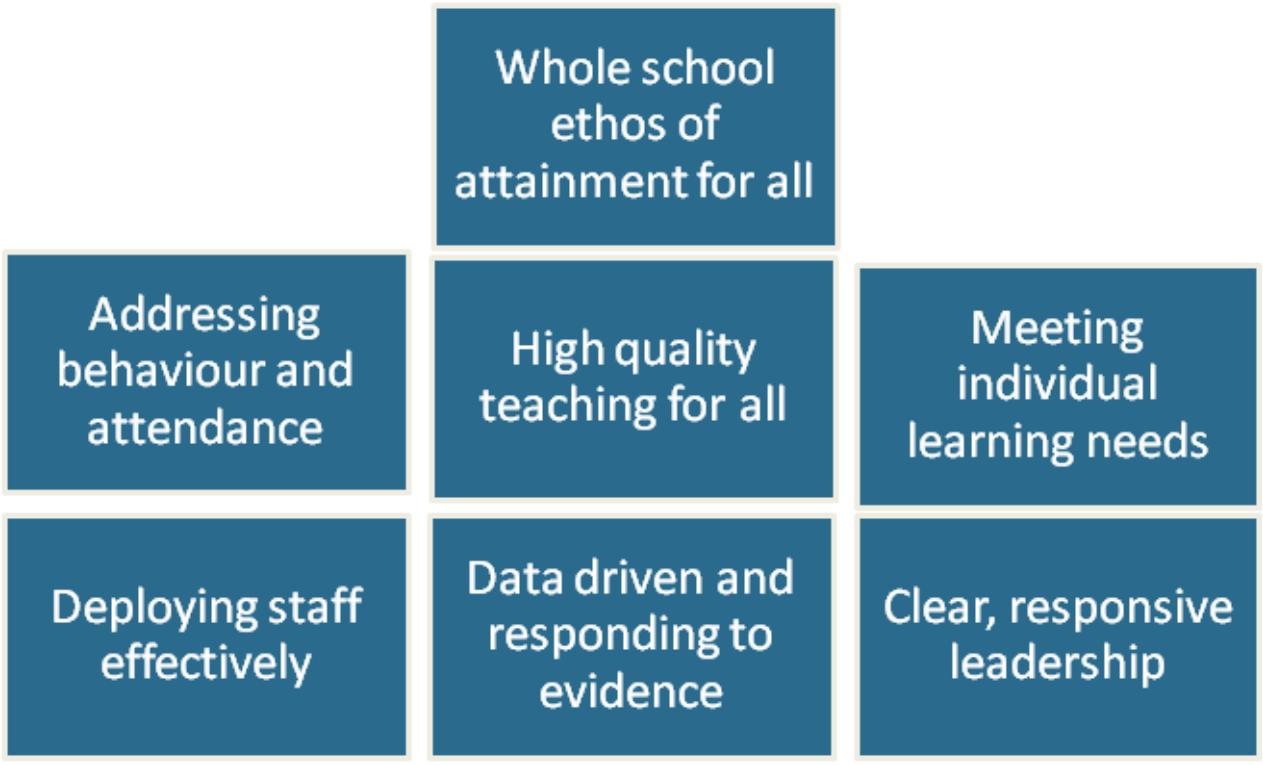
The study identified a few differences between more and less successful schools in relation to their choice of strategies. More successful schools tended to place more emphasis on teaching and learning strategies (in addition to emotional/social support and providing additional resources). They also tended to put more emphasis on honing their Assessment for Learning systems so they were straightforward to administer, provided clear feedback for pupils and contributed to their data systems. In addition, several interviewees in the more successful schools said they focused on improving pupils' ability to learn through metacognitive strategies, sometimes before addressing subject-specific problems through additional teaching (this reflects the finding from the survey analysis reported in Chapter 3).

Interviewees from more successful schools said they had adapted interventions or developed new ones based on their experience and understanding of what they were trying to achieve. 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.

Leaders in more successful schools outlined a set of approaches at three levels (whole-school; strategies for underperforming pupils; and strategies specifically targeted at pupils from disadvantaged backgrounds), consistent with the findings of previous research into effective leadership in using the pupil premium (Rea *et al*., 2013). This demonstrates that it is not simply implementing targeted strategies which leads to success, but that the effectiveness of such strategies relies on them being embedded in a whole-school ethos of aspiration and attainment.

The study identified seven 'building blocks' for greater effectiveness, based on the contrast between less and more successful schools.

Figure 25 Building blocks of success for all pupils, including those from disadvantaged backgrounds



The following sections describe each of these building blocks in turn.

4.3.1 Whole school ethos of attainment for all

The team noticed a difference in the way interviewees from less and more successful schools spoke about the challenge of raising attainment among disadvantaged pupils.

Interviewees in less successful schools tended to refer to pupils from disadvantaged backgrounds as a group, with the same challenges and support needs. They reasoned that disadvantaged pupils had lower attainment because of their lack of access to resources and support at home. Most of the interviewed leaders described staff development sessions where they had discussed and worked through the barriers to learning for their pupils. However, whereas more successful schools used pupil voice, or set up one-to-one meetings to explore the challenges faced by individual pupils, less successful schools held whole staff meetings where they discussed the challenges disadvantaged pupils as a group may face – such as their parents' unemployment, lack of aspiration, disengagement from education, mistrust of authority and inappropriate behaviours of family members.

Leaders in less successful schools tended to focus on compensating for poverty (for example by subsidising equipment, uniform and trips) and/or supplying things that staff thought pupils lacked at home (for example by providing homework clubs after school with computer access, or nurture groups to provide emotional support). Several said that children from disadvantaged backgrounds did not have anyone to listen to them read at home, so they arranged one-to-one reading sessions. Overall, their approaches to addressing teaching and learning needs were less individualised, detailed and sophisticated compared to schools achieving greater success in raising the attainment of disadvantaged pupils.

> *It wasn't a case of going to parents or to students and saying, "Okay, you are disadvantaged, what's stopping you learning?" You couldn't do it, you know. But clearly, students were doing work at school, but they weren't actively working at home. That's a barrier to learning. A lot of our students go home to chaos at home as opposed to somewhere quiet where they can work. All of our Year 11s, for example, have to go to an extra lesson at the end of the day if they are underperforming in a particular subject.*
>
> (Secondary school, less successful)

Interviewees from less successful schools tended to think of their own responsibility as providing opportunities which pupils from disadvantaged backgrounds could use to their advantage, but the ultimate responsibility for progress and success lay with the pupils themselves.

> *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.*
>
> (Primary school, less successful)

Similarly, some leaders in less successful schools expressed concerns about linking disadvantaged pupils' progress to judgements on teacher performance. They considered this to be 'unfair' because they believed there is a limit to what teachers can achieve with disadvantaged pupils.

Interviewees from less successful schools were also more likely to refer to raising the attainment of disadvantaged pupils as part of an external agenda driven by Ofsted and the Government, rather than as something that was central to their moral purpose as school leaders.

In contrast, interviewees in more successful schools saw pupils from disadvantaged backgrounds as individuals, each with their own set of challenges, talents and interests. They believed that all pupils have the capacity to succeed and that the school's role was to ensure success for everyone.

> *Our disadvantaged students here, they are each of them an individual, every single one of them is different with different needs. Some of them are extremely able... others need far more support. 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.*
>
> (Secondary school, more successful)

> *We always talk to our children about being the best they can be and we'll help them in any way we can, and then the sky's the limit.*
>
> (Primary school, more successful)

4.3.2 High quality teaching for all

Although the interviews focused on strategies and approaches that schools had brought in to raise attainment among disadvantaged pupils, school leaders pointed out the importance of ensuring quality teaching first. Almost all interviewees said they had this as their focus, but some heads of less successful schools were less clear about the reasons for its importance and were not able to give a detailed account of what quality teaching looks like and how they ensured it consistently across the school.

> *The quality of the teacher is crucial, because you can give them [underperforming pupils] one-to-one and everything, but that can do absolutely nothing. Or you can give them excellent teaching all the time.*
>
> (Primary school, more successful)

The principle of 'quality teaching first' was based on a strong understanding of pedagogical approaches, knowing how to differentiate teaching to meet individuals' needs and how best to support all learners in a class (including by adopting 'learning to learn' and peer tutoring approaches). Headteachers in more successful schools were

modelling the type of approach they wanted to see and ensuring it was consistent across the school.

> *We have a culture of transparency and active learning, so when I do school walks and lesson observations I give feedback instantly, on the spot in a constructive way, the same as I'd expect them to be doing for students. Teachers are important learners in our school too.*
>
> (Secondary school, more successful)

The importance of high quality teaching is supported by a study by the Sutton Trust (2011), which found that good teachers can make a large difference to pupils' results overall, and are especially important for pupils from disadvantaged backgrounds.

> *The effects of high-quality teaching are especially significant for pupils from disadvantaged backgrounds: over a school year, these pupils gain 1.5 years' worth of learning with very effective teachers, compared with 0.5 years with poorly performing teachers. In other words, for poor pupils the difference between a good teacher and a bad teacher is a whole year's learning.*
>
> (Sutton Trust, 2012, p. 2)

4.3.3 Meeting individual learning needs

Staff in more successful schools were routinely finding out about the barriers to learning for each individual and discussing them with the pupils and their families. The staff commonly worked as a team to pinpoint where exactly the barriers to learning lay and identify what might help each pupil to make progress. Once pupils' learning needs were identified, staff in more successful schools selected interventions which were most appropriate to address these needs.

Less successful schools tended to describe fitting pupils into their existing strategies, rather than the other way round. They were also more likely to offer the same teaching and learning strategies year after year. In contrast, more successful schools were not as reliant on an established set of strategies and were more willing to tailor their offer to meet the needs of individual pupils.

Staff in more successful schools tended to put considerable effort into supporting individual pupils. One senior leader from a more successful school described how, once staff had assessed pupils' learning needs, the heads of year and a member of the Senior Leadership Team (SLT) created a bespoke timetable for each pupil:

> *It took hours. We were here until late at night for a week or so, trying to get it all to fit, but we felt it was really important to address the students as individuals and develop the support they needed.*
>
> (Secondary school, more successful)

More successful schools emphasised the importance of early intervention, by identifying any issues as soon as pupils joined the school and responding at any time that their

progress faltered. In contrast, less successful schools tended to focus their attention primarily on pupils approaching the end-of-key-stage assessments.

Whereas more successful primary schools had interventions in place from Reception onwards (as well as links with preschool settings in some cases), interviewees in less successful primary schools were more likely to talk about targeting interventions in Year 6. (This may be why some secondary schools found they needed to re-assess pupils when they arrived as they suspected primary schools of 'cramming' pupils before the assessment, which led to test results overestimating pupils' ability.)

> *In Year 6 we split them into three, and I pay for a teacher, an extra teacher to work with a third group in Year 6 for literacy and numeracy.*
>
> (Primary school, less successful)

Similarly, whereas more successful secondary schools tended to focus on Year 7 as well as older year groups, less successful secondary schools were focusing their attention and resources on Years 10 and 11.

> *By Year 11 we have data capture five times a year, and a data capture at the end of Year 10. I look through all of those figures and identify the students who aren't making the expected levels of progress, who we need to do something about.*
>
> (Secondary school, less successful)

More successful schools, with more established early intervention approaches, found that they did not have to focus so intensively on the older age groups.

> *This is the first school that [a new teacher] had ever worked in where the children actually came into Year 6 and were on track. They weren't having to do intensive catch-up.*
>
> (Primary school, more successful)

4.3.4 Addressing attendance and behaviour

Many interviewees said that an important first step to bringing about successful learning for all pupils was to address attendance and behaviour. Pupils had to be in school and able to pay attention before they could access learning.

Regular attendance was a priority in more successful schools, with the importance of this being shared with all pupils and families. Many schools had designated a member of staff or team to ensure attendance – calling home when children did not arrive on time, 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.

> *We invested in a student support manager who looks at each child's progress, attendance, day-to-day behaviour and can then intervene very quickly. If a parent rings*

to say their son can't get to school today, they [the student support manager] organise to send a taxi, which teachers don't have time to arrange.

(Secondary school, more successful)

More successful schools had also brought in strong behaviour policies, which were supported by all staff, governors, families and pupils. For example, one special school was screening all pupils on entry to check for any underlying learning difficulties, such as dyslexia, which could lead to frustration and behavioural issues. All staff were trained in behaviour management and knew how to help pupils to monitor and control their own behaviour. Another special school had devised an incentive scheme so that good attendance and behaviour, as well as academic performance, could earn points which pupils could use to purchase a wide range of items in the school shop.

All our students are bussed or taxied in. So staff greet them when they arrive and from that point we then assess if there is any behaviour, social or emotional needs from that first point of contact. So we have all our battles at the start of the school day.

(Special school, Pupil Premium Award winner)

School leaders understood the link between attendance, behaviour and emotional support. More successful schools tended to have more extensive social and emotional support strategies in place, including developing close links with mental health services, creating a 'social care' hub within the school, providing counselling services and parent liaison staff, alongside teaching and learning interventions.

4.3.5 Data driven and responding to evidence

All schools had data systems in place, but more successful schools were using data more comprehensively to monitor pupils' progress. They were looking to identify areas of need at every opportunity – whether by baseline testing when pupils joined the school, during reviews of progress, and/or their day-to-day teaching.

In more successful schools, teachers were uploading pupils' assessment data at least every six weeks and in some cases as frequently as daily or weekly. They scrutinised data for individual pupils, not just at the year group or class level. Headteachers and SLT members looked at how each pupil was progressing and closely monitored the success teachers were having in supporting their pupils to make progress.

It's a question of looking where the children are with their learning, drilling down to that, and then designing a programme around it. If they're 2C and we want them to be 2A, then it's looking at those necessary steps. So, what can they do at 2C? What can't they do at 2C? It's more bespoke.

(Primary school, more successful)

More successful schools were also monitoring the success of specific strategies regularly, which meant that they could respond quickly if the strategies were not having

the desired effect. 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. In more successful schools, pupils' support needs could be identified at any point throughout the year and interventions could be planned and started almost immediately. This rapid response was made possible by having staff who could not only identify issues as they arose but were also able to deliver an appropriate intervention without needing to wait to get sign-off from more senior staff.

A key feature in more successful schools was that teachers engaged with the data as well as school leaders. Staff were not simply inputting data and handing it over – they were looking at it, analysing and using it to underpin their teaching. Staff in more successful schools had time allocated so that they could plan how to deliver their lessons to meet the needs of their disadvantaged pupils.

In contrast, less successful schools tended to have a centralised system of data collection and analysis which was then fed back to staff. This meant that teachers had less ownership of the data and used it less frequently as a basis for their decisions.

In addition to their data management systems, several of the more successful schools made frequent references to following an Assessment for Learning (AfL) approach. More successful schools had adopted consistent marking codes to provide detail but to avoid being burdensome for staff to implement. Their feedback covered areas to focus learning on, identified when a skill had been mastered and next steps for learning. Interviewees said it was important to give pupils the opportunity to consider feedback and address any issues. They set time aside for pupils to review their feedback and respond and discussed progress with each pupil.

4.3.6 Deploying staff effectively

Senior leaders in more successful schools tended to devolve more responsibility to frontline staff and to use support staff more effectively. Teaching assistants (TAs) were accountable to class or year group teachers; these people were accountable to middle managers (heads of year, inclusion or subject leads); who in turn were accountable to the SLT and the headteacher. Decisions were made collaboratively between these groups.

Interviewees often described strategies for disadvantaged pupils being delivered by TAs or higher level teaching assistants (HLTAs). Senior leaders in more successful schools described approaches to using TAs in similar ways to those identified in previous research to be more effective (Sharples *et al.,* 2015). This included: ensuring they were well trained in supporting learning; deploying them to deliver high quality one-to-one and small group support; and ensuring a connection between learning from everyday classroom teaching and structured interventions.

More successful schools provided TAs with thorough training on pedagogy so that they understood the drivers for educational practice, how to provide quality questioning and give appropriate feedback. They were either covering the same content as the pupils' normal lessons (presented in a more accessible way), revisiting the basics, or following a

different structured programme focused on specific skills. Those delivering the interventions were responsible for monitoring and delivering progress in attainment. Teachers set targets for the expected level of progress and there were clear pathways of accountability for achieving that progress.

In more effective schools, teaching assistants were typically deployed to deliver interventions to small groups or individual pupils rather than being class-based or assigned to specific pupils.

> *Before, TAs 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 TA a subject-specific TA. So they only worked within one subject. They became deployed by the subject leaders and had high level knowledge.*
>
> (Secondary school, more successful)

Senior staff in less successful schools expressed more reticence about using TAs to support disadvantaged pupils. They believed that qualified teachers were the best people to deliver interventions and were much more likely to talk about buying in help from retired teachers. However, interviewees from more successful schools explained that this option would mean that staff delivering interventions did not have an opportunity to get to know pupils as individuals, understand their challenges and see their progress across the board. These interviewees made less distinction between teachers and TAs, which gave them greater flexibility to provide the best support for disadvantaged learners.

In addition to using TAs, several more successful schools mentioned ensuring teachers focused on lower attaining groups in mixed ability groups and/or allocated their best teachers to lower sets. For example, one school allocated the head of maths to teach the bottom set and another deployed subject specialists to support lower attaining pupils during tutor time.

More successful schools ensured that any interventions with individual pupils were integral to the school day. One issue on which there was a difference of opinion was the withdrawal of pupils from lessons. Some interviewees (from both more and less successful schools) expressed the view that it was not acceptable to withdraw pupils from their normal lessons to receive additional support in basic skills because that would have the effect of narrowing the curriculum for those individuals. In order to address this, more successful schools tended to alternate the lessons from which pupils were withdrawn. They avoided maths and English, but then varied withdrawal from PE, RE, music or other subjects. Less successful schools were more likely to report using one of two other approaches:

a) Withdrawing pupils from English and/or maths to deliver interventions. The rationale for this was that disadvantaged pupils could not access the content without basic literacy or numeracy skills, so were better supported by being taken out and being taught in a way and at a pace that suited them
b) Providing interventions outside school hours – before or after school, during lunch, break times or assembly. The rationale for this was that pupils should not be

withdrawn from any of their normal lessons, as this might risk them missing subjects that they enjoy the most.

There was no clear distinction amongst schools about whether they provided one-to-one or small group tuition. Generally if a few pupils had similar needs at a similar level of attainment then schools arranged for them to take part in a small group session. However, successful schools were more likely to group pupils based on their attainment and learning needs, irrespective of their year group.

4.3.7 Clear, responsive leadership

Senior leaders in more successful schools set the expectation of success for all. They clearly communicated their expectation that all pupils should work hard to achieve their potential and that everyone in the school would support them in this. They expected the progress of disadvantaged pupils to at least match that of their non-disadvantaged peers.

Senior leaders in more successful schools involved all staff in decision-making, from pupil level up to strategic level. They felt that this led to staff feeling empowered, valued and inspired to do their best for all pupils. They described effective formal and informal paths of communication between the headteacher, SLT, middle leaders and other staff but also between staff and pupils, governors and parents.

Leaders in more successful schools promoted a culture of openness and high performance. They ensured staff were all fully trained in providing high quality feedback and said this was replicated in the way they worked with staff – they too provided regular feedback, encouraging staff to reflect on their practice and identify ways to improve. Some directly linked progress and attainment of disadvantaged pupils to performance management, highlighting the accountability of every staff member in helping disadvantaged pupils to succeed.

Leaders in more successful schools identified the potential of all their staff to contribute to raising the attainment of pupils. Several spoke about how they 'grew their own' staff; spotting students to recruit when they qualified and up-skilling current staff to take on more specialist roles.

Leaders in more successful schools were able to provide a detailed account of how they were achieving success for disadvantaged pupils. They were also acting as role models, exhibiting the behaviours they wanted to see in their staff and following through in the policies and approaches they were implementing.

> *I say that everybody has to come to parents' evening, there is no choice. A teacher came to me yesterday and said "Mrs so and so says she is not coming* [to the parents' evening] *she is not interested". I said "No, that is not acceptable". I stand on the door every morning and today I see* [that parent] *walking down the path and I ran after her. I told her she had to come; she said "Well I can't come this week – I'm too busy", so I said "When can you come?". And we never let it go. So next time when it is parents' evening she will think "Well that woman just doesn't give up, I will just go on the day".*
>
> (Primary school, more successful)

Senior leaders in more successful schools spoke of sharing information and working in partnership with their colleagues, pupils, families and the local community, whereas leaders in less successful schools tended to be more inward-looking.

> *We've talked through the ideas in the Sutton Trust Toolkit together. I want them to really think about ideas and what would work with our pupils. From the start I was really driving this change, but I knew it was no good unless I took them all [staff] with me.*
>
> (Secondary school, more successful)

> *I'm too busy to be looking at evidence and finding new interventions all the time.*
>
> (Secondary school, less successful)

More successful schools tended to be linked into a number of other networks, including with their local primary or secondary schools, with those in their local authority or academy chain, and with national sector-wide networks, initiatives and sources of evidence. Many staff were also involved in delivering CPD and sharing ideas and practice with others inside and beyond their school.

4.4 Barriers and challenges faced by less successful schools

Interviewees from less successful schools identified a number of barriers and challenges which affected their ability to raise the attainment of disadvantaged pupils. These related primarily to the characteristics of their pupil intake and their staff capacity to respond.

Many of the interviewed school leaders said that the introduction of pupil premium funding had been a very positive development which had helped them make improvements for disadvantaged pupils. In some schools a large proportion of their population was eligible for pupil premium funding and so they were getting, for example, around £250,000 a year extra to spend on supporting these pupils. In other schools, the disadvantaged pupils were very much in the minority and so they might be receiving around £15,000 a year. The amount of funding schools receive obviously makes a difference, but less successful schools with lower funding were more likely to cite this as a barrier to their ability to help pupils from disadvantaged backgrounds.

There were also different interpretations of how the pupil premium funding had to be spent. Less successful schools were much more likely to focus on accounting for how every penny was spent on providing 'additionality' for each pupil who attracted the funding. They were focusing on what extra they could provide for disadvantaged pupils – such as school trips, after-school clubs, or transport – rather than spending it on improving the quality of pupils' daily provision and support. They avoided putting any of the money into overall improvement or into any activities which might also benefit other pupils who did not attract the funding – such as raising the standard of teaching overall. For example, when asked about the school's approach to raising attainment of disadvantaged pupils, one interviewee from a less successful school explained that

senior staff had devised a grid for all teachers to detail how the pupil premium funding has been spent on each eligible child:

> *We're working on breaking down the costs of these interventions so that if someone comes in and asks how we're spending the money hopefully we'll be able to tell them*.
>
> (Primary school, less successful)

Interviewees in less successful schools were much more likely to view personalising learning for individual pupils as an insuperable challenge. Whereas more successful schools were moving towards tailoring support as much as possible, those in less successful schools spoke of the burden on already stretched teaching staff, the difficulties of individualising approaches within a large cohort of pupils, staffing issues and a lack of space for break-out sessions. All schools spoke about how hard their staff work and the long hours they put in, but less successful schools were more likely to consider individualisation too difficult to implement in practice.

Senior leaders in less successful schools also identified barriers to staff using pupil data. Some said staff were not interested in examining data and wouldn't know where to begin. They said that teachers did not have time to look at individual pupils' assessment data because they were too busy planning, teaching and marking. In these schools there was often one person – a head, deputy or member of the SLT – who was responsible for data analysis because they had an interest or aptitude in using it.

4.4.1 The improvement 'journey'

Several interviewees from more successful schools reflected on their improvement 'journey'. They said that making a difference takes time. Schools that were achieving high performance among disadvantaged pupils had not implemented everything all in one go or seen instant results. Heads of more successful schools spoke of changing their approach to focus more on disadvantaged pupils before the introduction of the pupil premium in 2011 (although they said the introduction of the pupil premium had helped them take their plans to the next level and invest in further developing their ideas and interventions). It took around three to five years for changes to 'bed in' and lead to a sustained change in pupils' attainment. Schools which were less successful were more likely to have begun focusing on disadvantaged pupils when the pupil premium funding was introduced or even later, when their school was identified as less successful in achieving good results for disadvantaged pupils.

The case study below provides an example of a school's progress in bringing about change.

A school case study

When Mrs J joined Burnlea[49] secondary school three years ago, the school had around 20 per cent disadvantaged pupils, a 'good' Ofsted rating and relatively good results overall.

She asked all staff to look at their student data and they identified that disadvantaged pupils were not making as much progress as their peers. The staff discussed potential barriers to learning and consulted pupils. However, some staff expressed the view that these pupils' progress was always going to be held back by their home life and social disadvantage. The head arranged training to highlight the impact teachers and support staff could have on pupils' attainment.

Teachers were encouraged to identify each pupil's barriers to learning. Using evidence from research, school visits and professional judgement, they gathered ideas about how best to meet pupils' needs.

The head prioritised addressing attendance and behaviour. She sent letters home and staff held drop-in sessions for parents to explain why consistent attendance is so important.

The head allocated time to teams of staff (senior leaders, class teachers and support staff) to analyse data, devise interventions and set outcome targets together. Senior staff introduced a consistent marking scheme and asked all teachers to mark disadvantaged pupils' work first.

The school appointed a higher level teaching assistant (HLTA) who had a background in child development. The HLTA trained other staff in supporting pupils' emotional needs and set up a drop-in centre for pupils and parents to discuss any issues they were facing.

Because the data identified lower performance among disadvantaged boys, staff introduced a mentoring scheme for this group.

Some staff said they did not feel confident in using data, so the deputy (who had previously analysed the data himself) ran training for all staff and offered ongoing support to answer queries. The head introduced weekly staff meetings and asked staff to bring along their analysis of data on existing interventions and their ideas for new strategies to improve pupil progress.

Despite initial opposition from staff, the head required all line managers to check that targets set for disadvantaged pupils were sufficiently challenging and that teachers could evidence steps they were taking to support achievement. Staff developed an individually tailored support package for each disadvantaged pupil, with contributions from all staff working with the pupil. The head often asks about these when carrying out her lesson observations and school walks.

[49] We have changed the headteacher's initial and the school name in order to preserve confidentiality.

Over the first two years staff tried many new interventions and became adept at identifying what was working for whom. Looking for new practice became the norm, as did planning their own tailored professional development.

In the third year the school began trying out new approaches to improve their engagement with families and the wider community. The head felt confident this would help raise parents' expectations and improve their ability to support their children's learning at home.

An analysis of the interview data identified a common 'pathway to success', with schools at different points along it. Less successful schools seemed at an earlier stage in their development of raising the attainment of disadvantaged pupils, although several were heading in the same direction as more successful schools. Their approaches seemed less developed, their change in practice less embedded and they appeared to be grappling with issues which the more successful schools had already addressed and overcome. In a few cases, the interviewers found it difficult to distinguish the answers of senior staff in less successful schools from those in more successful schools, as these interviewees were describing a committed and detailed approach to addressing the needs of pupils from disadvantaged backgrounds. Invariably, these were schools where headteachers were newer in post and had only recently implemented their approaches, which had not had time to fully bed in or lead to a positive shift in pupils' results.

One of the common starting points was to focus on attendance and behaviour alongside quality teaching, as part of a whole-school commitment to helping each pupil to succeed. Heads and senior leaders in more successful schools said that it was crucial that their staff were invested in the approach the school was taking. Some spoke of staff leaving as the school's ethos shifted. From this starting point they focused more on addressing individual pupils' learning needs, introduced more sophisticated data management systems and trained staff to use them.

Following this, teachers tended to become more engaged in actively seeking evidence and examples of good practice and using this learning to develop their personal practice and approach to the pupils they taught.

The use of data, along with high quality professional experience was feeding into a continual cycle of improvement in successful schools. They saw raising the attainment of disadvantaged pupils as a journey, not a destination, and so even though they were getting good results they were keen to develop their systems and approaches still further. (This development journey is illustrated in Chapter 5, using data from both the interviews and the survey of schools.)

Overall, the interviews demonstrated that, although senior leaders all understood the importance of raising the attainment of disadvantaged pupils, there were differences between more and less successful schools in the way they used their pupil premium funding and the principles underpinning this. Interviewees in more successful schools were committed to all their pupils achieving success and put systems in place to achieve that goal. They realised that ensuring attendance, good behaviour and providing social

and emotional support were necessary, but not sufficient, to improve pupils' learning. They used all the resources at their disposal and ensured they mobilised pupils, families, teachers and support staff. They identified the learning needs of each pupil and made sure these were addressed by tailored learning programmes, carefully monitored to check for effectiveness. In essence, they accepted responsibility for raising attainment and were willing to do whatever it takes to help each pupil succeed.

5 Conclusions and recommendations

This research set out to identify whether there are any common features of schools that have narrowed the gap successfully and whether there are any possible groups of schools that have been more successful. It also aimed to provide insights into what schools are doing to raise the attainment of disadvantaged pupils and what lessons can be learned from them. The study also attempted to identify the contributions of school characteristics, school strategies and other school-level approaches to improving the attainment of disadvantaged pupils.

5.1 How are school characteristics related to the performance of disadvantaged pupils?

The study identified several common features of schools that have better than expected results for disadvantaged pupils compared with the national average. Some of these were already known or suspected, but by using regression modelling this study has identified the relative contribution of specific school characteristics, after taking account of the influence of other characteristics included in the models.

One observation about the results overall is that there is a degree of consistency between the factors associated with success in the most recent year and improvement in results over time. There is also considerable consistency between the school-level factors associated with disadvantaged pupils' performance in both primary and secondary schools.

The findings from the analysis of national data provided some insights into factors that may be open to policy influence, though it is important to be cautious about assuming causality. In particular, the following relationships with disadvantaged pupil performance stand out:

- Schools with higher levels of pupil absence had lower performance among disadvantaged pupils than schools with otherwise similar characteristics.
- Primary schools with disadvantaged pupils who had previously achieved higher results at Key Stage 1 had higher results for disadvantaged pupils at Key Stage 2. Similarly, secondary schools with disadvantaged pupils who had achieved higher results at Key Stage 2 performed better at Key Stage 4.
- Schools with a higher proportion of disadvantaged pupils were associated with higher performance among disadvantaged pupils (and schools with a lower proportion of disadvantaged pupils were associated with lower performance among disadvantaged pupils).
- Schools with larger year groups overall (including both disadvantaged and non-disadvantaged pupils) were associated with lower performance among disadvantaged pupils.
- Primary schools with higher proportions of pupils with special educational needs (SEN) were associated with lower performance among disadvantaged pupils.

- Schools with a higher proportion of pupils from white British ethnic backgrounds were associated with lower performance among disadvantaged pupils.
- Schools located in certain areas (especially the South East, South West, East of England and North West) had poorer results, compared with schools in London or the North East[50].
- Rural secondary schools[51] had lower results among disadvantaged pupils, compared with schools with otherwise similar characteristics.

In relation to school type, the study found a positive correlation with higher attainment among disadvantaged pupils in converter academies at both primary and secondary level, and greater improvement over time at primary level. These findings form part of a broader trend for schools with higher performance overall (including converter academies, selective schools and Teaching Schools) to be associated with better performance among disadvantaged pupils, even after taking account of the influence of a high-performing intake. There were mixed findings for sponsored academies, which were associated with poorer than expected performance in 2014 at primary level, but greater than expected performance and improvement at secondary level. These findings are consistent with research focusing specifically on the influence of academies on pupil performance (Worth, 2014).

Faith schools were associated with higher attainment among disadvantaged pupils in the 2013 Key Stage 4 results only.

In addition, it is worth drawing attention to some characteristics that were not found to be significantly related to the performance of disadvantaged pupils once the influence of other factors had been taken into account. There was no evidence of a relationship between the proportion of pupils with EAL in the year group and the performance of disadvantaged pupils. Free schools were not statistically significantly associated with disadvantaged pupils' performance (though this result is influenced by the small number of free schools with results for the relevant years).

The study did not find evidence of a relationship between positive performance among disadvantaged pupils and being a member of a Teaching School Alliance (though this should not necessarily be taken as evidence that TSAs are ineffective at improving standards, as it is not known how long schools had been members of a TSA). Being a member of an academy group was not associated with performance at primary level. However, there was a small positive relationship between both disadvantaged pupil performance and improvement over time among secondary schools that were members of a small academy group.

[50] The research allocated schools to one of nine areas, based on the former Government Office Regions – see http://www.ons.gov.uk/ons/guide-method/geography/beginner-s-guide/maps/index.html

[51] Note that it was not possible to include an analysis of rural primary schools due to the small numbers of disadvantaged pupils in each school.

5.2 What strategies are schools using and how does this relate to success?

The survey found that schools had used a large number of strategies (18 per school, on average) in order to raise the attainment of disadvantaged pupils since 2011, when the pupil premium was introduced. The most popular strategies, and those that schools considered to be the most effective, focused on teaching and learning, especially paired or small group additional teaching, improving feedback between teachers and pupils and one-to-one tuition. These strategies are all supported by evidence of effectiveness in the Sutton Trust/EEF Teaching and Learning Toolkit. Fewer schools said they had used strategies to raise the attainment of disadvantaged pupils that the Toolkit identifies as ineffective, though over half (57.9 per cent) of schools surveyed said they introduced programmes to improve pupil aspirations, which is identified as an ineffective strategy in the Toolkit.

Schools identified a number of sources of their 'most effective' strategy, including from within their own school. However, they also used external sources of information, including evidence-based sources such as the Sutton Trust/EEF Teaching and Learning Toolkit and from published research or professional articles. The majority had used the pupil premium to fund the strategy they identified as the most effective.

Although schools tended to be using similar strategies, there were some choices that appeared to distinguish schools that were 'more successful' (i.e. their disadvantaged pupils' results were higher than expected, based on their characteristics) in their recent results and/or their progress over the last three years.

In particular, more successful schools were using metacognitive/independent learning and peer learning strategies (although this relationship was only statistically significant in secondary schools).

The survey analysis suggested a difference in timing, with a higher proportion of more successful schools introducing their most successful strategy before 2011.

5.3 What lessons can be learned from how schools implement their strategies?

The interviews with more and less successful schools provided further insights into the way in which schools were addressing the challenge of raising the performance of disadvantaged pupils.

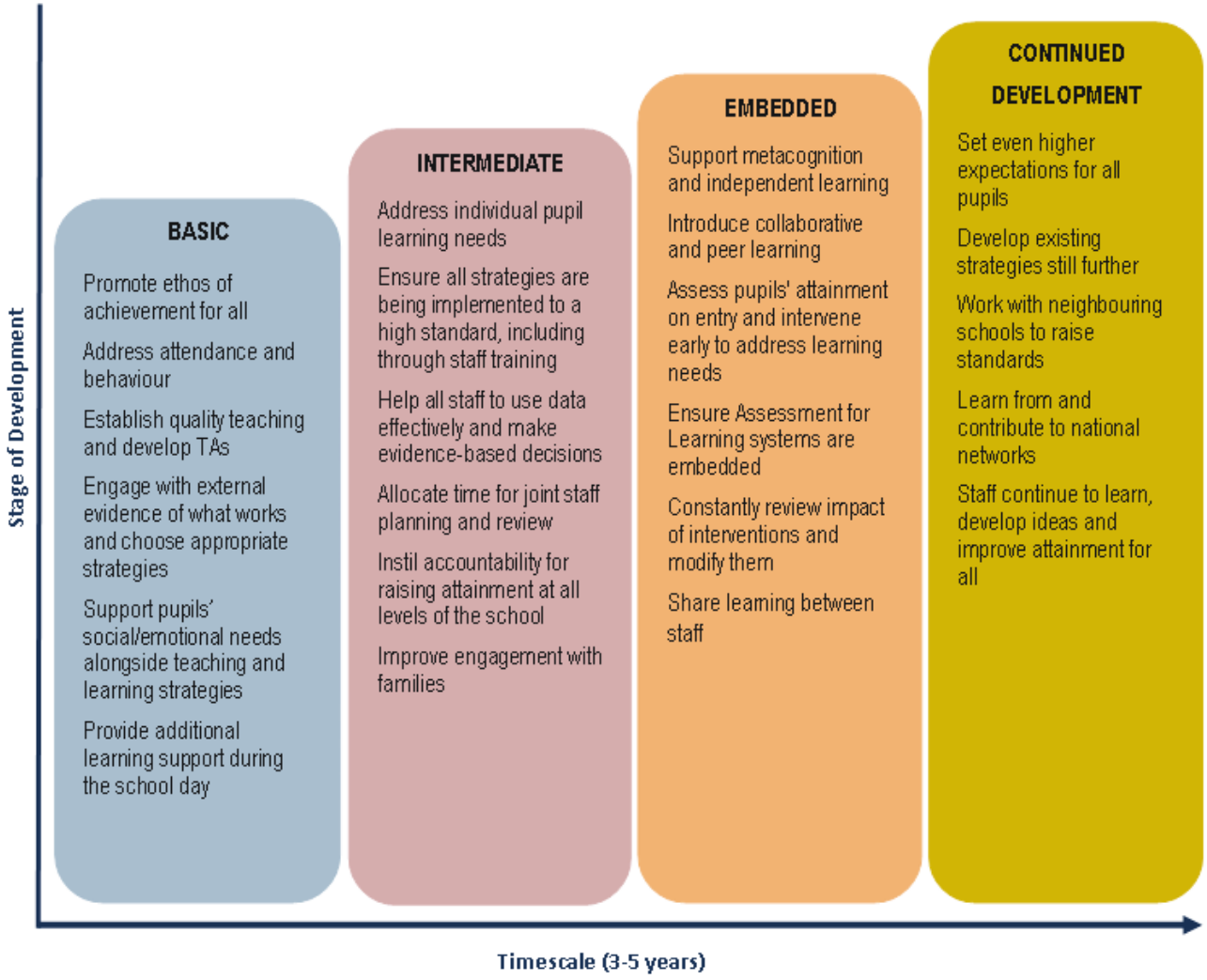
While there were few obvious differences in their choice of strategies, more effective schools appeared to be adopting their strategies with greater attention to detail. There were also some important cultural differences between more and less successful schools.

More successful schools viewed supporting disadvantaged pupils as their responsibility and saw it as part of their commitment to help each pupil succeed. They treated each

pupil as an individual with specific challenges and needs, whereas less successful schools tended to view their disadvantaged pupils as a group whose home environment and lack of access to opportunities limited their chances of success. More successful school leaders devolved responsibility to their staff and put effective systems in place to identify needs, select strategies, monitor progress and respond quickly. They provided pupils with more extensive emotional support alongside supporting their academic progress and involved families. They focused on providing high quality teaching, helping pupils to develop metacognitive strategies and providing additional support during curriculum time. They also focused on deploying teaching staff effectively and developing the full potential of their support staff, including TAs.

The research indicated that schools were following a trajectory of development, with less successful schools still tackling issues that more successful schools seemed to have already overcome. This ‘pathway to success’, based on both the survey and interview data, is shown in Figure 26. However, it is not intended to imply that all schools progress through all the stages in the same way, nor that taking these actions will inevitably lead to success. It represents a theoretical model, which may prove helpful in suggesting some of the steps that less successful schools could take to emulate their more successful colleagues.

Figure 26 An illustration of schools' pathways to success in raising the attainment of disadvantaged pupils



This model suggests that there are certain basics (especially addressing attendance and behaviour and ensuring a supportive school ethos) that need to be put in place first, before moving on to more specific improvement strategies. Schools at an intermediate stage have taken several of the actions associated with more successful practice, but these have yet to become embedded in their systems and practice. This takes place at the third stage, where schools are able to focus more strongly on early intervention. Metacognition/independent learning, collaboration and peer learning are placed at this stage, as the findings of this study suggest that these are associated with schools at a later stage in the improvement journey. At the final stage, schools are in a position to continually seek opportunities for improvement, contribute to local and national networks and share their learning with other schools.

5.4 Discussion

The findings from the three phases of this research raise some issues of interpretation. To what extent do the school characteristics identified in the national data act as barriers or enablers to the school strategies and approaches identified in the survey and interviews?

Some of the relationships identified in this study raise further questions: why, for example, do disadvantaged pupils make better progress in schools with a larger proportion of pupils from disadvantaged backgrounds? It might be expected that disadvantaged pupils would perform less well in these circumstances because of a lack of higher performing pupils to act as role models and/or the additional challenges for teachers to motivate pupils with poorer performance on entry. This finding may be related to the additional funding available to schools via the pupil premium and/or the ability of schools with higher proportions of pupils from disadvantaged backgrounds to identify and focus on their needs.

The negative associations between disadvantaged pupils' attainment and the size of the year group invite further discussion. Are the needs of disadvantaged pupils more likely to go unnoticed in larger schools? Similarly, the negative association between disadvantaged pupils' attainment and the proportion of pupils with SEN in primary schools raises further questions. Do these pupils from disadvantaged backgrounds also have SEN and is this posing additional challenges for primary schools? [52] Is it the case – as some of this study's interviewees suggested – that schools with larger proportions of pupils with SEN are using similar (less successful) strategies to support pupils with SEN and those from disadvantaged backgrounds who do not have SEN? Given that this study accessed pupil characteristics at cohort level, there are limitations to its ability to unpick these relationships at pupil level.

Any research adopting a non-experimental design raises questions of attribution and causation. It may be that some of the observed relationships are the result of a school's success in raising attainment, rather than the variable in question causing the observed degree of success. This is likely to contribute to the relationship between success and certain school characteristics – for example the association between higher performance of pupils from disadvantaged backgrounds in selective schools, Teaching Schools and converter academies. However, prior attainment cannot adequately explain the positive relationship between school status and an increase in performance of disadvantaged pupils over time, which suggests that there may be a difference in other factors which are not adequately captured in the models (such as attracting better motivated pupils with more home support, as well as the influence of the school itself). The findings in relation to sponsored academies are also open to interpretation. Sponsored academies were associated with poorer performance among disadvantaged pupils in primary schools but higher attainment and progress in secondary schools. This latter result is likely to be

[52] Note that there was evidence of a significant interaction between the effect for the proportion of disadvantaged pupils and the effect for the proportion of pupils with SEN in primary schools.

influenced by their low starting point and regression to the mean, but it could also be associated with improved leadership and other factors not included in the statistical models.

The lack of strong associations between the strategies adopted by schools and their relative success in raising the attainment of disadvantaged pupils (having taken account of the influence of school characteristics) is worthy of comment. Given that the most popular strategies are evidence-based, what is responsible for the difference in schools' success? The research suggests two possible explanations: either the strategies have not yet had a positive influence on results in less successful schools because they only implemented them recently, and/or more successful schools are implementing these strategies more effectively.

It seems likely that schools' success in closing the gap is influencing some of the findings from the survey and interviews. For example, schools experiencing less success are likely to have used more strategies in an attempt to improve their success. They are also more likely to rely on the Sutton Trust-EEF Toolkit and be more concerned that their strategies are evidence-based because of the pressure to demonstrate that they are doing 'the right things' to address the issue. On the other hand, schools experiencing greater success are more likely to attract higher quality staff, feel freer to rely on their own judgements and take calculated risks in their choice of strategies.

One of the issues raised by senior leaders was the tension between accountability for their use of pupil premium funding and the importance of ensuring effective teaching for all pupils. There was a suggestion that heads felt constrained by the need to demonstrate that the funding had been spent solely on eligible pupils. Clearly policy makers want to ensure that public money is spent for its intended purpose. However, they also need to encourage schools to use the funding most effectively which may include investing in systems and strategies which are also used by non-eligible pupils. Other issues raised by senior leaders in less effective schools highlight the importance of leaders' beliefs and conceptualisation of the issue. Some interviewees expressed the view that pupils from disadvantaged backgrounds are all facing similar barriers to learning and have a limited capacity to succeed. They saw the school's role as compensating for disadvantaged pupils' lack of possessions and social and cultural opportunities rather than to make a difference to their attainment. It will be important for the system to challenge these ingrained beliefs and behaviours even more strongly in future.

5.5 Conclusion

The success of the pupil premium in closing the attainment gap is reliant on schools to make the best choices, given their characteristics and circumstances. The government has introduced several sources of support, as well as checks and balances, to encourage schools to use the additional funding in the most appropriate and effective way. This study suggests that between one- and two-thirds of a school's success in promoting the attainment of disadvantaged pupils is related to the characteristics of the school, but the

remainder is open to the influence of other factors, including the actions taken by schools. There is no simple solution to this challenge, but the study has identified a number of features associated with more successful schools – both what they do and the way they do it – and has set out the path taken by more successful schools.

Overall, this research suggests that there is no single, 'one size fits all' solution to closing the attainment gap. Instead, a number of measures are required, tailored to each school's circumstances and stage on an improvement journey. These measures include setting a culture of high expectations for all pupils, understanding how schools can make a difference, selecting a range of evidence-based strategies tailored to meet the needs of individual schools and pupils, and implementing them well.

Further research

This research has identified several associations which would benefit from further investigation. The authors have selected three areas where further research would have the greatest value.

1. Further research into the relationship between absence and attainment for disadvantaged pupils, to investigate the reasons underlying the association and understand whether improving attendance for all pupils is likely to be an effective strategy for closing the attainment gap.
2. Further research into the relationships between disadvantaged pupils' performance and geographical regions, including investigating the relationships at pupil level.
3. Further research investigating the utility of the 'pathway to success'. Does this have resonance with schools? If less successful schools are supported to move to the next step on the pathway, does this result in improved outcomes for disadvantaged pupils?

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Appendix A: Methods and analysis

A.1 Secondary data analysis (regression analysis of school level data)

In Phase 1, school-level data was used to assess the relationship between observed school and cohort characteristics and the outcomes of interest. The analysis was split between primary and secondary schools (i.e. Key Stage 2 and Key Stage 4 results).

For the Key Stage 2 analysis, data from 2012 to 2014 from the DfE performance tables website was used. This data contains information on the percentage of pupils achieving level 4 in reading, writing (teacher assessment) and maths (identified as L4RWM), this study's main outcome measure, separately for disadvantaged and non-disadvantaged pupils. Other measures of attainment (e.g. the average point score) were not used for the Key Stage 2 modelling as these were not reported separately for the disadvantaged and non-disadvantaged pupils for all three years. It was not possible to use older data as the main headline measure for Key Stage 2 results has changed over the period, and older data only reported the percentage of pupils achieving the expected level in English and maths.

The second outcome measure used for the Key Stage 2 analysis was the percentage point change in L4RWM between 2012 and 2013. The percentage point change, in itself, would tend to over emphasise changes at the top end of the attainment distribution (e.g. a change from 80 per cent to 85 per cent is proportionally smaller than a change from 30 per cent to 35 per cent). However, proportional changes would present the opposite issue, as they would tend to over emphasise changes at the bottom end of the attainment distribution (e.g. an improvement from 80 per cent to 88 per cent is proportionally equivalent to an improvement from 30 per cent to 33 per cent, but might not be as easy or difficult to achieve). To address these concerns, the absolute percentage point change has been used as a dependent variable, controlling for the starting level of attainment for disadvantaged pupils in 2012.

For the Key Stage 4 analysis, data from 2011 to 2013 was used. The dataset contained information on a number of measures of attainment for both disadvantaged and non-disadvantaged pupils. The analysis focused on the capped average point score (CAPS) for GCSE or equivalent qualifications and the percentage of pupils achieving at least five A*-C GCSE or equivalent qualifications, including English and maths (henceforth 5ACEM). Data from 2014 was not used, as changes in the reporting of the main measures of attainment at Key Stage 4 meant they were not directly comparable to those from the previous years.

Additional data on school and cohort characteristics was collected from the performance tables website[53] and Edubase.[54] Academy schools (converter or sponsored) were linked

[53] http://www.education.gov.uk/schools/performance/

[54] http://www.education.gov.uk/edubase/home.xhtml

to their predecessors where necessary, in order to collect data for all three years considered.

The modelling strategy for Phase 1 was based on three separate models, depending on the attainment measure of interest.

Model 1 looked at the recent level of success in the attainment of disadvantaged pupils, and related it to current school and cohort characteristics. This relationship was modelled using a simple linear regression model of the form

$$Y_{it} = \alpha + \boldsymbol{\beta}\mathbf{S}_{it} + \boldsymbol{\gamma}\mathbf{X}_{it} + \varepsilon_{it}$$

where $i = 1, 2, 3, \ldots, n$ are the schools included in the analysis, *t* is the latest academic year used for the results (2014 for KS2 and 2013 for KS4), $\mathbf{S}_{it}$ is a vector of school characteristics, $\mathbf{X}_{it}$ is a vector of cohort characteristics and ε_{it} is a normally distributed random error with mean 0 and standard deviation σ.

School characteristics included:

- region -- former Government Office Regions (eight regional dummies for plus London as the reference group)
- school type (dummies for converter academy, sponsored academy and free school)
- membership of multi-academy trust/group (dummies for small groups with up to five schools, and for larger groups with six or more schools) compared with all other schools
- membership of a Teaching School Alliance (TSA) (dummies for Teaching School, TSA partner and TSA member)
- dummy for faith school
- dummy for selective school (KS4 models only)
- dummy for rural school (a school is classified as rural if located in a village or hamlet and isolated dwelling, based on the classification reported in Edubase).

Cohort characteristics included:

- cohort size
- percentage of disadvantaged pupils
- percentage of SEN pupils
- percentage of ethnic minority pupils (based on six broad categories: non-British white background, black, Asian, Chinese, mixed, other ethnic group)
- percentage of pupils with English as an additional language

- overall absence (at school level)
- prior attainment of disadvantaged pupils.

The option of including school-level funding per pupil was also explored. However, the inclusion of this variable presented several drawbacks, related to the fact that school-level funding is strongly correlated with the location of the school, as well as the percentage of disadvantaged pupils and of SEN pupils. This is known as a collinearity problem, and can result in imprecise parameter estimates for the variables affected. The funding variable was excluded from the final models because its inclusion did not substantially improve the explanatory power of the model.

Additionally, gender (as measured by the percentage of female pupils in the cohort) was also excluded from the final version of the model due to a number of schools having missing or unreliable data. When included in the model, gender was found to be positively correlated with the outcome. However, the inclusion did not significantly affect the estimates of the other parameters. Therefore, the loss in terms of sample size was judged to be more relevant, and the gender variable was not included.

Model 2 looked at the improvement in disadvantage pupil attainment over a three-year period, in relation to current school and cohort characteristics, and controlling for the starting level of attainment and disadvantage at the beginning of the period. The linear regression model took the form

$$\Delta Y_{it} = \alpha + \boldsymbol{\beta}\mathbf{S}_{it} + \boldsymbol{\gamma}\mathbf{X}_{it} + \boldsymbol{\theta}\mathbf{Z}_{it-2} + \varepsilon_{it}$$

where $\Delta Y_{it} = Y_{it} - Y_{it-2}$ is the change in attainment of disadvantaged pupils. School and cohort characteristics were the same as in Model 1, with the addition of $\mathbf{Z}_{it-2}$ which includes the percentage and attainment of disadvantaged pupils at the beginning of the three-year period.

Model 3 also looked at the improvement in disadvantaged pupil attainment over a three-year period. However, it used changes in the cohort characteristics as explanatory variables instead of current levels. Therefore, model 3 took the form

$$\Delta Y_{it} = \alpha + \boldsymbol{\beta}\mathbf{S}_{it} + \boldsymbol{\gamma}\Delta\mathbf{X}_{it} + \boldsymbol{\theta}\mathbf{Z}_{it-2} + \varepsilon_{it}$$

where $\Delta\mathbf{X}_{it} = \mathbf{X}_{it} - \mathbf{X}_{it-2}$ is the change in the cohort characteristics mentioned above, while $\mathbf{S}_{it}$ and $\mathbf{Z}_{it-2}$ are the same as in Model 2.

Estimates for the models are reported in Appendix C. It is important to bear in mind that these are purely descriptive models, in the sense that they can identify correlations between certain characteristics and outcomes, net of all the other characteristics included in the model, but the estimates have no causal implications.

The effect sizes reported in Appendix C (and in the graphs in Chapter 2) are 'pseudo-effect sizes' (Schagen, 2004), representing the variation in the outcome as a percentage of its standard deviation, for a given variation in the explanatory variable. For binary variables, such as the regional dummies or the school-type dummies, the effect size

shows the impact of going from 0 to 1. For continuous variables, the effect size is based on the expected difference between two randomly picked values of the variables.[55]

A.2 Headteacher survey

Survey sampling strategy

Phase 1 modelling results were used to inform the sampling strategy for the survey of headteachers. Specifically, the process involved three steps:

I) estimate the expected outcome of each school given their observed characteristics and split the range of possible expected outcomes into quintiles
II) identify the schools that over- or under-perform other schools with similar characteristics
III) select schools that either over-perform or under-perform compared with their peers across the whole range of expected outcomes.

The aim was to decompose the outcome into an expected component, which is determined by the observed school and cohort characteristics, and an unexplained component, which might be, at least in part, the result of specific policies and procedures implemented within each school. By comparing schools with similar expected outcomes but different actual outcomes, there is a better chance of picking up the effect of a particular intervention.

Steps I and II follow directly from the regression analysis in Phase 1. For step I, two models, Model 1 and Model 3, were used to predict the level of attainment of disadvantaged pupils in each school, given the observed characteristics included in the model. The quintiles of the distribution of the predicted outcomes were then calculated and each school was assigned to their respective quintile. For the purpose of Phase 2 sampling, the L4RWM measure for Key Stage 2 was used and the CAPS measure for Key Stage 4.

For step II, the residuals from each regression model first needed to be calculated. The residuals are simply the difference between the actual (y_i) and the predicted ($\hat{y}_i$) outcome from the model, i.e.

$$r_i = y_i - \hat{y}_i$$

Schools with positive residuals are outperforming other schools with similar characteristics, whereas schools with negative residuals are performing worse than other similar schools.

In step III, the schools to contact for the survey were selected based on whether they had positive or negative residuals across the whole spectrum of predicted outcomes. However, in order to avoid schools with very small residuals, which are performing broadly in line with what their characteristics would imply, only the top 60 per cent of

[55] See Schagen (2004), pages 30-31.

positive residuals and the bottom 60 per cent of negative residuals were selected. This is because it could be argued that schools performing in line with their expectations are neither adding nor subtracting to what their pupils could have been expected to achieve given their characteristics and prior attainment. In contrast, selecting schools with relatively large residuals focuses attention on the most and least successful schools.

Finally, a school was classified as more successful if it performed in the top 60 per cent of positive residuals in at least one of the two models, with a positive residual from the other model. Similarly, a school was classified as less successful if it performed in the bottom 60 per cent of negative residuals in at least one of the two models, with a negative residual in the other model.

By construction, this approach resulted in a broad representation of school and cohort characteristics, as these were reflected in the predicted outcomes, as well as a broad representation of actual outcomes, as these were reflected in the combination of predicted outcomes and residuals.

Sample representativeness

The strategy described above results in two samples that are broadly representative of the main characteristics of the school population, except for one important but unavoidable flaw: small primary schools are under-represented. This is because schools with small cohort sizes have a small number of disadvantaged pupils, who might either not be reported[56], or which may simply not be statistically reliable.[57].This is a particular issue for rural primary schools, which are substantially under-represented in the models produced for this research.

It is important to point out that this is not a result of response bias to the survey itself. Indeed, responses were very evenly spread across school characteristics. Rather, this is the result of a lack of available or reliable data on many small schools, which resulted in them not being included in the Phase 1 analysis and, consequently, in the sampling framework for Phase 2.

Due to the systematic nature of the problem, the use of sample weights to address this issue may actually have created more problems, as it would simply amplify the natural variability of a small sample of very small schools. The best approach was to take the survey numbers as they were and accept the fact that, due to the number of pupils on roll, small schools were not properly represented.

This did not present an issue for the Key Stage 4 sample, for which a simple logistic model shows no significant difference in the likelihood of participating in the survey based on school type, region, rurality, school size, level of disadvantage or prior attainment.

The composition of the Key Stage 2 sample is as follows.

Table 4 Profile of Key Stage 2 sample by school type

School type	Sample		Overall population	
	N	%	N	%
Maintained school	668	88.0%	13,448	88.7%
Converter academy	62	8.2%	1,020	6.7%
Sponsored academy	29	3.8%	573	3.8%
Free school	0	0.0%	115	0.8%

[56] The DfE suppresses school data in cases where the number of pupils in the category of interest is either one or two, in order to avoid the possibility of individual pupils being identified.

[57] Small numbers of pupils make the resulting percentages very volatile and unreliable. Schools have been included in the analysis if their overall cohort size was at least ten, and they had at least six disadvantaged pupils.

Table 5 Profile of Key Stage 2 sample by region

School type	Sample		Overall population	
	N	%	N	%
London	90	11.9%	1,700	11.2%
South East	115	15.2%	2,165	14.3%
South West	80	10.5%	1,712	11.3%
East of England	70	9.2%	1,707	11.3%
East Midlands	62	8.2%	1,453	9.6%
West Midlands	77	10.1%	1,577	10.4%
Yorkshire and the Humber	98	12.9%	1,690	11.2%
North West	117	15.4%	2,382	15.7%
North East	50	6.6%	770	5.1%

Table 6 Profile of Key Stage 2 sample by schools' level of success

Level of success	Sample		Overall population*	
	N	%	N	%
More successful	419	55.2%	1,937	50.6%
Less successful	339	44.8%	1,888	49.4%

*The overall population referred to in this table is the total number of schools that were classified as more or less successful based on the Phase 1 analysis, which formed the basis of the sampling.

The overall response rate for the Key Stage 2 sample was 19.8 per cent, with 21.6 per cent for more successful schools and 18 per cent for less successful schools. The difference in response rates between more and less successful schools was not statistically significant. The composition of the Key Stage 4 sample is as follows.

Table 7 Profile of Key Stage 4 sample by school type

School type	Sample		Overall population	
	N	%	N	%
Maintained school	260	45.6%	1,510	51.3%
Converter academy	241	42.3%	1,041	35.4%
Sponsored academy	69	12.1%	380	12.9%
Free school	0	0.0%	10	0.3%

Table 8 Profile of Key Stage 4 sample by region

Region	Sample		Overall Population	
	N	%	N	%
London	64	11.2%	412	14.0%
South East	93	16.3%	460	15.6%
South West	68	11.9%	295	10.0%
East of England	65	11.4%	322	11.0%
East Midlands	52	9.1%	237	8.1%
West Midlands	68	11.9%	355	12.1%
Yorkshire and the Humber	52	9.1%	287	9.8%
North West	84	14.7%	427	14.5%
North East	24	4.2%	146	5.0%

Table 9 Profile of Key Stage 4 sample by schools' level of success

Level of success	Sample		Overall population*	
	N	%	N	%
More successful	292	51.2%	1,156	51.5%
Less successful	278	48.8%	1,087	48.5%

*The overall population referred to in this table is the total number of schools that were classified as more or less successful based on the Phase 1 analysis, which formed the basis of the sampling.

The overall response rate for the Key Stage 4 sample was 25.4 per cent, with 25.6 per cent for more successful schools and 25.3 per cent for less successful schools. The difference in response rates between more and less successful schools is not statistically significant.

A.3 Qualitative interviews

The team invited a sample of school leaders from more and less successful primary, secondary and special schools to participate in qualitative interviews between January and March 2015.

Sampling strategy

The sampling strategy for the qualitative case studies followed on from the sampling strategy for the Phase 2 survey. The sampling strategy was devised in order to account for all five quintiles of predicted attainment, and to include a pair of more and less successful schools for each quintile and each phase (KS2 and KS4). Geography and school type was also accounted for in a systematic way, by selecting more and less successful schools within the same quintile of predicted attainment, of the same type and located in the same broad geographical area.

Interviews were conducted in two tranches. Tranche 1 interviews were selected using the sampling strategy described above. Tranche 2 interviews were selected from schools which had completed the survey, using the sampling strategy to determine groups of more and less successful schools.

Approach to the qualitative interviews

Headteachers in the sample were all initially contacted by email to explain the purpose of the research and invite them to take part in an interview. Headteachers were asked to contact the research team to book an appointment. Interviewers explained that they needed to speak with a senior member of staff who could talk in detail about what steps the school had taken to raise the attainment of disadvantaged pupils. In the majority of cases the head teacher was interviewed, although other interviewees included the deputy head or member of SLT with responsibility for disadvantaged pupils and/or pupil premium funding.

The interviews took between 45 minutes and an hour. The team developed a topic guide to capture all of the school's approaches to raising attainment, in whichever way they chose to talk about them. Questions were deliberately not narrowed down to just how the pupil premium funding had been spent. The research aimed to explore the processes that underpinned interviewees' considerations of how to raise attainment, their approaches, decisions taken and how they were monitoring impact.

The main aim of the interviews was to explore what it was about the school, the approaches they had taken, or the way that these had been implemented that had led to the type of success the school had experienced. In tranche 1, the sampling approach aimed to match more and less successful schools on their school characteristics (type, location, size) in order to interview a pair of schools with similar characteristics but different levels of success. However, recruitment using this process was slow, as there was a need to ensure one school in a 'pair' had been interviewed before its 'match' could be approached. An initial attempt to have the interviewers 'blind' to which category the school was in proved impractical, because interviewers needed to have a good understanding of the school's situation so that they could tailor the questions to explore some of the key issues affecting the school.

Questions focussed on '**how**' the school was, and had been, implementing changes to raise the attainment of disadvantaged pupils rather than just '**what**' they had been doing. This was to gain an understanding of the processes in place and explore potential examples of good practice to share with less successful schools. Questions explored the role of staff, the SLT and governors, links with wider networks and use of evidence and data. Interviews also included the barriers and drivers to bringing about these changes along with lessons schools had learned along their journey of implementation.

All interviews were audio recorded, with interviewees' permission, for analysis by the research team. Participants were assured that their school's participation would be kept

confidential and that any quotes used would be anonymised. Participants were also offered a copy of the final research report when finalised.

Interviewers took notes during and following the interviews to feed into the analysis. The research team devised a framework to capture the answers of all participants in a way that could be analysed by school type, levels of success and other influences identified by the interviewers. Key themes in the emerging findings were drawn out using this process after the tranche 1 interviews and the topic guide was amended slightly to focus more on the school's approach to raising attainment, and any changes to policy and school structure.

Three members of the research team responsible for the interviews also conducted the analysis. The findings were discussed with the whole research team in order to provide additional challenge, explore what may have been leading to these findings and see what had been learnt from the interviews which could help to explain findings from the survey analysis.

Participant profile

A total of 49 schools (41 mainstream schools and eight special schools) participated in the qualitative interviews for this research. Interviews were conducted with school leaders from across England and Figure 34 describes the characteristics of all schools that participated in the qualitative research. The eight special schools were sampled from Pupil Premium Award applicants or winners since 2013.

Table 10 Profile of schools that participated in the qualitative interviews

Relative level of success in raising disadvantaged pupils' attainment	Primary (N)	Secondary (N)	Special (N)
More successful schools	10	10	8
Less successful schools	**10**	**11**	
Total	20	21	8

Appendix B: Survey data tables

This Appendix contains a series of tables showing overall means and percentages for the survey questions.

Table 11 Q1A Which of the following strategies has your school used to raise the attainment of disadvantaged pupils in the last three years (i.e. between September 2011 and September 2014)?

Strategy	All schools		Primary		Secondary	
	N	%	N	%	N	%
Teaching and learning						
One-to-one tuition	1134	85.3	634	83.5	500	87.7
Paired or small group additional teaching	1265	95.2	732	96.4	533	93.5
Improving feedback between teachers and pupils	1150	86.5	654	86.2	496	87.0
Personalised learning plans for each pupil	523	39.4	284	37.4	239	41.9
New reading/reading comprehension programme	757	57.0	408	53.8	349	61.2
New speaking and listening programme	197	14.8	130	17.1	67	11.8
New numeracy/maths programme	604	45.4	349	46.0	255	44.7
New homework strategy	355	26.7	168	22.1	187	32.8
Peer-to-peer tutoring schemes for pupils	383	28.8	116	15.3	267	46.8
Collaborative learning	486	36.6	299	39.4	187	32.8
Metacognitive/independent learning	437	32.9	223	29.4	214	37.5
Introduced/improved setting or streaming	478	36.0	282	37.2	196	34.4
Improving pupil engagement with the curriculum	698	52.5	441	58.1	257	45.1
CPD for teachers focused on disadvantaged pupils	590	44.4	273	36.0	317	55.6
CPD for teaching assistants focused on disadvantaged pupils	477	35.9	287	37.8	190	33.3
Incentives/rewards to pupils for good performance	553	41.6	246	32.4	307	53.9
Other teaching and learning strategy	359	27.0	173	22.8	186	32.6
Additional resources						
Additional teachers/teaching hours	1052	79.2	641	84.5	411	72.1
Additional teaching assistants/TA hours	907	68.2	626	82.5	281	49.3
Additional other staffing or volunteers	565	42.5	306	40.3	259	45.4
Extending school time	331	24.9	134	17.7	197	34.6
IT resources	704	53.0	401	52.8	303	53.2
Improving the classroom/school environment	471	35.4	310	40.8	161	28.2

Strategy	All schools		Primary		Secondary	
	N	%	N	%	N	%
Introducing/subsidising school uniform	440	33.1	164	21.6	276	48.4
Reducing class sizes	521	39.2	228	30.0	293	51.4
Collaborating with other schools to share resources	404	30.4	213	28.1	191	33.5
Other resources	207	15.6	114	15.0	93	16.3
Social and emotional support						
Extra-curricular clubs (e.g. breakfast, homework, sports/interest clubs)	885	66.6	493	65.0	392	68.8
Arranging/subsidising trips to cultural venues	1075	80.9	600	79.1	475	83.3
Transition support (including summer schools)	720	54.2	292	38.5	428	75.1
Social/emotional support programmes	1046	78.7	617	81.3	429	75.3
Improving pupil aspirations	770	57.9	354	46.6	416	73.0
Improving attendance	1030	77.5	552	72.7	478	83.9
Improving behaviour	830	62.5	434	57.2	396	69.5
Parental involvement programmes	620	46.7	364	48.0	256	44.9
Other social and emotional support strategy	440	33.1	250	32.9	190	33.3
Other						
Other strategy	107	8.1	53	7.0	54	9.5
No response	4	0.3	1	0.1	3	0.5

More than one answer could be given so percentages may sum to more than 100.
A total of 1325 respondents answered at least one item in this question.
Source: *(NFER Survey of Headteachers, 2015)*

Table 12 Q1B Please identify the three strategies that you feel have been most effective.

Strategy	All schools	Primary	Secondary
	Yes	Yes	Yes
	%	%	%
Teaching and learning			
One-to-one tuition	15.6	13.3	18.5
Paired or small group additional teaching	18.8	29.8	17.5
Improving feedback between teachers and pupils	18.7	17.9	19.8
Personalised learning plans for each pupil	2.0	2.0	2.1
New reading/reading comprehension programme	3.3	2.9	3.9
New speaking and listening programme	0.0	0.0	0.0
New numeracy/maths programme	0.7	0.9	0.4
New homework strategy	0.0	0.0	0.0
Peer-to-peer tutoring schemes for pupils	0.3	0.0	0.8
Collaborative learning	0.3	0.5	0.2
Metacognitive/independent learning	1.4	1.2	1.5
Introduced/improved setting or streaming	0.9	1.1	0.8
Improving pupil engagement with the curriculum	2.0	2.3	1.7
CPD for teachers focused on disadvantaged pupils	1.5	1.2	1.9
CPD for teaching assistants focused on disadvantaged pupils	0.3	0.3	0.2
Incentives/rewards to pupils for good performance	0.1	0.0	0.2
Other teaching and learning strategy	1.4	1.2	1.7
Additional resources			
Additional teachers/teaching hours	11.2	14.2	7.3
Additional teaching assistants/TA hours	2.7	3.8	1.3
Additional other staffing or volunteers	1.3	0.5	2.3
Extending school time	0.2	0.2	0.2
IT resources	0.0	0.0	0.0
Improving the classroom/school environment	0.1	0.0	0.2
Introducing/subsidising school uniform	0.0	0.0	0.0
Reducing class sizes	3.6	4.1	3.1
Collaborating with other schools to share resources	0.1	0.0	0.2
Other resources	0.1	0.0	0.2
Social and emotional support			
Extra-curricular clubs (e.g. breakfast, homework, sports/interest clubs)	0.2	0.3	0.0
Arranging/subsidising trips to cultural venues	0.2	0.0	0.4
Transition support (including summer schools)	0.3	0.0	0.8
Social/emotional support programmes	2.9	3.6	1.9
Improving pupil aspirations	1.9	1.1	3.1

Improving attendance	1.6	1.1	2.3
Improving behaviour	0.8	0.8	1.0
Parental involvement programmes	0.1	0.2	0.0
Other social and emotional support strategy	10.6	0.8	0.4
Other			
Other strategy	0.7	0.6	0.8

A series of single response questions.
Due to rounding percentages may not sum to 100.
A total of 1180 respondents gave at least one response to these questions.
Source: (NFER Survey of Headteachers, 2015)

The following questions focus on the strategy that you identified in Question 1 as the most effective in raising attainment of disadvantaged pupils.

Table 13 Q2 Year strategy introduced

	All schools	Primary	Secondary
	%	%	%
Before September 2011	18.5	20.3	16.1
2011-12	21.6	22.0	21.1
2012-13	28.1	28.4	27.6
2013-14	28.0	25.9	30.8
Don't know	3.8	3.3	4.4

A single response question.
A total of 1314 respondents gave a response to this question.
Source: *(NFER Survey of Headteachers, 2015).*

Table 14 Q3 Where did you get the idea for this strategy?

	All schools		Primary		Secondary	
	N	%	N	%	N	%
From within my own school	854	64.3	473	62.3	381	66.8
From another school	321	24.2	168	22.1	153	26.8
From my academy chain or local authority	101	7.6	66	8.7	35	6.1
From a conference/CPD	237	17.8	120	15.8	117	20.5
Teaching and Learning Toolkit (Sutton Trust/Education Endowment Foundation)	406	30.5	187	24.6	219	38.4
Information from published research or professional articles	259	19.5	134	17.7	125	21.9
Guidance from official bodies such as Ofsted	192	14.4	92	12.1	100	17.5
Other source	124	9.3	77	10.1	47	8.2
Don't know	40	3.0	21	2.8	19	3.3
No response	3	0.2	3	0.4	0	0.0

More than one answer could be given so percentages may sum to more than 100.
A total of 1326 respondents answered at least one item in this question.
Source: *(NFER Survey of Headteachers, 2015).*

Table 15 Q4 How important were each of the following in your decision to select this strategy?

	All schools				Primary				Secondary			
We thought it....	not important	some importance	very important	no response	not important	some importance	very important	no response	not important	some importance	very important	no response
	%	%	%	%	%	%	%	%	%	%	%	%
...would be straightforward to implement	19.9	43.4	34.2	2.6	19.4	42.0	36.4	2.2	20.5	45.3	31.2	3.0
...was likely to be popular with staff	32.0	46.9	17.2	3.9	31.0	47.0	17.9	4.1	33.3	46.7	16.3	3.7
...was likely to be popular with parents	18.8	52.4	24.2	4.6	19.5	53.4	22.5	4.6	17.9	51.1	26.5	4.6
...was likely to be popular with pupils	10.4	35.8	49.8	4.0	10.5	35.3	50.3	3.8	10.2	36.5	49.1	4.2
...was inexpensive/good value for money	16.9	44.1	35.3	3.8	17.1	43.3	34.9	4.6	16.5	45.1	35.8	2.6
...was backed by academic research	8.5	37.4	50.9	3.2	9.2	37.8	49.4	3.6	7.5	36.8	52.8	2.8
...was a good fit with existing practices	9.6	39.0	48.5	2.9	8.7	36.4	51.5	3.4	10.7	42.5	44.6	2.3
...aligned with our professional experience	2.8	32.9	61.6	2.8	2.1	31.8	63.5	2.6	3.7	34.4	58.9	3.0
...would have the greatest impact	0.2	3.1	95.3	1.4	0.3	2.5	96.3	0.9	0.0	3.9	94.0	2.1

A series of single response questions.

A total of 1327 respondents gave at least one response to these questions.

Source: *(NFER Survey of Headteachers, 2015).*

Table 16 Q5 Strategy targeted on specific pupils?

	All schools	Primary	Secondary
	%	%	%
Yes	73.1	72.4	73.4
No	26.9	27.1	26.6

A single response question.
A total of 1229 respondents gave a response to this question.
Source: *(NFER Survey of Headteachers, 2015).*

Table 17 Q6A If Yes, which groups did you target?

	All schools		Primary		Secondary	
	N	%	N	%	N	%
Disadvantaged pupils (i.e. pupils eligible for free school meals at any point within the last six years, those looked after by the local authority, adopted children, care leavers and children of service families)	860	90.5	496	91.5	364	89.2
Pupils with special educational needs	428	45.1	259	47.8	169	41.4
Pupils with English as an additional language	243	25.6	141	26.0	102	25.0
Lower attaining pupils	630	66.3	389	71.8	241	59.1
Middle attaining pupils	346	36.4	196	36.2	150	36.8
Higher attaining pupils	331	34.8	233	43.0	98	24.0
Boys	289	30.4	181	33.4	108	26.5
Girls	220	23.2	138	25.5	82	20.1
Specific year group(s)	359	37.8	214	39.5	145	35.5
Other group of pupils	99	10.4	50	9.2	49	12.0
No response	26	2.7	13	2.4	13	3.2

More than one answer could be given so percentages may sum to more than 100.
A filter question: all those who answered [Q5=1].
A total of 924 respondents answered at least one item in this question.
Source: *(NFER Survey of Headteachers, 2015).*

Table 18 Q6B If the strategy was targeted on specific year groups, which one(s)?

	All schools		Primary		Secondary	
	N	%	N	%	N	%
Reception	38	10.6	38	17.8	0	0.0
Year 1	64	17.8	64	29.9	0	0.0
Year 2	97	27.0	97	45.3	0	0.0
Year 3	71	19.8	71	33.2	0	0.0
Year 4	81	22.6	81	37.9	0	0.0
Year 5	123	34.3	123	57.5	0	0.0
Year 6	188	52.4	184	86.0	4	2.8
Year 7	70	19.5	4	1.9	66	45.5
Year 8	52	14.5	4	1.9	48	33.1
Year 9	43	12.0	1	0.5	42	29.0
Year 10	73	20.3	1	0.5	72	49.7
Year 11	130	36.2	2	0.9	128	88.3
No response	2	0.6	2	0.9	0	0.0

More than one answer could be given so percentages may sum to more than 100.
A filter question: all those who answered [Q6A_9=1 and Q5=1].
A total of 357 respondents answered at least one item in this question.
Source: *(NFER Survey of Headteachers, 2015)*.

Table 19 Q7 How successful has the strategy been?

	All schools	Primary	Secondary
	%	%	%
Highly successful	38.4	47.0	27.1
Fairly successful	49.8	46.1	54.7
Marginally successful	3.4	1.5	6.0
Too soon to say	8.2	5.2	12.1
Don't know	0.2	0.3	0.2

A single response question.
A total of 1322 respondents gave a response to this question.
Source: *(NFER Survey of Headteachers, 2015).*

Table 20 Q8 How are you assessing the success of this strategy?

	All schools		Primary		Secondary	
	N	%	N	%	N	%
Professional opinion of teaching staff	827	62.2	522	68.8	305	53.5
Positive pupil reactions to the strategy	793	59.7	463	61.0	330	57.9
Pupils' work shows an improvement	1129	85.0	685	90.3	444	77.9
Our pupil performance data showed an improvement after we introduced this strategy	1148	86.4	658	86.7	490	86.0
Our evaluation shows a positive impact on pupil attainment related to this strategy	933	70.2	557	73.4	376	66.0
We have had an independent evaluation which shows a positive impact on pupil attainment	227	17.1	142	18.7	85	14.9

More than one answer could be given so percentages may sum to more than 100.
A total of 1327 respondents answered at least one item in this question.
Source: *(NFER Survey of Headteachers, 2015).*

Table 21 Q9 To what extent funded by PPF?

	All schools	Primary	Secondary
	%	%	%
Not at all	6.6	5.4	8.1
Partially	58.6	60.3	56.3
Wholly	33.7	33.6	33.8
Don't know	1.1	0.7	1.8

A single response question.
A total of 1322 respondents gave a response to this question.
Source: *(NFER Survey of Headteachers, 2015).*

Table 22 Q10 To what extent have the following people/organisations provided support for your plans to improve the performance of disadvantaged pupils?

	All schools				Primary				Secondary			
	Not at all	A little	A great deal	No response	Not at all	A little	A great deal	No response	Not at all	A little	A great deal	No response
	%	%	%	%	%	%	%	%	%	%	%	%
Your school governors	4.6	33.6	59.5	2.3	4.9	30.3	62.6	2.2	4.2	38.1	55.4	2.3
Your local authority	32.7	41.3	12.9	13.0	29.6	43.5	16.2	10.7	36.8	38.4	8.6	16.1
Academy sponsor	25.7	5.0	5.3	64.0	25.3	3.2	3.8	67.7	26.3	7.4	7.2	59.1
Teaching School Alliance	30.8	14.3	4.7	50.3	29.2	13.3	4.5	53.0	32.8	15.6	4.9	46.7

A series of single response questions.
A total of 1311 respondents gave at least one response to these questions.
Source: *(NFER Survey of Headteachers, 2015).*

Table 23 Q11 What is your role?

	All schools	Primary	Secondary
	%	%	%
Headteacher/principal	57.0	74.7	33.3
Deputy/assistant headteacher or principal	34.3	19.5	54.1
Other SLT member	4.8	4.4	5.3
Other role	3.9	1.5	7.2

A single response question.
A total of 1322 respondents gave a response to this question.
Source: *(NFER Survey of Headteachers 2015).*

Appendix C: Results of regression modelling and factor analysis

Modelling results: Key Stage 2

Table 24 Model 1 KS2: Recent school-level attainment of disadvantaged pupils (2014)

School and cohort characteristics	Coefficient	S.E.	T-stat	p-value	95% C. I.		Pseudo-effect size[58]	Sig.
South East	-0.063	0.007	-9.13	0.000	-0.077	-0.049	-0.37	***
South West	-0.062	0.008	-7.98	0.000	-0.077	-0.047	-0.37	***
East of England	-0.088	0.007	-12.12	0.000	-0.102	-0.074	-0.52	***
East Midlands	-0.073	0.008	-9.46	0.000	-0.088	-0.058	-0.43	***
West Midlands	-0.053	0.007	-7.67	0.000	-0.067	-0.040	-0.31	***
Yorks & Humber	-0.066	0.007	-9.00	0.000	-0.080	-0.052	-0.39	***
North West	-0.035	0.007	-4.89	0.000	-0.049	-0.021	-0.20	***
North East	-0.012	0.009	-1.30	0.193	-0.029	0.006	-0.07	
Rural school	-0.015	0.010	-1.59	0.112	-0.034	0.004	-0.09	
Converter academy	0.026	0.007	3.66	0.000	0.012	0.040	0.15	***
Sponsored academy	-0.047	0.013	-3.75	0.000	-0.071	-0.022	-0.28	***
Free school	-0.141	0.082	-1.72	0.086	-0.301	0.020	-0.83	
Small academy group	0.011	0.012	0.95	0.343	-0.012	0.035	0.07	
Large academy group	0.018	0.012	1.51	0.131	-0.005	0.042	0.11	
Faith school	-0.002	0.004	-0.43	0.664	-0.009	0.005	-0.01	
Teaching School	0.098	0.011	8.79	0.000	0.076	0.120	0.58	***
TSA member	0.008	0.004	1.93	0.053	0.000	0.015	0.05	
TSA partner	0.035	0.005	7.79	0.000	0.026	0.044	0.21	***
Cohort size	-0.001	0.000	-12.64	0.000	-0.001	-0.001	-0.18	***
Other white	0.069	0.028	2.43	0.015	0.013	0.124	0.04	*
Black	0.031	0.020	1.53	0.125	-0.009	0.071	0.03	
Asian	0.060	0.024	2.55	0.011	0.014	0.106	0.08	*
Chinese	0.149	0.134	1.11	0.266	-0.113	0.411	0.01	
Mixed	0.059	0.032	1.87	0.061	-0.003	0.121	0.03	
Other group	0.029	0.046	0.62	0.533	-0.062	0.120	0.01	
EAL	-0.003	0.024	-0.11	0.911	-0.049	0.044	-0.01	
SEN	-0.111	0.022	-5.05	0.000	-0.154	-0.068	-0.07	***

[58] See explanation of pseudo-effect size in Appendix A.

School and cohort characteristics	Coefficient	S.E.	T-stat	p-value	95% C. I.		Pseudo-effect size[58]	Sig.
Disadvantage	0.087	0.011	7.69	0.000	0.065	0.110	0.15	***
Absence	-1.284	0.173	-7.41	0.000	-1.623	-0.944	-0.12	***
Prior Attainment	0.063	0.001	48.54	0.000	0.060	0.065	0.88	***
Constant term	-0.747	0.023	-32.33	0.000	-0.792	-0.701		

Number of obs	=	9209
F(30, 9178)	=	135.45
Prob > F	=	0
R-squared	=	0.3069
Adj R-squared	=	0.3046

Table 25 Model 2 KS2: Change in school-level attainment of disadvantaged pupils over a three-year period (2012-2014)

School and cohort characteristics	Coefficient	S.E.	T-stat	p-value	95% C. I.		Pseudo-effect size	Sig.
South East	-0.048	0.007	-6.65	0.000	-0.063	-0.034	-0.25	***
South West	-0.052	0.008	-6.26	0.000	-0.068	-0.036	-0.27	***
East of England	-0.069	0.008	-9.03	0.000	-0.083	-0.054	-0.36	***
East Midlands	-0.062	0.008	-7.67	0.000	-0.078	-0.046	-0.32	***
West Midlands	-0.048	0.007	-6.69	0.000	-0.062	-0.034	-0.25	***
Yorks & Humber	-0.054	0.008	-7.12	0.000	-0.069	-0.039	-0.28	***
North West	-0.033	0.007	-4.43	0.000	-0.047	-0.018	-0.17	***
North East	-0.014	0.009	-1.51	0.132	-0.032	0.004	-0.07	
Rural school	-0.016	0.013	-1.19	0.233	-0.041	0.010	-0.08	
Converter academy	0.016	0.007	2.11	0.035	0.001	0.030	0.08	*
Sponsored academy	-0.027	0.017	-1.62	0.106	-0.060	0.006	-0.14	
Small academy group	0.005	0.013	0.39	0.698	-0.021	0.031	0.03	
Large academy group	0.018	0.014	1.30	0.194	-0.009	0.045	0.09	
Faith school	-0.001	0.004	-0.23	0.816	-0.008	0.007	-0.01	
Teaching School	0.074	0.011	6.45	0.000	0.052	0.097	0.37	***
TSA member	0.006	0.004	1.38	0.168	-0.002	0.014	0.03	
TSA partner	0.029	0.005	6.10	0.000	0.019	0.038	0.15	***
Cohort size	-0.001	0.000	-9.84	0.000	-0.001	-0.001	-0.13	***
Other white	0.059	0.030	1.96	0.050	0.000	0.118	0.03	*
Black	-0.014	0.021	-0.68	0.497	-0.055	0.027	-0.01	
Asian	0.022	0.025	0.89	0.374	-0.026	0.070	0.03	
Chinese	0.062	0.144	0.43	0.668	-0.221	0.345	0.01	
Mixed	0.044	0.033	1.32	0.187	-0.021	0.109	0.02	
Other group	-0.032	0.048	-0.66	0.508	-0.127	0.063	-0.01	
EAL	0.020	0.025	0.82	0.414	-0.028	0.069	0.03	
SEN	-0.109	0.024	-4.61	0.000	-0.155	-0.063	-0.06	***
Disadvantage	0.038	0.017	2.23	0.026	0.005	0.072	0.06	*
Absence	-0.960	0.189	-5.08	0.000	-1.330	-0.589	-0.08	***
Prior attainment	0.059	0.001	41.82	0.000	0.056	0.061	0.73	***
Disadvantaged Attainment 2012	-0.801	0.010	-81.94	0.000	-0.821	-0.782	-1.04	***
Disadvantaged pupils in 2012	0.062	0.017	3.66	0.000	0.029	0.096	0.10	***
Constant term	-0.175	0.025	-6.85	0.000	-0.225	-0.125		

Number of obs	=	7429
F(29, 7396)	=	256.02
Prob > F	=	0
R-squared	=	0.5176
Adj R-squared	=	0.5156

Table 26 Model 3 KS2: Change in school-level attainment of disadvantaged pupils over a three-year period (2012-2014) including changes in the cohort characteristics as explanatory variables

School and cohort characteristics	Coefficient	S.E.	T-stat	p-value	95% C. I.		Pseudo-effect size	Sig.
South East	-0.059	0.006	-9.28	0.000	-0.071	-0.046	-0.31	***
South West	-0.070	0.007	-9.79	0.000	-0.084	-0.056	-0.36	***
East of England	-0.072	0.007	-10.51	0.000	-0.085	-0.058	-0.37	***
East Midlands	-0.068	0.007	-9.52	0.000	-0.082	-0.054	-0.36	***
West Midlands	-0.055	0.006	-8.97	0.000	-0.067	-0.043	-0.29	***
Yorks & Humber	-0.074	0.006	-11.61	0.000	-0.087	-0.062	-0.39	***
North West	-0.046	0.006	-7.85	0.000	-0.057	-0.034	-0.24	***
North East	-0.035	0.008	-4.47	0.000	-0.050	-0.019	-0.18	***
Rural school	-0.016	0.014	-1.19	0.233	-0.043	0.010	-0.08	
Converter academy	0.009	0.008	1.20	0.229	-0.006	0.024	0.05	
Sponsored academy	-0.017	0.017	-0.99	0.323	-0.051	0.017	-0.09	
Small academy group	-0.005	0.014	-0.35	0.725	-0.031	0.022	-0.03	
Large academy group	0.008	0.014	0.55	0.585	-0.020	0.035	0.04	
Faith school	0.009	0.004	2.25	0.024	0.001	0.016	0.05	*
Teaching School	0.071	0.012	5.94	0.000	0.047	0.094	0.37	***
TSA member	0.001	0.004	0.34	0.737	-0.007	0.010	0.01	
TSA partner	0.026	0.005	5.43	0.000	0.017	0.036	0.14	***
Average cohort size	0.000	0.000	-2.82	0.005	0.000	0.000	-0.04	**
Other white (var)	0.014	0.036	0.39	0.697	-0.057	0.085	0.01	
Black (var)	-0.032	0.035	-0.94	0.349	-0.100	0.036	-0.01	
Asian (var)	0.080	0.038	2.13	0.034	0.006	0.155	0.03	*
Chinese (var)	-0.115	0.126	-0.91	0.361	-0.361	0.131	-0.01	
Mixed (var)	-0.012	0.035	-0.34	0.731	-0.081	0.057	-0.01	
Other group (var)	-0.067	0.059	-1.13	0.258	-0.183	0.049	-0.01	
EAL (var)	0.025	0.029	0.87	0.387	-0.032	0.082	0.01	
SEN (var)	-0.114	0.021	-5.33	0.000	-0.156	-0.072	-0.07	***
Disadvantage (var)	-0.025	0.017	-1.43	0.152	-0.059	0.009	-0.02	
Absence (var)	-0.697	0.240	-2.91	0.004	-1.167	-0.227	-0.04	**
Prior attainment (var)	0.042	0.001	35.23	0.000	0.039	0.044	0.65	***
Disadvantaged attainment 2012	-0.623	0.010	-60.68	0.000	-0.643	-0.603	-0.81	***
Disadvantaged pupils in 2012	-0.040	0.011	-3.59	0.000	-0.062	-0.018	-0.06	***
Constant term	0.520	0.012	45.20	0.000	0.498	0.543		

Number of obs	=	7426
F(29, 7396)	=	221.44
Prob > F	=	0
R-squared	=	0.4814
Adj R-squared	=	0.4793

Modelling results: Key Stage 4

Table 27 Model 1 KS4 (5A*-C GCSE or equivalent qualifications including English and maths): recent school-level attainment of disadvantaged pupils (2014)

School and cohort characteristics	Coefficient	S.E.	T-stat	p-value	95% C. I.		Pseudo-effect size	Sig.
South East	-0.035	0.009	-3.83	0.000	-0.053	-0.017	-0.20	***
South West	-0.032	0.010	-3.12	0.002	-0.052	-0.012	-0.18	***
East of England	-0.047	0.009	-4.99	0.000	-0.066	-0.029	-0.27	***
East Midlands	-0.042	0.010	-4.07	0.000	-0.062	-0.022	-0.24	***
West Midlands	-0.024	0.009	-2.61	0.009	-0.043	-0.006	-0.14	**
Yorks & Humber	-0.021	0.010	-2.11	0.035	-0.041	-0.002	-0.12	*
North West	-0.039	0.010	-4.04	0.000	-0.059	-0.020	-0.23	***
North East	-0.007	0.012	-0.56	0.575	-0.030	0.017	-0.04	
Rural school	0.004	0.009	0.45	0.649	-0.013	0.022	0.02	
Converter academy	0.013	0.005	2.84	0.005	0.004	0.022	0.08	***
Sponsored academy	-0.007	0.008	-0.86	0.387	-0.023	0.009	-0.04	
Free school	-0.041	0.044	-0.94	0.349	-0.127	0.045	-0.24	
Small academy group	0.026	0.007	3.55	0.000	0.012	0.040	0.15	***
Large academy group	0.024	0.008	2.96	0.003	0.008	0.041	0.14	**
Faith school	0.019	0.005	3.63	0.000	0.009	0.029	0.11	***
Selective school	0.216	0.014	15.68	0.000	0.189	0.243	1.25	***
Teaching School	0.071	0.008	8.73	0.000	0.055	0.087	0.41	***
TSA member	0.002	0.005	0.45	0.655	-0.007	0.011	0.01	
TSA partner	0.024	0.005	5.34	0.000	0.015	0.033	0.14	***
Cohort size	0.000	0.000	0.40	0.690	0.000	0.000	0.01	
Other white	0.057	0.049	1.16	0.247	-0.040	0.154	0.03	
Black	0.068	0.032	2.14	0.032	0.006	0.131	0.06	*
Asian	0.050	0.031	1.61	0.108	-0.011	0.110	0.07	
Chinese	0.236	0.264	0.89	0.371	-0.282	0.754	0.02	
Mixed	0.138	0.070	1.97	0.049	0.001	0.276	0.04	*
Other group	0.007	0.088	0.08	0.940	-0.167	0.180	0.00	
EAL	0.047	0.034	1.39	0.164	-0.019	0.113	0.08	
SEN	0.014	0.036	0.39	0.693	-0.056	0.084	0.01	
Disadvantage	0.089	0.020	4.53	0.000	0.050	0.127	0.13	***
Absence	-2.974	0.197	-15.09	0.000	-3.360	-2.587	-0.31	***
Prior attainment	0.048	0.002	28.53	0.000	0.045	0.052	0.79	***
Constant term	-1.116	0.050	-22.26	0.000	-1.214	-1.018		

Number of obs	**=**	**3438**
F(30, 3407)	**=**	**186.52**
Prob > F	**=**	**0**
R-squared	**=**	**0.6293**
Adj R-squared	**=**	**0.6259**

Table 28 Model 1 KS4 (CAPS): recent school-level attainment of disadvantaged pupils (2014)

School and cohort characteristics	Coefficient	S.E.	T-stat	p-value	95% C. I.		Pseudo-effect size	Sig.
South East	-7.907	2.165	-3.65	0.000	-12.152	-3.663	-0.23	***
South West	-9.006	2.410	-3.74	0.000	-13.731	-4.281	-0.26	***
East of England	-9.467	2.227	-4.25	0.000	-13.833	-5.101	-0.27	***
East Midlands	-4.650	2.415	-1.93	0.054	-9.385	0.084	-0.13	
West Midlands	1.437	2.194	0.65	0.513	-2.864	5.738	0.04	
Yorks & Humber	1.811	2.364	0.77	0.444	-2.825	6.446	0.05	
North West	-7.375	2.302	-3.20	0.001	-11.889	-2.862	-0.21	***
North East	14.888	2.813	5.29	0.000	9.373	20.404	0.43	***
Rural school	-4.559	2.102	-2.17	0.030	-8.681	-0.437	-0.13	*
Converter academy	4.078	1.085	3.76	0.000	1.949	6.206	0.12	***
Sponsored academy	4.976	1.931	2.58	0.010	1.190	8.762	0.14	*
Free school	9.105	10.312	0.88	0.377	-11.114	29.323	0.26	
Small academy group	8.722	1.728	5.05	0.000	5.334	12.111	0.25	***
Large academy group	4.605	1.945	2.37	0.018	0.792	8.417	0.13	*
Faith school	3.186	1.215	2.62	0.009	0.803	5.568	0.09	**
Selective school	38.678	3.242	11.93	0.000	32.322	45.034	1.10	***
Teaching School	12.237	1.911	6.41	0.000	8.491	15.983	0.35	***
TSA member	0.953	1.108	0.86	0.390	-1.219	3.126	0.03	
TSA partner	5.194	1.064	4.88	0.000	3.108	7.281	0.15	***
Cohort size	-0.023	0.008	-2.97	0.003	-0.038	-0.008	-0.06	**
Other white	-0.143	11.643	-0.01	0.990	-22.972	22.686	-0.00	
Black	-5.557	7.535	-0.74	0.461	-20.331	9.217	-0.02	
Asian	17.661	7.287	2.42	0.015	3.373	31.949	0.12	*
Chinese	90.328	62.286	1.45	0.147	-31.793	212.449	0.03	
Mixed	38.751	16.533	2.34	0.019	6.335	71.166	0.05	*
Other group	18.923	20.852	0.91	0.364	-21.961	59.806	0.02	
EAL	-6.858	7.970	-0.86	0.390	-22.484	8.768	-0.05	
SEN	7.236	8.442	0.86	0.391	-9.316	23.787	0.02	
Disadvantaged	36.170	4.627	7.82	0.000	27.099	45.241	0.25	***
Absence	-826.020	46.457	-17.78	0.000	-917.107	-734.934	-0.43	***
Prior attainment	6.975	0.398	17.51	0.000	6.194	7.756	0.56	***
Constant term	-136.445	11.819	-11.54	0.000	-159.618	-113.272		

Number of obs	=	3438
F(30, 3407)	=	109.21
Prob > F	=	0
R-squared	=	0.4985
Adj R-squared	=	0.4939

Table 29 Model 2 KS4 (5A*-C or equivalent qualifications including English and maths): school-level change in attainment of disadvantaged pupils over a three-year period (2011-2013)

School and cohort characteristics	Coefficient	S.E.	T-stat	p-value	95% C. I.		Pseudo-effect size	Sig.
South East	-0.027	0.009	-2.83	0.005	-0.045	-0.008	-0.18	**
South West	-0.021	0.010	-2.08	0.038	-0.042	-0.001	-0.14	*
East of England	-0.036	0.010	-3.76	0.000	-0.054	-0.017	-0.24	***
East Midlands	-0.036	0.010	-3.48	0.000	-0.056	-0.016	-0.24	***
West Midlands	-0.017	0.009	-1.77	0.076	-0.035	0.002	-0.11	
Yorks & Humber	-0.012	0.010	-1.23	0.220	-0.032	0.007	-0.08	
North West	-0.037	0.010	-3.79	0.000	-0.056	-0.018	-0.24	***
North East	-0.005	0.012	-0.43	0.667	-0.028	0.018	-0.03	
Rural school	-0.013	0.009	-1.34	0.179	-0.031	0.006	-0.08	
Converter academy	0.010	0.005	2.13	0.033	0.001	0.019	0.06	*
Sponsored academy	-0.004	0.008	-0.43	0.667	-0.020	0.013	-0.02	
Small academy group	0.022	0.007	2.96	0.003	0.007	0.036	0.14	**
Large academy group	0.017	0.008	2.04	0.042	0.001	0.033	0.11	*
Faith school	0.014	0.005	2.72	0.007	0.004	0.025	0.09	**
Selective school	0.183	0.022	8.49	0.000	0.141	0.225	1.21	***
Teaching School	0.063	0.008	7.59	0.000	0.046	0.079	0.41	***
TSA member	0.003	0.005	0.59	0.557	-0.006	0.012	0.02	
TSA partner	0.021	0.005	4.53	0.000	0.012	0.029	0.14	***
Cohort size	0.000	0.000	1.41	0.158	0.000	0.000	0.03	
Other white	0.054	0.052	1.04	0.299	-0.048	0.156	0.03	
Black	0.051	0.032	1.63	0.103	-0.010	0.113	0.05	
Asian	0.043	0.032	1.35	0.176	-0.019	0.106	0.07	
Chinese	0.625	0.322	1.94	0.052	-0.006	1.256	0.05	
Mixed	0.085	0.071	1.20	0.232	-0.054	0.223	0.03	
Other group	-0.018	0.086	-0.21	0.831	-0.188	0.151	-0.01	
EAL	0.026	0.035	0.74	0.456	-0.042	0.094	0.05	
SEN	0.007	0.035	0.21	0.832	-0.062	0.077	0.00	
Disadvantage	0.112	0.030	3.72	0.000	0.053	0.170	0.18	***
Absence	-2.602	0.200	-13.01	0.000	-2.995	-2.210	-0.31	***
Prior attainment	0.043	0.002	23.75	0.000	0.039	0.047	0.80	***
Disadvantaged Attainment 2011	-0.834	0.014	-60.62	0.000	-0.861	-0.807	-1.31	***
Disadvantaged pupils in 2011	0.005	0.037	0.15	0.884	-0.067	0.078	0.01	
Constant term	-0.662	0.052	-12.60	0.000	-0.765	-0.559		***

Number of obs	=	3124
F(31, 3092)	=	125.54
Prob > F	=	0
R-squared	=	0.5651
Adj R-squared	=	0.5606

Table 30 Model 2 KS4 (CAPS): change in school-level attainment of disadvantaged pupils over a three-year period (2011-2013)

School and cohort characteristics	Coefficient	S.E.	T-stat	p-value	95% C. I.		Pseudo-effect size	Sig.
South East	-3.668	2.088	-1.76	0.079	-7.763	0.427	-0.11	
South West	-4.377	2.287	-1.91	0.056	-8.861	0.107	-0.14	
East of England	-4.220	2.120	-1.99	0.047	-8.377	-0.063	-0.13	*
East Midlands	-0.804	2.290	-0.35	0.726	-5.293	3.686	-0.03	
West Midlands	1.952	2.074	0.94	0.347	-2.115	6.019	0.06	
Yorks & Humber	4.872	2.233	2.18	0.029	0.493	9.251	0.15	*
North West	-5.999	2.183	-2.75	0.006	-10.280	-1.718	-0.19	**
North East	11.260	2.633	4.28	0.000	6.097	16.423	0.35	***
Rural school	-7.244	2.085	-3.47	0.001	-11.332	-3.157	-0.23	**
Converter academy	1.860	1.032	1.80	0.072	-0.163	3.884	0.06	
Sponsored academy	5.804	1.818	3.19	0.001	2.240	9.367	0.18	**
Small academy group	5.424	1.627	3.33	0.001	2.233	8.614	0.17	**
Large academy group	2.963	1.837	1.61	0.107	-0.640	6.565	0.09	
Faith school	1.608	1.165	1.38	0.168	-0.677	3.893	0.05	
Selective school	21.320	4.696	4.54	0.000	12.113	30.527	0.67	***
Teaching School	7.186	1.837	3.91	0.000	3.583	10.788	0.22	***
TSA member	1.283	1.039	1.24	0.217	-0.753	3.320	0.04	
TSA partner	3.074	1.009	3.05	0.002	1.095	5.053	0.10	**
Cohort size	-0.010	0.007	-1.39	0.165	-0.024	0.004	-0.03	
Other white	-5.800	11.604	-0.50	0.617	-28.551	16.951	-0.01	
Black	-6.492	7.015	-0.93	0.355	-20.246	7.263	-0.03	
Asian	8.163	7.126	1.15	0.252	-5.810	22.135	0.06	
Chinese	59.042	71.563	0.83	0.409	-81.274	199.359	0.02	
Mixed	23.766	15.743	1.51	0.131	-7.103	54.634	0.04	
Other group	-1.325	19.252	-0.07	0.945	-39.073	36.423	-0.00	
EAL	-4.639	7.731	-0.60	0.549	-19.797	10.519	-0.04	
SEN	1.101	7.851	0.14	0.888	-14.293	16.496	0.00	
Disadvantage	35.739	6.668	5.36	0.000	22.664	48.814	0.27	***
Absence	-586.386	44.732	-13.11	0.000	-674.093	-498.680	-0.33	***
Prior attainment	5.367	0.401	13.39	0.000	4.581	6.153	0.47	***
Disadvantaged Attainment 2011	-0.685	0.012	-54.99	0.000	-0.709	-0.660	-1.19	***

School and cohort characteristics	Coefficient	S.E.	T-stat	p-value	95% C. I.		Pseudo-effect size	Sig.
Disadvantaged pupils in 2011	-5.436	8.214	-0.66	0.508	-21.542	10.670	-0.03	
Constant term	103.437	11.937	8.67	0.000	80.032	126.842		

Number of obs	=	3124
F(31, 3092)	=	102.55
Prob > F	=	0
R-squared	=	0.515
Adj R-squared	=	0.5099

Table 31 Model 3 (CAPS): Improvement in school-level attainment of disadvantaged pupils over a three-year period (2011-2013) using changes in cohort characteristics as explanatory variables

School and cohort characteristics	Coefficient	S.E.	T-stat	p-value	95% C. I.		Pseudo-effect size	Sig.
South East	-13.441	1.753	-7.67	0.000	-16.878	-10.004	-0.42	***
South West	-12.432	1.913	-6.5	0.000	-16.184	-8.681	-0.39	***
East of England	-11.306	1.855	-6.09	0.000	-14.943	-7.669	-0.35	***
East Midlands	-8.032	1.975	-4.07	0.000	-11.905	-4.159	-0.25	***
West Midlands	-3.546	1.695	-2.09	0.036	-6.869	-0.223	-0.11	*
Yorks & Humber	-3.651	1.776	-2.06	0.040	-7.133	-0.169	-0.11	*
North West	-9.946	1.614	-6.16	0.000	-13.111	-6.781	-0.31	***
North East	2.895	2.064	1.4	0.161	-1.153	6.942	0.09	
Rural school	-8.570	2.145	-3.99	0.000	-12.777	-4.364	-0.27	***
Converter academy	2.781	1.059	2.62	0.009	0.704	4.858	0.09	**
Sponsored academy	3.064	1.888	1.62	0.105	-0.639	6.766	0.10	
Small academy group	3.593	1.681	2.14	0.033	0.298	6.889	0.11	*
Large academy group	1.572	1.895	0.83	0.407	-2.143	5.288	0.05	
Faith school	3.194	1.132	2.82	0.005	0.974	5.414	0.10	**
Selective school	47.168	4.554	10.36	0.000	38.239	56.097	1.47	***
Teaching School	10.520	1.878	5.6	0.000	6.837	14.202	0.33	***
TSA member	1.343	1.074	1.25	0.211	-0.762	3.449	0.04	
TSA partner	4.228	1.038	4.07	0.000	2.192	6.264	0.13	***
Average cohort size	-0.005	0.007	-0.66	0.508	-0.020	0.010	0.01	
Other white (var)	-20.302	10.578	-1.92	0.055	-41.043	0.439	-0.04	
Black (var)	-13.216	17.476	-0.76	0.450	-47.482	21.051	-0.01	
Asian (var)	42.562	16.060	2.65	0.008	11.073	74.051	0.06	**
Chinese (var)	74.448	66.380	1.12	0.262	-55.706	204.603	0.02	
Mixed (var)	19.011	19.747	0.96	0.336	-19.708	57.730	0.02	
Other group (var)	-54.469	30.904	-1.76	0.078	-115.064	6.126	-0.04	
EAL (var)	-1.757	8.484	-0.21	0.836	-18.392	14.877	-0.00	
SEN (var)	-11.262	7.665	-1.47	0.142	-26.292	3.768	-0.03	
Disadvantage (var)	-3.718	6.350	-0.59	0.558	-16.170	8.733	-0.01	
Absence (var)	-313.783	46.395	-6.76	0.000	-404.751	-222.815	-0.13	***
Prior attainment (var)	3.879	0.289	13.41	0.000	3.312	4.446	0.57	***

School and cohort characteristics	Coefficient	S.E.	T-stat	p-value	95% C. I.		Pseudo-effect size	Sig.
Disadvantaged Attainment 2011	-0.555	0.013	-44.02	0.000	-0.579	-0.530	-0.96	***
Disadvantaged pupils in 2011	-3.288	4.327	-0.76	0.447	-11.772	5.197	-0.02	
Constant term	180.407	4.739	38.06	0.000	171.114	189.700		

Number of obs	=	3122
F(31, 3090)	=	90.53
Prob > F	=	0
R-squared	=	0.4839
Adj R-squared	=	0.4786

Table 32 Model 3 KS4 (5A*-C or equivalent qualifications including English and maths): change in school-level attainment of disadvantaged pupils aver a three-year period (2011-2013) using changes in cohort characteristics as explanatory variables

School and cohort characteristics	Coefficient	S.E.	T-stat	p-value	95% C. I.		Pseudo-effect size	Sig.
South East	-0.100	0.009	-11.80	0.000	-0.117	-0.084	-0.66	***
South West	-0.088	0.009	-9.52	0.000	-0.106	-0.070	-0.58	***
East of England	-0.095	0.009	-10.62	0.000	-0.112	-0.077	-0.62	***
East Midlands	-0.094	0.010	-9.88	0.000	-0.113	-0.076	-0.62	***
West Midlands	-0.061	0.008	-7.36	0.000	-0.077	-0.045	-0.40	***
Yorks & Humber	-0.077	0.009	-8.84	0.000	-0.094	-0.060	-0.50	***
North West	-0.079	0.008	-10.12	0.000	-0.095	-0.064	-0.52	***
North East	-0.066	0.010	-6.59	0.000	-0.085	-0.046	-0.43	***
Rural school	-0.029	0.010	-2.81	0.005	-0.049	-0.009	-0.19	**
Converter academy	0.016	0.005	3.14	0.002	0.006	0.026	0.10	**
Sponsored academy	-0.020	0.009	-2.17	0.030	-0.037	-0.002	-0.13	*
Small academy group	0.014	0.008	1.80	0.072	-0.001	0.030	0.09	
Large academy group	0.007	0.009	0.75	0.456	-0.011	0.024	0.04	
Faith school	0.027	0.005	4.93	0.000	0.016	0.037	0.18	***
Selective school	0.326	0.023	14.46	0.000	0.282	0.370	2.15	***
Teaching School	0.077	0.009	8.63	0.000	0.060	0.095	0.51	***
TSA member	0.003	0.005	0.68	0.497	-0.007	0.014	0.03	
TSA partner	0.027	0.005	5.46	0.000	0.017	0.037	0.18	***
Average cohort size	0.000	0.000	2.10	0.036	0.000	0.000	0.04	*
Other white (var)	-0.047	0.050	-0.93	0.351	-0.146	0.052	-0.02	
Black (var)	-0.090	0.083	-1.08	0.280	-0.253	0.073	-0.02	
Asian (var)	0.190	0.077	2.48	0.013	0.040	0.340	0.05	*
Chinese (var)	0.419	0.317	1.32	0.186	-0.202	1.039	0.03	
Mixed (var)	0.134	0.094	1.43	0.154	-0.050	0.319	0.03	
Other group (var)	-0.191	0.147	-1.30	0.195	-0.480	0.098	-0.03	
EAL (var)	-0.002	0.040	-0.05	0.956	-0.082	0.077	-0.00	
SEN (var)	0.007	0.037	0.18	0.858	-0.065	0.078	0.00	
Disadvantage (var)	-0.045	0.030	-1.46	0.143	-0.104	0.015	-0.03	
Absence (var)	-1.165	0.221	-5.26	0.000	-1.599	-0.731	-0.10	***
Prior attainment (var)	0.023	0.001	16.49	0.000	0.020	0.026	0.72	***
Disadvantaged Attainment 2011	-0.610	0.015	-41.07	0.000	-0.639	-0.581	-0.96	***

School and cohort characteristics	Coefficient	S.E.	T-stat	p-value	95% C. I.		Pseudo-effect size	Sig.
Disadvantaged pupils in 2011	-0.003	0.021	-0.13	0.893	-0.043	0.038	-0.00	
Constant term	0.301	0.014	21.34	0.000	0.273	0.328		

Number of obs	=	3122
F(31, 3090)	=	88.63
Prob > F	=	0
R-squared	=	0.4787
Adj R-squared	=	0.4733

Factor Analysis results

Table 33 Factor scoring and uniqueness for Key Stage 2 sample

Variable	Factor 1	Factor 2	Factor 3	Factor 4	Uniqueness
Q1A_1	0.018	0.254	0.306	-0.152	0.818
Q1A_2	-0.047	0.188	0.445	-0.067	0.760
Q1A_3	0.287	0.236	0.073	-0.145	0.836
Q1A_4	0.014	0.524	0.030	-0.035	0.723
Q1A_5	0.216	0.032	0.484	-0.081	0.712
Q1A_6	0.288	0.184	0.215	-0.098	0.827
Q1A_7	0.249	0.132	0.345	-0.131	0.785
Q1A_8	0.353	0.119	0.125	-0.029	0.845
Q1A_9	0.086	0.473	0.015	-0.065	0.765
Q1A_10	0.428	0.437	-0.200	-0.012	0.587
Q1A_11	0.406	0.430	-0.330	0.070	0.537
Q1A_12	0.226	0.102	0.239	-0.384	0.734
Q1A_13	0.535	0.062	0.081	0.177	0.672
Q1A_14	0.163	0.545	0.226	0.166	0.598
Q1A_15	0.062	0.585	0.248	0.200	0.552
Q1A_16	0.395	0.224	0.222	-0.027	0.744
Q1A_17	0.251	0.131	-0.019	0.521	0.648
Q1A_18	0.182	0.173	0.177	-0.293	0.820
Q1A_19	-0.028	0.044	0.462	0.138	0.765
Q1A_20	0.162	0.160	0.353	0.223	0.774
Q1A_21	0.006	0.377	0.144	-0.100	0.828

Variable	Factor 1	Factor 2	Factor 3	Factor 4	Uniqueness
Q1A_22	0.312	0.168	0.235	0.026	0.819
Q1A_23	0.569	0.002	0.126	0.219	0.613
Q1A_24	0.106	0.136	0.306	0.156	0.853
Q1A_25	0.328	-0.015	0.112	-0.406	0.715
Q1A_26	0.349	0.169	0.147	0.007	0.828
Q1A_27	0.101	0.183	0.107	0.517	0.678
Q1A_28	0.171	0.028	0.373	0.269	0.758
Q1A_29	0.279	0.099	0.234	0.088	0.850
Q1A_30	0.328	0.246	0.139	0.099	0.803
Q1A_31	0.303	0.108	0.195	0.241	0.801
Q1A_32	0.530	0.195	-0.036	0.033	0.678
Q1A_33	0.618	0.012	0.077	-0.044	0.610
Q1A_34	0.681	0.053	0.042	0.003	0.532
Q1A_35	0.498	0.122	0.041	0.110	0.724
Q1A_36	0.247	0.129	0.095	0.469	0.693
Q1A_37	0.015	0.409	-0.203	0.228	0.739

Table 34 Factor scoring and uniqueness for Key Stage 4 sample

Variable	Factor 1	Factor 2	Factor 3	Factor 4	Uniqueness
Q1A_1	0.1356	0.1674	0.2505	0.0872	0.8832
Q1A_2	0.0296	0.1101	0.502	0.1697	0.7061
Q1A_3	0.4175	0.1181	-0.0275	-0.0111	0.8109
Q1A_4	0.2789	0.1237	0.0277	0.3113	0.8092
Q1A_5	0.0903	0.513	0.2449	-0.0329	0.6676
Q1A_6	0.1371	0.3486	0.1255	0.1021	0.8335
Q1A_7	-0.0007	0.5488	0.275	0.0364	0.6219
Q1A_8	0.3299	0.046	0.1559	0.0972	0.8553
Q1A_9	0.1284	-0.055	-0.0272	0.3631	0.8479
Q1A_10	0.3717	0.2299	-0.0543	0.3156	0.7064
Q1A_11	0.2638	0.2294	-0.0116	0.3284	0.7698
Q1A_12	0.1643	0.089	0.4774	0.1244	0.7217
Q1A_13	0.4148	0.2373	0.0619	0.2115	0.723
Q1A_14	0.2278	0.6092	-0.1862	0.0424	0.5405
Q1A_15	0.1636	0.6046	-0.0365	0.1026	0.5959
Q1A_16	0.3231	0.0008	0.2971	0.2213	0.7584
Q1A_17	0.105	0.0517	0.1403	0.606	0.5994
Q1A_18	0.1056	0.0411	0.5841	0.0832	0.6391
Q1A_19	0.0832	0.228	0.4248	-0.1022	0.7502
Q1A_20	-0.0821	0.2986	0.3039	0.218	0.7642
Q1A_21	0.3646	-0.0769	0.236	0.0781	0.7994
Q1A_22	0.0633	0.3775	0.237	0.1627	0.7708

Variable	Factor 1	Factor 2	Factor 3	Factor 4	Uniqueness
Q1A_23	0.4352	0.1834	0.0042	0.188	0.7416
Q1A_24	0.1091	0.3456	0.1667	0.0731	0.8355
Q1A_25	0.205	-0.0644	0.6038	-0.0014	0.5893
Q1A_26	0.328	0.3076	0.0499	0.2173	0.7481
Q1A_27	-0.1231	0.1421	0.0229	0.5859	0.6208
Q1A_28	0.2819	0.2627	0.275	-0.0691	0.7711
Q1A_29	0.1168	0.3645	0.1931	0.0862	0.8088
Q1A_30	0.4365	0.1427	0.2172	-0.0665	0.7375
Q1A_31	0.3898	0.2494	0.1133	0.2045	0.7312
Q1A_32	0.6068	0.1571	0.0904	0.0958	0.5898
Q1A_33	0.5804	0.1005	0.2023	-0.032	0.6111
Q1A_34	0.6589	0.0267	0.1551	0.0241	0.5405
Q1A_35	0.4796	0.1617	-0.0771	0.1529	0.7146
Q1A_36	0.2061	0.0308	0.0596	0.5643	0.6346
Q1A_37	0.048	-0.1082	0.0288	0.4036	0.8222

Table 35 Key Stage 2: Summary of Factor Analysis results (analysis of average factor scores by school characteristics and relative success) (1)

	Relative levels of school success		Type of school			Proportion of disadvantaged pupils in school			Levels of disadvantaged pupils' prior attainment (at previous key stage)			Regional location of school, in England								
Factor groups	More successful	Less successful	Maintained	Converter academy	Sponsored academy	LOW	MED	HIGH	LOW	MED	HIGH	LON	SE	SW	EoE	EM	WM	YH	NW	NE
Factor 1 **Main focus of strategies:** Improving behaviour, attendance and engagement	(-)*	(+)*	=	(-)	(+)*	(-)	(-)	(+)*	(+)*	(-)*	(-)*	(-)	(+)	(-)	(-)	(-)	(+)	(+)	(-)	(+)
Factor 2 **Main focus of strategies:** CPD and personalised plans **Secondary focus:** P2P/collaborative/independent learning	(+)	(-)	(-)*	(+)*	(+)	(+)	=	(-)*	(-)	=	(+)*	(+)	(-)	(+)	(+)	(-)	(-)*	(-)*	(-)*	(-)
Factor 3 **Main focus of strategies:** Additional TAs/staff and small group teaching **Secondary focus:** new literacy/numeracy programmes	(-)*	(+)*	=	(-)	(+)	(+)	(+)	(-)	(-)	=	(+)*	(-)	(-)	(+)	(+)	(+)*	(+)	(+)	=	(-)
Factor 4 **Other strategies**	=	=	(+)	(-)	(-)	(+)	(+)	(-)	(-)	(-)	(+)	=	(+)	(+)	(+)	(-)	(+)	(-)	=	(-)*

(1) Reported signs indicate whether average score for each factor was positive or negative for corresponding group of schools. *denotes a significant difference in the average factor score across school characteristics

Table 36 Key Stage 4: Summary of Factor Analysis results

	TIERS		TYPE			DISADVANTAGE			PRIOR ATTAINMENT			REGION								
Main focus	More successful	Less successful	Maintained	Converter academy	Sponsored academy	LOW	MED	HIGH	LOW	MED	HIGH	LON	SE	SW	EoE	EM	WM	YH	NW	NE
Factor 1 Main focus of strategies: Improving behaviour, attendance and engagement	(-)	(+)	(+)	(-)*	(+)	(-)*	(+)*	(+)*	(+)	(+)	(-)*	(+)	(+)	(-)	(-)	(-)*	(+)	(+)	(+)	=
Factor 2 Main focus of strategies: CPD and personalised plans **Secondary focus:** new literacy/numeracy programmes	(-)	(+)	(-)	(-)	(+)	(+)	=	(-)	(+)	(-)	(-)	(-)	(+)*	(+)*	(-)	(+)*	(+)*	(-)	(-)	(-)
Factor 3 Main focus of strategies: Smaller class sizes **Secondary focus:** Additional TAs/staff and small group teaching	(-)	(-)	(-)	(-)	(+)	(-)	(-)	(+)*	(+)	(+)	(-)*	(-)	(-)	(-)	(+)	(+)*	=	(-)	(+)*	(-)
Factor 4 Main focus of strategies: Other strategies **Secondary focus:** P2P/collaborative/independent learning	(+)*	(-)*	(-)*	(+)*	(+)	(+)	(+)	(-)	=	(-)	(+)	(+)	(+)	(-)	(+)	(+)	(-)	=	(+)	(-)

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