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Playing for Success
An Evaluation of its Long Term Impact

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National Foundation for Educational Research

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Executive Summary

Introduction

The *Playing for Success* (PfS) initiative is targeted on underachieving young people. It aims to contribute to raising educational standards, especially in numeracy and literacy, bringing the attainment levels of lower achieving pupils closer to the average expected for their age. Previous national evaluation studies have measured pupils' performance at the start and end of their attendance at PfS Centres (Sharp *et al*., 1999, 2001, 2002, 2003). The results have shown clear evidence of significant improvements, especially in numeracy and information and communications technology (ICT).

This study set out to consider whether there was any evidence of longer term changes in pupils' performance in National Curriculum Assessments (NCA) associated with attending a PfS Centre. It also aimed to gather information on the strategies adopted by PfS Centres to encourage schools to capitalise on the learning gains achieved by pupils attending PfS.

Key findings

The statistical analysis indicated that:

- In Key Stages 2, 3 and 4, low attainers who attended PfS Centres did better than expected and higher attainers did less well than expected in NCAs (except in respect of English in Key Stage 4, where no statistically significant difference was found). For example, in Key Stage 2 maths, one in four PfS pupils who performed below the expected level in Key Stage 1 maths went on to perform above the expected level at Key Stage 2, compared to one in five similar pupils that did not attend.

- In Key Stage 4, pupils who had attended PfS made greater progress in maths when compared to similar pupils that did not attend. The difference was equivalent to one in seven PfS pupils attaining one higher grade in maths GCSE than expected. PfS pupils also made greater progress overall at GCSE (in terms of the average GCSE score, one in ten PfS pupils attained one grade higher than expected in all subjects they took).

- In Key Stage 2, pupils who attended PfS made less progress in English (by 0.7 of a month). No statistically significant impact was found in Key Stage 3.

- An analysis of the progress achieved by pupils attending each Centre identified eight PfS Centres that had performed significantly better than other Centres on at least two of six NCA outcome measures.

The qualitative analysis of 'more effective' Centres indicated that:

- Centres and partner schools were focussing on the details of liaison and good practice that provided a well targeted, high quality learning experience during the course and facilitated transfer of learning after the pupils had left.

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- Partnership working between Centres and schools was critical, before, during and after pupils attended the PfS programme. Establishing a good relationship with the host club was important, as was a good working relationship with local authority colleagues, Critical Friends and the central team at DfES.

Background

Playing for Success is a national initiative, established in 1997 by the Department for Education and Skills in partnership with the FA Premier League and their clubs, and local education authorities. Since then it has expanded to include a wide range of professional sports, including cricket and rugby. It aims to contribute to raising educational standards, especially in urban areas, by setting up Study Support Centres in professional football clubs and other sports venues. The initiative has expanded from three pilot Centres in 1997 to over 150 signed up in 2006.

Playing for Success focuses on underachieving young people, mainly in Years 6 to 9, and places a strong emphasis on improving pupils' attitudes and motivation to learn. Centres are managed by experienced teachers. They use the medium and environment of sport to support pupils' work in literacy, numeracy and ICT. Pupils attend the Centres after school for around 20 hours during a period of about ten weeks.

Methodology

The study took place in 2006-7. Data were collected in two main strands. Strand 1 used quantitative methods to compare the academic performance at Key Stage 2, Key Stage 3 and Key Stage 4 of 14,541 pupils who had attended PfS Centres during academic years 2000/1 to 2004/5 (and took their NCAs in 2003, 2004 or 2005) with the performance of pupils who did not attend. In order to make fair comparisons, multilevel modelling was used to take account of pupil and school factors known to influence pupil progress (including such variables as prior attainment, gender, ethnicity, eligibility for free school meals, special educational needs status and school size).

Strand 2 entailed a qualitative analysis of strategies adopted in 'more effective' Centres in relation to their longer term impact on pupil progress. Seven Centres were identified as more effective on the basis of the quantitative analysis. Two Centres were amongst those identified as more effective by the PfS Central team, based on the judgements of PfS Critical Friends and local evaluation results. Interviews were conducted with Centre Managers and two link teachers sending pupils to each Centre (a total of 27 interviewees).

Other findings

The study investigated whether the time that had elapsed between a pupil's attendance at PfS and their assessments made any difference to their progress. There was no indication of a consistent relationship between this variable and the progress of PfS pupils.

The qualitative data from 'more effective' Centres demonstrated the importance of partnership working between Centres and schools. Best practice points included:

- Emphasising the importance of selecting pupils who were most likely to benefit from PfS. These Centres took care of practical details and ensured that teachers, pupils and parents were well prepared for the experience.
- Providing a positive ethos, where individuals were welcomed, encouraged and valued. Centres helped pupils to engage in individual target setting and ensured pupils were aware of what they needed to do to achieve their goals.
- Emphasising personalised learning, devising individual programmes and providing constant feedback. These Centres offered practical activities, which enabled pupils to relate curriculum content to real life situations. They also ensured a good communication with schools during the course.
- Helping pupils to recognise their achievements and encouraging them to continue to succeed after PfS. Centres ensured that pupils received public acknowledgement of their effort and attainment at end-of-course celebration events. They provided pupils with a portfolio of work that could be displayed at school and encouraged schools to build on the progress achieved. Some partner schools capitalised on PfS particularly well by adopting similar approaches and using pupils' skills.

Conclusions and recommendations

The overall findings from the statistical analysis employed in this study present a mixed picture. However, rather than see this as evidence of a lack of impact at Key Stage 2 and 3, the contribution of the qualitative analysis suggests that longer term progress should be viewed as a shared responsibility between Centres and schools. PfS is not an inoculation against future underperformance, but it does give underachieving young people a new chance, as long as they receive recognition for their achievement, continued support and opportunities to succeed.

The study of 'more effective' Centres found that staff were paying very detailed attention to liaison and partnership with schools, as well as to the quality of the programme provided at the Centre. The study identified specific strategies adopted before, during and after the pupils attended PfS that helped pupils to transfer their learning to the school environment.

The evaluation findings have the following implications and recommendations for those managing PfS at local and national levels as well as for PfS Centres and their partner schools:

- The government, local authorities and sponsors should continue to support PfS. Further consideration should be given to the opportunities for pupils to transfer their learning from PfS to other contexts (for example, through continued partnerships between Centres and schools, and through developing opportunities for PfS graduates to build on their achievements, both within and outside school hours).

- Given that this study has found evidence of greater long term impact among lower-attaining pupils, Centres may wish to reconsider their selection criteria.

- Local authorities and Centre Managers should consider carrying out their own studies of longer term progress. This would entail adopting systems to record which pupils had attended, selecting an appropriate comparison (control) group and analysing progress over time, including progress at Key Stage 4.

- PfS should share information about best practice in contributing to longer term impact.

1   Introduction

Playing for Success (PfS) was established in 1997 by the Department for Education and Skills (DfES). The broad aim of the initiative is to contribute to raising educational standards, especially in numeracy and literacy. It is targeted on underachieving young people in Key Stages 2 and 3 and is particularly concerned with bringing the attainment of lower achieving pupils closer to the average expected for their age. Pupils attend Study Support Centres after school for around 20 hours during a period of about ten weeks (see Sharp *et al*., 2002a). The initiative began by establishing Centres in English professional football clubs. The number of Centres has grown from three pilot Centres established in 1997 to over 150 signed up in 2006. The initiative has also expanded to encompass sports other than football. Further information on PfS can be found on the website: www.dfes.gov.uk/playingforsuccess

The National Foundation of Educational Research (NFER) was responsible for the national evaluation of PfS for four consecutive years (Sharp *et al*., 1999, 2001, 2002a, 2003). The evaluation studies measured pupils' performance and attitudes at the start and end of their attendance at PfS Centres. The results showed clear evidence of significant improvements on several measures, especially numeracy and ICT, during the pupils' time at the Centres. However, the previous national evaluation studies did not investigate the question of whether or not the initiative had led to longer term changes in pupils' performance, after they had left the Centres.

The longer term impact of PfS was considered in a preliminary study (Sharp *et al*., 2004), which set out to consider the issues involved in attempting to measure the subsequent impact of PfS on pupil performance. It attempted to find an appropriate method, using the National Pupil Database (NPD) and explored the potential usefulness of a statistical approach to investigate the impact of attending PfS on subsequent pupil performance in National Curriculum Assessments (NCAs). The evaluation reported here builds on the experience gained during the preliminary study.

2   Aims and objectives

The aims of the evaluation were:

- to establish the evidence for longer term gains among pupils who have attended PfS Centres
- to consider the evidence for differential effects among different PfS Centres
- to gather information on the strategies adopted by PfS Centres to encourage schools to capitalise on the learning gains achieved by pupils attending PfS
- to identify the implications of the evaluation findings for PfS Centres and their partner schools.

The evaluation sought to address the following research questions:

- Are there any longer term gains for pupils who have attended PfS Centres once back in school, compared to pupils with similar attainment who have not attended a PfS Centre?
- Which are the most effective Centres in producing longer term gains in attainment and how can best practice be spread?
- How can this information be used to develop guidance for schools to enable them to support PfS graduates within schools during and after the intervention?

Figure 1 shows the main factors that the research team considered likely to influence the longer term impact of PfS on pupil performance.

Figure 1   Hypothesised relationships for longer term impact of PfS
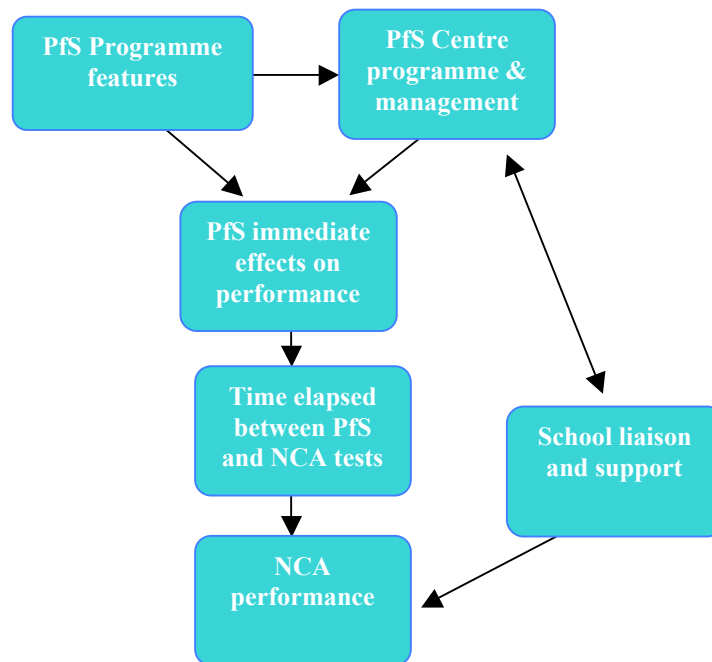
The hypothesis underlying the evaluation design was that both the PfS initiative as a whole and the individual Centre attended would influence pupils' performance in basic skills during their time at the Centre and that these immediate effects might have a longer term impact on pupils' performance in National Curriculum Assessment outcomes. The strength of influence of PfS on National Curriculum Assessment outcomes was thought to vary according to the amount of time that had elapsed between a pupil's attendance at PfS and taking the tests. It was also hypothesised that the degree to which schools capitalised upon the PfS programme and the PfS-related support they provided to pupils would influence the longer term effects of PfS on pupil performance.

3 Methodology

The methodology was split into two strands, dealing with quantitative and qualitative data. Strand 1 aimed to investigate whether there were any longer term gains for pupils attending PfS Centres once back in school. It also aimed to identify PfS Centres that were 'more effective' in producing longer term gains. Strand 2 of the research aimed to identify the best practice which could be used to develop guidance for schools to enable them to support PfS graduates. Both strands of the research are reported here. Section 3.1 outlines the study design for Strand 1 (statistical analysis) and Section 3.2 outlines the study design for Strand 2 (case study analysis)

3.1 Strand 1 study design

This study made use of the National Pupil Database (NPD), held by the DfES. The NPD is a 'data warehouse' which brings together value-added national performance data with pupil-level information from the Pupil Level Annual Schools Census (PLASC). It links pupils' performance in Key Stage 1, 2 and 3 assessments to GCSE/GNVQ results, thereby providing the means to identify pupil performance at a given point in time *and* progress from one Key Stage to the next, taking important pupil characteristics into account. The preliminary study of the longer term impact of PfS (Sharp *et al.,* 2004) considered the academic attainment of pupils completing Key Stage 2 or Key Stage 3 in 2003. The study reported here, focused on pupils' progress from Key Stage 1 to Key Stage 2, from Key Stage 2 to Key Stage 3 and from Key Stage 2 to Key Stage 4, using the datasets from 2003, 2004 and 2005. This is therefore a much larger study compared to the preliminary study.

3.1.1 Target population

The study focused on the population of pupils who took their Key Stage 2, Key Stage 3 or Key Stage 4 assessments in the summer of 2003, 2004 and 2005. The population was divided into two main groups for the purposes of this study: those who were known to have attended PfS Centres (the PfS group) and a much larger population of pupils who did not attend PfS. A subset of non-PfS pupils was chosen as a comparison group, comprising pupils with the same background, school characteristics and prior attainment as the PfS group.

The PfS group included nine cohorts of pupils (labelled A to G for the purposes of the study) in year 6, 9 and 11. These pupils took their National Curriculum Assessments in 2003, 2004 and 2005. Pupils completing Key Stage 2 attended PfS in years 5 or 6 and their attainment at the end of Key Stage 1 was used as the measure of prior attainment. Pupils completing Key Stage 3 and 4 attended PfS in

years 7 to 9 and their attainment at the end of Key Stage 2 was used as the measure of prior attainment.

Table 1 shows the year groups who were eligible to be included in the study. The shaded boxes indicate the year in which the cohorts took their Key Stage assessments. The number of pupils and PfS Centres involved in the study are reported in Sections 3.1.2 and 3.1.3.

Table 1   Cohort year groups included in the study

Academic year	Cohort year groups						
2000/2001			Year7(D)				
2001/2002	Year5(A)		Year7(E)	Year8(D)		Year10(G)	
2002/2003	Year5(B)	Year6(A)	Year7(F)	Year8(E)	Year9(D)	Year10(H)	Year11(G)
2003/2004	Year5(C)	Year6(B)		Year8(F)	Year9(E)	Year10(I)	Year11(H)
2004/2005		Year6(C)			Year9(F)		Year11(I)

Further information on the procedure used to collect data for the study can be found in Appendix A.

3.1.2 Method of analysis

The research team used multilevel modelling to consider the evidence for the effects of PfS on young people's subsequent attainment, while controlling for other factors collected in the NPD that are known to influence pupils' attainment. Multilevel modelling is a development of regression analysis which takes account of data which is grouped into similar clusters at different levels. For example, individual pupils are grouped into year groups or cohorts, and those cohorts are grouped within schools. There may be more in common between pupils within the same cohort than with other cohorts, and there may be elements of similarity between cohorts in the same school.

Multilevel modelling takes account of this hierarchical structure of the data and produces more accurate predictions, as well as estimates of differences between pupils, between cohorts and between schools. It was a particularly suitable method of analysis to adopt for this study, because of the need to make 'fair' comparisons between a small population of young people who participated in PfS and the much larger group of young people who took their National Curriculum Assessments in 2003, 2004 and 2005.

Lists of the variables included in the model for the analyses are included in Appendix C with their descriptions. A range of background factors has been shown to impact on pupil performance in National Curriculum Assessments in England (see Benton *et al.*, 2003; Schagen and Benton, 2003). These were controlled for in the models at pupil or school level, as appropriate. The pupil-level factors included prior attainment, gender, ethnicity, having English as an additional language (EAL), eligibility for free school meals (FSM) and special educational needs (SEN) status. School-level variables included school size, type, and percentages of pupils with SEN, EAL and eligibility for FSM.

A set of special variables, known as 'interactions', was created in order to address hypotheses about the differential effects of PfS when combined with other factors. The interaction terms investigated, among other things, whether:

- the relationship with prior attainment was different for PfS pupils;
- the relationship between gender and attainment was different for PfS pupils;
- the performance of certain ethnic groups was different for PfS pupils; and
- the performance of pupils born at different times of the year (seasonal effect) was different for PfS pupils.

The outcome measures analysed for Key Stage 2 were:

- Key Stage 2 English 'fine grade'[1] (based on total test score); and
- Key Stage 2 maths 'fine grade'.

Similarly, the outcomes analysed for Key Stage 3 were:

- Key Stage 3 English 'fine grade' (based on total test score); and
- Key Stage 3 maths 'fine grade'.

For Key Stage 4, the outcomes analysed were:

- GCSE English grade;
- GCSE maths grade;
- Mean GCSE score; and
- Total GCSE score.

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[1] See Appendix C for a description and further details of 'fine grade'.

The team ran a total of eight multilevel models, one for each of the outcomes given above. In each model the pupil and school level background factors that have been shown in previous research to relate to pupils' performance were included. The interaction terms which look at the nature of the relationship for PfS pupils were also included. Variables for which there were no statistically significant relationships were removed from the model. So the final models only contained variables that were shown to have a statistically significant relationship with pupils' attainment.

3.1.3 Data collection

From a list of all PfS Centres provided by the DfES, the NFER team compiled a list of all Centres which were open and taking pupils in previous years (1999 to 2005) which had the potential to contribute data for this project. There were 93 such Centres. In May 2006, all 93 Centres were invited by email to take part in the evaluation. Attached to each email was an electronic copy of a pupil data form which requested:

- Unique Pupil Numbers (UPNs) or pupil name and date of birth
- school attended
- the year and term pupils attended the Centre.

Centres were given the option of submitting their data on the form provided or in a format of their choice. They were also given the option of submitting their data in paper format.

A total of 63 Centres returned data (a response rate of 68 per cent), 26 Centres did not respond and four Centres declined the invitation to take part (because they had only just opened or were unable to supply pupil data). The majority of the responding Centres were football clubs (47 Centres), but other sports, including rugby, cricket, tennis and hockey, were also represented in the achieved sample.

Table 2 shows the number of pupils for whom data was provided and the number of pupils who had a complete set of data following matching to the NPD:

Table 2   Number of PfS and comparison pupils included in the analysis

	No. of pupils for whom data was provided	No. of Centres providing data	No. of pupils successfully matched	No. of Centres with matched data	No. of pupils in the comparison group
KS1-2	23844	60	9807	52	726825
KS2-3	11994	48	3890	44	719140
KS2-4	3040	32	844	31	363105

Table 2 shows that not all the data provided was suitable for use in the study because some of the pupils for whom data was provided did not fall within the study sample. More specifically, some of the pupil records were not in the nine cohorts being studied (this study focused on pupils who took their Key Stage 2, Key Stage 3 or Key Stage 4 assessments in the summer of 2003, 2004 and 2005 and had attended a PfS Centre prior to that). Other records did not include the necessary information required for identifying pupils as belonging to one of the nine cohorts (i.e. pupils' date or birth, or the year and term they attended PfS as well as their year group at that time). Further information on this is given in Appendix A.

Overall, 14,541 pupils were included in the PfS group and 1,809,070 pupils included in the comparison group analysis. Fewer pupils were included in the Key Stage 2–4 cohort. This is because fewer older pupils participate in PfS as it is primarily targeted at Key Stage 2 and 3 pupils. The decision was taken to use a large comparison group (comprising all pupils from the national cohorts with equivalent background characteristics) as this had the potential to improve the precision of the analysis. (See Section 4 for a description of the findings from the statistical analysis.)

3.2   Strand 2 study design
One of the aims of this research was to identify Centres that were more effective in producing longer term gains in attainment. Part of the Strand 1 statistical analysis was conducted to identify such Centres. The models compared how pupils actually performed with how they could be expected to perform, given their prior attainment and background characteristics. By making this comparison for the pupils attending each of the Centres at each Key Stage, it was possible to identify Centres where performance was greater than expected.

The quantitative analysis considered six possible scores for each Centre[2], representing pupil progress in maths and English at Key Stages 2, 3 and 4. Centres scoring significantly above the average for all Centres (p <0.05) were considered for selection. This resulted in eight Centres being identified. (See Section 4.5 for further information on the statistical analyses that was performed to select the case study Centres.)

Seven of the eight 'high performing' Centres participated in Strand 2, along with some of their partner schools. Two other Centres were invited to participate, on the basis of local evaluation results and on the judgment of Critical Friends. The DfES supplied the NFER with a list of Centres which the evaluation team compared with the list of Centres identified through the quantitative study. Sixteen of the Centres on the DfES list were included in the study sample, four of which were also identified as 'more effective' in the quantitative analysis. The NFER team was responsible for selecting two Centres from the remaining 12.

The link teachers were identified through a two-stage process. The Strand 1 statistical analysis was used to identify the Key Stages that had shown significant improvements in results for each Centre (see Section 4.5). For example, Centre 1 showed significant positive results in Key Stage 2 and Key Stage 4 maths. The research team therefore asked the Centre Manager to nominate link teachers from the corresponding Key Stages. In the case of Centre 1, this was one primary school link teacher and one secondary school link teacher.

Through qualitative interviews with Centre Managers and school link teachers, this strand sought information on the Centres' programme, pupil selection, liaison, and relationships with schools. It also aimed to identify the strategies schools were using to capitalise on pupils' progress. It was intended that this information would provide valuable insights into the process involved in sustaining the impact of PfS and help to develop good practice guidance for Centres and schools.

A total of 27 semi-structured interviews were conducted with nine Centre Managers and 18 link teachers (two from each of the nine Centres). Two case studies involved face-to-face interviews with the Centre Manager and their Critical Friend and the remaining seven were conducted by telephone. All 27 link teachers were interviewed on the telephone.

The interviews focused on the perceived longer term impact of PfS and the approaches that schools and Centres were adopting to sustain its impact. Common themes were identified using the computer software package Max QDA. (See

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[2] It should be noted that not all Centres provided data on pupils for all six analyses.

Section 5 for a description of the key areas that emerged from the analysis of the interview data.)

4 Findings from Strand 1: Statistical analysis

Summary of findings from Strand 1

The multilevel models considered the progress of pupils attending PfS Centres (PfS pupils) in relation to the progress achieved by similar pupils not attending PfS (in the comparison group). The main findings from the statistical analysis were:

- At Key Stage 2, PfS pupils made less progress in English (by 0.7 of a month) and the same progress in maths. Low attainers who attended PfS did better and higher attainers did less well. Schools sending pupils to PfS made the same progress as schools with pupils in the comparison group.

- At Key Stage 3, PfS pupils made about the same amount of progress as comparison group pupils. Low attainers who attended PfS did better and higher attainers did less well. Schools sending pupils to PfS made the same progress as schools with pupils in the comparison group.

- At Key Stage 4, PfS pupils made greater progress in maths and overall GCSE score. Low attainers who attended PfS Centres did better and higher attainers did less well. Generally, schools sending pupils to PfS made the same progress as schools with pupils in the comparison group.

- An analysis of the progress achieved by pupils attending each Centre identified eight PfS Centres that had performed significantly better than others on at least two of six NCA outcome measures.

4.1 How well matched were the PfS and comparison samples?

Results for Key Stage 2, Key Stage 3 and Key Stage 4 were analysed separately, each combining data from the 2003 to 2005 NPD. A similar procedure was followed in each case.

Figure 2 below shows the prior attainment of pupils who attended PfS and the selected Key Stage 2 comparison group, representing 9,807 PfS pupils and 72,6825 comparison pupils.

Figure 2   Key Stage 2 PfS cohort's prior attainment compared to the comparison group
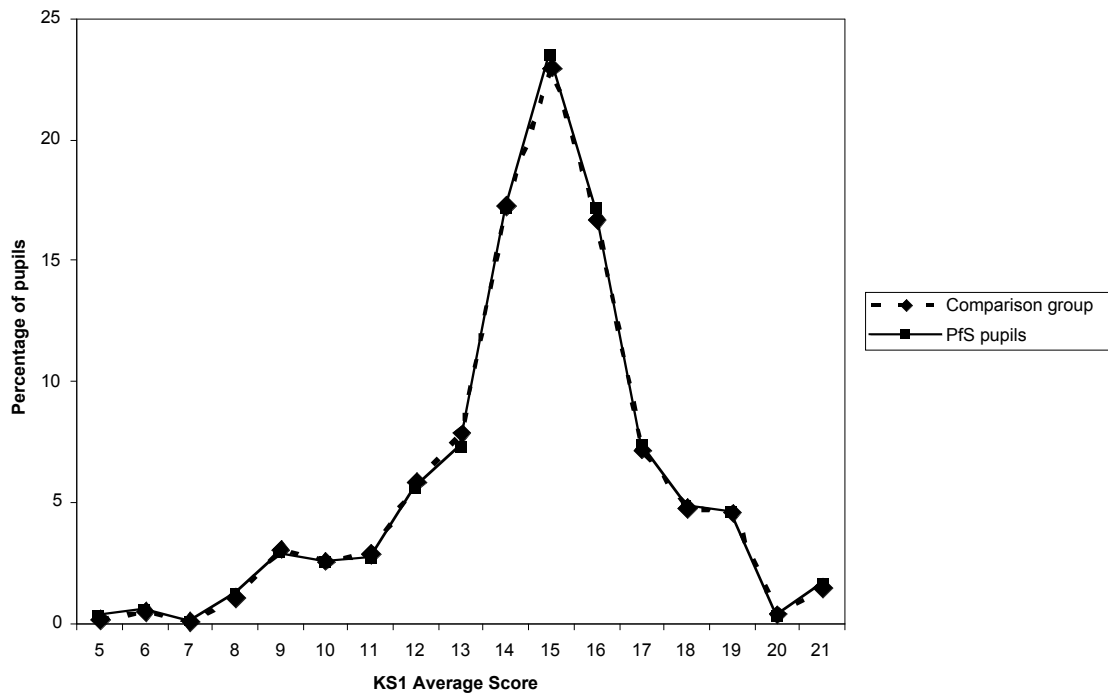
Figure 2 shows that there was a very close match between the prior attainment (Key Stage 1 data) of the PfS pupils and the comparison group for the Key Stage 2 cohorts of pupils.

Figure 3 below shows the prior attainment of pupils who attended PfS and the selected Key Stage 3 comparison group, representing 3,890 PfS pupils and 71,9140 comparison pupils.

Figure 3   Key Stage 3 PfS cohort's prior attainment compared to the comparison group
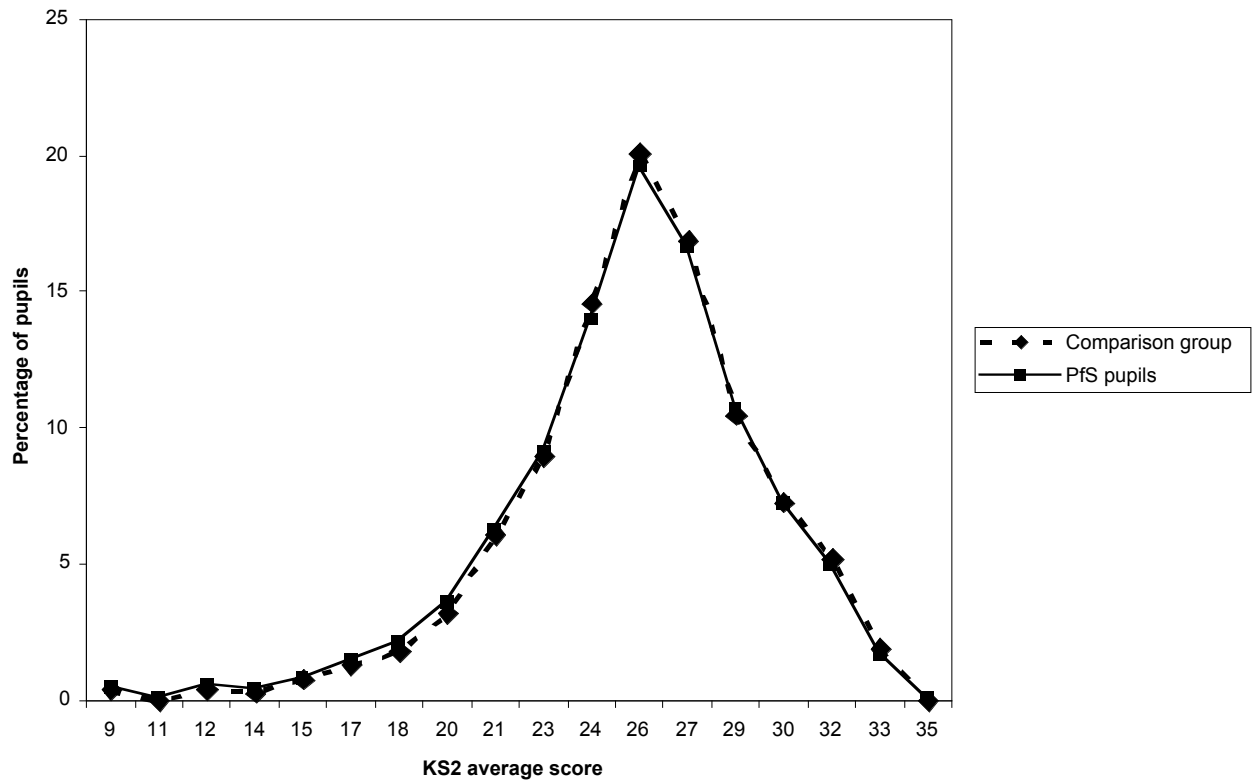
Figure 3 shows that there was a very close match between the prior attainment (Key Stage 2 data) of the PfS group (PfS pupils) and the comparison group for the Key Stage 3 cohorts of pupils.

Figure 4 below shows the prior attainment of the 844 pupils who attended PfS and the selected Key Stage 4 comparison group, comprising 36,3105 pupils.

Figure 4   Key Stage 4 PfS cohort's prior attainment compared to the comparison group
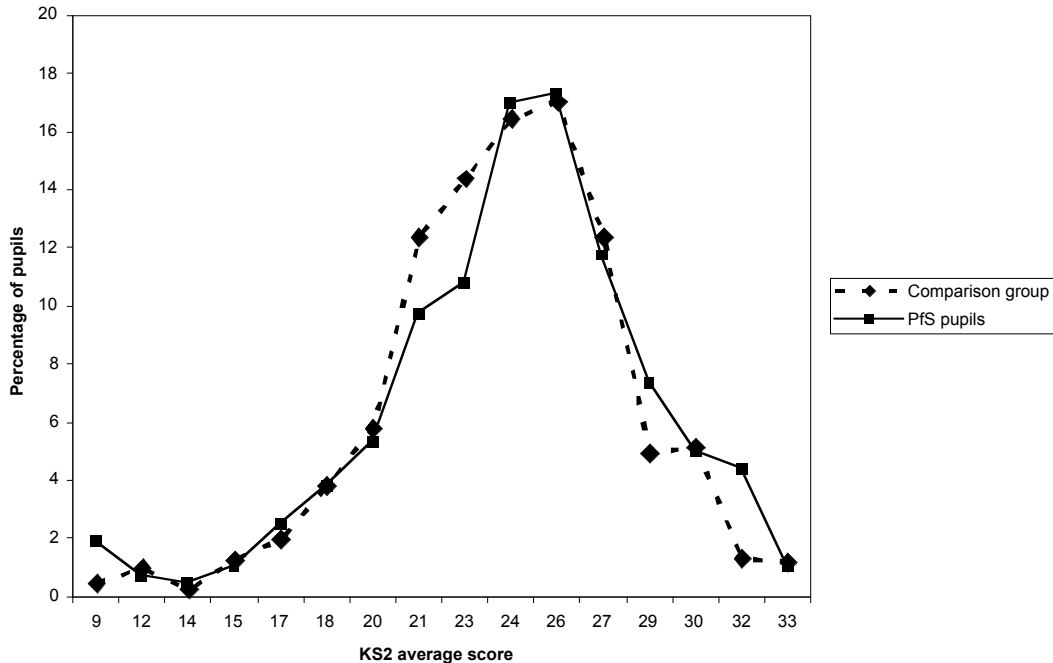
Figure 4 shows that there was a fairly close match between the prior attainment (Key Stage 2 data) of PfS pupils and the comparison group for the Key Stage 4 cohorts of pupils. The prior attainment of these two groups of pupils was not as closely aligned as it was with the previous two Key Stages because it is more difficult to match the distribution of prior attainment for PfS pupils. This is due to the smaller number of PfS pupils in the Key Stage 4 cohorts (884 pupils compared to 9807 and 3890 pupils in Key Stages 2 and 3). Pupils who sat their GCSEs in 2003, 2004 and 2005 were some of the first pupils to attend PfS. Not only was record keeping and data collection less comprehensive, but there were also far fewer Centres established then. Hence the data on these cohorts was relatively sparse. However, it is important to recognise that as a statistical technique, regression takes account of differences like these, so what could be considered a greater level of mismatch is dealt with correctly.

In order to ensure the comparative analysis between the PfS group and the comparison group were fair, further analyses were performed to examine the match between the groups in terms of other pupil and school characteristics (e.g. attainment, levels of EAL and SEN, eligibility for FSM, and size and type of school). Overall, the PfS groups and comparison groups were well matched in

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terms of the background characteristics examined. Detailed information on this is provided in Appendix B.

4.2 Results of the multilevel modelling

Most of the results from the multilevel models are consistent with national trends, reflecting the outcomes from other studies not relating to PfS. For example, girls performed better than boys in English, boys performed better than girls in maths, and the largest contributor to a pupil's performance was their prior attainment. However, what is of interest here is the relationship between attending PfS and attainment, and whether this relationship differs for pupils with different characteristics. The PfS results are presented separately for Key Stage 2, Key Stage 3 and Key Stage 4.

4.2.1 Results of multilevel modelling at Key Stage 2

Two outcomes were modelled using the Key Stage 2 datasets: Key Stage 2 English level and Key Stage 2 maths level. Key Stage 1 results were used as a measure of prior attainment. Findings are presented below (all statistically significant findings are reported here). More detail is given in the Appendices.

- In English, pupils who attended PfS Centres made less progress than the comparison group (by 0.7 of a month).

- In maths, PfS pupils made similar progress to the comparison pupils.

- Schools that sent their pupils to PfS Centres performed about the same (in terms of their pupils' progress) as the comparison schools.

- Although, as a whole group, PfS pupils made less progress in English (by 0.7 of a month) and performed no differently in maths, there was differential performance among the group of pupils who attended PfS. Pupils with low prior attainment who attended PfS made greater progress at Key Stage 2 than those with similar low attainment in the comparison group. PfS pupils with higher prior attainment made less progress at Key Stage 2. (For example, in Key Stage 2 maths, one in four PfS pupils who performed below the expected level (level 2) in Key Stage 1 maths went on to perform above the expected level (level 4) at Key Stage 2, compared to one in five of low attainers in the comparison group.)

- There were some differences in progress of pupils of different ethnic groups who attended PfS[3]. White pupils involved in PfS made greater progress than pupils of mixed origin, Indian, black other and those with unknown ethnicity in English. White pupils involved in PfS made greater progress than pupils of black African backgrounds in maths. (For example white pupils made 1.6 months more progress in English than pupils of Indian origin and white pupils made 2.2 months more progress in maths than pupils of black African background.)

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[3] Although the size of some of the ethnic sub-groups was small, the size of the groups is taken into account in calculating the significance level.

- Autumn-born pupils involved in PfS made greater progress relative to spring- and summer-born pupils (by 0.9 of a month).

4.2.2 Results of multilevel modelling at Key Stage 3

Two outcomes were modelled using the Key Stage 3 datasets: Key Stage 3 English level and Key Stage 3 maths level. Key Stage 2 results were used as a measure of prior attainment.

- In both maths and English, PfS pupils and comparison pupils made a similar amount of progress.

- Schools that sent their pupils to PfS Centres performed about the same (in terms of their pupils' progress) as the comparison schools.

- Although, as a whole group, PfS pupils made similar progress in English and maths between Key Stages 2 and 3, there was differential performance among the group of pupils who attended PfS. Pupils with low prior attainment who attended PfS made greater progress than those with similar low attainment in the comparison group. PfS pupils with higher prior attainment made less progress. (For example, about one in seven PfS pupils who performed below level 3 at Key Stage 2 reading went on to achieve level 5 or above in Key Stage 3 English, compared to about one in ten of the comparison group.)

- In English, girls who attended PfS performed slightly less well than girls in the comparison group (by 1.3 months).

- There were some differences in the progress of certain ethnic groups who attended PfS[4]. Pupils of mixed and Chinese ethnicity who attended PfS made less progress than their peers in maths (pupils of mixed ethnicity by 2.5 months and pupils of Chinese origin by 13.7 months). Pupils of Indian origin and those for whom there was no ethnicity data who attended PfS made greater progress than their peers in English (pupils of Indian origin by 3.3 months and those with no ethnicity data by 7.0 months).

4.2.3 Results of multilevel modelling at Key Stage 4

Since students can take a number of examinations at Key Stage 4, several outcomes were considered in the Key Stage 2–4 analysis. In addition to the core subjects of English and maths, the analysis also examined the mean and total GCSE score to gain some insight into overall progress at GCSE. Findings are presented below.

- In maths and overall at GCSE, pupils attending PfS Centres performed better than pupils in the comparison group. (In maths, the difference was equivalent to one in seven PfS pupils attaining one higher grade in maths GCSE than their peers in the comparison group. Overall, in terms of average GCSE score, the difference was equivalent to one in ten PfS pupils attaining one grade higher than their peers in the comparison group in all subjects they took.)

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[4] Although the size of some of the ethnic sub-groups was small, the size of the groups is taken into account in calculating the significance level.

- Generally, schools that sent their pupils to PfS Centres performed about the same (in terms of their pupils' progress) as the comparison schools.

- Although, as a whole group, PfS pupils made greater progress in maths and similar progress in English between Key Stages 2 and 4, there was differential performance among the group of pupils who attended PfS. Pupils with low prior attainment who attended PfS made greater progress than those with similar low attainment in the comparison group, in all outcomes except for English. PfS pupils with higher prior attainment made less progress. (For example, about one in seven PfS pupils who performed below the expected level at Key Stage 2 maths went on to achieve a grade C or higher in GCSE maths, compared to about one in 17 of the comparison group.)

- In English and overall at GCSE, girls involved in PfS made slightly less progress than girls in the comparison group. (In English, the difference was equivalent to three in four PfS girls attaining one grade lower in English GCSE than their peers in the comparison group. Overall, in terms of average GCSE score, the difference was equivalent to one in five PfS girls attaining one grade lower than their peers in the comparison group in all subjects they took.)

- In maths, girls who attended PfS made slightly more progress than the comparison group (one in two girls who attended PfS attained one grade higher than their peers in the comparison group in GCSE maths).

- There were some differences in the progress in English of certain ethnic groups who attended PfS[5]. Pupils of mixed origin, Gypsy-Roma and those who stated their ethnicity as 'other' made greater progress in English (almost one in three Gypsy-Roma pupils and almost one in two pupils of mixed ethnicity who attended PfS attained one grade higher than their peers in the comparison group in GCSE English). Pupils of black Caribbean and Chinese origin who attended PfS made less progress in English (about one in two pupils of black Caribbean origin attained one grade lower than their peers in the comparison group in GCSE English, while pupils of Chinese origin attained more than two grades lower than their peers in the comparison group).

4.3 Progress of lower attaining pupils

As noted in the findings presented above, the models showed variable performance of PfS pupils overall; with some results showing more or less progress in one subject, and other models showing that progress was no different to that of the comparison group. However one finding was consistent across almost all models: there was differential performance within the group of PfS pupils, such that pupils with low attainment who attended PfS made greater progress than those with similar low attainment in the comparison group. The purpose of this section is to explore this relationship further.

Figure 5 illustrates the progress that pupils made between their Key Stage 1 tests and their Key Stage 2 tests. The two lines represent the progress made between

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[5] Although the size of some of the ethnic sub-groups was small, the size of the groups is taken into account in calculating the significance level.

Key Stage 1 and Key Stage 2 for two groups of pupils. The dotted line represents the progress of PfS pupils and the solid line represents the progress of the comparison group.

Figure 5   Progress between Key Stage 1 and 2 English for Key Stage 2 PfS pupil cohorts and comparison group
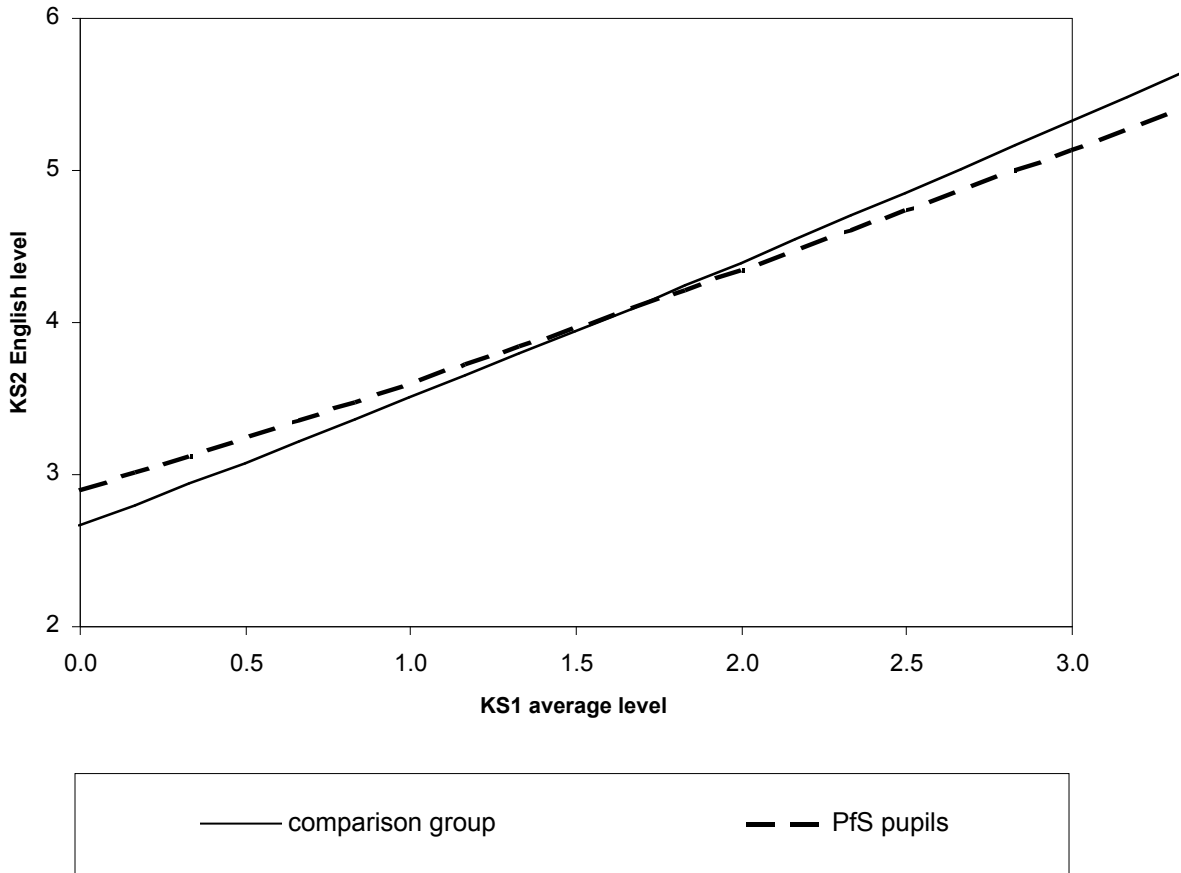
The national expectation for Key Stage 1 is that most pupils should achieve level 2 in their assessments. The national target for Key Stage 2 is for 85 per cent of pupils to achieve level 4 (DfES, 2006).

Figure 5 shows that pupils who attained the expected standard of level 2 on average in their Key Stage 1 tests went on to attain, on average, about a level 4 in their Key Stage 2 English test. The lines converge at around level 2 at Key Stage 1, indicating that for pupils who attained the expected level at Key Stage 1, the two groups of pupils (PfS group and comparison group) made a similar amount of progress.

The figure also shows the different patterns of progress between the PfS group and the comparison group in relation to those with higher or lower prior

attainment. For pupils with low prior attainment (Key Stage 1 average levels of 1.7 or below) PfS attendees showed a greater improvement by Key Stage 2 than the comparison group. The effect was greatest for pupils with the lowest prior attainment.

To give some idea of the proportion of pupils involved, 24 per cent of the PfS pupils achieved below level 2 in their Key Stage 1 reading assessments.

The opposite trend is apparent for pupils of higher initial performance (above level 2 at Key Stage 1) where those who attended PfS made less progress than the comparison group.

A similar pattern was identified at all Key Stages. Pupils with lower performance at Key Stage 2 who attended PfS achieved higher results at both Key Stages 3 and 4 than the equivalent comparison group.

The proportion of the PfS cohorts in the Key Stage 3 models with low initial performance at Key Stage 2 (i.e. below level 4) was 42 per cent in English and 41 per cent in maths. The proportion of the PfS cohorts in the Key Stage 4 models with low initial performance at Key Stage 2 was 53 per cent in English and 51 per cent in maths.

Figure 6 shows one of the outcomes from the Key Stage 4 analysis, demonstrating how the pattern continued for older pupils.

Figure 6   Progress between Key Stage 2 and 4 maths for Key Stage 4 PfS pupil cohorts and comparison group
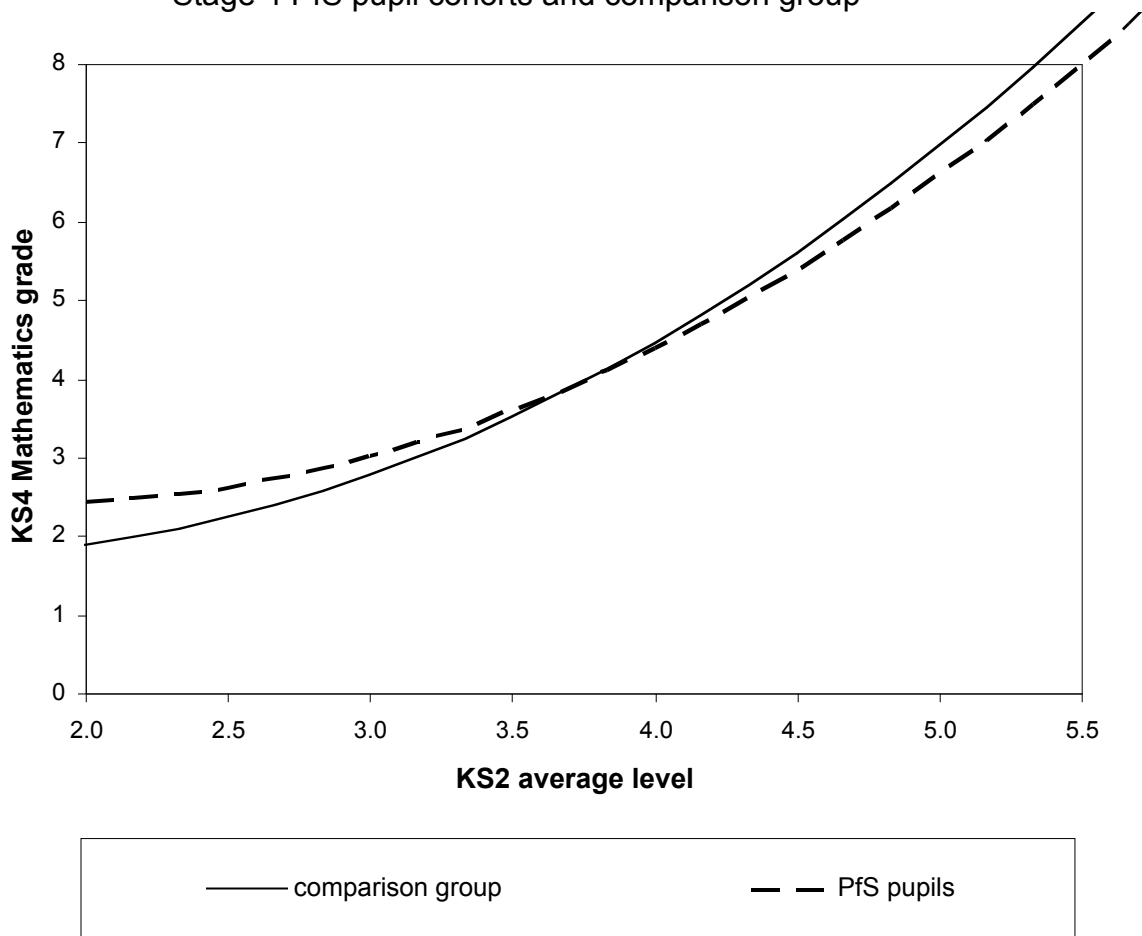
Figure 6 shows that PfS pupils with lower than the expected attainment at Key Stage 2 (level 4) performed better in GCSE maths than the equivalent pupils in the comparison group.

In order to investigate the progress of low attainers in more detail, the NFER team produced conversion tables – crosstabulations of pupils' Key Stage performance from Key Stage 1 to 2 and from Key Stage 2 to 3. Conversion tables were produced for PfS pupils and for the comparison group.

In many cases, the progress of the two groups was similar, however there were examples where the PfS pupils showed greater improvement than the comparison group. Below is one example. Table 3 shows the progress in maths of pupils in the comparison group between Key Stages 1 and 2 and Table 4 shows the equivalent progress for PfS pupils.

Table 3   Comparison pupils' progress from Key Stage 1 to 2

Key Stage 1 maths level %	Key Stage 2 maths level %					No. of pupils
	Below level 2	2	3	4	5	
W	35	9	46	10	0	5786
1	15	6	59	20	1	60810
2	3	2	45	45	4	110208
3	0	0	13	55	32	226

Table 4   PfS pupils' progress from Key Stage 1 to 2

Key Stage 1 maths level %	Key Stage 2 maths level %					No. of pupils
	Below level 2	2	3	4	5	
W	29	5	48	18	0	97
1	11	6	57	25	1	726
2	2	2	44	48	4	1460
3	0	0	0	100	0	3

These tables show the percentage of pupils, at each level at Key Stage 1, who went on to achieve each level at Key Stage 2. For example, in Table 4, 57 per cent of pupils who were at level 1 at Key Stage 1 went on to achieve a level 3 at Key Stage 2.

There is a group of pupils who performed below the expected level (level 2) in Key Stage 1 and went on to achieve the expected level at Key Stage 2 (level 4 or above) in maths. Ten per cent of comparison group pupils who were working towards level 1 (W) at Key Stage 1 progressed to a level 4 at Key Stage 2, compared to 18 per cent in the PfS group. Similarly, 21 per cent of pupils in the comparison group who attained level 1 at Key Stage 1 went on to achieve a level 4 or above at Key Stage 2, compared with 26 per cent of the pupils who attended PfS.

4.4   Did it matter when pupils attended?

The evaluation team considered that the time elapsed between pupils' attendance at PfS and taking their assessments may influence their results. It was expected that pupils who had attended PfS just before taking their assessments might make greater progress (for example pupils who attended PfS in the spring term or summer term before their assessments might be expected to make greater progress than those who had attended in the autumn term). Additional analyses was used to refine the original multilevel models, codifying pupils into the following groups:

- attended PfS during the summer term prior to the assessments
- attended PfS during the spring term prior to the assessments
- attended PfS during the autumn term prior to the assessments
- attended PfS a year prior to the assessments.

It was only possible to conduct these analyses for the Key Stage 2 and 3 cohorts, because pupils attend PfS Centres during Key Stage 2 or Key Stage 3 so the Key Stage 4 cohorts had attended PfS at least two years before they took their GCSE exams.

The results of these analyses were mixed, with no consistent pattern becoming apparent. There were no statistically significant findings for maths. For English, pupils who attended in the spring term made less progress at Key Stage 2, but the opposite result was obtained at Key Stage 3 where pupils who attended in the spring term made greater progress than other PfS attendees.

4.5   Centre-level analysis

One of the aims of this research was to identify Centres that were more effective in producing longer term gains in attainment. The statistical models described earlier were used to identify such Centres. The models compared how pupils actually performed with how they could be expected to perform, given their prior attainment and background characteristics[6]. By making this comparison for the pupils attending each of the Centres at each Key Stage, it was possible to identify Centres where performance was greater than expected.

The statistical model establishes an average that represents expected performance in the absence of PfS, based on the comparison group results. Each Centre is measured against this expected performance, and a range of values (known as the 'confidence interval') is computed such that there is a 95 per cent chance that the Centre's value-added measure is within this range. Figure 7 below illustrates this.

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[6] Each pupil's actual result was compared with the expected result derived from the multilevel model, and these differences were aggregated to give a 'value-added' measure for each Centre. The expected results took no further account of school or local authority variation, or the overall apparent impact of PfS.

Figure 7   Key Stage 2 English – Centre value-added measures (in rank order)
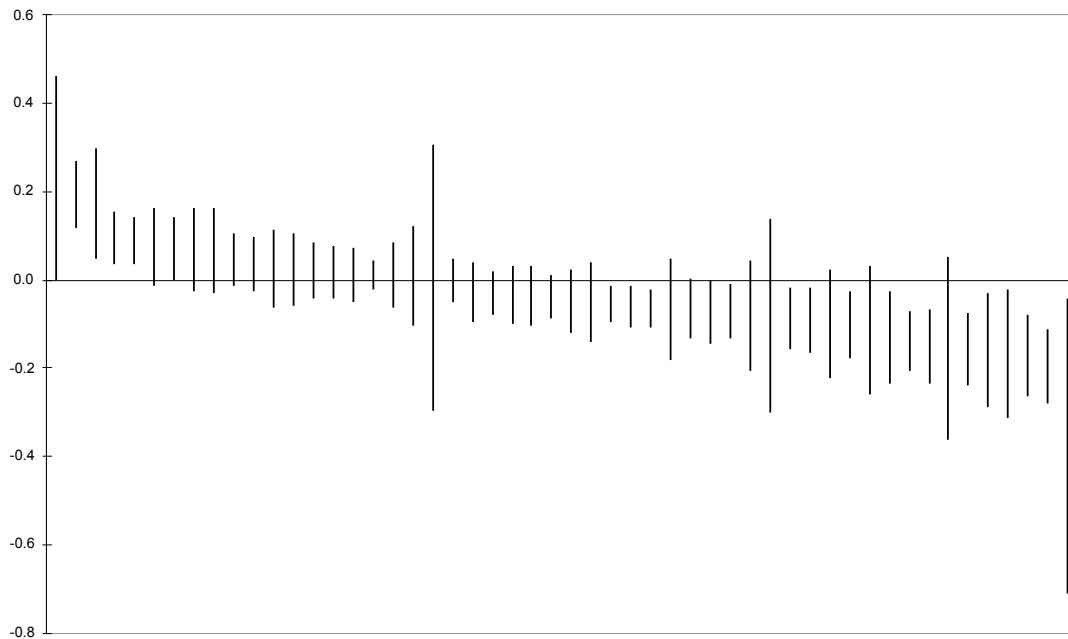
The Centres are shown in rank order of their Key Stage 2 English performance. Each Centre is represented by a vertical line, and the average is shown as the horizontal line. If a Centre's line is wholly above the horizontal average, it is concluded that its performance is statistically significantly[7] above the expected level of achievement, given the prior attainment and other characteristics of its pupils. In this chart there are five such Centres. The length of the lines represents the confidence interval for each Centre, illustrating the extent to which their performance can confidently be predicted. This is affected by the number of pupils' results included for each Centre (Centres providing information on smaller numbers of pupils tend to have larger confidence intervals).

Equivalent charts could be drawn for each of the outcomes of the multilevel models (Key Stage 2 English and maths, Key Stage 3 English and maths, GCSE English, maths and GCSE total and average point score) and the pattern would be similar.

While it may be unrealistic to expect all pupils who attend a Centre to perform consistently well in both subjects (English and maths), performance might be expected to be consistent within subject area (for example Key Stage 2 and Key

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[7] at the five per cent level

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Stage 3 English) or for pupils in a particular age range (for example, for pupils at Key Stage 3 in English and maths).

The analysis considered six possible scores for each Centre[8], representing pupil progress in maths and English at Key Stages 2, 3 and 4. Centres scoring significantly above the average for all Centres ($p < 0.05$) were considered for selection. This resulted in the following eight Centres being selected.

Table 5   Selection criteria for Strand 2 qualitative work

Selection criteria – significant positive results
Centre 1: KS2 maths, KS4 maths
Centre 2: KS2 maths, KS4 maths
Centre 3: KS2 English and maths
Centre 4: KS3 maths, KS4 maths
Centre 5: KS2 English, KS4 English and maths
Centre 6: KS2 English and maths
Centre 7: KS2 maths, KS3 maths
Centre 8: KS2 maths, KS3 English and maths

These Centres are based in the following areas of England: London, the North, the North East and North West. They include Centres which opened in 1998, 1999, 2000, 2002 and 2003.

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[8] It should be noted that not all Centres provided data on pupils for all six analyses.

5 Findings from Strand 2: Case studies of good practice

The second strand of the study sought to identify good practice in helping young people to maintain the positive progress they have achieved in PfS (Sharp *et al*., 1999, 2001, 2002a, 2003). This section reports the findings from the qualitative analysis of the nine case study Centres. (See Sections 3.2 and 4.5 for an explanation of how the case study Centres were selected.)

Summary of findings from Strand 2

The qualitative data from the case study Centres identified good practice in helping young people to maintain the positive progress they achieve in PfS. The main findings from the case study analysis are reported in terms of actions before, during and after pupils attended PfS. The good practice points include:

Before PfS

- regularly reviewing and updating the content of the programmes and adapting them to suit the needs of schools and particular groups of pupils

- working closely with the named contact in schools – the link teacher – before pupils attend the programme

- facilitating schools' participation in the programme by taking care of practical details and ensuring teachers, pupils and parents are well prepared for the experience

- emphasising the importance of selecting pupils who are most likely to benefit from PfS.

During PfS

- utilising the skills and experience of all Centre staff – including mentors and ICT technicians – to deliver quality sessions

- ensuring good communication with schools during the programme

- providing a positive ethos, where individual young people are welcomed, encouraged and valued

- helping pupils to engage in individual target setting and ensuring pupils are aware of what they need to do to achieve their goals

- emphasising personalised learning, devising individual programmes and providing constant feedback

- offering practical activities which enable pupils to relate curriculum content to real life situations.

After PfS

• helping pupils to recognise their achievements and encouraging them to continue to succeed after PfS, by ensuring that pupils receive public acknowledgement of their effort and attainment at celebration events

• providing parents with feedback on their children's progress following the PfS programme

• providing pupils with a portfolio of work that can be displayed at school and encouraging schools to build on the progress achieved. Some partner schools capitalised on PfS particularly well by adopting similar approaches and using pupils' skills.

Partnership working

• partnership working between Centres and schools was critical during all of the above stages – before, during and after pupils attended the PfS programme. Establishing a good relationship with the host club was important, as was a good working relationship with local authority colleagues, Critical Friends and the central team at DfES.

Longer term impact

• overall, school staff noticed a marked improvement in young people's self-esteem and confidence as a result of attending PfS. They also noticed positive effects on pupils' motivation, persistence and independence in learning.

5.1   Background to Strand 2

Strand 2 entailed a qualitative analysis of strategies adopted in 'more effective' Centres in relation to their longer term impact on pupil progress. Seven Centres were identified as more effective on the basis of the quantitative analysis and two Centres were identified as more effective by the PfS Central team, based on the judgements of PfS Critical Friends and local evaluation results. Qualitative interviews were conducted with the nine Centre Managers and 18 associated link teachers.

The nine Centres had been operating for varying lengths of time, ranging from approximately four to eight years. The current Centre Managers were interviewed except in one case where a new Centre Manager had only just taken up post so the interview was conducted with the previous post holder. Seven of the nine case study PfS Centres were associated with football clubs, one was associated with football and rugby league and one with gymnastics. Five of the eight Centres offered the classic model of provision – 20 hours over ten weeks (two hours a session); one Centre offered the 20 hours over a five-week period (two two-hour sessions a week); and one Centre offered 15 hours over ten weeks (one and a half hour sessions a week).

The link teachers, representing 11 primary and seven secondary schools, had been involved in PfS for differing lengths of time. The two link teachers with the least experience of PfS were in their second year of being involved whereas the two with greatest experience had been involved for eight years (since the Centres were established).

The interviews focused on the perceived longer term impact of PfS and the approaches that schools and Centres were adopting to sustain this impact. Although the context in which each of the Centres was operating was different, a number of key areas emerged from the analysis of the interview data, where similar areas of good practice were highlighted.

The remainder of this section is divided into five sub-sections; the first three sub-sections focus on areas of activity which took place before, during and after pupils attended the PfS Centres. The final two sub-sections report on partnership working and reflect on the longer term impact from attending PfS. Each sub-section describes the overall findings and presents specific examples (in boxes)[9]. It is important to point out that the good practice highlighted in the boxes was not necessarily limited to individual Centres, but may have been adopted elsewhere.

5.2 Good practice before pupils attend the PfS programme

This section focuses on the key activities and arrangements identified as contributing to longer term impact that took place in the period before pupils attended PfS.

5.2.1 Management and organisation of the programme

It was evident that the nine Centres all had well organised and well planned programmes which were recognised and appreciated by the link teachers. The programmes were very clearly structured with different activities scheduled for each session. A typical session might include one activity to support literacy, one to support numeracy and one to support ICT. The activities often included games, puzzles and quizzes for individuals or groups.

Centre Managers explained that they regularly evaluated their programmes and adapted the content to suit the needs of schools and pupils:

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[9] Centres and individuals are identified in the boxed examples. The decision to name participating Centres was taken because it was felt that it would be difficult to ensure anonymity and the project steering group felt that this was desirable to enable sharing of good practice. Interviewees were informed that there was a possibility that they would be identified and were given an opportunity to approve the text attributed to them before publication.

> *I think it's important that the programme is well thought out. We are proud of our programme and think it's very good. If something doesn't work we improve or change it.*

One Centre Manager noted that it was important to be creative in trying out new activities and to be prepared to move the programme's curriculum forward:

> *Our curriculum changes from year to year. It's a natural thing, we don't sit down and change it all, but it's just that new activities are constantly feeding into it and it's evolving and changing.*

The Centre Managers used a number of different strategies for ensuring their programmes remained relevant and appropriate. The strategies included:

- visiting schools to observe lessons (as a way of keeping up to date with new developments in schools)
- liaising with schools over which areas of the National Curriculum they were prioritising
- adapting the programme if schools identified groups of pupils who were weak in particular areas. (See also Section 5.3.3)
- liaising with local authority consultants over current priority areas
- using QCA reports and other national sources to identify the areas in which underachieving pupils needed additional support.

The Centre Managers then built activities into their Centre's programme to support these key areas.

One Centre Manager explained how he had changed his Centre's programme to improve uptake. Initially the Centre had found it difficult to recruit pupils from Key Stage 3 and so the Centre staff re-evaluated their programme content to make it more appealing to secondary students. They changed the focus to creating music and movies, using ICT hardware, thereby ensuring that they were offering something attractive and different from the curriculum in schools. The staff introduced the change in the programme gradually over a two-year period. It had the desired effect – the sessions for Key Stage 3 pupils were well subscribed and attended.

Link teachers appreciated the opportunity to feed into the development of their Centres' programmes and many teachers described both formal and informal ways in which they could have an input. Some link teachers were involved in local PfS steering committees, which enabled them to feed suggestions through to Centre staff. Teachers found this a useful opportunity, as one primary teacher explained:

> *We discuss how things are going, push ideas forward and look at how we can change what's happening, by looking at what's working and what's not working… It gives me the opportunity to highlight areas that each year children struggle on.*

One Centre Manager explained that she asked schools to identify the needs of a particular group of pupils before they attended the Centre. Centre staff then adjusted the programme to meet the needs of each group:

> *We have a planning meeting with the link teacher the term before their pupils attend… We show the curriculum to the teachers in advance and they can tell us how they would like us to amend it for their pupils. If they know this group of children are struggling with a particular concept or skill for example, they can tell us and we will ensure we cover it.*

Input at the school level meant that the Centre could tailor the programme to the needs of those particular pupils. For example, one primary teacher told the Centre Manager that pupils needed extra support with measures in maths, specifically, conversion from one set of measures to another. The Centre staff built work on conversion between measures into the programme for that particular group.

Link teachers also provided examples of more informal opportunities to share ideas with Centre staff. For example, one secondary teacher said: 'I have an excellent relationship with the Centre where I can suggest things for certain groups of kids. We have built on the PfS strategies'.

On the whole, the link teachers felt that the Centres were open to suggestions and that their views were taken into consideration:

> *They always ask for our opinions. We discuss things together and what we think could be improved… We made a suggestion that on the last day [the pupils were at the Centre] they could make a PowerPoint presentation which they could then come in and show [at school], with input from the Centre. And they've taken that on board.*

5.2.2 Liaison with schools and pupils before they attend

The importance of building a good relationship between the Centre and the schools was highlighted by Centre Managers and link teachers alike. As one primary teacher said: 'The relationship between the school and the Centre is key.'

Some Centres noted that there had been challenges in establishing good working relationships with schools. For example, one Centre Manager explained that when they first opened the PfS Centre it had been difficult to get schools on board. But once one or two schools had been involved in the pilot, interest had 'snowballed' because the schools shared information about their experience with other schools. As the Centre Manager explained: 'I think it's getting that relationship with your first customers and they'll sell it for you'.

The main factors identified by interviewees as important in helping to build good relationships prior to involvement in the programme focused on having a named contact within the school – the 'link teacher' and providing briefings for schools, pupils and their parents/carers.

The role of link teachers
Critical to the relationships between schools and Centres were link teachers. Centre Managers and link teachers themselves highlighted the importance of schools having a named contact to liaise between the Centre and the school, as one secondary link teacher explained:

> *You need to have a readily identifiable person who's clearly the person [Centre staff] should get in contact with straight away, for initial contacts and then subsequent detail. They've got to have someone who they know they can get hold of and knows what's going on.*

Centre Managers noted that when schools changed link teachers, they needed to re-establish a good working relationship, as one commented: 'If you know you've got the school and the link teacher behind you it does make things a lot easier.'

Briefing schools
It was common practice for Centre staff to visit schools, prior to their involvement in the programme, to meet with the headteacher and/or the identified link teacher. This provided the opportunity for the Centre to share information about the aims and objectives of PfS, programme details and practical information with school staff. These face-to-face meetings provided the basis for establishing good working relationships between the schools and the Centre.

For some Centres, particularly those covering a large number of schools, the task of personally visiting schools and maintaining the good relationships was a considerable challenge. In one case, the Centre Manager had delegated this role to an administrator. The administrator's work included visiting schools to provide general information about PfS and supporting them in selecting groups of pupils to attend. The administrator was also involved in providing feedback for schools

during and at the end of the programme. Further details on liaison and feedback during and after the programme are provided in Sections 5.3.2 and 5.4.2.

Briefing pupils and their parents/carers
During their visits to schools, Centre staff usually gave presentations to the selected pupils and, in some instances, their parents/carers. This might include a video presentation. These visits provided an opportunity to describe the programme and what pupils could expect during the sessions.

In some cases, Centre staff spoke to a whole year group of pupils before the selection process had taken place. This strategy was particularly useful if schools were having difficulties recruiting pupils to attend. One Centre Manager described the purpose of such sessions as: 'to try and get people interested and to make sure the schools were aware of what we were trying to do'.

Involving parents in the presentation briefing was felt to be important to help them understand the aims and objectives of PfS, the type of activities their child would be involved in, and more generally to secure parental commitment to the programme. Some link teachers commented that, although they used to invite parents in to hear about the programme, this was no longer necessary because the school had been participating in PfS for so many years, that parents had a good understanding of what it involved. Others said that although parents were familiar with PfS, they still felt it was important for the Centre Manager to meet parents before the start of the programme, so they had met the Centre Manager before their first session.

Overall, school link teachers seemed to know Centre staff well and most Centres visited schools before the start of a programme. But in the minority of cases where this did not take place, teachers said they could ask Centre staff to visit if necessary.

5.2.3 Centres facilitating schools' participation

Interviewees reported that Centre staff were willing to do everything in their power to make it easy for schools to participate in PfS. This ability to see things from the schools' perspective and to help with practical arrangements was fundamental for building a supportive relationship between Centres and schools. There were many ways in which Centres achieved this, which included the following four strategies.

Providing ample notice for the dates of key events
This allowed link teachers to make appropriate arrangements to ensure they could attend the events (e.g. open evenings and end of course celebrations). One

secondary link teacher commented: 'As a teacher you have to juggle it with everything else, so if you can get those dates in the diary early, it really helps'.

Keeping paperwork to a minimum
This included completing forms on the schools' behalf. This was greatly appreciated by busy teachers, as one explained:

> *The organisation is very efficient and not painful for the school at all… For example, things that some teachers find difficult like doing health and safety risk assessments, sorting out transport, including an authorised driver – all that is done by the Centre.*

Providing information for schools to send to parents
Information for parents included documentation about the aims of PfS, a description of the activities for pupils, the exact dates and times of the sessions and background information on the Centre staff (e.g. teaching qualifications, Criminal Records Bureau checks, first aid training). Link teachers appreciated the fact that the information was so well thought through that parents were not left with any concerns or questions. As one primary link teacher said: 'The information they send… is very comprehensive. All I need to do is photocopy it and send to parents.'

Organising safe and reliable transport for pupils
Transport arrangements were an area of potential concern for schools and parents, so teachers were grateful for the attention paid to this by Centre staff. Typically, the Centre would arrange for a minibus to collect pupils straight after school and take them to the Centre and then return them to school at the end of the session. Many link teachers made comments about the high standard of transport that was provided. This included references to seat belts being provided and the fact that the minibuses arrived on time – something that the link teachers felt parents appreciated. As one secondary link teacher said: 'The Centre arranges the minibus and it's always there on time to pick us up and take us back.'

5.2.4 Selecting pupils

Centres provided schools with information to support them in selecting appropriate pupils to attend PfS, as part of the initial briefing about the initiative. Centres provided schools with written guidance, based on the original DfES criteria. In some cases Centre Managers would discuss the selection of each pupil group with the school link teachers. On the whole, individual schools decided which pupils to invite to take part and Centre Managers were unlikely to refuse to take pupils, even if they felt that the school had selected inappropriately (though they might speak to the link teacher about improving selection for the next group).

Most school link teachers who were interviewed were aware of the criteria and followed them, at least to some extent. However, some pointed out that selection was less of an issue for them. In small primary schools, for example, it could be possible for a whole year group to attend. Some Centre Managers commented that selection was more challenging in secondary schools, because the link teacher needed to liaise with other staff members to make a selection from among a large year group. This was particularly challenging where there had been changes of link teachers.

Where the selection worked well, it seemed that teachers had used more than assessment data to decide which pupils would benefit most from the opportunity to attend PfS. Pupils' attitudes were often considered (e.g. pupils may be invited to attend because they lacked self-confidence). Once schools had their first cohort of pupils attend, they were in a better position to understand which pupils would benefit and used the information in selecting the next cohort.

In terms of using assessment data to support selection, many teachers explained that they targeted lower achieving pupils who were working below the expected level for their age. One secondary school link teacher said he targets pupils who 'have entered the school at about a level and a half below what they should be and with that little bit more attention, they can really accelerate up'. The main emphasis was on selecting pupils who would benefit the most from what the Centres had to offer. For example, one Centre Manger explained:

> *The pupils who tend to benefit are ones who are willing to engage in learning but not in the way they do in school. They feel unmotivated by the learning which is going on in school, so they benefit from a more informal, relaxed classroom experience where the boundaries are still there but not as tight.*

The importance of selecting appropriate pupils

Pupil selection was identified as particularly important at Watford Learning Centre. Centre Manager Julia Bateson explained that their programme was targeted at pupils who are working at National Curriculum levels 4c, 3a, 3b, 3c in literacy and numeracy. The Centre produced information for schools about the pupils who would benefit most from attending.

Geoff Carr, the deputy headteacher, from Francis Combe School and Community College explained how the importance of selection had been brought home to him during his association with PfS at Watford Learning Centre. As he said:

> *Selection is really critical… I've learned so much over the years about how to select them and how to make sure that they are ones that will really benefit from the whole process and will sustain attendance and really enjoy it and get a lot out of it. You've got to be really careful.*

Time spent on selection was time well spent, because:

> *When I've done it badly, it's when I haven't put in enough preparation. When I've had drop-out of any kind, it's my fault in effect, because I didn't go carefully enough about choosing them.*

In order to ensure that the selection is as accurate as possible, he involves other staff, including year leaders and class teachers, in a three step process. First, students' achievements in literacy and numeracy are taken into account – the selected students are those working below the expected level for their age, but not too far below the expected level. Second, staff consider students' behaviour – 'they don't need to be angels but you've got to be able to rely on their behaviour'. And third, staff take pupils' reliability into account, because they are aiming for their students to attend all available sessions.

This approach had paid off with the most recent group of students: 'We really did it carefully and that was the best outcomes we've had, because I'd taken the most trouble over it.'

5.3 Good practice during pupils' attendance at the PfS programme

This section reports on the findings from the case study analysis relating to the period (of around ten weeks) whilst pupils are attending the PfS programme.

5.3.1 Leadership and staffing

The quality of leadership and staff at the PfS Centres was identified as a fundamental issue in contributing to impact. One primary link teacher summarised his views of the leadership and staffing at the Centre in the following terms: 'They've got a great team of people, they're committed to what they're doing, they give every evidence of enjoying what they're doing.'

The typical staffing model included the Centre Manager, a qualified teacher, an ICT technician, an administrator and a group of mentors or study support assistants. The number of teaching staff and mentors varied according to the size of the Centre. In some cases, the drivers of the minibuses (e.g. sports development officers) contributed to the sessions. The skilled ICT technicians were considered invaluable by some Centre Managers. This was particularly the case when the individuals had been working at the Centre for a number of years and so were able to contribute fully to the programme, for example by making an input into the programme content. As one Centre Manager said of his ICT technician: 'His knowledge of the project is far more than simply dealing with the ICT side of things'.

The link teachers spoke favourably about the staff at the Centres and felt the teaching was of the highest quality. Words such as 'committed', 'positive', 'motivated', 'enthusiastic' and 'welcoming' were frequently used to describe the Centre staff, as can be seen in the following comment from a primary link teacher:

> *I think the quality of the adult input is essential… the staff are friendly and it's informal, but there is a work ethic, it's happy chatty study time, but the children know the boundaries.*

The Centre staff were able to build a good rapport with the pupils and create an atmosphere that was more relaxed than school. Some link teachers mentioned the fact that pupils and PfS staff were on first name terms: 'The Centre Manager is known by her first name and that relaxed atmosphere helps children to see it as a special relationship'. Even the simple fact that the Centre teacher was not their ordinary school teacher was felt to be important.

Some Centre Managers highlighted the delivery of the sessions as being a critical success factor. They aimed to be dynamic, try out new ideas and encourage a friendly exchange with the pupils. Monitoring the impact of each session was particularly important, given the very limited time available to each pupil group. As one Centre Manager said: 'the staff are always ready to move on and adapt what they are doing' another explained: 'staff are constantly analysing their practice – what went well, what we need to do next time'.

The high ratio of staff to pupils was also felt to be important because it meant that pupils had access to support as soon as they required it. As one secondary link teacher said: '[the pupils] have a lot more opportunity to succeed because they are not getting the frustration factor of waiting for the teacher to get round'.

The key contribution of Centre staff

Blackburn Rovers Study Centre places a strong emphasis on the quality of staff. As Deputy Centre Manager Duncan Kinloch explained:

> *I would say that our delivery is our strength. It's all well and good having strategies, but you need someone who can work with the young people. We make it as informal as possible, so it's not like a classroom. We have a lot of healthy banter [with the pupils]. We make learning fun… When we appointed staff we didn't necessarily look at how many years of experience they had, it was more whether they were a good classroom practitioner. I think that if you have a good teacher who relates to the young people, that really is key.*

When asked to identify the key features of the Centre that contributed to its lasting impact, link teacher Yvonne Hindle of St Wilfrid's CE High School and Technology College also pinpointed the contribution of the Centre's staff: 'It's a fantastic learning environment – the staff are vibrant and enthusiastic. It's very well run and the staff have a good rapport with students.' Joyce Boyes from Roe Lee Primary School made a similar point:

> *I don't know how other Centres choose their staff, but at [Blackburn Rovers Study Centre] they are of the highest quality and their enthusiasm really shows through. I haven't met a child who hasn't thought it was one of the best experiences they've ever had.*

As well as teaching staff, PfS Centres make extensive use of mentors. Although the use of mentors was common practice across the Centres, the type and background of the mentors varied. Some Centres recruited college and university students to work as volunteer mentors or used the Millennium Volunteers scheme, whereas others made use of PfS graduates as peer mentors.

The college and university student mentors were from a range of backgrounds and studying for a range of courses. They could be particularly useful in offering specialist knowledge and also had a potential to provide role models of academic success. Peer mentors were felt to be good at relating to the PfS pupils because they had been through the same experience only a year or two before. Several

Centre Mangers provided examples of how the mentors themselves had benefited from their experience of PfS, including those who had decided to take up a career in teaching.

PfS Centres recognised the need to provide training and support for mentors. Some Centres had well developed strategies in place, as in the following example.

Providing training and support for PfS mentors

Steve Smith, the Centre Manager for Leeds United Learning Centre, explained about the system of support the Centre had set up for their mentors, many of whom were PfS graduates in Key Stage 4.

Four full-time members of staff were involved in recruiting, interviewing and training the volunteer mentors. The mentors had tutorials with the Centre staff – they were briefed on the aims and objectives of PfS and on the expected outcomes and they were regularly supported in improving their involvement with the PfS pupils. They also had the opportunity to follow the Open College Network (OCN) accreditation for mentoring at level 2.

The Centre Manager explained that the aim was to ensure that: 'no mentor just comes in and stumbles across pupils and work and makes it up as they go along'. As well as helping the mentors themselves, he felt that investment in mentoring support had impacted on pupils attending the Centre as pupils' raw scores in literacy and numeracy had improved following the introduction of the mentoring system.

5.3.2 Feedback and constant communication

Constant communication between Centre staff and school staff during the course was viewed as a necessity by Centre Managers and school staff alike. As one secondary link teacher said: 'The identified person at school must be contactable and able to act on things immediately… so it's just a continual feeding of information both ways.'

Centres needed to be good at communicating with schools, but equally, schools needed to be good at communicating with the Centres. Usually there was weekly contact between the Centre and the school, either through informal chats or through weekly feedback reports.

Weekly school feedback

Interviewees from Fulham FC Skills and Learning Centre provided specific examples of the strategies used for feeding back to schools regularly during the period that the pupils were attending the Centre. The Centre staff provided weekly reports to schools via fax. As Sarah Martin, a year 6 teacher in All Saints Primary School summarised: 'At the end of the session I would get a fax on what the topic was and who did well'.

Centre staff prepared information for the link teachers on:

- the topic or the focus of the session
- what progress or particular achievements individual pupils had made
- any behavioural issues and absences.

This instant communication enabled teachers to act on the information immediately by following up and addressing any issues with individual pupils the following day. As Breda Carr, a year 6 teacher from St Augustine's Primary School in Fulham said: 'it lets the pupils know there is a link'.

Sometimes the information from the weekly feedback reports was used in school assemblies to praise pupils for the progress they were making. On other occasions pupils would be asked to feed back to their class on what they had been doing, following teachers' praise. The Centre Manager felt this to be important for the longer term success of the pupils as it was reinforcing their achievements within the school environment.

School staff accompanying pupils to the Centre

Centre Managers encouraged school staff to visit the Centre while their pupils were attending the course, as they felt it was a means of ensuring good communication between Centre and schools. They felt that pupils benefited from their teachers' presence and that teachers benefited from seeing the pupils respond in a non-school environment.

Conversely, a few link teachers argued that it was better for the pupils to attend the PfS Centre *without* a teacher from school, as one secondary link teacher explained:

> *We don't attend the sessions deliberately – I think it's good for them to get away from me and from associations with the school… and there's always an open door for me to pop over anyway.*

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Encouraging teachers to attend with their pupils

Two of the case study Centres, Millwall Study Support Centre and Kingston Communications Stadium Learning Zone (at Hull City AFC & Hull FC), asked schools to provide a member of staff (usually the link teacher) to accompany the children and attend the sessions. In fact, these Centres had made staff attendance one of the conditions for schools to access PfS. As Jacque Russell, Centre Manager for Millwall Study Support Centre said: 'the fact that we have an escort in the room every week is very important'.

For the Centre staff, it provided a means for finding out about any issues from during the school day that may affect pupils' behaviour or concentration during the PfS session. For the school staff, it provided the opportunity for them to see, first hand, the work and progress of individual pupils. Martin Kemp, the numeracy coordinator from Winifred Holtby Technology College in Hull said: 'it works well because I can help [the pupils] out with certain parts of it'.

Overall, although there were different approaches to maintaining good communication and the constant feeding of information between the Centres and the school, there was agreement that this was a critical factor to the overall success of sustaining a longer term impact.

5.3.3 Positive ethos and personalised learning

Centre staff ensured that all pupils felt welcome at the Centre and valued as individuals. Interviewees made a number of specific comments about the influence of the Centres' positive ethos on pupils. The main points raised were in relation to:

- valuing the individual pupils and making them feel special
- individual target setting, reviewing pupils' progress and the use of rewards
- giving pupils a voice and ownership in their work.

The positive attitudes of all staff members was essential to creating the positive ethos, right from the time pupils first boarded the minibus to travel to the Centre. This was considered especially important for children from disadvantaged backgrounds who needed an extra boost to their self esteem, as one secondary link teacher said: 'I feel their relationship with the students who attend is very personalised. They're really friendly towards them and praise them.' The children appreciated being selected to attend the programme and enjoyed travelling off the

school site and learning in the exciting environment of the PfS Centres. It helped children to feel special and gave them a sense of belonging. The effect of the positive ethos was described by one primary link teacher in the following terms:

> *I haven't met a child who hasn't thought it was one of the best experiences that they've ever had. They enjoyed being treated as an individual and being given time to work things out for themselves. That comes as a bit of a shock after being treated as a school child and being pigeon-holed into doing things at specific times. They can think for themselves.*

Individual target setting and reviewing pupils' progress towards targets was a common part of the PfS sessions. Pupils were encouraged to set their own targets at the beginning of the course and to monitor their own achievements by providing evidence of progress (e.g. a child could cite putting their hand up more in class as evidence that they had improved their self-confidence). Where pupils were in charge of their targets and involved in reviewing them, this helped pupils to recognise their progress and gave them a sense of achievement. As illustrated in the following comments from two Centre Managers and a primary link teacher:

> *They are really encouraged to think about what it is they have learnt – there is a large reflective process going on.*

> *They're motivated because they want to be able to tick off in their Records of Achievement the activities they do.*

> *The children get a tremendous boost in terms of self-esteem if they can see their progress.*

Another motivational factor that was common across the Centres, was the use of incentives and rewards. Pupils were made aware of the progress they needed to make to achieve a reward. For example, one Centre Manager explained that the Centre's programme focused on recognising positive aspects of pupils' behaviour and outcomes, rather than dwelling on the negatives. Small prizes were awarded every session for the three highest achieving pupils of the week and there were also rewards for all pupils when they had completed the ten-week programme. (See section 5.4.1 for further information on celebratory events).

Giving pupils a voice and ownership in their work helped to engage them as individual learners. Some activities were specifically designed to encourage pupils to organise aspects of a task for themselves, for example groups of pupils may be encouraged to work together to discuss and find an agreed solution. This sense of ownership, with pupils taking responsibility for their learning, was felt to support the pupils' achievements, as one secondary link teacher acknowledged:

Pupils had to write a newspaper article – the work was really hard, but in the end everyone produced something that was really good. I think they might not have done that in school; they might have said 'that's too hard', but because of where it was they did actually persevere with it and it was really impressive what they produced in the end.

One Centre Manager explained that as part of each session the pupils are asked to complete a comment sheet on what they enjoyed and anything that they did not enjoy. This was another means for ensuring pupils had a voice. Staff were able to use pupils' comments as a basis for discussion with individuals as well as drawing together the comments to evaluate each session.

Personalised learning
The positive ethos that was promoted through pupil voice and the use of individualised target setting supported personalised learning. Most Centres used ICT programmes that enabled pupils to respond at different levels of difficulty, according to their level of attainment in a given subject. Centres also commonly set group tasks, which could be differentiated according to each pupil's level. However, some Centres had developed this approach still further, to enable pupils to undertake different tasks according to their individual needs and learning preferences. This was particularly challenging, given the short period of time in which the Centres had to work with each new intake of pupils.

The following example shows how one Centre had taken the focus on personalised learning programmes to the next level.

The use of personalised learning programmes

In East London Gymnastics (ELG) Learning Zone the personalised learning programmes were set up after the first week's session, following an initial assessment. Pupils are asked to evaluate their own abilities in the areas of literacy, numeracy, ICT and key skills and then the Centre staff work with pupils to set individual targets based on those evaluations.

This process was made possible by the high ratio of staff to pupils. Usually there were 15 pupils and three Centre assistants or mentors, as well as the Centre teacher. The Centre Manager carefully allocated each mentor to a group of five pupils, based on the individual needs of pupils and the strengths of individual mentors. For example, if a particular pupil was suffering from low self esteem, they were allocated to the group with a more experienced learning mentor who was able to give the pupil constant encouragement.

At the end of the session the staff record pupils' individual targets on their Records of Achievement. So although the Centre staff are setting the activities, the pupils are choosing their own learning targets. This gave pupils a sense of ownership over what they were doing. As Jamie McGachy, the ex-Centre Manager[10] explained: 'What it means is each of the 15 learners in the classroom could be working on a completely different activity.' Dave Pasola, the maths coordinator and year 6 teacher from Rosetta Primary School explained that this approach was carried on at school:

> *The ELG Learning Zone activities are pitched at the right level and the personalised learning programmes really do act to inspire and motivate the children and that's sustained throughout school.*

5.3.4 Contextualised learning

Many of the interviewees stressed the benefits of the PfS activities being grounded in real life contexts. This was considered especially helpful for pupils with a history of underachievement, who had difficulty grasping abstract concepts. Although the sessions were typically based on aspects of the National Curriculum, these topics were presented practically, in contrast to their experience of class lessons.

For example, many of the maths activities were related to aspects of the sports venue – mental calculations based on the number of seats in the stadium, the cost of club merchandise in the stadium shop, or measurements using the perimeter of

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[10] Now Centre Manager at West Ham United Learning Zone

the pitch. Similarly, activities to support English were equally contextualised – pupils were asked to write letters to the stadium manager, produce articles for match day programmes or to interview club players.

Contextualised learning was felt by interviewees to be beneficial because it gave a purpose and real meaning to the National Curriculum work and allowed pupils to experience learning as fun. Some interviewees commented that the pupils did not always realise that they were working on aspects of the National Curriculum, as one said: 'it's learning by stealth'.

In some cases, the PfS activities were set in the context of one larger challenge. Pupils could be working on aspects of the National Curriculum across maths, English and ICT, but all within one piece of work. For example, pupils might be asked to organise a virtual tour for the team players. This would involve researching and reading about venues, designing the kit and calculating the costs. Such an approach provided a contrast to school work in secondary schools, where there are few opportunities for multi-subject projects.

PfS activities to contextualise learning

The link teachers from Hull provided examples of the types of activities for both primary aged- and secondary-aged pupils during the PfS programme at Kingston Communications Stadium Learning Zone (at Hull City AFC & Hull FC). As both the link teachers interviewed had accompanied pupils to the sessions, they had first-hand experience of the activities.

One of the main maths-based activities is based around the club shop. There are a number of variations around the theme, but essentially the pupils are given an imaginary amount of money and have to select certain items while mentally calculating the total cost. For example, pupils were asked to pretend they were a player for the club and that they needed to buy the essentials for a game, including items of kit (e.g. socks, shirt and bag) and a something to eat (e.g. a high protein energy bar). The activity was run in the club shop so the pupils could look around at the prices of the items for sale and note on their clipboard how much each item cost. Pupils were required to estimate the total cost as they selected the items. The rule was that total cost had to be as close to, but not more than £150. The pupils would then check their addition once back at the study support centre.

Martin Kemp, the numeracy coordinator from Winifred Holtby Technology College commented on the advantages of this exercise: 'Getting prices out of a textbook isn't the same as going around the Hull City shop'. And Robin Petch, the headteacher of Paisley Primary School agreed, saying: 'It gives it a context, they can see the point of doing it and they actually enjoy it'.

There was also evidence that pupils were able to apply this experience to their work in school, as Robin explained:

> *I think it has a bit of a knock-on effect in that when they are looking at problems they've actually seen real problems in real life, so the written problems they get in their tests make a bit more sense to them, because they've worked through real examples of the same kind of thing.*

5.4 Good practice after pupils have attended the PfS programme

This section presents information from the case study interviewees about actions taken at the end of PfS programmes that contributed to a longer term impact on pupils.

5.4.1 Celebratory events

All nine Centres had celebratory events at the end of their PfS programmes. These provided an opportunity for young people to receive recognition for their achievements in the presence of teachers, parents and Centre staff. Several also involved representatives from the host organisation, such as players and club staff, as well as sponsors and local press. The events were usually held at the host venue (e.g. the football club), which was felt to be a particular attraction for parents to attend. Celebration events usually included the following elements: printed displays of pupils' work; screening of pupils' PowerPoint or video presentations; an awards ceremony to present special prizes for individual achievement and certificates for all pupils.

One Centre had developed their celebration into a major social event, as a primary teacher explained:

> *There is a presentation evening in the banqueting room. Music plays and all the staff [dress up for the occasion]. It's a big event: the director of education turns up…They do a drum roll as children shake hands with the player and get their certificates. They also manage to involve the local community.*

This Centre offered an annual prize for the 'greatest improver of all'. The prize was a meal out for the pupil and his/her family. They were picked up by a limousine and taken for a helicopter ride. The primary link teacher felt this was a great incentive for the pupils.

Interviewees from all Centres felt that celebration events were enjoyable and provided validation of each pupil's effort and achievement. Centre staff used the final event as an incentive throughout the programme, by pointing out that pupils' efforts would be rewarded at the prize-giving. As one Centre manager explained: 'We encourage them to try everything, for example if they do reading aloud every session then they have a better chance of a star prize at the celebration night.'

Interviewees spoke about the reinforcement provided by the celebration, which was considered to be particularly important for young people who are not normally singled out for public recognition of their achievements. One primary link teacher said: 'Their faces light up at the end when they get a present from United.' Another primary teacher spoke about the achievement of a particular pupil: 'This boy who wouldn't talk [in public] is actually going to be reading out the names of the children as they collect their certificates. I couldn't conceive of him ever doing that – it's a major move forward for him.'

5.4.2 Post-course feedback for schools and parents

Schools valued information provided by Centres, in particular:

- high quality, colourful examples of printed work that schools could use for displays
- photographs that could be used as a talking point, for displays or in newsletters
- individual feedback on pupils' targets and progress, which could be used to highlight areas of achievement for school staff to build on
- individual portfolios of pupils' work at the Centre, both printed and/or on CD RoM/DVD.

Several schools mentioned that they used the feedback they received to recognise and reinforce pupils' achievements, through school assemblies, displays and newsletters. A secondary teacher said: 'We work quite hard for the impact not to be left behind. Once they are back in school, we get the students to write an article for our newsletter.'

One primary teacher explained how school staff used the information provided by the Centre for individual feedback: 'When the programme is finished each child gets an achievement award. We tell them how they have done, what they have learnt and what they have achieved.' A secondary link teacher emphasised the importance of informing form tutors about the pupils' achievements at PfS: 'After the celebration evening I pick up their certificates, bring them back to school and put them in their form registers so then they get the recognition in form class as well'.

As well as recognising pupils' achievements, some link teachers ensured that class teachers were aware of pupils' progress in order to raise teachers' expectations of what PfS graduates were capable of achieving. One secondary link teacher explained that when he received feedback reports on individual pupils he ensured they were fed back to the pupils' key teachers. He said:

> *Their key teachers know they've been attending and would be alert to the fact that they would have gone up and maybe raise their expectations of that child, and be able to refer to it in their teaching.*

This was a particularly important action for a secondary school teacher to take, given that pupils have a number of different key teachers in secondary schools and some may not have had any involvement in, or knowledge of, PfS.

Some Centres provided feedback reports or information directly to pupils' parents, whereas other Centres provided information for schools to send to

parents. One Centre Manager stressed the importance of keeping parents informed. He felt that parents should be able to see the progress that their child had made. At the end of the course, this Centre provided parents with a folder including pre- and post-course assessments, question papers and examples of written work. In another case, the Centre produced individual reports for parents, but addressed these from the schools as he felt it important that the schools felt some ownership for the pupils' progress.

5.4.3 Pupils transferring learning from the Centre to school

Centre staff hoped that schools would capitalise on the achievements of pupils once they had completed the PfS programme. School staff gave several examples of pupils' improved self-esteem, confidence, experience and skills which they attributed to PfS. Several offered anecdotes of pupils who were quiet and lacking in confidence becoming much more willing to contribute in class after attending PfS, as a primary teacher said: 'One year 5 girl was so shy… She has turned into a confident, articulate, approachable person: a real dramatic change in her.'

School staff recognised that PfS had helped pupils to have a more positive attitude towards themselves as learners, with a greater belief in their own ability to achieve. Some schools made a particular effort to capitalise on pupils' experiences and skills. For example, one primary teacher explained how pupils were invited to talk about interviewing football players:

> *Over the last three years they have come back and spoken in class for about 30 minutes about the players they have met. They give a speech, show pictures and the other children ask questions. They become the centre of attention; it's a confidence-booster.*

School staff recognised that PfS graduates had developed their ICT skills, which gave them an area of expertise to draw on back in school. One primary teacher said: 'I teach year 6 and I've got last year's PfS kids in my maths sets. I can see when we're using ICT that these children are more switched on because they've used the programmes and they're producing quality work'.

Another primary school link teacher gave an example of PfS graduates contributing in class:

> *In ICT, those children who previously may have been less confident are able to give suggestions for shortcuts, or finding and interpreting information. It is fantastic that children who were not the most vocal ones are able to put up their hand and say: 'Miss, if you right click on that, there's a quicker way'. It is quite impressive; it puts the spotlight on them instead of somebody who has all this equipment at home.*

Centre staff mentioned some of the ways in which schools could build on the skills pupils had learned during the course (and one Centre Manager mentioned that the Centre provided schools with a set of 'exit strategies' to encourage them to build on pupils' progress during PfS). Examples included PfS graduates working with peers or younger pupils. This provided an opportunity for pupils to take a role of responsibility, for example in a 'buddy' scheme or by helping to run a computer club.

One of the primary school interviewees mentioned a specific example of the school drawing on pupils' expertise. In this case, PfS attendees were teaching the acting headteacher how to use PowerPoint to make presentations.

A secondary teacher spoke about the school's role in building on pupils' progress:

> *We are very conscious of the fact that the impact shouldn't just be for the six or eight weeks and we make a point of ensuring that it's not. Once a student gets an opportunity like this it's not the end, it's just the beginning really. Teachers realise that [the pupils] are responsible because they've been really well behaved or their work was really good. So they're recognised in many different ways and that builds the further opportunities for them once they're back here.*

5.4.4 Ongoing curriculum influence in school

Interviewees gave several examples where PfS had had an influence on schools' curriculum and pedagogy. Most commonly, this was in relation to the ICT programmes used in the Centres. For example, several Centre Managers and school staff mentioned that schools had purchased software for numeracy and literacy, having been convinced of its value by PfS.

Teachers' visits to Centres provided an opportunity for PfS to influence their attitudes and pedagogy. As one Centre Manager explained: 'Teachers say they pick up skills to add to their own teaching and it gives them a breadth about learning that isn't just about learning at school – it's sharing of good practice.'

PfS supporting teachers' pedagogy

At the Millwall Study Support Centre, it was common practice for teachers to attend PfS sessions with the pupils. Both the Millwall link teachers who were interviewed were able to draw on the benefits of this for their teaching practices in school.

Simon Jarvis, assistant headteacher of Rangefield Primary School explained how he had been influenced by his visits to the Centre:

> *Two years ago, the Centre used interactive whiteboards, which we didn't have [in school]. It persuaded me that they are a "must have". And seeing someone else teach is always beneficial. One of my colleagues (who visited the Centre at a later date) said: 'Did you see the way they did that? I replied: 'Funny you should say that, I've copied it!'. I've modelled it on what they do at the Centre; I use it with my class and I've passed it onto other teachers so good practice is cascading into other year groups as well.*

The director of inclusion, Jas Basi from Bonus Pastor Catholic College was keen to share his observations of Millwall Study Support Centre with colleagues:

> *I've been attending each session for the last three years and I've got to the point now where I'm inviting other members of staff to attend as well. I've had both vice principals and the principal come. I would like staff to see what they're doing, not just from the display I put up in school, but actually see the children working. I think being outside school with a different atmosphere, the children do behave differently. They are more relaxed and it would be good for other staff to see them behaving so well. Otherwise staff can get stuck in their own rut. This will also help us to develop joint programmes.*

5.4.5 Centres continuing to support schools after the programme

Although for most schools, the relationship with the PfS Centre was characterised by periodic participation in PfS courses, one Centre mentioned two other PfS-related initiatives designed to continue the Centre's partnership with pupils and schools: *Carry on PfS* and *Golden Graduates*.

Centres continuing to support pupils and schools

Staff from Watford Learning Centre described the way *Carry on PfS* and *Golden Graduates* operated.

Carry on PfS is aimed at pupils in Key Stage 2. This takes place in the term following pupils' attendance at the Centre. Deputy Centre Manager Angela Howl visits the pupils in their school and team teaches with their class teacher. This takes place after school for a period of ten weeks.

Angela explained how the team teaching between the Centre staff and school teachers helped improve liaison and continuity with the schools: 'They have a planned, customised programme that is tailor made. The link teachers are left with a way of embedding study support programmes in their schools'. Margie Knight, of Jupiter Drive School, confirmed this, saying:

> *The Centre teachers work with the class teacher in our ICT suite, making sure there is an impact… One of our teaching assistants works with them, putting together a programme of work to go right through next term.*

Golden Graduates is a programme for older pupils. A group of pupils from three secondary schools who have graduated from PfS the previous term are invited back to the Centre one evening per week for ten weeks. The students make a film about Watford Learning Centre PfS which is shown to the new groups of pupils before they attend. At the end of the course, the staff ask if the students would like to volunteer to become mentors at the Centre and the students vote for the four people that they think would best suit the role.

Deputy headteacher, Geoff Carr, from Francis Combe School and Community College commented on the impact of the *Golden Graduates* programme:

> *Because they have done a presentation in front of a little class and they've interviewed a football player, they are really pleased with themselves. They show the film to their parents. They are in command of it all much more than at school. They build up confidence so that when they come back to school they are more willing to engage in what we're doing. They aren't back at square one; they've moved on a square or two.*

5.5 Partnership working

One of the themes to emerge from the interviews with Centre Managers in particular was the importance of partnership working. Relationships with schools

were mentioned frequently in this context, but also support from sports clubs, local authorities and the PfS programme itself.

5.5.1 Partnerships with schools

There were many comments from school link teachers about the shared ethos and the mutual understanding between Centres and schools. School staff clearly appreciated the respect and understanding that Centre staff showed towards schools.

When asked why his school had become involved with PfS, a secondary school link teacher gave the following explanation:

> *Because there was such a good match between the aims and objectives of PfS and the kinds of children we have… It was almost as if PfS had been designed for schools such as ours.*

Where the school and the Centre shared a vision of valuing study support generally and recognising the value of learning outside the classroom, this helped to build positive relationships, as one secondary link teacher explained: 'they're reinforcing what we do and we're reinforcing what they do'.

Centre Managers and link teachers also needed a certain amount of respect of each others' roles and workload, in order to support partnership working. For example, link teachers needed to understand that Centre staff will not be able to respond to queries early in the morning as the Centre staff start work later than staff in schools. Similarly, Centre staff needed to show awareness of the burdens upon school staff, especially by keeping paperwork to a minimum.

One point that emerged from the interviews with Centre Managers was that primary schools were easier to liaise with than secondary schools. The main reasons related to the size and organisation of secondary schools.

In some cases there was less continuity in link teachers within secondary schools. For example, where the link teacher was the head of year 8 and then that head of year remained with the year cohort as they transferred into year 9, it was necessary to build a new relationship with the new head of year 8. However, there were also some cases where secondary school link teachers had remained constant, particularly when the role was taken on by curriculum managers or the subject year heads (e.g. head of literacy or numeracy). Centre Managers commented that such continuity supported partnership working.

One Centre Manager identified a specific difference when working with primary and secondary schools: 'One thing I have discovered is that secondary schools

need a lot of extra lead in time. You need to contact them the term before with a reminder for them to book their places.'

Some Centres had found it more of a challenge to attract secondary schools to the programme. This was particularly the case for one Centre that did not have the 'glamour' of being associated with a football club.

Although Centres found it easier to build good working relationships with primary schools, some excellent partnerships between secondary schools and Centres had been formed through the commitment of both Centre staff and dedicated school link teachers.

5.5.2 Club support

Although not asked about this directly, three of the case study Centre Managers specifically mentioned the relationship and support they received from their host club. Having a supportive partnership with the club was felt to be crucial to the success of PfS. Centre Managers commented that these supportive relationships had developed over time, following a commitment from Centre staff to developing good working relationships. There were a number of specific ways in which the clubs were felt to support the PfS programme:

- Clubs donated merchandise for the Centres or pupils (e.g. sports kits, player photos and diary planners).
- Clubs gave open access to the stadiums and facilities.
- Clubs allowed staff to work directly with PfS pupils on learning activities (e.g. staff in the Club shop or those in charge of security). As one Centre Manager said: 'If the children are learning about how security works on a match day then staff from the stadium will contribute to the programme, even though it's not their day job.'
- Clubs allowed Centres access to the professional players, for example for interviews with pupils and at celebration events.
- Clubs included PfS Centre staff in training events (e.g. fire safety, first aid and child protection training).

The importance of a good relationship with the club

Centre staff and teachers interviewed about the Pompey Study Centre (at Portsmouth FC) paid tribute to the contribution of Portsmouth City FC. The Centre is located in a secondary school, some distance from the ground, but there are plans to relocate to the football stadium as soon as redevelopment work has taken place.

Centre Manager Clare Martin said:

> *The football club gives us open access. Each week I submit a tour sheet letting the Club know when and where we would like to visit and they always endeavour to say yes. All the [club] staff are very committed. If the shop staff know we're coming they go out the back and find some items of stock to give to the pupils. When the children walk into the changing rooms, a member of staff shouts at them as though they are players – they love it! The children do interviews with youth team players and produce a CV for them. On celebration night they donate kits, player photos… A player always attends. We get excellent access to players. It's all down to hard work, commitment and the personalities of certain key people at the Club. They know what we do is of high quality and it raises the esteem of the Club.*

Miriam Rooks, SEN Coordinator at Springfield Secondary School said: 'They are wonderful, it's a brilliant facility. The kids love the tours around [the stadium]'. Howard Payne, headteacher of Medina Primary School, explained how the Club's involvement contributed to pupils' motivation and enjoyment:

> *The maths is done through football – they go to the shop and work out the cost of shirts… They interview players, do a player profile and present it using the IT skills they've been taught... It engages them totally and the attendance is excellent.*

5.5.3 Local authority support

Three Centres specifically mentioned the benefits of working closely with their local authority (although, again, this was not asked directly). As one Centre Manager said: 'One of the benefits is the support we have from the local authority… just knowing they're supporting you'. The main ways in which local authorities supported Centres were:

- making a funding commitment
- literacy and numeracy consultants providing advice and input into the content of the PfS programme

- enthusiastic and supportive LA staff (including line managers)
- facilitating networks (e.g. with the summer school coordinator and the family learning coordinator) which led to cross-promotion of provision
- promoting PfS in local authority publications.

In relation to the good working relationship with local authority colleagues, one Centre Manager observed:

> *I think as long as you can keep your creativity and some freedom, it is good to use the strength of being part of a supportive local authority team. It can only serve to benefit what we're trying to do.*

Local authority consultants' input into the PfS programme

Staff at the Manchester United Study Support Centre work closely with the Trafford School Improvement Service and particularly the literacy and numeracy consultants at Key Stages 2 and 3, to ensure the PfS programme focuses on areas that children find difficult.

Neil Bradburn, the Centre Manager, invites the consultants to visit the Centre to discuss the programme and scrutinise the pupils' work. Neil works as part of the School Improvement Service and regularly attends advisory meetings in order to keep up to date on particular areas of study that should be a focus of the PfS programme.

Neil commented that:

> *Close liaison with the school improvement service is key, so that we're not just working out on a limb. Sometimes you can feel that way, just working in a stadium along with the youngsters, doing something that's not connected to the wider education agenda.*

Working within the local authority facilitates liaison with other agencies and ensures that strategies to support schools and pupils are coordinated.

5.5.4 Support provided by the PfS programme

Centre Managers benefited from the support they received from Critical Friends and the central team at the DfES. This was important in helping Centre Managers to share information and improve their provision. One Centre Manager described how she had benefited from the support provided by the DfES:

> *Regional meetings, email networks, professional development meetings and the annual conference are all important. Critical Friends are a*

> *gateway: you can ask for help whenever you need it, they are on call at any time. The Centre Manager's role is very political and you need back up from the Critical Friend to help you with that.*

She went on to explain that the national team encouraged an ethos of trust in the decisions taken by Centre staff: 'We have the freedom to analyse what makes good teaching and learning; we can take risks without fearing punitive measures.'

Centre Managers also appreciated the sharing culture across PfS Centres. They spoke of the openness and willingness of Centres to share ideas, which had promoted the adoption of best practice and prevented colleagues having to 'reinvent the wheel'.

5.6 Reflections on longer term impact from attending PfS

When asked what they considered to be the longer term impact of PfS on pupils, most interviewees mentioned the marked improvement in young people's self-esteem and confidence. One secondary teacher described the effect of PfS on pupils as follows:

> *I see a difference in their attitude – they stop and talk to me. I think part of what happens with PfS is that they value themselves more; they feel a bit special, a bit more self-belief, confidence and pride in what they do.*

Other commonly-reported impacts of PfS were on pupils' motivation, persistence and independence in learning. One primary teacher commented: 'They are able to tackle things themselves' and another mentioned 'a definite impact on their interest in learning'. A secondary teacher highlighted the importance of the immediate support available to pupils at the Centre:

> *It makes them more responsible and self-aware. They believe in themselves. They don't have to wait to get help at the Centre so they are never up against a brick wall for too long.*

A few interviewees spoke about other areas of impact of PfS on pupils, such as improved socialisation skills (including an ability to work cooperatively with other learners) and an ability to understand the context of their class work. As one secondary link teacher said:

> *I get positive feedback from other staff about the concentration of pupils, maturity, their socialisation skills… The children say 'Miss, it's helped me' or 'I'm not special needs anymore'.*

Some interviewees (especially primary teachers whose pupils attended in year 6) felt unable to comment about the impact of PfS on longer term achievement because the children had moved on to another school. Others were reluctant to make sweeping claims. As one primary teacher explained:

> *Their attitude to work has changed and their ICT work improves. You don't see a massive improvement, it's about a keenness in attitude and a desire to finish things off which will slowly infiltrate into their work. It's not a magic wand but it's part and parcel of what we're doing.*

A few interviewees provided evidence that PfS had improved individuals' attainment at school. One primary teacher explained that his school had selected a group of year 5 pupils with low attainment: 'We chose children whose TA levels were mainly high 2As and low 3Cs. Each child is assessed each term. Every single child from the PfS Centre had made at least one sub-level of progress, if not two.' He went on to comment that none of the children who did not attend PfS made this amount of progress.

A secondary teacher described the impact of PfS on two individuals in particular:

> *There were two boys from difficult home backgrounds who came into school in year 7 and I didn't think they would get through to year 9. But I think they will finish year 11 and go out with some GCSEs. Their parents had never been to any event at the same time because of arguments between them but they both came to [the PfS celebration event]. The boys still talk about the day when their parents came to see them at the Centre.*

Another secondary teacher gave an account of the multiple influences that PfS had had on his low attaining students:

> *Firstly, they are very proud that they've been chosen. It's marked them out as able to go on and make progress, so it helps their confidence. Secondly, it gives them greater assertiveness and builds up their self-esteem. Thirdly, it gives them real tools for tackling academic subjects so they are better at their English, maths and ICT than when they went into it. And there's an improvement in attendance and punctuality with the students – they are less likely to skip lessons. Obviously it's hard to be very definite about it, but those students who attended in year 7 haven't failed by year 11. We have tracked them and they certainly haven't failed the way that some of them might have done. We think there is a sustained improvement.*

6 Discussion and conclusions

This report presents data from quantitative and qualitative methods designed to examine the longer term progress of pupils who had attended PfS Centres, once they were back in school.

Previous national evaluations of the immediate benefits of PfS (see Sharp *et al.*, 1999, 2001, 2002a, 2003) over four consecutive years showed clear evidence of statistically significant improvements in pupils' performance and attitudes between the start to end of their attendance at PfS Centres, especially in numeracy and ICT. Given the positive effects of PfS measured over the short term, the next logical step is to find out whether the 'PfS effect' is still evident once pupils have left the Centres.

6.1 Why did this study find limited evidence of longer term effects?

In order to examine the longer term gains of attending PfS Centres, the NFER team compared the Key Stage performance of PfS pupils with similar groups of non-PfS pupils. Overall, the findings revealed a mixed picture: some analyses showed no difference, some showed PfS pupils making less progress, and others showed PfS pupils making greater progress than the comparison group. The most promising indication of longer term progress was found at Key Stage 4.

It might have been reasonable to expect that the progress in attainment demonstrated while pupils attended the Centres would have led to an improved performance in national assessments, compared with similar pupils who did not attend. However, this does not seem to have been the case for all pupils. There are a number of possible explanations for the results obtained in this study.

- The PfS effect may be short lived – pupils may benefit while they attend, but the impact is not consistently sustained in the longer term.

- There may be key differences between the PfS pupils and the comparison group pupils which could not be taken into account in the model. For example, PfS pupils may be more likely to have a long-standing history of underachievement, low self esteem and other factors that are especially difficult to address through a relatively short educational programme. If this were the case, PfS pupils could be expected to make significantly less progress than pupils in the comparison group, so progress in line with or better than the comparison group would indicate a positive outcome.

- The PfS effect may be influenced by variations between Centres and schools (for example, differences in selection criteria, the effectiveness of schools in sustaining the positive impact of the initiative or the success of schools sending pupils to the Centres). This hypothesis is supported by evidence of

Centre-level differences in performance and by qualitative evidence concerning the key role of partner schools.

- PfS may be more effective in helping pupils with certain characteristics (such as low attaining pupils) than others (such as pupils whose prior performance is closer to the expectation for their age). This is supported by the consistent trend identified within the quantitative analyses.

- PfS could continue to have an impact on pupils in areas not measured by the statistical models (for example ICT skills, their attitudes to school or school attendance). The study did not collect data on outcome measures other than National Curriculum Assessments.

- PfS could have a greater impact at Key Stage 4 because PfS graduates are more adept at learning independently.

The findings related to the impact of PfS at Key Stage 4 are interesting, but should be treated with some caution, given the relatively small sample size at this Key Stage. The possibility of longer term effects becoming apparent several years after attendance at PfS would be worth considering in future evaluation studies.

6.2 Why did certain PfS pupils do better?

There was a consistently positive finding regarding the longer term performance of a certain group of pupils, namely those with relatively low prior attainment. This trend was also identified in the previous exploratory study of longer term effects of PfS (Sharp *et al.*, 2004). The results suggest that PfS is having a positive effect on the performance of lower attaining pupils who attend, but not for those whose prior performance is at or above the expected standard for their age.

The association between a PfS effect and prior attainment is interesting. It might have been expected that attending a study support Centre would benefit the attainment of all pupils equally, or that the impact would be greatest on those whom are performing at a slightly higher level because they could be expected to access the curriculum more easily.

From this and previous evaluation studies, it is evident that PfS 'recruitment' decisions are influenced by a range of considerations, such as:

- the desire to be inclusive (e.g. to extend the offer of places to pupils with higher prior attainment who are underachieving in relation to their potential)

- the decision to take factors other than prior attainment (such as pupil motivation) into account

- the advantages for Centre staff in having some more able pupils in the group

- the profile of attainment in partner schools (there may not always be sufficient numbers of low attaining pupils available to attend).

6.3 Are some PfS Centres more effective?

The present evaluation considered whether there was a variation between Centres in relation to longer term progress of pupils. It indicated that there was a considerable amount of consistency between Centres in their profile of results. However, it did suggest that a small number of Centres had achieved better results and this enabled the team to identify eight Centres that appeared to be more effective in producing longer term gains in pupils' Key Stage performance. The selected Centres had at least two cohorts of PfS pupils performing 'above average', based on statistically significant results.

6.4 What does this study add to our understanding of effective practice in promoting longer term gains?

One of the aims of the evaluation was to gather information on the strategies adopted by PfS Centres to encourage schools to capitalise on the learning gains achieved by pupils attending PfS. The nine Centres involved in this part of the study were identified as 'more effective' based on the results of the quantitative analysis and/or the judgement of the PfS Critical Friends.

The qualitative data drew attention to three main stages in involvement for each group of pupils: i.e. before, during and after their attendance at PfS. The systems and strategies adopted in the 'more effective' Centres showed evidence of being particularly well developed and attuned to the needs of pupils and schools.

The key importance of the partnership between Centres and schools was highlighted in the interviews with Centre and school staff. In order to develop a good working relationship, the Centres paid attention to communication strategies at every stage. Before pupils attended PfS, Centre staff ensured that schools were in a position to select pupils who were most likely to benefit from attending. They also ensured communication with parents and the pupils themselves, so pupils were well prepared for the experience.

Once pupils had begun to attend, Centre staff took care of the practical arrangements and focused on making a difference for each individual. Centres provided schools with timely and useful information about each pupil and encouraged teachers to visit the Centre to gain a better understanding of their ethos, provision and pedagogy.

At the end of the PfS 'course', Centres celebrated pupils' achievements and ensured that pupils, schools and parents were aware of their progress. They provided schools with samples of pupils' work, suitable for display in the school.

They also suggested strategies that schools could adopt to help pupils maintain their progress in the longer term.

Previous research as part of the Study Support National Evaluation and Development Programme (MacBeath *et al*., 2001) tracked 10,000 pupils in 53 inner city schools over three years and demonstrated that study support was effective in helping raise pupils' GCSE results. The qualitative part of this study provided a theoretical basis for understanding the way in which study support engages pupils in a positive learning cycle (Sharp *et al*., 2002b). This conceptual model has also been applied to the PfS programme (Sharp, 2004). It theorises that PfS helps underachieving pupils by providing an enjoyable learning experience, motivating pupils to learn, improving their self-confidence and boosting their achievement in basic skills, as shown in Figure 8.

Figure 8   How PfS influences pupil learning during the course
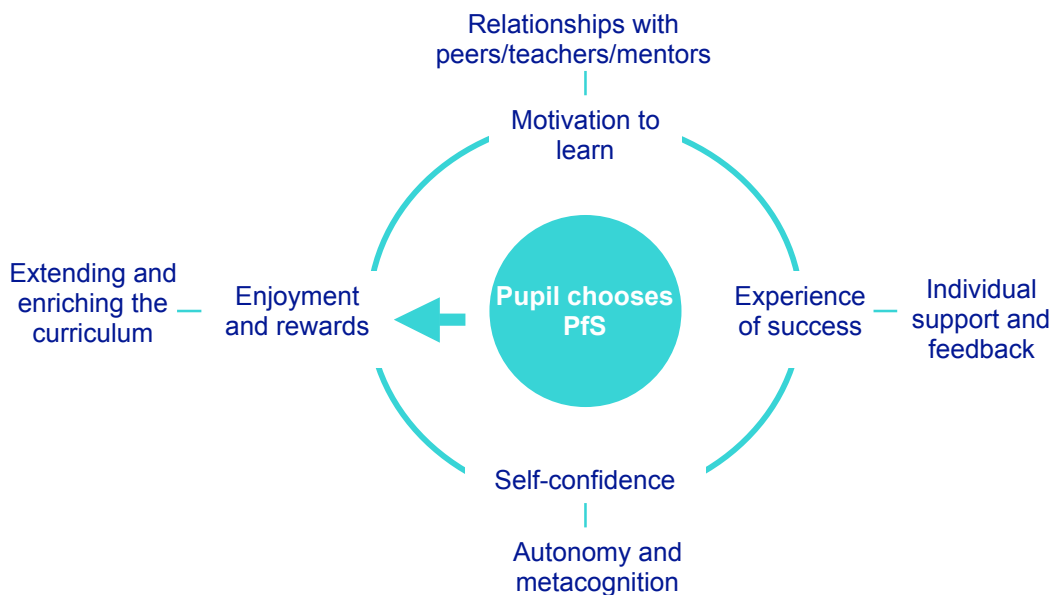
The model begins with a pupil's decision to attend *Playing for Success*. This represents a positive choice, for although certain pupils are nominated by their teachers, pupils decide whether or not they wish to take up the opportunity. Choice in this matter is important because it represents a positive decision to re-engage with learning.

Once at the Centre, pupils experience the immediate reward of visiting a prestigious venue with good computer facilities. The Centres encourage an atmosphere of learning in a fun and supportive environment. They also set practical tasks, so that learning objectives are easily understood and meaningful.

All of these factors add to pupils' initial enjoyment of the experience and makes them want to return.

From their first session at the Centres, young people are given help designed to meet their particular learning needs. Centres use a target-setting process, whereby pupils are encouraged to identify the aspects of learning they find most difficult. This sense of working on the learner's agenda and setting realistic targets reinforces pupils' motivation to learn. Pupils also appreciate the support they receive from staff and mentors who work at the Centres, finding them helpful, patient and encouraging.

Pupils are further motivated by the fact that they are beginning to experience success in their learning. This is underpinned by the skilful matching of tasks to pupils so that they are constantly making progress and receiving feedback on their improvement. Centre staff ensure that pupils understand the concept in question and pupils get the chance to practise and master the necessary skills. Staff encourage pupils to become more active, independent (autonomous) learners. As a result they learn new skills and begin to regain their confidence in their ability to succeed. They also learn 'metacognitive' strategies (mental approaches to help manage and integrate concepts) so that they are more able to monitor and fine tune their own learning.

Greater self confidence leads to greater enjoyment in learning. Pupils gain both extrinsic rewards (praise from staff, certificates and small prizes) and intrinsic rewards (such as the pleasure in succeeding at a difficult task). Once pupils' potential was 'unlocked' in this way, they become more effective learners, so making rapid progress in basic skills.

One of the pupils interviewed as part of an earlier evaluation study (Sharp *et al.*, 2002a) explained how the PfS Centre had helped with a specific aspect of learning:

> *We did this question in maths at school. We did all this homework on it and everything but I just didn't understand. Then I went to the Centre and asked the Centre Manager. She explained how to do it in our sense of understanding and saying it. Then I understood, and now I know how to do it and I don't get low marks on it in my mental tests.*

The attitudes and skills identified in Figure 8 are key to developing 'self-regulated learning', which can be defined as the extent to which individuals are metacognitively, motivationally and behaviourally active participants in their own learning (see Zimmerman, 1994). Self-regulation is considered to be a key process by which learners are able to achieve academic success (Boekaerts and Pintrich,

2000; Deci *et al.*, 1996; Zimmerman, 1994). Pupils attending PfS show the attributes of self-regulated learners, but, given the relatively brief time that pupils attend PfS, it would not be surprising to consider these attributes to be somewhat fragile and context-dependent.

The information provided by schools involved in the current study demonstrated the importance of their actions in building on the contribution of PfS once pupils had completed their course. School staff can help pupils to transfer their learning to the school context by recognising their achievements, providing similar conditions and learning resources, encouraging young people to use their skills and providing opportunities for independent (or self-regulated) learning.

The findings from this study led the team to reconsider the initial model of hypothesised relationships between PfS and longer term attainment (see Figure 1 in Section 1). A new conceptual model of relationships, based on the findings from both the qualitative and quantitative data, is shown in Figure 9.

Figure 9   Identified relationships for longer term impact of PfS
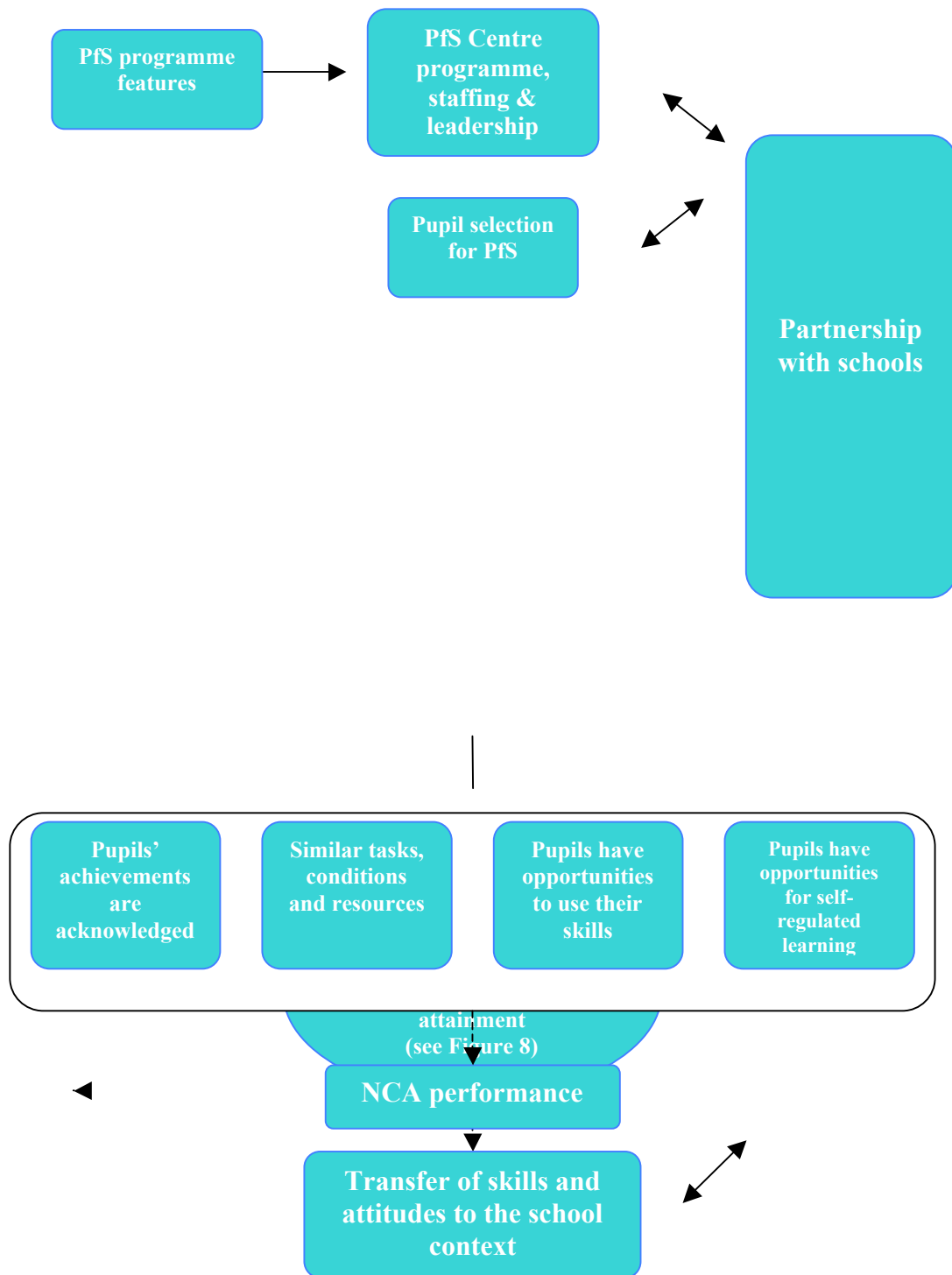
The model suggests that PfS programme features influence the programme offered at each Centre. Pupil selection takes place as a result of liaison between Centres and schools. The programme experienced by pupils during their time at the Centres sets up a positive cycle of learning and development, as explained in Figure 8. But this model also illustrates the importance of liaison and communication between Centres and schools in contributing to longer term impact. Strand 1 showed that not all pupils demonstrated improved progress in their subsequent National Curriculum Assessment results. As Strand 2 of this study suggested, the key element lies in pupils' ability to transfer their learning to the school environment. The factors identified as important in facilitating transfer are identified as: recognition of pupils' achievements; the presence of similar conditions, tasks and resources; opportunities for pupils to use their new skills and schools' encouragement of self-regulated learning.

The new model has two main areas of difference with the initial hypothesis, modelled in Figure 1. First, the influence of 'time elapsed between PfS and National Curriculum Assessment tests' has been removed because the quantitative analysis found no evidence of a consistent relationship between this variable and later progress. Second, the new model focuses on the issue of transfer and the mechanisms through which this can be encouraged in schools. The original model hypothesised that longer term effects of PfS on pupil performance were likely to be influenced by the degree to which schools capitalise upon the PfS programme and the PfS-related support they provide to pupils. This suggestion was strengthened by the qualitative analysis, which highlighted the critical role of school staff in helping pupils to transfer their learning from PfS.

There is also another scenario hinted at by this model. If pupils benefit from their experience at PfS (as previous evaluation studies demonstrate) but they are not offered opportunities to demonstrate their learning once they leave, then there is a possibility of increased frustration and disaffection as a result. This possibility is worthy of further investigation as it poses a potential challenge to schools and local authorities in relation to meeting the needs of individual learners.

6.5   Conclusion

This study sought to identify the longer term impact of PfS on pupil performance. Previous evaluation studies have demonstrated that pupils make academic gains during their time at PfS. The overall findings from the statistical analysis of longer term progress present a mixed picture. However, rather than see this as evidence of a lack of impact at Key Stage 2 and 3, the contribution of the qualitative analysis suggests that longer term progress should be viewed as a shared responsibility between Centres, schools and local authorities, as well as the young people concerned. PfS is not an inoculation against future underperformance, but it does give underachieving young people a new chance, as

long as they receive recognition for their achievement, continued support and opportunities to succeed.

The study found a consistent trend for PfS to be associated with gains in the performance of pupils with low attainment (and for PfS to be associated with losses in performance of pupils with average/above average attainment). This suggests that PfS may be more effective for pupils attaining below expectations for their age. On the other hand, it seems unlikely that attendance at PfS would have a negative effect on pupils with average or slightly above average performance. Rather, this finding suggests that pupils in this group may have more complex needs which are more difficult to address within a 20-hour programme. It may also be the case that the comparison group was not well matched with the PfS group in this respect (for example if the comparison group included pupils without these more complex needs). This raises the possibility that findings for 'higher achieving' pupils result from an artefact of the design, rather than from the impact of PfS itself.

In relation to Centre-level differences, the study found a great deal of consistency across the 63 Centres. However, eight Centres showed evidence of securing significantly greater progress on at least two of six outcome measures (pupils' progress in maths and English at Key Stage 2 , 3 or 4).

This study found that staff in 'more effective' Centres were paying very detailed attention to liaison and partnership with schools, as well as to the quality of the programme provided at the Centre. The study identified specific strategies adopted before, during and after the pupils attended including liaison over pupil selection, keeping bureaucratic burdens to a minimum, informing pupils, teachers and parents, adapting the programme to meet individual needs and helping schools to ensure that pupils are able to transfer their learning to the school environment.

6.6   Recommendations

The study team was asked to identify the implications of the evaluation findings for PfS Centres and their partner schools. The report therefore ends with a set of key findings and accompanying recommendations for consideration by those responsible for managing PfS at a national and local level as well as those delivering the programme in Centres and supporting underachieving pupils in schools.

Key Finding 1: PfS is effective in raising pupils' attainment during their time at the Centres, but this study provides limited evidence of longer term impact on all attendees.

Recommendation 1: The government, local authorities and sponsors should continue to support PfS. Further consideration should be given to the opportunities for pupils to transfer their learning from PfS to other contexts (for example, through continued partnership between Centres and schools, and through developing opportunities for PfS graduates to build on their achievements, both within and outside school hours).

Key Finding 2: PfS appears to be successful for lower attaining pupils.

Recommendation 2: The NFER team recognises that prior attainment is not the only selection factor taken into consideration by Centre Managers and schools, but the team hope that the results of this study may contribute to a clearer understanding of the match between what PfS offers and its impact on pupils with different profiles of prior attainment. Some Centres may wish to reconsider their selection criteria in the light of this finding.

Key Finding 3: The design of this study took account of some of the main factors known to be associated with pupil progress. But the finding that PfS pupils attaining at or above average did not do as well in their National Curriculum Assessments is curious and raises the possibility that the comparison group was not well matched in relation to more complex factors contributing to underachievement.

Recommendation 3: Local authorities and Centre Managers should consider carrying out their own studies of longer term progress. This would entail adopting systems to record which pupils had attended, selecting an appropriate comparison (control) group and analysing their progress over time, including progress at Key Stage 4.

Key finding 4: Some Centres appeared to be more effective at promoting longer term impact than others. The Centre Managers in question were not adopting radically different practice from others; rather it was their attention to detail, flexibility and focus on partnership working that appeared to make the difference. PfS link teachers played a vital role in making the most of the programme.

Recommendation 4: PfS should share information about best practice in contributing to longer term impact. New Centre Managers should be given opportunities to learn from established Centres. Schools should be encouraged to adopt best practice in supporting PfS graduates. The vital role of link teachers should be acknowledged. Ideally the role should go to someone who is senior enough to be influential, is well informed and enthusiastic about PfS.

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Appendix A   Procedure and approach to quantitative data analysis

The procedure for this study comprised a number of steps. Firstly, all PfS Centres in England were identified and Centre Managers were approached to invite them to participate in the evaluation. Secondly, the team obtained the NPD data for the appropriate cohorts, including national pupil-level information on variables such as gender, ethnicity, pupils with EAL, SEN, and entitlement to FSM. The team also obtained a list of names and dates of birth or UPNs for pupils in the PfS cohorts (i.e. those who were involved in PfS between 2000/2001 and 2004/2005) as well as details of schools and term/year of attendance. Where Centres were not able to supply full records, the research team obtained a list of schools sending pupils to the Centre between 2000/2001 and 2004/2005, so that these schools could be excluded from the comparison group. Thirdly, the information on PfS cohorts was matched to the NPD.

The next step involved defining a 'comparison' group of pupils who did not attend PfS Centres, but who were similar to PfS pupils in many characteristics, most importantly prior attainment. The evaluation team sought to establish a 'comparison' group, which would enable fair comparisons to be made between PfS and non-PfS attendees. The team considered how best to define a 'fair' comparison group and decided to include all the pupils who attended the same schools as PfS pupils, but who had not attended PfS Centres themselves. It was considered important to include these pupils because they were likely to have some similarities with the PfS pupil group and also because it allowed for the PfS schools to be represented in the comparison group. However, this was not a sufficiently well matched comparison group to use on its own, since pupils with certain characteristics (especially low attainment) were more likely to be selected to attend PfS.

The team decided to supplement the comparison group with pupils from other schools which did not send pupils to PfS. A random sample of pupils was drawn with similar background characteristics to PfS attendees, for example, in relation to gender, and FSM eligibility. Most importantly, they had to have similar levels of prior attainment.

The comparison group was selected from the pupils in the NPD with valid data on Key Stage 2, Key Stage 3 or Key Stage 4 outcomes in 2003, 2004 and 2005 and on their prior attainment (for the Key Stage 2 cohort this was Key Stage 1 attainment data and for those in the Key Stage 3 or 4 cohort this was Key Stage 2 attainment data).

The research team then set up and ran a multilevel analysis of progress from Key Stage 1 to Key Stage 2 and from Key Stage 2 to Key Stage 3 and from Key Stage 2 to Key Stage 4, controlling for all background factors, including PfS attendance as a variable.

In preparation for the analysis, the data files collected from the various Centres were processed until they were in a consistent format and could be merged together into a single dataset. Pupils were sorted by date of birth and allocated to a particular cohort accordingly. Where date of birth was not known, a pupil's year group at the time they attended the Centre was used to determine the correct cohort.

Each cohort was matched to data from the NPD Key Stage datasets supplied to the NFER by the DfES. Where possible, the matching was done by using the UPN and surname, as well as the first letter of the forename. Where the UPNs were not available, the match was done using surname, forename, date of birth and school DfES number. In addition to this, further matching techniques were used when the spelling of names was unclear or UPNs and dates of birth were not available, in order to ensure that the highest number of matched pupils be achieved for the analysis.

A total of 41,874 pupil records were initially supplied by Centres but not all of them could be used in the analysis for the reasons given below.

1,727 (4 per cent) records were discarded because they were duplicates, or because the data did not include pupil names.

12,045 (29 per cent) records had to be discarded because they were outside the study sample. More specifically, the records did not fit into one of the nine cohorts being studied (this study focused on pupils who took their Key Stage 2, Key Stage 3 or Key Stage 4 assessments in the summer of 2003, 2004 and 2005 and had attended the PfS Centre prior to that); or the records did not include the necessary information required for allocating pupils to one of the nine cohorts (i.e. either their date or birth, or the year and term they attended PfS as well as their year group at that time); or the records had to be discarded because the pupils had attended the PfS Centres after their Key Stage tests.

A total of 11,987 (29 per cent) records could not be matched to the NPD dataset because they were missing the information required for matching (i.e. their UPN, or their date of birth, or the school they attended for the relevant Key Stage)

A total of 1,574 (4 per cent) records had to be discarded because the NPD did not include a complete set of attainment data for that pupil.

Appendix B   PfS and comparison groups' background characteristics

Table B1   Characteristics of Key Stage 1–2 2003 to 2005 dataset

Measure	Non-PfS Pupils	PfS Pupils
Total pupils in dataset	72,6825	9,807
KS2 Outcomes[11]		
English 'fine grade'	4.30	4.25
Maths 'fine grade'	4.35	4.31
KS1 Prior Attainment[12]		
Overall average KS1 QCA point score	14.43	14.44
Average reading QCA point score	14.06	14.03
Average writing QCA point score	13.55	13.43
Average maths QCA point score	15.13	15.29
Average science QCA point score	14.97	15.01
School-level background factors		
% of pupils in school eligible for FSM*	17.9 %	27.4 %
% of pupils in school with SEN*	1.9 %	2.0 %
% of pupils in school with EAL*	10.8 %	17.3 %
Average size of whole school	320	310
% of pupils in faith schools	29.0 %	22.9 %
Pupil-level background factors		
% with SEN (school action plus)	22.5 %	22.3 %
% with statement	1.5 %	1.0 %
% with EAL	9.3 %	12.5 %
% eligible for FSM	18.3 %	26.3 %
% of girls	48.6 %	48.8 %

* These school-level indicators are based on all pupils in the school, not just year 6.

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[11] Outcomes are 'fine grades' based on total test score. More information about how these were derived is given in Appendix C

[12] Prior attainment measures are based on levels awarded, converted to QCA point scores. 1999 Autumn Package Key Stage 1 Technical Annex

http://www.standards.dfes.gov.uk/performance1/pdf/KS1.pdf?version=1

Table B2   Characteristics of Key Stage 2–3 2003 to 2005 dataset

Measure	Non-PfS Pupils	PfS Pupils
Total pupils in dataset	719,140	3,890
KS3 Outcomes[13]		
English 'fine grade'	5.16	5.04
Maths 'fine grade'	5.51	5.42
KS2 Prior Attainment[14]		
Overall average KS2 QCA point score	25.41	25.25
Average reading QCA point score	26.48	25.97
Average writing QCA point score	23.29	23.08
Average maths QCA point score	24.82	24.82
Average science QCA point score	27.06	27.13
School-level background factors		
% of pupils in school eligible for FSM*	15.3 %	22.2 %
% of pupils in school with SEN*	2.5 %	2.7 %
% of pupils in school with EAL*	9.3 %	16.1 %
Average size of whole school	1123	986
% pupils in faith schools	17.7 %	18.0 %
% pupils in specialist schools	65.2 %	49.5 %
% pupils in grammar schools	1.7 %	0.1 %
% pupils in boys' schools	3.8 %	7.9 %
% pupils in girls' schools	5.5 %	8.7 %
Pupil-level background factors		
% with SEN (school action plus)	19.3 %	23.2 %
% with statement	2.2 %	2.0 %
% with EAL	9.0 %	12.7 %
% eligible for FSM	17.5 %	25.1 %
% of girls	48.6 %	45.5 %

* These school-level indicators are based on all pupils in the school, not just year 9.

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[13] Outcomes are 'fine grades' based on total test score. More information about how these were derived is given in Appendix C

[14] Prior attainment measures are based on levels awarded, converted to QCA point scores. 1999 Autumn Package Key Stage 1 Technical Annex

http://www.standards.dfes.gov.uk/performance1/pdf/KS1.pdf?version=1

Table B3   Characteristics of Key Stage 2–4 2003 to 2005 dataset

Measure	Non-PfS Pupils	PfS Pupils
Total pupils in dataset	363,105	844
KS4 Outcomes[15]		
GCSE English point score	3.63	3.26
GCSE maths point score	3.26	3.58
Average GCSE point score	3.34	3.24
Total GCSE point score	32.30	32.07
KS2 Prior Attainment[16]		
Overall average KS2 QCA point score	23.81	24.04
Average reading QCA point score	24.78	24.95
Average writing QCA point score	21.87	21.74
Average maths QCA point score	23.24	23.64
Average science QCA point score	25.34	25.84
School-level background factors		
% of pupils in school eligible for FSM*	16.2 %	23.4 %
% of pupils in school with SEN*	2.5 %	2.7 %
% of pupils in school with EAL*	9.6 %	13.8 %
Average size of whole school	1122	958
% pupils in faith schools	16.7 %	18.4 %
% pupils in specialist schools	64.6 %	52.4 %
% pupils in grammar schools	1.0 %	0 %
% pupils in boys' schools	3.4 %	9.4 %
% pupils in girls' schools	5.1 %	6.6 %
Pupil-level background factors		
% with SEN (school action plus)	22.4 %	22.4 %
% with statement	4.0 %	3.6 %
% with EAL	9.0 %	10.3 %
% eligible for FSM	19.6 %	25.9 %
% of girls	47.9 %	42.4 %

* These school-level indicators are based on all pupils in the school, not just year 11.

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[15] Key Stage 3 outcomes are 'fine grades' based on total test score.

[16] Key Stage 2 measures are based on levels awarded, converted to scores by multiplying by six and adding three.

Appendix C Multilevel models

Presented in this appendix are a series of tables and charts that show the results of the multilevel models in more detail. An explanation of how and why 'fine grades' were derived is also given. For each Key Stage, a list of the variables that were available for use in the models are detailed.

For the multilevel model for English and maths at each Key Stage, the coefficients of both the fixed and the random parts of the model are tabulated, along with confidence intervals. For each of these, the coefficients of the fixed part of the model are also shown graphically.

In these charts, the variables that were significantly associated with the outcome measure (i.e. performance in Key Stage 2 English or maths) are listed along the bottom of the plot. The order in which they are listed is arbitrary.

The horizontal line, labelled 0 (zero), across the middle of the plot represents no impact. Symbols above this zero line represent a positive association and the higher above the line the stronger the association. For example, a pupil's Key Stage 1 reading score is positively associated with their Key Stage 2 English score, as is their Key Stage 1 maths score, although the association is less strong for the latter. Similarly, symbols below the zero line represent a negative association. Predictably, eligibility for FSM is negatively associated with Key Stage 2 English performance.

For categorical variables (ethnic categories, SEN status and gender) it should be remembered that each category is being compared to one other category, referred to as the *base case*. The base case for the ethnic categories is white British, so each symbol for the ethnic groups compares them to white British pupils. For example, Bangladeshi pupils perform better than white British pupils in Key Stage 2 English. The SEN categories are all compared to pupils without SEN, and the gender variable illustrates girls' performance compared to boys'.

Fine grades

The NPD contains data of pupils' outcomes at each of the Key Stages. For Key Stages 1, 2 and 3, these outcomes are given as whole levels. The NPD does not contain sublevels. The NPD does contain total marks on each of the tests.

At each of the Key Stages there are a restricted range of levels available, for example at Key Stage 2 the levels available are 2 to 5. Any pupil not scoring enough marks to obtain a level 2 is awarded a 'Below level 2'. Consequently the gradations in the data are relatively crude, as it effectively only contains five levels (below level 2 and levels 2, 3, 4 and 5).

To improve this, the idea of 'fine grades' was used. By creating finer gradations between the levels it is possible to make fuller use of the data, and it is more likely to see improvements where there are any. For example, using levels in the statistical modelling does not allow differentiation between a pupil who only just scored enough marks to be awarded a level 3 and a pupil who scored higher, and only just missed obtaining a level 4 by one mark.

To create fine grades, for each test (for each subject of each year in each Key Stage, and where appropriate for each tier) the total raw score on each test was used to obtain a linear interpolation between each level.

An example is shown in the graph below.
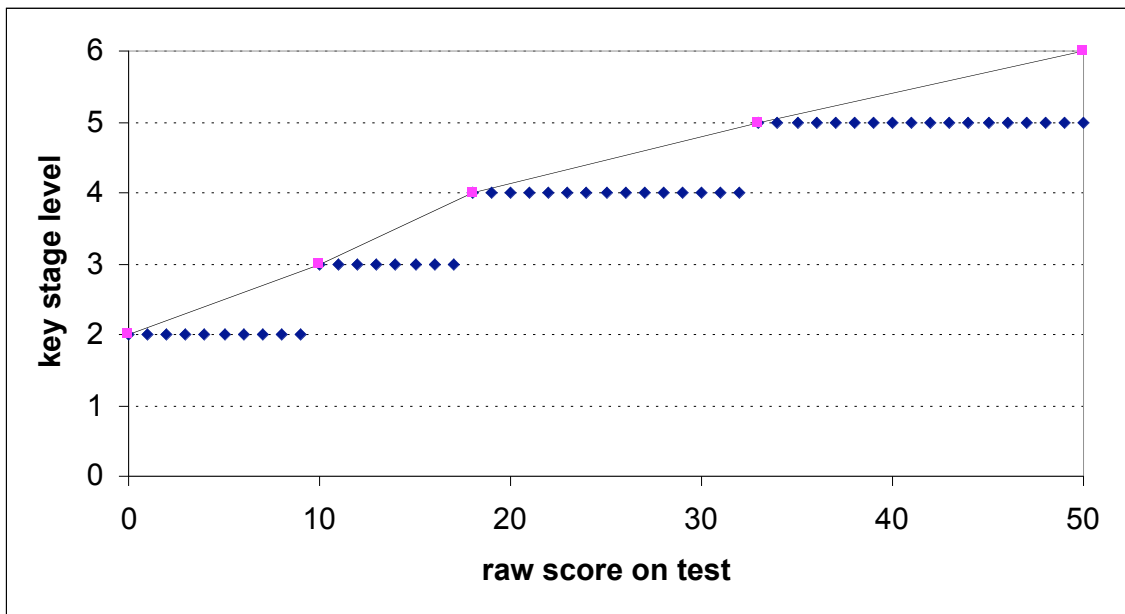
Here, the total raw score on the test is plotted against the level obtained. A pupil who scored 18 marks would be awarded a level 4. In addition, all pupils who scored between 18 and 32 marks would also be awarded a level 4. Linear interpolation uses the raw score between 18 and 32 to obtain finer gradations to distinguish between a lower level 4 and a higher level 4.

In the example of a pupil scoring 23, their fine grade is calculated by:

$$4 + \frac{(23-18)}{(33-18)} = 4.333$$

Linear interpolation was used to calculate fine grades between all levels, and these were used as the outcomes in the multilevel models.

Variables used in the KS1 to KS2 multilevel models

KS1 to KS2 2003-5

No.	Name	Min.	Max.	Description
1	LEA	201	938	Local authority
2	SCHOOL	2000	6905	School
3	YEAR	2003	2005	Cohort
4	PUPID	3	1003130	Pupil ID
5	CONS	1	1	Constant term
6	IMPE2	1	5.92	imputed KS2 English level (fine grades)
7	IMPM2	1	5.96	imputed KS2 maths level (fine grades)
8	YR04	0	1	2004 cohort
9	YR05	0	1	2005 cohort
10	K1AV	3	23	Average KS1 score
11	K1RLN	3	21	Key Stage 1 Overall Reading
12	K1WLN	3	21	Key Stage 1 Writing
13	K1MLN	3	27	Key Stage 1 Maths
14	K1STA	3	21	Key Stage 1 Science TA
15	KS1SQ	0	116	KS1 squared term
16	FEMALE	0	1	Female
17	SENSA	0	1	SEN - school action plus
18	SENSTAT	0	1	SEN - Statement
19	FSM	0	1	Eligible for free school meals?
20	EAL	0	1	English as an additional language
21	WHITOTH	0	1	Ethnicity - White Non-UK
22	GYPSY	0	1	Ethnicity - Gypsy/Roma
23	ETHMIX	0	1	Ethnicity - Mixed
24	ASIANI	0	1	Ethnicity - Asian Indian
25	ASIANP	0	1	Ethnicity - Asian Pakistani
26	ASIANB	0	1	Ethnicity - Asian Bangladeshi

KS1 to KS2 2003-5 (continued)

No.	Name	Min.	Max.	Description
27	ASIANO	0	1	Ethnicity - Asian Other
28	BLACKC	0	1	Ethnicity - Black Caribbean
29	BLACKA	0	1	Ethnicity - Black African
30	BLACKO	0	1	Ethnicity - Black Other
31	CHINESE	0	1	Ethnicity - Chinese
32	ETHOTH	0	1	Ethnicity - Other
33	ETHREFU	0	1	Ethnicity - Refused
34	ETHMISS	0	1	Ethnicity - Unknown
35	INPFR	0	1	Attended PfS
36	PFRSCH	0	1	School in PFS
37	JUNIOR	0	1	Junior school
38	MIDDLE	0	1	Middle school
39	FAITH	0	1	Faith school
40	PCFSM	0	85	% pupil eligible for free school meals
41	FSMSQ	0	4368	% FSM squared term
42	PCSEN	0	23	% pupils with statement of SEN
43	PCEAL	0	100	% EAL pupils
44	PTR	0	91.25	pupil:teacher ratio
45	SIZE	0	14	School size/100
46	SPRING	0	1	Spring-born
47	SUMMER	0	1	Summer-born
48	SENCENT	0	1	Special SEN centre
49	PFRKS1	-10	10	PfS by KS1 average
50	PFRSEX	0	1	PfS by gender
51	PFRFSM	0	1	PfS by FSM
52	SEXKS1	-23	23	Gender by KS1 average level
53	PFRWOTH	0	1	PfS v. White Other

KS1 to KS2 2003-5 (continued)

No.	Name	Min.	Max.	Description
54	PFRGYP	0	1	PfS v. Gypsy/Roma
55	PFRMIX	0	1	PfS v. Mixed
56	PFRIND	0	1	PfS v. Indian
57	PFRPAK	0	1	PfS v. Pakistani
58	PFRBAN	0	1	PfS v. Bangladeshi
59	PFRASO	0	1	PfS v. Asian other
60	PFRBLC	0	1	PfS v. Black Caribbean
61	PFRBLA	0	1	PfS v. Black African
62	PFRBLO	0	1	PfS v. Black Other
63	PFRCHIN	0	1	PfS v. Chinese
64	PFROTH	0	1	PfS v. Other
65	PFRREFU	0	1	PfS v. Ethnicity refused
66	PFRMISS	0	1	PfS v. Ethnicity missing
67	PFR04	0	1	PfS in 2004
68	PFR05	0	1	PfS in 2005
69	PFRSPR	0	1	PfS v. Spring-born
70	PFRSUM	0	1	PfS v. Summer-born
71	RECENT1	0	1	Attended PfS during the summer term prior to KS2
72	RECENT2	0	1	Attended PfS during the spring term prior to KS2
73	RECENT3	0	1	Attended PfS during the autumn term prior to KS2
74	RECENT4	0	1	Attended PfS during the previous year

Variables used in the KS2 to KS3 multilevel models

KS1 to KS2 2003-5

No.	Name	Min.	Max.	Description
1	LEA	202	938	Local authority
2	SCHOOL	4000	6901	School
3	YEAR	2003	2005	Cohort
4	PUPID	2	723800	Pupil ID
5	CONS	1	1	Constant term
6	IMPE3	1	7.97	imputed KS3 English level (fine grades)
7	IMPM3	1.07	8.96	imputed KS3 maths level (fine grades)
8	YR04	0	1	2004 cohort
9	YR05	0	1	2005 cohort
10	K2AV	9	35	Average KS2 score
11	K2RLN	9	33	Key Stage 2 Overall Reading
12	K2WLN	9	33	Key Stage 2 Writing
13	K2MLN	9	39	Key Stage 2 Maths
14	K2SLN	9	39	Key Stage 2 Science
15	KS2SQ	0	269	KS2 squared term
16	FEMALE	0	1	Female
17	SENSA	0	1	SEN - school action plus
18	SENSTAT	0	1	SEN - Statement
19	FSM	0	1	Eligible for free school meals?
20	EAL	0	1	English as an additional language
21	WHITOTH	0	1	Ethnicity - White Non-UK
22	GYPSY	0	1	Ethnicity - Gypsy/Roma
23	ETHMIX	0	1	Ethnicity - Mixed
24	ASIANI	0	1	Ethnicity - Asian Indian
25	ASIANP	0	1	Ethnicity - Asian Pakistani
26	ASIANB	0	1	Ethnicity - Asian Bangladeshi
27	ASIANO	0	1	Ethnicity - Asian Other

KS1 to KS2 2003-5 (continued)

No.	Name	Min.	Max.	Description
28	BLACKC	0	1	Ethnicity - Black Caribbean
29	BLACKA	0	1	Ethnicity - Black African
30	BLACKO	0	1	Ethnicity - Black Other
31	CHINESE	0	1	Ethnicity - Chinese
32	ETHOTH	0	1	Ethnicity - Other
33	ETHREFU	0	1	Ethnicity - Refused
34	ETHMISS	0	1	Ethnicity - Unknown
35	SPRING	0	1	Spring-born
36	SUMMER	0	1	Summer-born
37	INPFR	0	1	Attended PfS
38	PFRSCH	0	1	School in PFS
39	SECMOD	0	1	Secondary modern school
40	GRAMMAR	0	1	Selective school
41	GRAMINT	-22	4	Grammar by KS2 interaction
42	SPEC	0	1	Active specialist school during year before
43	CTCSCH	0	1	CTC school
44	FAITH	0	1	Faith school
45	BOYSCH	0	1	Boys' school
46	GIRLSCH	0	1	Girls' school
47	PCFSM	0	87	% pupil eligible for free school meals
48	FSMSQ	0	5139	% FSM squared term
49	PCSEN	0	23	% pupils with statement of SEN
50	PCEAL	0	100	% EAL pupils
51	PTR	0	35.15	pupil:teacher ratio
52	SIZE	0	26	School size/100
53	SENCENT	0	1	Special SEN centre
54	PFRKS2	-10	10	PfS by KS2 average
55	PFRSEX	0	1	PfS by gender

KS1 to KS2 2003-5 (continued)

No.	Name	Min.	Max.	Description
56	PFRFSM	0	1	PfS by FSM
57	SEXKS2	-23	23	Gender by KS2 average level
58	PFRWOTH	0	1	PfS v. White Other
59	PFRGYP	0	1	PfS v. Gypsy/Roma
60	PFRMIX	0	1	PfS v. Mixed
61	PFRIND	0	1	PfS v. Indian
62	PFRPAK	0	1	PfS v. Pakistani
63	PFRBAN	0	1	PfS v. Bangladeshi
64	PFRASO	0	1	PfS v. Asian other
65	PFRBLC	0	1	PfS v. Black Caribbean
66	PFRBLA	0	1	PfS v. Black African
67	PFRBLO	0	1	PfS v. Black Other
68	PFRCHIN	0	1	PfS v. Chinese
69	PFROTH	0	1	PfS v. Other
70	PFRREFU	0	1	PfS v. Ethnicity refused
71	PFRMISS	0	1	PfS v. Ethnicity missing
72	PFR04	0	1	PfS in 2004
73	PFR05	0	1	PfS in 2005
74	PFRSPR	0	1	PfS v. Spring-born
75	PFRSUM	0	1	PfS v. Summer-born
76	RECENT1	0	1	Attended PfS during the summer term prior to KS3
77	RECENT2	0	1	Attended PfS during the spring term prior to KS3
78	RECENT3	0	1	Attended PfS during the autumn term prior to KS3
79	RECENT4	0	1	Attended PfS during the previous year

Variables used in the KS2 to KS4 multilevel models

KS2 to KS4 2004-5

No.	Name	Max.	Max	Description
1	LEA	202	938	Local authority
2	SCHOOL	4000	6901	School
3	YEAR	2004	2005	Cohort
4	PUPID	6	365695	Pupil ID
5	DOB	1	31	Date of birth
6	MOB	1	12	Month of birth
7	YOB	1986	1990	Year of birth
8	GCSE_OLD	0	133	Total GCSE Point Score (old system)
9	NOGCSE	0	22	Number of GSCE entered for
10	MEANGCSE	0	8	Mean GCSE Grade
11	YR04	0	1	2004 cohort
12	YR05	0	1	2005 cohort
13	K2ELN	9	39	Key Stage 2 English
14	K2RLN	9	33	Key Stage 2 Overall Reading
15	K2WLN	9	33	Key Stage 2 Writing
16	K2MLN	9	39	Key Stage 2 Maths
17	K2SLN	9	39	Key Stage 2 Science
18	K2AV	9	33	Average KS2 score
19	MATHSTOT	0	8	Maths GCSE Grade
20	ENGTOT	0	8	English GCSE Grade
21	FSM	0	1	Eligible for free school meals?
22	EAL	0	1	English as an additional language
23	INPFR	0	1	Attended PfS
24	SENCENT	0	1	SEN centre
25	WHITUK	0	1	Ethnicity -White UK
26	WHITOTH	0	1	Ethnicity - White Non-UK

KS2 to KS4 2004-5 (continued)

No.	Name	Max.	Max	Description
27	GYPSY	0	1	Ethnicity - Gypsy/Roma
28	ETHMIX	0	1	Ethnicity - Mixed
29	ASIANI	0	1	Ethnicity - Asian Indian
30	ASIANP	0	1	Ethnicity - Asian Pakistani
31	ASIANB	0	1	Ethnicity - Asian Bangladeshi
32	ASIANO	0	1	Ethnicity - Asian Other
33	BLACKC	0	1	Ethnicity - Black Caribbean
34	BLACKA	0	1	Ethnicity - Black African
35	BLACKO	0	1	Ethnicity - Black Other
36	CHINESE	0	1	Ethnicity - Chinese
37	ETHOTH	0	1	Ethnicity - Other
38	ETHREFU	0	1	Ethnicity - Refused
39	ETHMISS	0	1	Ethnicity - Unknown
40	SECMOD	0	1	Secondary modern school
41	COMP16	0	1	Comprehensive to 16
42	GRAMMAR	0	1	Selective school
43	CTCSCH	0	1	CTC school
44	PRUSCH	0	0	Pupil Referral Unit
45	FAITH	0	1	Faith school
46	BOYSCH	0	1	Boys' school
47	GIRLSCH	0	1	Girls' school
48	PCFSM	0	87	% pupil eligible for free school meals
49	PCSEN	0	23	% pupils with statement of SEN
50	PCEAL	0	100	% EAL pupils
51	PTR	0	35.15	pupil:teacher ratio
52	N99	47	2568	headcount of total No. of pupils
53	N16	0	623	No. of pupils aged 16
54	N14	0	538	No. of pupils aged 14

KS2 to KS4 2004-5 (continued)

No.	Name	Max.	Max	Description
55	SPEC	0	1	Specialist school during year before exams
56	SPECTECH	0	1	Technology Specialist School
57	SPECARTS	0	1	Arts Specialist School
58	SPECSCI	0	1	Science Specialist School
59	SPECSPOR	0	1	Sports Specialist School
60	SPECLANG	0	1	Language Specialist School
61	SPECMATH	0	1	Maths and Computing Specialist School
62	SPECBUSI	0	1	Business and Enterprise Specialist School
63	SPECOTH	0	1	Other Specialist School
64	SENSA	0	1	SEN - school action plus
65	SENSTAT	0	1	SEN –Statement
66	FEMALE	0	1	Female
67	SIZE	0.47	25.68	School size/100
68	NPUP	1	32	Number of pupils
69	PFRSCH	0	1	School in PFS
70	CONS	1	1	Constant term
71	SPRING	0	1	Spring born pupil
72	SUMMER	0	1	Summer born pupil
73	KS2SQ	0.04	219.04	KS2 squared term
74	FSMSQ	0.0625	5005.563	% FSM squared term
75	GRAMINT	-20.97	3.03	Grammar by KS2 interaction
76	PFRKS2	-16.41	7.59	PfS by KS2 average
77	PFRSEX	0	1	PfS v. Female
78	SEXKS2	-16.41	7.59	Female by KS2 average
79	PFRGYP	0	1	PfS v. Gypsy/Roma
80	PFRMIX	0	1	PfS v. Mixed
81	PFRBLC	0	1	PfS v. Black Caribbean
82	PFRCHIN	0	1	PfS v. Chinese
83	PFROTH	0	1	PfS v. Other
84	PFRREFU	0	1	PfS v. Ethnicity refused

Coefficients in the KS1 to KS2 English model

| Parameter | Estimate | Standard error | Sig. | 95% Confidence interval | |
				Min.	Max.
Base case					
LEA variance	0.005	0.001	*	0.004	0.007
School variance	0.042	0.001	*	0.041	0.044
Year variance	0.025	0.000	*	0.024	0.026
Pupil variance	0.461	0.001	*	0.459	0.462
Fixed model					
LEA variance	0.004	0.001	*	0.003	0.005
School variance	0.015	0.000		0.014	0.015
Year variance	0.027	0.000	*	0.026	0.027
Pupil variance	0.217	0.000	*	0.216	0.218
Fixed coefficients					
cons	2.257	0.013	*	2.231	2.283
yr04	-0.018	0.002	*	-0.023	-0.013
yr05	-0.008	0.002	*	-0.013	-0.003
k1rln	0.058	0.000	*	0.057	0.058
k1wln	0.045	0.000	*	0.044	0.045
k1mln	0.035	0.000	*	0.035	0.036
k1sta	0.014	0.000	*	0.013	0.014
ks1sq	0.001	0.000	*	0.001	0.001
female	0.113	0.001	*	0.111	0.115
sensa	-0.323	0.002	*	-0.326	-0.320
senstat	-0.382	0.005	*	-0.391	-0.372
fsm	-0.083	0.002	*	-0.086	-0.080
eal	0.038	0.004	*	0.030	0.046
whitoth	0.081	0.005	*	0.071	0.090
gypsy	-0.047	0.021	*	-0.088	-0.005
ethmix	0.048	0.004	*	0.041	0.055
asiani	0.026	0.005	*	0.016	0.037
asianp	0.010	0.006		-0.001	0.020
asianb	0.104	0.007	*	0.090	0.119
asiano	0.073	0.009	*	0.056	0.091
blackc	-0.012	0.005	*	-0.022	-0.002
blacka	0.049	0.006	*	0.038	0.060
blacko	0.011	0.010		-0.008	0.029
chinese	0.084	0.011	*	0.062	0.106

Fixed coefficients (continued)					
ethoth	0.086	0.008	*	0.070	0.102
ethrefu	0.013	0.005	*	0.003	0.023
ethmiss	-0.033	0.005	*	-0.042	-0.024
inpfr	-0.029	0.007	*	-0.042	-0.016
junior	-0.068	0.005	*	-0.077	-0.058
middle	-0.065	0.010	*	-0.085	-0.045
faith	0.031	0.003	*	0.025	0.038
pcfsm	-0.005	0.000	*	-0.005	-0.005
fsmsq	0.000	0.000	*	0.000	0.000
pceal	0.001	0.000	*	0.001	0.001
ptr	0.001	0.000		0.000	0.002
size	-0.007	0.001	*	-0.010	-0.005
spring	0.026	0.001	*	0.023	0.029
summer	0.054	0.001	*	0.051	0.057
pfrks1	-0.024	0.002	*	-0.027	-0.020
pfrfsm	0.019	0.011		-0.003	0.041
sexks1	0.003	0.000	*	0.002	0.004
pfrmix	-0.050	0.024	*	-0.097	-0.004
pfrind	-0.067	0.031	*	-0.127	-0.007
pfrban	-0.072	0.045		-0.161	0.017
pfrblc	-0.041	0.027		-0.094	0.011
pfrblo	-0.139	0.052	*	-0.241	-0.037
pfrmiss	-0.081	0.039	*	-0.158	-0.004

KS2 English Fine Grade (2003-5)
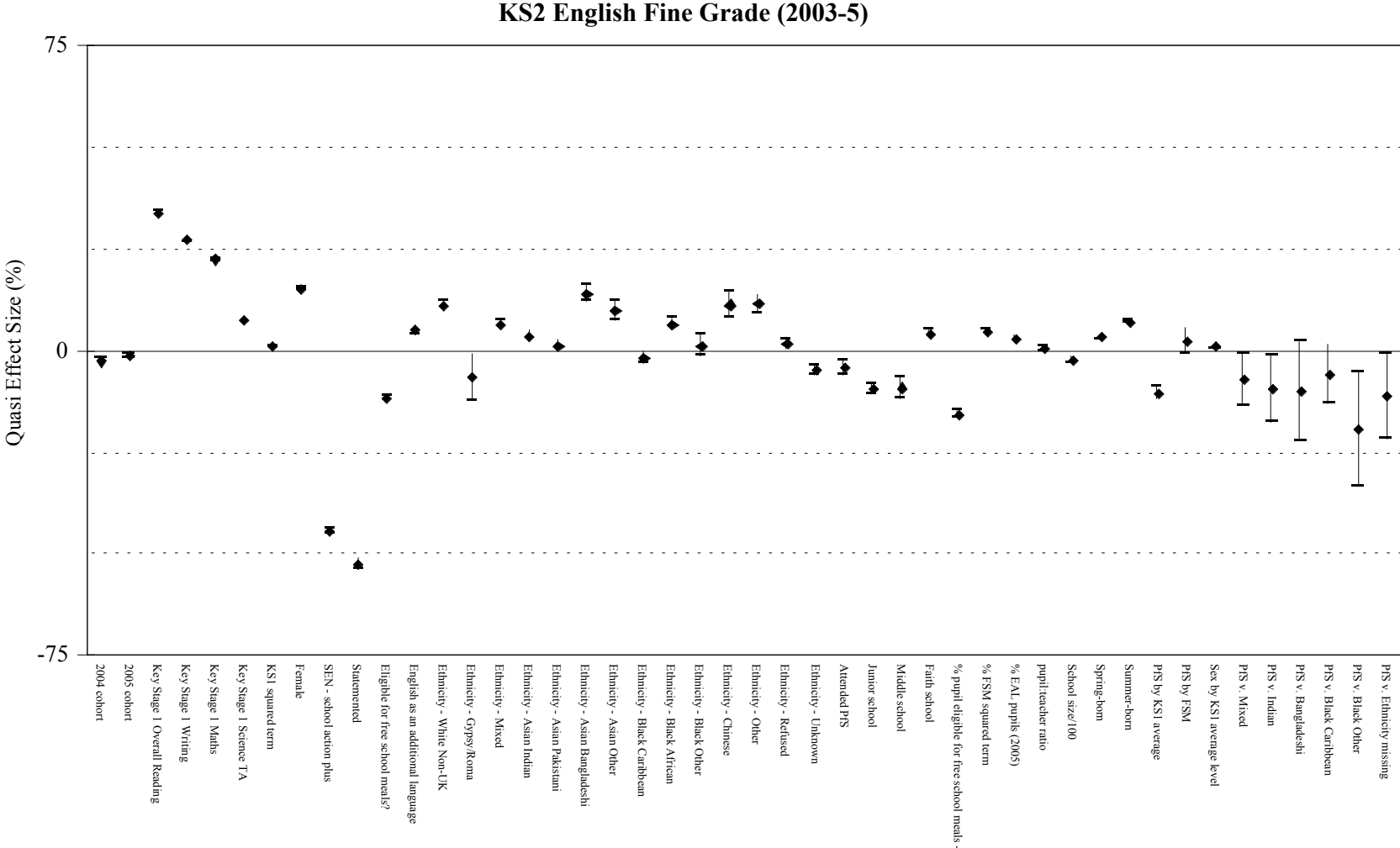
Coefficients in the KS1 to KS2 maths model

Parameter	Estimate	Standard error	Sig.	95% Confidence interval Min.	Max.
Base case					
LEA variance	0.005	0.001	*	0.004	0.007
School variance	0.059	0.001	*	0.057	0.061
Year variance	0.017	0.000	*	0.016	0.018
Pupil variance	0.593	0.001	*	0.591	0.595
Fixed model					
LEA variance	0.004	0.001	*	0.003	0.005
School variance	0.030	0.001	*	0.029	0.031
Year variance	0.021	0.000	*	0.021	0.022
Pupil variance	0.278	0.000	*	0.277	0.279
Fixed coefficients					
cons	2.021	0.016	*	1.990	2.052
yr04	-0.039	0.002	*	-0.044	-0.034
yr05	-0.070	0.002	*	-0.075	-0.065
k1rln	0.010	0.000	*	0.009	0.011
k1wln	0.023	0.000	*	0.022	0.023
k1mln	0.118	0.000	*	0.117	0.118
k1sta	0.019	0.000	*	0.018	0.019
ks1sq	0.002	0.000	*	0.002	0.002
female	-0.151	0.001	*	-0.153	-0.148
sensa	-0.292	0.002	*	-0.295	-0.288
senstat	-0.289	0.005	*	-0.300	-0.279
fsm	-0.070	0.002	*	-0.074	-0.067
eal	0.082	0.005	*	0.073	0.091
whitoth	0.085	0.006	*	0.074	0.096
gypsy	-0.123	0.024	*	-0.170	-0.076
ethmix	0.016	0.004	*	0.008	0.023
asiani	0.082	0.006	*	0.070	0.094
asianp	-0.006	0.006		-0.019	0.006
asianb	0.090	0.008	*	0.073	0.106
asiano	0.171	0.010	*	0.151	0.190
blackc	-0.078	0.006	*	-0.089	-0.067
blacka	0.010	0.007		-0.003	0.023
blacko	-0.034	0.011	*	-0.054	-0.013
chinese	0.318	0.013	*	0.293	0.344

Fixed coefficients (continued)

ethoth	0.140	0.009	*	0.122	0.157
ethrefu	0.019	0.006	*	0.008	0.030
ethmiss	-0.039	0.005	*	-0.050	-0.029
inpfr	-0.018	0.011		-0.040	0.003
pfrsch	-0.014	0.008		-0.030	0.002
junior	-0.072	0.006	*	-0.083	-0.060
middle	-0.109	0.013	*	-0.133	-0.084
faith	0.019	0.004	*	0.011	0.027
pcfsm	-0.005	0.000	*	-0.005	-0.004
fsmsq	0.000	0.000	*	0.000	0.000
pceal	0.000	0.000		0.000	0.000
ptr	0.002	0.001	*	0.001	0.003
size	-0.005	0.002	*	-0.008	-0.002
spring	0.055	0.002	*	0.052	0.058
summer	0.110	0.002	*	0.107	0.113
pfrks1	-0.029	0.002	*	-0.033	-0.025
pfrfsm	0.036	0.013	*	0.011	0.061
sexks1	0.019	0.000	*	0.018	0.020
pfrmix	-0.034	0.027		-0.086	0.019
pfrind	-0.056	0.035		-0.124	0.012
pfrbla	-0.093	0.037	*	-0.165	-0.020
pfrmiss	-0.074	0.044		-0.161	0.013
pfrspr	-0.039	0.014	*	-0.066	-0.012
pfrsum	-0.038	0.014	*	-0.064	-0.011

KS2 Maths Fine Grade (2003 to 2005)
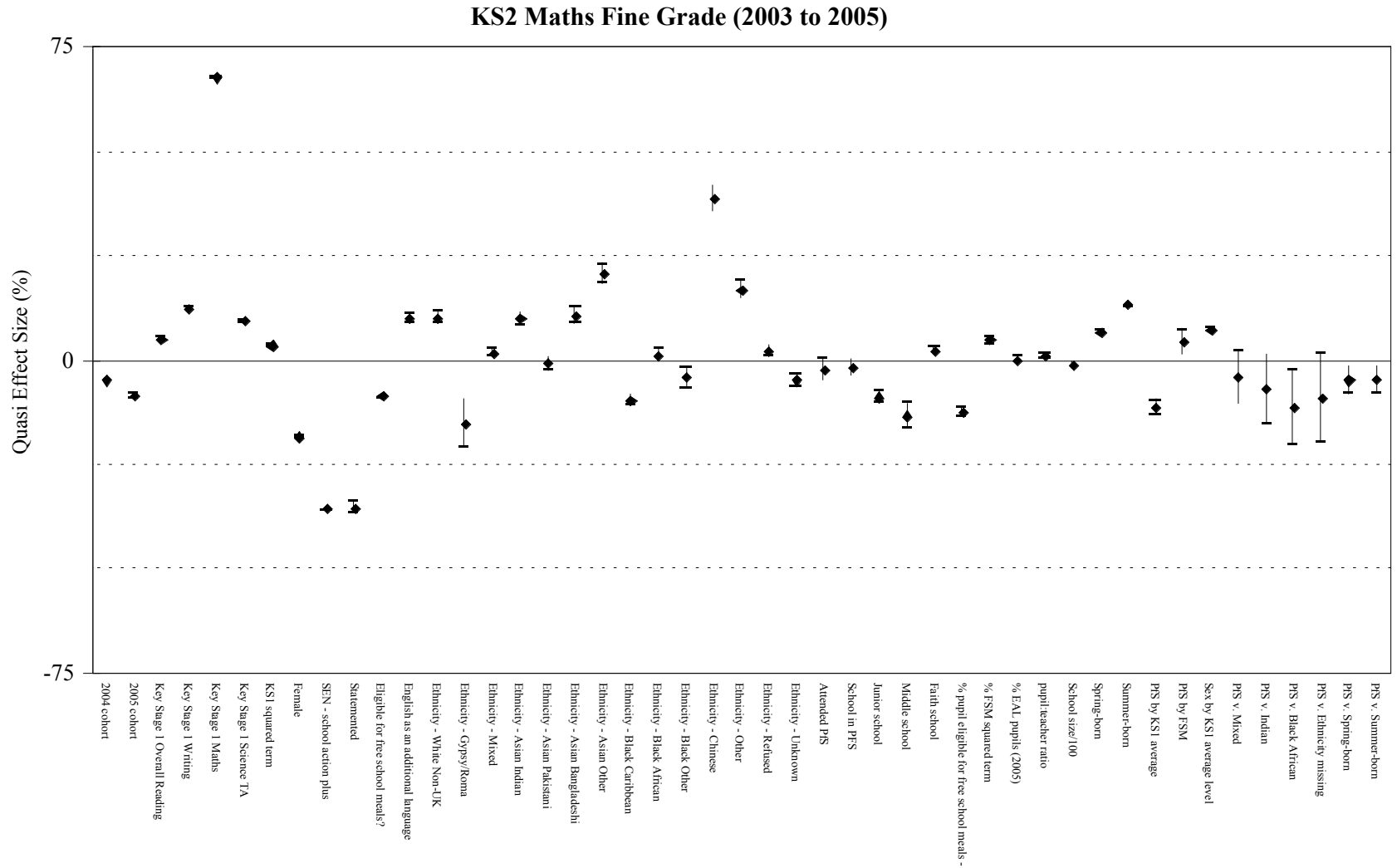
Coefficients in the KS2 to KS3 English model

| Parameter | Estimate | Standard error | Sig. | 95% Confidence interval | |
				Min.	Max.
Base case					
LEA variance	0.032	0.005	*	0.021	0.043
School variance	0.205	0.006	*	0.193	0.217
Year variance	0.082	0.002	*	0.078	0.085
Pupil variance	1.111	0.002	*	1.107	1.115
Fixed model					
LEA variance	0.003	0.001	*	0.002	0.004
School variance	0.011	0.001	*	0.009	0.014
Year variance	0.074	0.001	*	0.071	0.077
Pupil variance	0.517	0.001	*	0.515	0.519
Fixed coefficients					
cons	0.352	0.039	*	0.276	0.427
yr04	0.060	0.007	*	0.046	0.074
yr05	0.159	0.007	*	0.145	0.174
k2rln	0.069	0.000	*	0.068	0.069
k2wln	0.055	0.000	*	0.055	0.056
k2mln	0.032	0.000	*	0.031	0.032
k2sln	0.036	0.000	*	0.036	0.037
ks2sq	0.002	0.000	*	0.002	0.002
female	0.283	0.002	*	0.279	0.286
sensa	-0.353	0.003	*	-0.357	-0.348
senstat	-0.446	0.006	*	-0.458	-0.434
fsm	-0.168	0.002	*	-0.173	-0.164
eal	0.089	0.006	*	0.078	0.100
whitoth	0.102	0.007	*	0.087	0.116
gypsy	-0.230	0.046	*	-0.320	-0.140
ethmix	0.061	0.006	*	0.049	0.073
asiani	0.115	0.008	*	0.099	0.131
asianp	0.075	0.008	*	0.060	0.091
asianb	0.133	0.011	*	0.111	0.155
asiano	0.130	0.013	*	0.104	0.155
blackc	0.047	0.007	*	0.032	0.061
blacka	0.147	0.009	*	0.130	0.164
blacko	0.043	0.013	*	0.018	0.068
chinese	0.128	0.017	*	0.094	0.162

Fixed coefficients (continued)

ethoth	0.163	0.012	*	0.140	0.186
ethrefu	-0.038	0.008	*	-0.054	-0.023
ethmiss	-0.066	0.007	*	-0.079	-0.053
spring	0.008	0.002	*	0.004	0.013
summer	0.023	0.002	*	0.019	0.027
inpfr	-0.003	0.018		-0.037	0.032
pfrsch	-0.022	0.012		-0.046	0.002
grammar	0.182	0.021	*	0.141	0.222
gramint	-0.085	0.003	*	-0.091	-0.078
spec	0.033	0.008	*	0.018	0.049
faith	0.077	0.009	*	0.059	0.095
boysch	0.082	0.017	*	0.048	0.116
girlsch	0.102	0.016	*	0.072	0.133
pcfsm	-0.014	0.001	*	-0.015	-0.013
fsmsq	0.000	0.000	*	0.000	0.000
pceal	0.003	0.000	*	0.002	0.004
ptr	-0.006	0.002	*	-0.010	-0.002
pfrks2	-0.014	0.003	*	-0.020	-0.009
pfrsex	-0.054	0.024	*	-0.100	-0.007
pfrfsm	0.042	0.027		-0.012	0.095
sexks2	-0.016	0.000	*	-0.017	-0.016
pfrind	0.139	0.070	*	0.002	0.277
pfrrefu	0.292	0.128	*	0.042	0.542

KS3 English Fine Grade (2003-5)
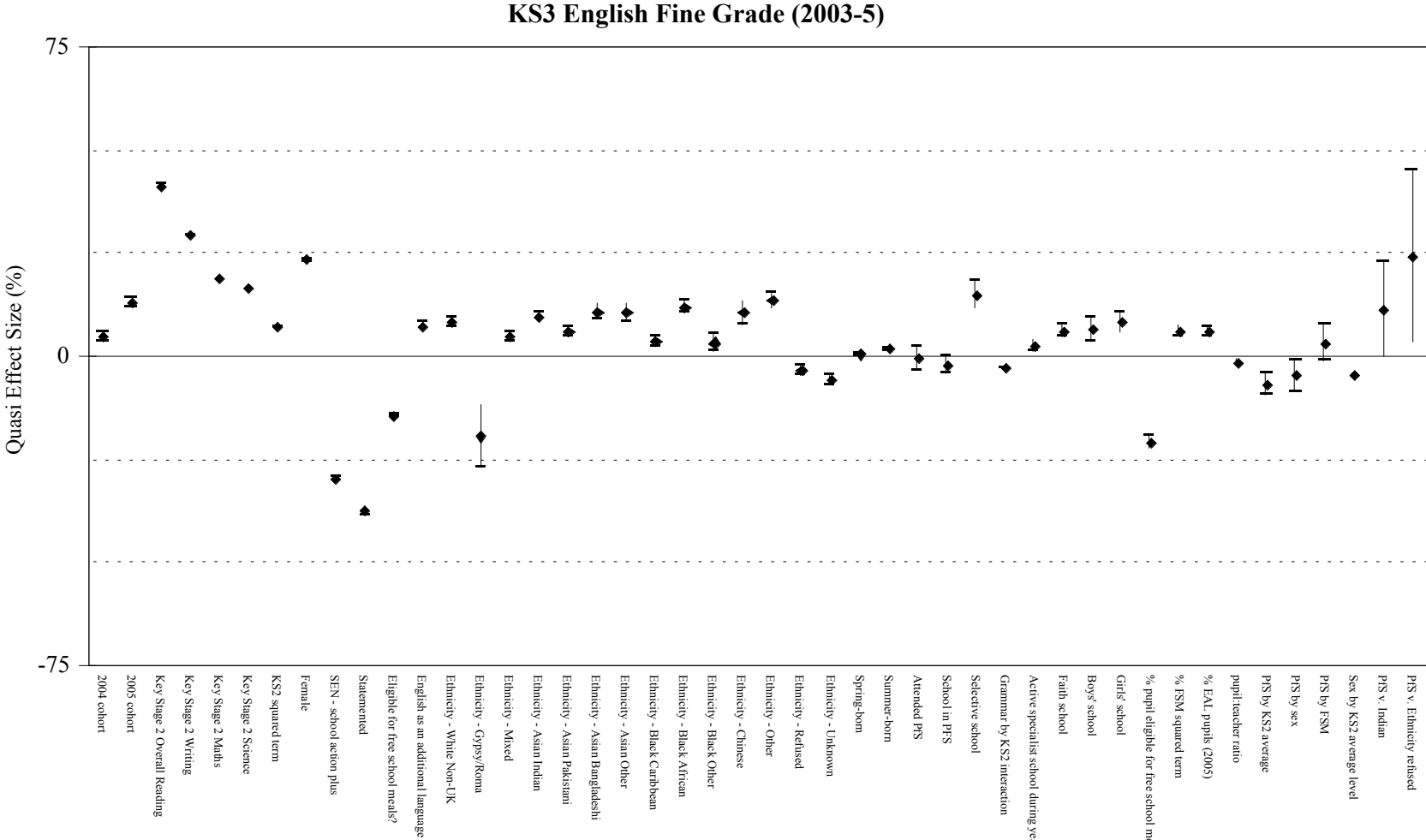
Coefficients in the KS2 to KS3 maths model

Parameter	Estimate	Standard error	Sig.	95% Confidence interval	
				Min.	Max.
Base case					
LEA variance	0.045	0.007	*	0.030	0.059
School variance	0.280	0.008	*	0.266	0.295
Year variance	0.009	0.000	*	0.009	0.010
Pupil variance	1.230	0.002	*	1.226	1.234
Fixed model					
LEA variance	0.003	0.000	*	0.002	0.004
School variance	0.015	0.001	*	0.014	0.016
Year variance	0.006	0.000	*	0.006	0.006
Pupil variance	0.400	0.001	*	0.398	0.401
Fixed coefficients					
cons	-0.254	0.029	*	-0.312	-0.196
yr04	0.068	0.003	*	0.063	0.074
yr05	0.085	0.003	*	0.079	0.090
k2rln	0.036	0.000	*	0.036	0.037
k2wln	0.023	0.000	*	0.022	0.023
k2mln	0.129	0.000	*	0.128	0.129
k2sln	0.046	0.000	*	0.045	0.046
ks2sq	0.007	0.000	*	0.007	0.007
female	-0.089	0.002	*	-0.092	-0.086
sensa	-0.233	0.002	*	-0.238	-0.229
senstat	-0.283	0.005	*	-0.293	-0.272
fsm	-0.111	0.002	*	-0.115	-0.106
eal	0.085	0.005	*	0.075	0.095
whitoth	0.047	0.006	*	0.034	0.060
gypsy	-0.156	0.040	*	-0.235	-0.077
ethmix	-0.026	0.005	*	-0.036	-0.015
asiani	0.145	0.007	*	0.131	0.158
asianp	0.026	0.007	*	0.013	0.040
asianb	0.071	0.010	*	0.052	0.090
asiano	0.198	0.011	*	0.176	0.220
blackc	-0.096	0.006	*	-0.108	-0.083
blacka	0.013	0.008		-0.002	0.028
blacko	-0.095	0.011	*	-0.118	-0.073
chinese	0.402	0.015	*	0.372	0.432
ethoth	0.166	0.010	*	0.146	0.186

Fixed coefficients (continued)

ethrefu	-0.037	0.007	*	-0.050	-0.023
ethmiss	-0.075	0.006	*	-0.087	-0.064
spring	0.030	0.002	*	0.026	0.034
summer	0.064	0.002	*	0.060	0.067
inpfr	-0.008	0.011		-0.030	0.013
secmod	0.033	0.016	*	0.002	0.064
grammar	0.317	0.016	*	0.285	0.349
gramint	-0.129	0.003	*	-0.135	-0.124
spec	0.017	0.006	*	0.006	0.028
faith	0.024	0.007	*	0.011	0.037
boysch	0.049	0.013	*	0.024	0.074
girlsch	0.096	0.011	*	0.073	0.118
pcfsm	-0.012	0.000	*	-0.013	-0.011
fsmsq	0.000	0.000	*	0.000	0.000
pcsen	0.004	0.002	*	0.000	0.008
pceal	0.002	0.000	*	0.001	0.002
ptr	-0.008	0.001	*	-0.011	-0.005
pfrks2	-0.006	0.003	*	-0.011	-0.001
sexks2	-0.001	0.000		-0.002	0.000
pfrmix	-0.105	0.051	*	-0.205	-0.006
pfrchin	-0.569	0.202	*	-0.965	-0.174

KS3 Maths Fine Grade (2003 to 2005)
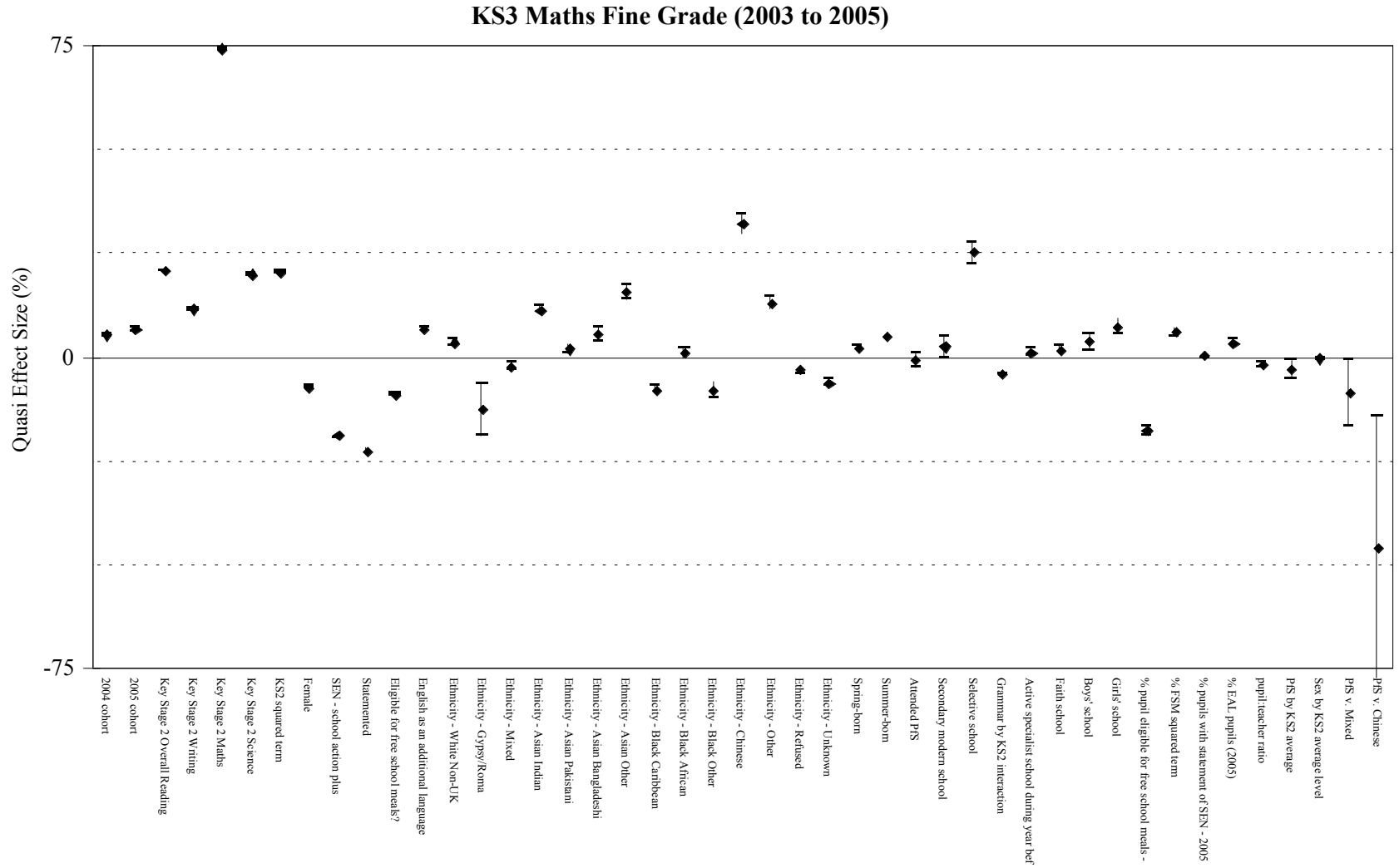
Coefficients in the KS2 to KS4 English model

				95% Confidence interval	
Parameter	Estimate	Standard error	Sig.	Min.	Max.
Base case					
LEA variance	0.113	0.018	*	0.078	0.148
School variance	0.575	0.016	*	0.543	0.607
Year variance	0.030	0.002	*	0.026	0.034
Pupil variance	2.731	0.006	*	2.718	2.744
Fixed model					
LEA variance	0.019	0.003	*	0.013	0.025
School variance	0.080	0.003	*	0.075	0.086
Year variance	0.030	0.001	*	0.027	0.033
Pupil variance	1.599	0.004	*	1.592	1.606
Fixed coefficients					
cons	-1.735	0.071	*	-1.875	-1.595
yr05	-0.057	0.006	*	-0.069	-0.044
k2rln	0.071	0.001	*	0.070	0.072
k2wln	0.064	0.001	*	0.063	0.066
k2mln	0.043	0.001	*	0.042	0.044
k2sln	0.054	0.001	*	0.053	0.056
ks2sq	0.009	0.000	*	0.008	0.009
female	0.451	0.005	*	0.442	0.460
sensa	-0.640	0.006	*	-0.651	-0.628
senstat	-0.695	0.012	*	-0.719	-0.672
fsm	-0.478	0.006	*	-0.489	-0.467
eal	0.321	0.015	*	0.292	0.350
whitoth	0.216	0.019	*	0.179	0.253
gypsy	-0.515	0.099	*	-0.709	-0.321
ethmix	0.119	0.016	*	0.087	0.151
asiani	0.431	0.020	*	0.392	0.470
asianp	0.390	0.020	*	0.351	0.429
asianb	0.497	0.028	*	0.443	0.551
asiano	0.447	0.035	*	0.379	0.516
blackc	0.268	0.018	*	0.233	0.303
blacka	0.618	0.023	*	0.573	0.663
blacko	0.163	0.031	*	0.101	0.224
chinese	0.359	0.046	*	0.268	0.449
ethoth	0.400	0.030	*	0.341	0.460
ethrefu	-0.125	0.019	*	-0.162	-0.088

Fixed coefficients (continued)

ethmiss	-0.291	0.016	*	-0.323	-0.260
spring	0.068	0.005	*	0.058	0.079
summer	0.138	0.005	*	0.127	0.148
inpfr	0.054	0.073		-0.089	0.197
pfrsch	-0.055	0.039		-0.131	0.021
grammar	0.359	0.040	*	0.282	0.437
gramint	-0.159	0.010	*	-0.178	-0.140
spec	0.085	0.014	*	0.058	0.113
ctcsch	0.337	0.109	*	0.124	0.550
faith	0.160	0.016	*	0.128	0.192
boysch	0.102	0.031	*	0.040	0.163
girlsch	0.140	0.028	*	0.085	0.194
pcfsm	-0.019	0.001	*	-0.021	-0.018
pceal	0.005	0.001	*	0.004	0.006
ptr	-0.015	0.004	*	-0.022	-0.008
size	0.005	0.002	*	0.001	0.009
pfrsex	-0.743	0.092	*	-0.924	-0.562
pfrgyp	0.292	0.109	*	0.079	0.505
pfrmix	0.483	0.243	*	0.006	0.960
pfrblc	-0.448	0.211	*	-0.862	-0.034
pfrchin	-2.259	0.739	*	-3.707	-0.811
pfroth	3.230	0.908	*	1.450	5.010
pfrrefu	-0.893	0.181	*	-1.247	-0.539

KS4 English Grade (2003 to 2005)
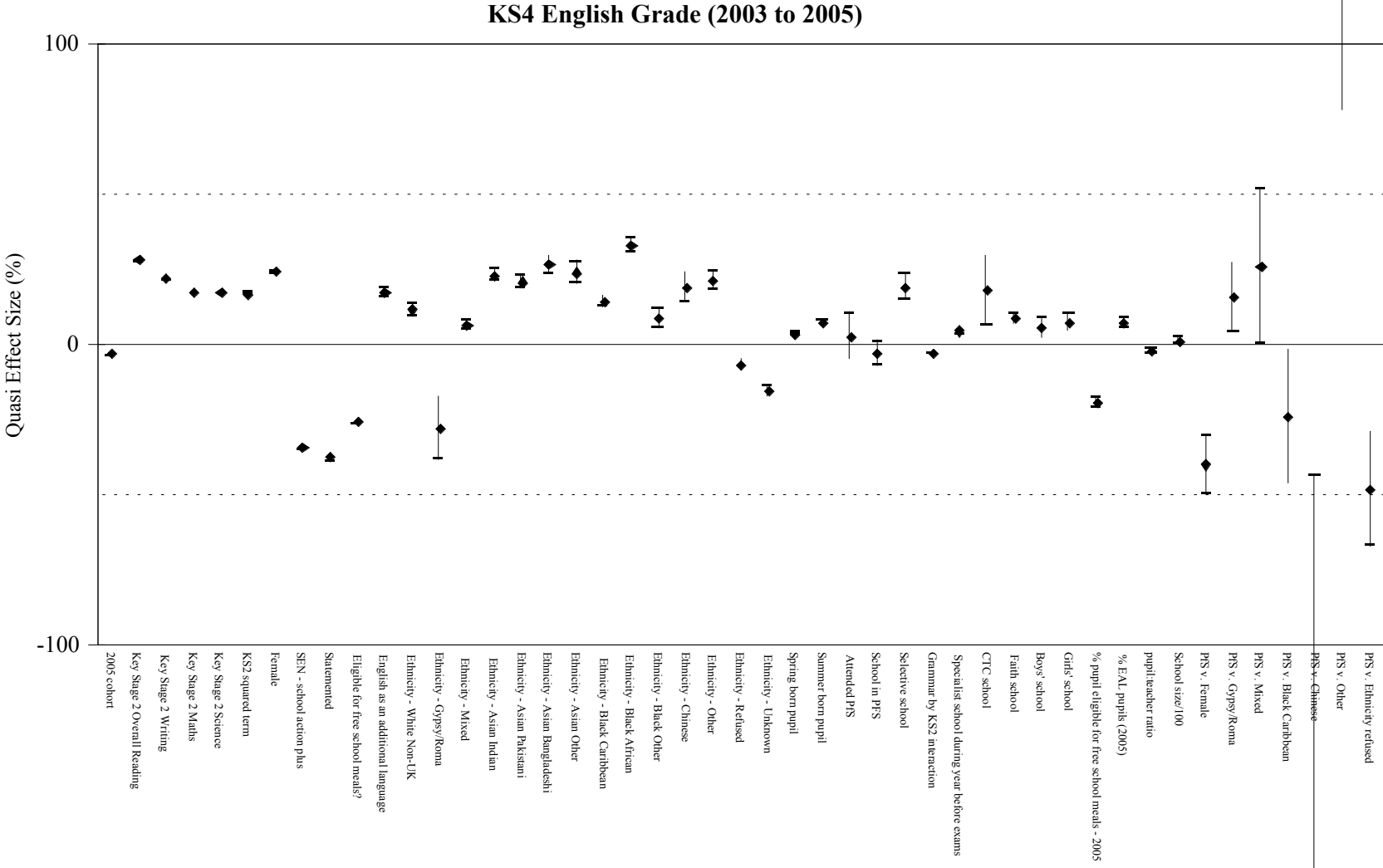
Coefficients in the KS2 to KS4 maths model

Parameter	Estimate	Standard error	Sig.	95% Confidence interval	
				Min.	Max.
Base case					
LEA variance	0.135	0.021	*	0.094	0.177
School variance	0.669	0.019	*	0.633	0.706
Year variance	0.024	0.002	*	0.021	0.028
Pupil variance	2.734	0.006	*	2.721	2.747
Fixed model					
LEA variance	0.020	0.003	*	0.013	0.026
School variance	0.099	0.003	*	0.092	0.106
Year variance	0.023	0.001	*	0.020	0.025
Pupil variance	1.524	0.004	*	1.517	1.531
Fixed coefficients					
cons	-2.491	0.073	*	-2.634	-2.348
yr05	-0.039	0.006	*	-0.050	-0.027
k2rln	0.044	0.001	*	0.043	0.046
k2wln	0.031	0.001	*	0.029	0.032
k2mln	0.123	0.001	*	0.122	0.124
k2sln	0.063	0.001	*	0.062	0.064
ks2sq	0.011	0.000	*	0.011	0.011
female	-0.016	0.005	*	-0.025	-0.006
sensa	-0.481	0.006	*	-0.492	-0.470
senstat	-0.407	0.012	*	-0.430	-0.384
fsm	-0.420	0.006	*	-0.431	-0.409
eal	0.376	0.014	*	0.348	0.405
whitoth	0.134	0.019	*	0.097	0.170
gypsy	-0.531	0.097	*	-0.720	-0.341
asianp	0.359	0.019	*	0.321	0.396
asianb	0.485	0.027	*	0.432	0.538
asiano	0.616	0.034	*	0.550	0.683
blackc	0.067	0.017	*	0.033	0.101
blacka	0.456	0.022	*	0.412	0.499
blacko	-0.075	0.030	*	-0.134	-0.015
chinese	0.973	0.045	*	0.884	1.061
ethoth	0.452	0.029	*	0.394	0.509
ethrefu	-0.155	0.019	*	-0.191	-0.118
ethmiss	-0.306	0.016	*	-0.337	-0.274
spring	0.095	0.005	*	0.085	0.105

Fixed coefficients (continued)

summer	0.191	0.005	*	0.181	0.201
inpfr	0.146	0.064	*	0.021	0.270
pfrsch	-0.093	0.041	*	-0.174	-0.013
secmod	0.103	0.041	*	0.022	0.184
grammar	0.532	0.041	*	0.451	0.614
gramint	-0.178	0.010	*	-0.197	-0.159
spec	0.080	0.014	*	0.051	0.108
faith	0.109	0.017	*	0.075	0.142
girlsch	0.172	0.028	*	0.116	0.227
pcfsm	-0.020	0.001	*	-0.021	-0.018
pceal	0.004	0.001	*	0.003	0.005
ptr	-0.021	0.004	*	-0.028	-0.014
sencent	-0.605	0.282	*	-1.157	-0.052
pfrks2	-0.051	0.010	*	-0.070	-0.031
pfrsex	0.525	0.089	*	0.351	0.699
sexks2	-0.002	0.001	*	-0.004	0.000

KS4 Maths Grade (2003 to 2005)