



# **The Impact of Creative Partnerships on School Attainment and Attendance**

**Final Report**

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## Executive summary

Creative Partnerships is the Government's creative learning programme, designed to develop the skills of young people across England, raising their aspirations and achievements, and opening up more opportunities for their futures. It started in 2002 with 398 core schools in 16 deprived areas of England. Creative Partnerships has now worked with nearly 5,000 schools in over 150 Local authorities across England, from Key Stage 1 to 4.

In this report we present findings from the third follow-up study, which explored the comparative impact of Creative Partnerships on attainment and behaviour (attendance and exclusions) using the latest available data.

For the analysis of progress in attainment, two cohorts of pupils are being analysed separately:

- Pupils who sat key stage exams at the end of the 2006/07 academic year.
- Pupils who sat key stage exams at the end of the 2007/08 academic year.

Progress in attainment was studied separately for key stage 2, key stage 3 and key stage 4.

We examined the way in which absence rates changed over time in Creative Partnership schools when compared with schools who were not engaged in Creative Partnerships. A similar analysis looked at exclusions (fixed-term and permanent).

The analysis found an interesting pattern of relationships between involvement in Creative Partnerships and outcomes for attainment and attendance. Although many of the analyses found no significant differences in outcomes between Creative Partnership and comparison schools, there were some positive relationships. In particular, involvement in Creative Partnerships was associated with slightly higher average attainment at KS4 in 2007 and 2008. Primary and secondary schools taking part in Creative Partnerships had slightly lower rates of fixed-term exclusions.

There were also some indications that length of participation in Creative Partnerships and the amount of Creative Partnerships activity reported by schools were important. For instance, lower rates of fixed-term exclusions were found in primary schools which had been in Creative Partnerships for two years or more. On the other hand, higher numbers of Creative Partnerships' project days in a given period of time were correlated with lower attainment at key stage 2 in 2007 and at key stage 3 in 2008. The same relationship was found in school exclusions where higher numbers of Creative Partnerships' project days in a given period of time were associated with greater levels of fixed-term exclusion and lower levels of school attendance. This appears to suggest that a lower number of project days spread out over a longer period of time has a more positive relationship with attainment and attendance than shorter periods of overlapping project activities.

Broadly speaking, these results are consistent with those found in previous years, although analysis at the school level has resulted in fewer statistically significant results than those at the individual pupil level. With this in mind, we recommend Creative Partnerships to collect data on participation at the pupil level wherever possible, because this is likely to yield a more powerful analysis and possibly more conclusive results.



# 1. Introduction

Creative Partnerships is the Government's creative learning programme which has worked with over 940,000 young people and over 90,000 teachers by fostering long-term partnerships between schools and creative professionals to inspire, harness the potential of creative learning and experiment with new ideas. Managed by new national organisation, Creativity, Culture and Education (CCE) ([www.creativitycultureeducation.org](http://www.creativitycultureeducation.org)), the programme was launched in 2002 and has worked with nearly 5,000 schools across England, from Key Stage 1 to 4.

The National Foundation for Educational Research (NFER) has conducted a number of studies to evaluate the initiative. Between Autumn 2002 and Summer 2004, the NFER carried out a programme-level evaluation of Creative Partnerships (Sharp *et al.*, 2006), which focused on measuring changes in self-confidence, self-esteem and attitudes to learning amongst young people who took part in Creative Partnerships' activity. However, the evaluation was not intended to address the issues of the impact that involvement in Creative Partnerships may have on pupil performance. In consultation with Arts Council England, it was decided that the NFER should undertake a separate study to consider whether Creative Partnerships has had a significant positive impact on educational attainment.

Using the National Pupil Database (NPD), the NFER was able to examine the relationship between attendance at Creative Partnerships schools and activities and attainment, for young people reaching the end of key stages 2, 3 or 4 (i.e. those young people in Years 6, 9 or 11) in 2003 and 2004. The study indicated some small but statistically significant positive associations between attending Creative Partnerships' activities and attainment for young people (see Eames *et al.*, 2006).

Creative Partnerships was interested in examining the extent to which the impact of the programme was sustained or enhanced over a longer time-period so a subsequent study focused on attainment in 2005 and 2006 to explore this (Kendall *et al.*, 2008a). Consistent with the findings of Eames *et al.* (2006) the study found statistically significant but small positive effects on academic progress. Pupils who were known to have attended Creative Partnerships' activities made greater progress at key stages 2, 3 and 4 than other young people in the same schools. These pupils also made better academic progress at key stages 3 and 4, but not at key stage 2, than other similar young people nationally. There was no evidence, however, of a wider impact on the progress of young people who attended Creative Partnerships' schools but who were not involved in Creative Partnerships' activities. This suggested that while Creative Partnerships might have benefited individual pupils who were directly involved in its activities, it had not yet become a whole school initiative that affected all young people within the school community.

A further study focused on absence rates between 2002/3 to 2006/7 and school exclusions from 2002/3 to 2005/6 (Kendall *et al.*, 2008b) in order to examine whether

schools' engagement with Creative Partnerships was associated with improvements in young people's attendance and behaviour at school. Participation in Creative Partnerships was associated with a reduction in total absence rates in primary schools and this reduction increased over a period of years as Creative Partnerships became more established in these schools. There were, however, no statistically significant effects on attendance in secondary schools. Involvement in Creative Partnerships did not affect exclusion rates in either primary or secondary schools, but this may have been due to the fact that exclusions are relatively rare, making it more difficult to show an impact on this measure.

In this report we present findings from the most recent follow-up study, which explored the impact of Creative Partnerships on attainment and on attendance and exclusions (fixed and permanent) using the latest available data. The study adopted a comparative approach to establish how the performance of schools involved in Creative Partnerships compared with that of similar schools which have not been involved in the initiative. The analyses of the impact on attainment looked at attainment in both 2006/07 and 2007/08, while the analyses of the impact on attendance and exclusions focused on just 2007/08 data, as absence and exclusions rates in 2006/07 had already been explored in Kendall *et al.* (2008b). The study focused on school-level outcomes only: analyses were not conducted at pupil level on this occasion. This is because records of individual pupil attendance at Creative Partnerships' activities were collected from Autumn 2002 to Summer 2004 and much has changed since 2004. Some of the older pupils will have left the school they were attending previously and we did not know whether these or the remaining pupils continued to experience Creative Partnerships' activities. We were also not in a position to know which pupils in other schools have experienced Creative Partnerships' activities since 2004.

## 1.1 Structure of the report

Chapter 2 outlines how the attainment and behaviour analyses were conducted. In Chapter 3, we present the characteristics of the schools and young people involved in the analyses, including the level of disadvantage of Creative Partnerships' schools in comparison to other schools, and the number of schools and young people in the analyses. The findings relating to the impact of Creative Partnerships on attainment in 2006/07 and 2007/08 are presented in Chapter 4. The results of the analysis of the impact of Creative Partnerships on attendance and exclusions rates in 2007/08 are presented in Chapter 5. Finally, in Chapter 6, we discuss the findings and consider their implications. Further and more detailed technical information about the analyses can be found in the Appendix at the end of the report.

## 2. Approach

### 2.1 About the analysis

The National Pupil Database (NPD) was used to explore the relationship between young people's attendance at Creative Partnerships' schools and their progress in national assessments. The NPD is a 'data warehouse' which brings together information from the Pupil Level Annual Schools Census (PLASC) and assessment data. It links pupil performance in key stage 1, 2 and 3 assessments to GCSE/GNVQ results. The NPD information for results obtained in 2007 and 2008 was merged with school-level data from the NFER Register of Schools.

To evaluate an association between participation in the Creative Partnerships' programme and improved outcomes, the most powerful analysis would make use of information relating to the involvement of individual young people. However, this was not possible because the data on individual participation in Creative Partnerships' activities was collected too long ago and was therefore too out of date to be reliable. This study focuses on school-level data participation in the programme.

This report presents the following information:

- a brief description of the sample of young people included in the analysis
- the overall differences in progress (attainment) between young people who attended Creative Partnerships' activities and other young people nationally
- the difference in attendance and exclusion rates for primary and secondary schools between young people who attended Creative Partnerships' activities and other young people nationally.

The technical appendix includes additional information used in the analysis. The appendix includes:

- the profile of the young people in the sample
- data on the attainment of young people in the sample known to attend Creative Partnerships' schools compared to attainment data of all young people nationally
- details of attendance and exclusion in schools
- number of Creative Partnerships' schools included in the attendance and exclusion analysis
- details of the multilevel models.

When interpreting our analysis we consider two measures of significance. Firstly, a relationship is considered *statistically significant* if it is unlikely to have occurred by chance. However, a relationship is only then considered *educationally significant* if it

also indicates a large enough impact on educational outcomes. We have used an effect size calculation to indicate ‘educational significance’. An effect size represents the difference found by dividing the observed difference between two groups by the standard deviation of the scores in the relevant population. In this report, effect sizes have been scaled so that an effect size of 100 is equivalent to a difference of one standard deviation in the outcome. A useful rule of thumb in considering the importance of a given value is that an effect size of 25 or more is likely to represent a finding which is of educational, as well as statistical significance (Slavin and Fashola, 1998). The US What Works Clearinghouse<sup>1</sup>, which provides a highly regarded resource of evidence of ‘what works’ in education, also sets an effect size of at least 25 as the minimum level indicating that an educational intervention has an impact and that it may be worth consideration for wider adoption.

## 2.2 Analysis of progress in attainment

The main analysis used was multilevel modelling. This 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 within schools. Multilevel modelling allows us to take account of this hierarchical structure of the data and produce more accurate predictions, as well as estimates of the differences between students and between schools. After each model had been created, non-significant variables were removed. This procedure is used to ensure that none of the non-significant variables are disguising an important effect.

Please note that the models take account of each pupil’s level of prior attainment, so the outcome we measure is academic *progress* rather than attainment. This allows us to take account of differences in pupil attainment at Creative Partnerships’ schools and non-Creative Partnerships’ schools before Creative Partnerships’ activities began.

For the attainment analysis, two cohorts of pupils are being analysed separately:

- Pupils who sat key stage exams at the end of the 2006/07 academic year.
- Pupils who sat key stage exams at the end of the 2007/08 academic year.

Progress in attainment was studied separately for key stage 2, key stage 3 and key stage 4. The measures used were:

- KS2 reading, writing and maths
- KS3 English, maths and science
- KS4 English, maths and science.

We also considered the progress in total attainment scores for each key stage.

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<sup>1</sup> See <http://ies.ed.gov/ncee/wwc/>.

## 2.3 Analysis of attendance and exclusion rates

This report also examines the association between engagement in Creative Partnerships and absence rates. In particular, because any impact of Creative Partnerships on attendance is likely to take some time to become established, we examine the way in which absence rates change over time in Creative Partnerships' schools, compared with schools not engaged in Creative Partnerships. Similarly, we explore the hypothesis that schools engaged in Creative Partnerships may become less likely to permanently exclude young people as Creative Partnerships becomes more established.

Creative Partnerships is targeted at disadvantaged areas, and therefore schools engaged with Creative Partnerships have higher levels of absence and exclusion than schools not involved. By using the statistical technique of multilevel modelling, valid comparisons can be made between schools engaged with Creative Partnerships and those not involved.



### 3. Sample information: the young people in the analysis

Since Creative Partnerships involves primary and secondary schools, the analysis conducted and reported here covered years 1 to year 11, grouping pupils in relation to their most recent key stage assessment.

To enable a reliable view of the impact of Creative Partnerships on pupils' progress, their key stage attainment prior to being involved with Creative Partnerships was taken into account. Analysis was conducted on two cohorts of pupils: those from the academic year 2006/07 and those from the year 2007/08.

Overall, sample characteristics are broadly in line with previous studies (see Eames *et al.*, 2006; and Kendall *et al.*, 2008a and b). As expected, analysis revealed that schools involved in Creative Partnerships tended to be situated in areas associated with higher measures of deprivation.

In the analysis presented below the term 'Level 1 schools' is used: this refers to the 'core' schools, selected at the start of a Creative Partnerships' programme, that received significant investment in projects and programmes. Initially, these schools hosted a broad range of projects designed to explore learning needs, capabilities and overall ambitions. Such schools, according to Creative Partnerships, tended to develop whole school approaches, with a high level of senior management engagement, considerable CPD training and reaching most, if not all, young people in the school. Further, such schools are seen by Creative Partnerships as 'exemplars' and advocates for Creative Partnerships' work across the schools and cultural sectors, helping to encourage good practice after Creative Partnerships has ceased to be active.

#### 3.1 The 2006/07 sample

In total there are 694 Level 1 Creative Partnerships' schools included in the 2006/2007 analysis. The 2006/2007 cohort consists of the following groups:

- At key stage 2 the analysis included 17,492 children in 456 Creative Partnerships' schools, compared with 514,569 children in 14,823 non-Creative Partnerships' schools.
- At key stage 3, the analysis included 38,608 young people attending 272 Creative Partnerships' schools and 488,066 young people in 3,683 non-Creative Partnerships' schools.

- At key stage 4, the analysis included 39,243 young people attending 263 Creative Partnerships' schools and 490,891 young people in 3,483 non-Creative Partnerships' schools<sup>2</sup>.

Details about the background characteristics of these groups can be found in the Appendix, Tables A1 to A3. Overall, they suggest that schools involved in Creative Partnerships serve more disadvantaged populations than other schools.

Analysis revealed that, in terms of prior attainment, pupils from Creative Partnerships' schools had significantly lower scores than their non-Creative Partnerships' counterparts, prior to their schools' involvement in Creative Partnerships. This finding is to be expected, given that Creative Partnerships focused on schools in areas of deprivation, which tend to have lower overall measures of attainment. In line with this observation analysis also revealed that, compared to non-Creative Partnerships' schools:

- young people in schools involved in Creative Partnerships were more likely to be eligible for free school meals
- the proportion of young people identified as having Special Educational Needs (SEN) (School action Plus) was larger in Creative Partnerships' schools
- the proportion of young people whose first language is not English was larger in Creative Partnerships' schools
- Creative Partnerships' schools tend to be located in areas which are higher on the index of deprivation.

In terms of ethnic background, the majority of pupils were categorised as White-British. Compared with non-Creative Partnerships' schools, analysis showed that:

- there was a larger proportion of pupils from Asian backgrounds (such as Pakistani, Indian and Bangladeshi) in Creative Partnerships' schools. At key stage 2, 12.5 per cent of children in Creative Partnerships' schools were from one of these three ethnic groups, compared to 6.1 per cent in non Creative Partnerships' schools. At key stage 3, 9.3 per cent of young people in Creative Partnerships' schools were from one of these ethnicities, compared to 5.6 per cent in non Creative Partnerships' schools. At key stage 4, 8.7 per cent of young people in Creative Partnerships' schools were from one of these ethnicities, compared to 5.0 per cent in non Creative Partnerships' schools
- at key stage 2, there was a larger proportion of young people from a Black African minority background attending Creative Partnerships' schools.

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<sup>2</sup> Young people for whom some key pieces of information were missing, for example end of key stage assessment data, could not be included in the analysis and are therefore excluded from these figures. Note also that some schools could be included in more than one of the Key Stage analyses, and so the totals by Key Stage do not add up to the overall total number of Creative Partnerships' schools.



All of these findings are similar to those reported in previous years (see Eames *et al.*, 2006; Kendall *et al.*, 2008a and b).

### 3.2 The 2007/08 sample

In total 681 Level 1 Creative Partnerships' schools were included in the 2007/08 analysis. The 2007/2008 cohort breaks down as follows:

- At key stage 2, the analysis included 17,662 children attending 442 Creative Partnerships' schools and 514,418 children in 14,330 non-Creative Partnerships' schools.
- At key stage 3, the analysis included 37,463 young people attending 261 Creative Partnerships' schools and 470,325 young people in 3,472 non-Creative Partnerships' schools.
- At key stage 4, the analysis included 39,089 young people attending 258 Creative Partnerships' schools and 492,720 young people in 3,373 non-Creative Partnerships' schools<sup>3</sup>.

A detailed breakdown of the background characteristics of the young people in the sample can be found in the technical appendix, Tables A4 to A6. Unsurprisingly, it was found that young people in Creative Partnerships' schools appeared to be more disadvantaged than young people in other schools. The average attainment of Creative Partnerships' schools is consistently lower compared to average attainment in other schools (see Tables A10 to A12). In fact, all prior attainment measures in Creative Partnerships' schools are approximately 1 average point score less than in non-Creative Partnerships' schools. However, it should be noted that this is only an average result, and there was considerable variation between schools.

Analysis also revealed that, compared to non-Creative Partnerships' schools:

- young people attending Creative Partnerships' schools in 2007/08 were more likely to be entitled to Free School Meals compared to young people in non-Creative Partnerships' schools
- young people attending Creative Partnerships' schools were more likely to have English as an additional language compared to young people in non-Creative Partnerships' schools
- there was a higher proportion of young people with School Action Plus in the group of young people who attended Creative Partnerships' schools than young people attending non-Creative Partnerships' schools

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<sup>3</sup> Young people for whom some key pieces of information were missing, for example end of key stage assessment data, could not be included in the analysis and are therefore excluded from these figures. Note also that some schools are included in more than one of the key stage analyses, and so the totals by key stage do not add up to the overall total number of Creative Partnerships' schools.

- at key stage 2, there was a higher proportion of young people with statements of SEN in Creative Partnership schools than in non-Creative Partnerships' schools
- the deprivation index was consistently higher for young people attending Creative Partnership schools compared to non-Creative Partnerships' schools.
- young people attending Creative Partnerships' schools were less likely to be from White British backgrounds and slightly more likely to be from a Pakistani background than young people attending non-Creative Partnerships' schools.
- young people attending Creative Partnerships' schools are slightly more likely to be from a Bangladeshi ethnic background compared to young people attending non-Creative Partnerships' schools.

## 4. How did the academic progress in Creative Partnerships' schools compare with that of other schools?

To examine the impact of schools' involvement in Creative Partnerships on young people's academic progress, we compared the performance of Creative Partnerships' schools with that of similar schools which had not been involved in the Creative Partnerships' programme. Using a statistical technique called multi-level modelling, we looked at the differences in progress at key stage 2, key stage 3 and key stage 4 for young people sitting exams in 2006/7 and 2007/08. These differences were found after taking into account other pupil, family and school characteristics that can affect attainment, such as gender and free school meal eligibility (please see the Appendix for further details). We also considered the relationship between academic progress and the following variables:

1. The period of time between the end of the most recent Creative Partnerships project and the relevant key stage assessment (a measure of 'recency' of Creative Partnerships activity)
2. The period of time between the start of the first Creative Partnerships project and the end of the last project in the school (length of involvement in the Creative Partnerships programme)
3. The number of Creative Partnerships projects in a school
4. The difference between the start and end date of each Creative Partnerships project, totalled across all projects in the school (a measure of total project duration)
5. Whether the school took part in the Creative Partnerships programme or was selected as a comparison school.

(The first four variables were not included in our previous analyses of the longer-term impact of Creative Partnerships.)

### 4.1 Exploring progress in attainment in 2007

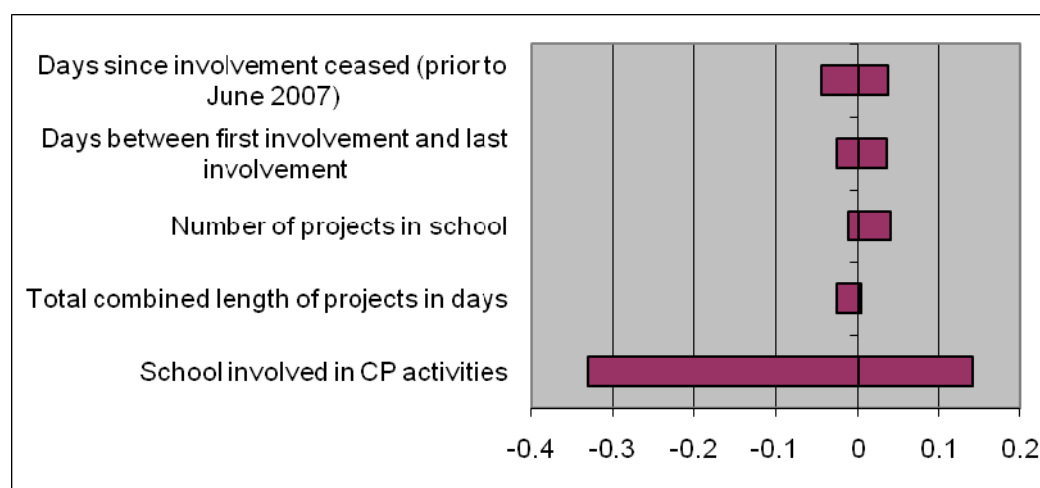
The analysis compared the progress of young people in Creative Partnerships' schools in 2006/07 at key stage 2, key stage 3 and key stage 4 with that of pupils in non-Creative Partnerships' schools.

Results for the analysis are presented in graphs below and these show the impact of each of the five Creative Partnerships-related variables listed in the previous section.

### 4.1.1 Progress in attainment at key stage 2 in 2007

Figure 1 shows the relationship between the five Creative Partnerships measures and overall progress at KS2. Results to the right of the zero line indicate a positive relationship and those to the left indicate a negative relationship with a 95 per cent probability. If the bar crosses the zero line, the effect is not statistically significant.

**Figure 1: Results for key stage 2 average (2007)**



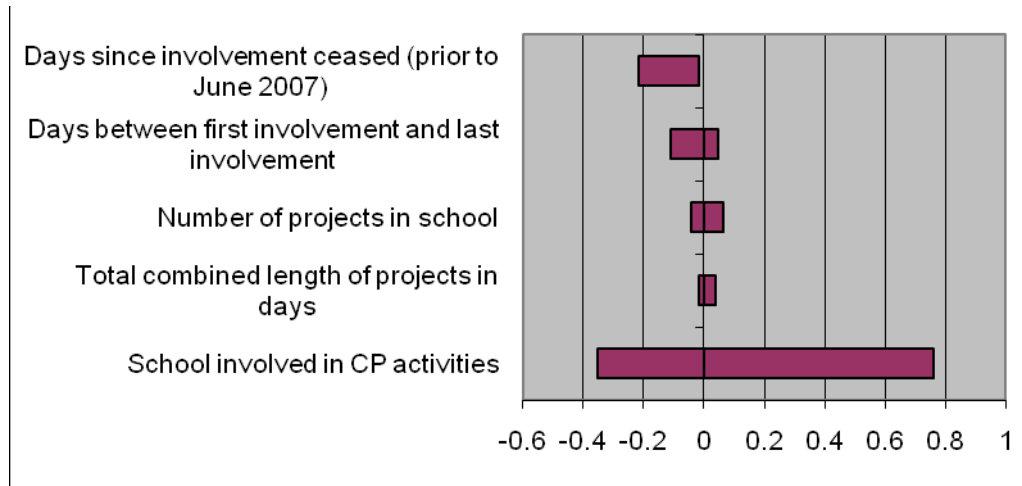
*Each bar represents the 95% confidence interval for the variables coefficient obtained with multilevel modelling*

As Figure 1 shows, analysis at key stage 2 found no differences in academic progress between pupils in Creative Partnerships' schools compared to those in non-Creative Partnerships' schools. However, the fourth variable (an indicator of total project duration) only just crosses the zero line. When non-significant variables were removed, we found evidence of a statistically significant negative relationship between the total length of Creative Partnerships' projects and average attainment at KS2. In other words, there was evidence that schools providing projects of a longer total duration correlated with less progress in KS2.

### 4.1.2 Progress in attainment at key stage 3 in 2007

There were no statistically significant relationships between overall progress at KS3 and participation in Creative Partnerships in 2007. However, there was a significant finding for progress in English. Figure 2 shows the relationship between the five Creative Partnerships measures and attainment in English at KS3.

**Figure 2 Results for key stage 3 English (2007)**



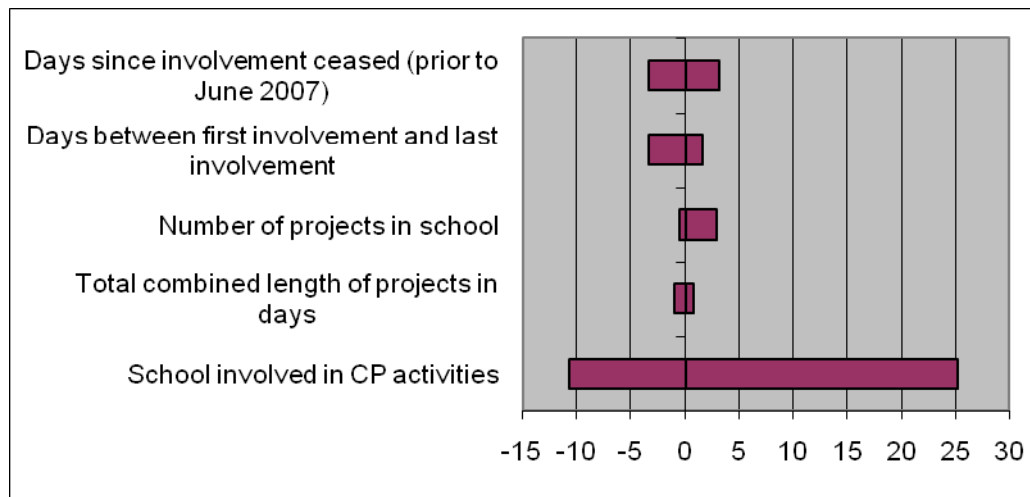
*If the bar crosses the zero line, the effect is not statistically significant at 5 % level. Each bar represents the 95% confidence interval for the variables coefficient obtained with multilevel modelling*

The key stage 3 analysis found only one significant relationship: there was a small association between attainment in KS3 English, and the time that had passed since Creative Partnerships' activities had ceased. In Creative Partnerships' schools where more time had passed since the end of Creative Partnerships' activities, the school had a slightly lower average progress in KS3 English.

#### 4.1.2 Progress in attainment at key stage 4 in 2007

Figure 3 shows the results of analysis for KS4 in 2007.

**Figure 3 Results for KS4 total point score (new system) (2007)**



*If the bar crosses the zero line, the effect is not statistically significant at 5 % level. Each bar represents the 95% confidence interval for the variables coefficient obtained with multilevel modelling*

As Figure 3 shows, analysis at key stage 4 found no differences between the KS3 progress in attainment of pupils in Creative Partnerships' schools compared to those in non-Creative Partnerships' schools. There was no evidence of a correlation between a range of Creative Partnerships-related factors and average key stage 4 attainment. However, when we removed non-significant variables, there was a statistically significant relationship between being in Creative Partnerships' schools and total GCSE point score. That is, all young people in Creative Partnerships' schools have, on average, a slightly higher total point score mark (about 7 points higher) when compared to similar pupils in non Creative Partnerships' schools.

In interpreting this result, we should point out that it could be young people who were not part of Creative Partnerships' activities who attained the higher marks rather than those who participated in Creative Partnerships activities. It is not possible to determine whether this is a Creative Partnerships' effect without a pupil-level analysis.

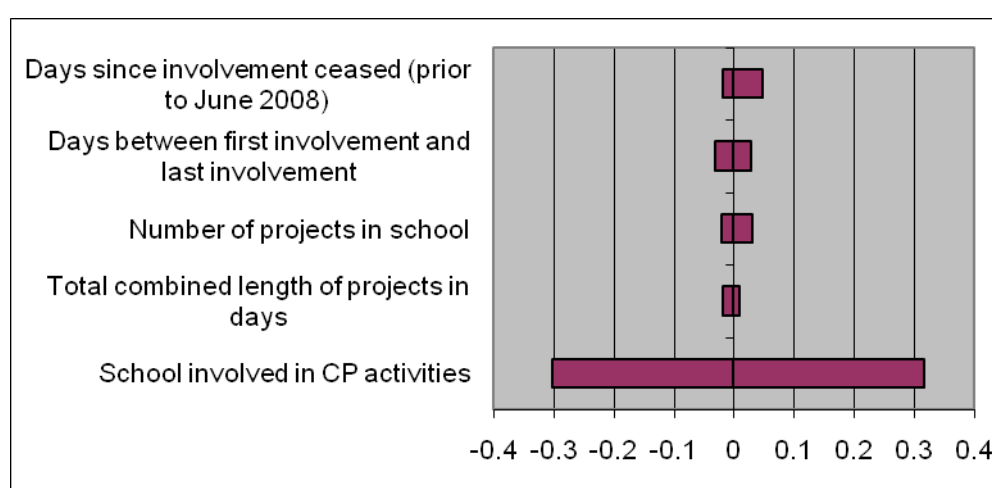
## 4.2 Progress in attainment in 2008

The study compared the attainment of young people in Creative Partnerships' schools in 2007/08 at key stage 2, key stage 3 and key stage 4 with that of pupils in non-Creative Partnerships' schools using the same five measures as for the 2007 analysis.

### 4.2.1 Progress in attainment at key stage 2 in 2008

Figure 4 shows the results of the analysis for attainment in key stage 2.

**Figure 4 Results for key stage 2 average (2008)**



*If the bar crosses the zero line, the effect is not statistically significant at 5 % level. Each bar represents the 95% confidence interval for the variables coefficient obtained with multilevel modelling*

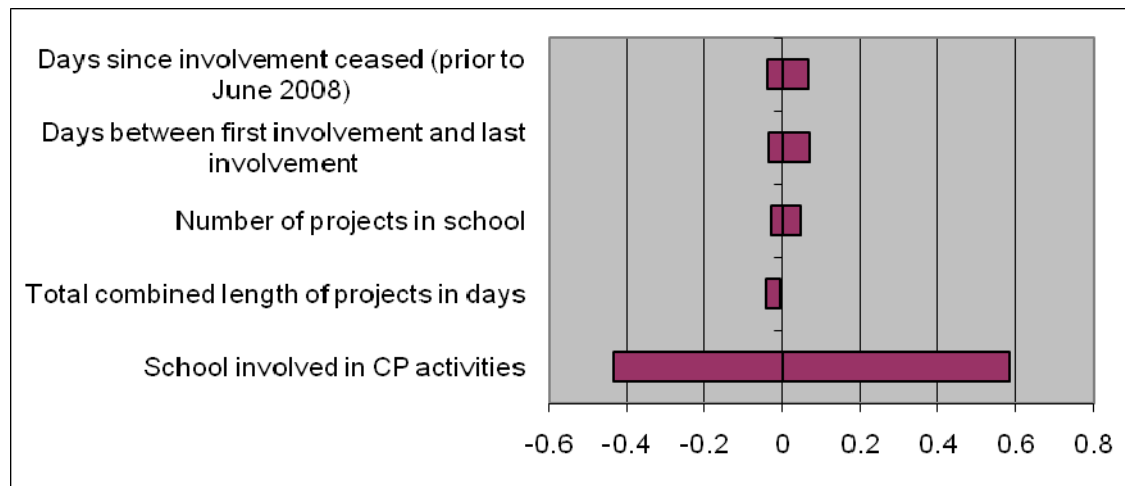
As Figure 4 shows, analysis at key stage 2 found no statistical difference between pupils in Creative Partnerships' schools compared to those in non-Creative

Partnerships' schools. There was also no evidence of a statistically significant relationship between academic attainment and the four Creative Partnerships-related measures.

#### 4.2.2 Progress in attainment at key stage 3 in 2008

Figure 5 shows the results of analysis for KS3 in 2008.

**Figure 5 Results for key stage 3 average (2008)**



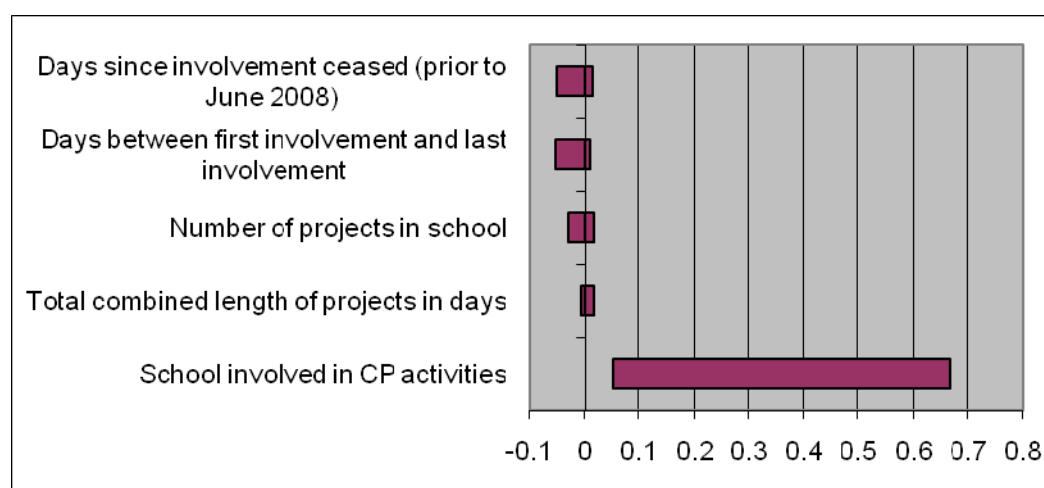
*If the bar crosses the zero line, the effect is not statistically significant at 5 % level. Each bar represents the 95% confidence interval for the variables coefficient obtained with multilevel modelling*

Figure 5 shows that in schools involved in Creative Partnerships' activities over a longer period, pupils had a lower average attainment score at key stage 3, although this only amounted to half of a point. As well as average key stage score, this relationship was also found for mathematics and science (although the differences were small).

#### 4.2.2 Progress in attainment at key stage 4 in 2008

Figure 6 shows the results of analysis for KS4 in 2008. As Figure 6 shows, on average, schools that had taken part in Creative Partnerships had a higher percentage of pupils who achieved 5 A to C grades. However, this result should be considered with care because the relationship disappeared when non-significant variables were removed.

**Figure 6 Results for 5 A-C GCSE grades (2008)**



*If the bar crosses the zero line, the effect is not statistically significant at 5 % level. Each bar represents the 95% confidence interval for the variables coefficient obtained with multilevel modelling. Coefficients on time variables are presented per 100 days*

### Summary of findings for progress in academic attainment

This chapter considered the relationship between participation in Creative Partnerships and academic progress in 2007 and 2008. The analysis of academic progress revealed few significant results, and those that were found were generally small in nature.

- At key stage 4 in 2007 and in 2008, Creative Partnerships participation was found to correlate with better progress (between KS2 and KS4).
- Schools with a higher number of Creative Partnerships' project days over a given period of time had lower overall progress at key stage 2 in 2007 and at key stage 3 in 2008.
- Analysis of progress at key stage 3 in 2007 indicated that the longer the period since the last Creative Partnerships' activity, the lower the progress in English score.



## **5. How did the 2007/08 attendance and exclusion rates of Creative Partnerships' schools compare with those of other schools?**

This chapter uses the following measures to consider the impact of participation in Creative Partnerships: total absence, unauthorised absence and exclusions from primary and secondary schools in 2007/08. (Further details of the analyses can be found in the Appendix.)

### **5.1 Attendance**

In order to examine the impact of Creative Partnerships on attendance, we used two outcome measures: the percentage of all sessions that pupils were absent during the year, and the percentage of all sessions of unauthorised pupil absence during the year.

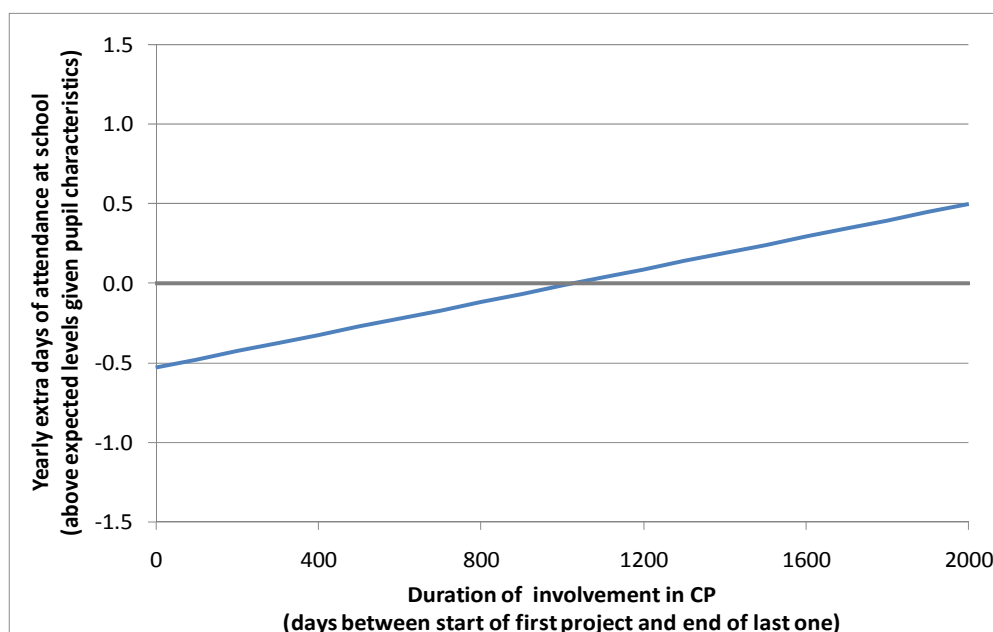
The average absence rates in 2007/08 were about five percent in primary schools, and seven percent in secondary schools. Authorised absence represents around 90 percent of absence in primary schools and 80 percent in secondary schools.

We used multilevel modelling to consider the relationship between school participation in Creative Partnerships and attendance. By taking account of a range of background variables, we were able to determine the impact of Creative Partnerships over and above any other factors which are known to influence absence rates.

#### **5.1.1 Primary school attendance**

For some Creative Partnerships' primary schools, depending on the duration of their involvement in the initiative, we found a statistically significant association between Creative Partnerships' activities and higher levels of attendance. The relationship between total attendance rates in primary schools and participation in Creative Partnerships is shown in Figure 7.

**Figure 7 Attendance levels within primary schools participating in Creative Partnerships for different lengths of time (2007/08)**



As shown in Figure 7, primary schools involved in Creative Partnerships for shorter periods of time had lower levels of attendance than non-Creative Partnerships' schools, but primary schools that had taken part in Creative Partnerships for approximately three years or more had higher than expected attendance.

It should be noted that there is considerable variation between schools, and this affects the strength of the relationship found. For schools involved in Creative Partnerships for five years the impact amounts to 0.41 days more attendance over the year, giving an effect size of 11 at school level<sup>4</sup>. This is below the level that would normally be considered educationally significant.

On the other hand, the analysis also found that, for a given period of involvement, the greater the total project duration (the difference between each project's start and end dates, totalled across all projects in a school), the lower the attendance levels were overall.

The analysis found no statistically significant differences in *unauthorised* absence rates in primary schools associated with any of the measures of Creative Partnerships involvement.

<sup>4</sup> An effect size of 11 means that a school engaged in Creative Partnerships for 5 years will on average have an increased level of attendance equal to 11 percent of the school-level standard deviation in attendance.

### 5.1.2 Secondary school attendance

The analysis was repeated for secondary schools, but found no statistically significant relationships between attendance and Creative Partnership activities or their duration. This is consistent with the findings of our previous report.

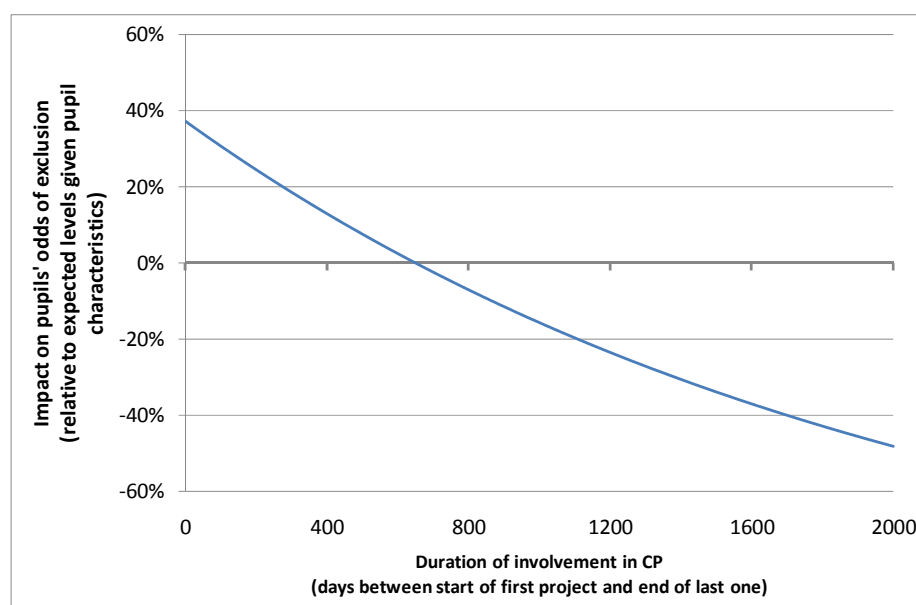
## 5.2 Exclusions

### 5.2.1 Exclusions from primary schools

In order to examine the relationship between participation in Creative Partnerships and school exclusions we considered the rates of fixed-term and permanent exclusions in 2007/08. We fitted a multilevel logistic regression model, using a number of pupil background characteristics to explain any variations in exclusions.

Exclusions are relatively rare in primary schools. In 2007/08 only 0.7 per cent of primary school pupils were subject to a fixed-term exclusion (equivalent to odds of about 150 to 1). The relationship between fixed-term exclusions and length of involvement in Creative Partnerships is shown in Figure 8.

**Figure 8** Fixed-term exclusions for Creative Partnerships' primary schools participating for different lengths of time (2007/08)



Our analysis revealed that for many primary schools involved in Creative Partnerships, the odds of pupils being excluded for a fixed term were lower than in non-Creative Partnerships' schools, but only when the school had been involved for two years or more. The likelihood of fixed-term exclusion decreased even further the longer the school's duration of involvement in Creative Partnerships so that on

average five years of Creative Partnerships’ activity is associated with 44 per cent lower odds of fixed-term exclusion.

Because of the very low number of permanent exclusions in primary schools (0.05 per cent of pupils in 2007/08), it was not possible to draw reliable conclusions relating the relationship between Creative Partnerships and permanent exclusions in primary schools.

### 5.2.2 Exclusions from secondary schools

Secondary school fixed-term and permanent exclusion rates are higher than those in primary schools. In 2007/08 the average for fixed-term exclusions in secondary schools was 5.9 per cent (equivalent to odds of about 17 to 1) and 0.16 per cent for permanent exclusions.

Analysis found that involvement in Creative Partnerships was associated with lower levels of fixed-term exclusions, about a 19 per cent drop in the odds of exclusion. However, a lower duration of Creative Partnerships’ projects was also associated with lower rates of fixed-term exclusions (see Figure 9)

**Figure 9 Fixed-term exclusions for secondary schools participating in Creative Partnerships for different lengths of time (2007/08)**

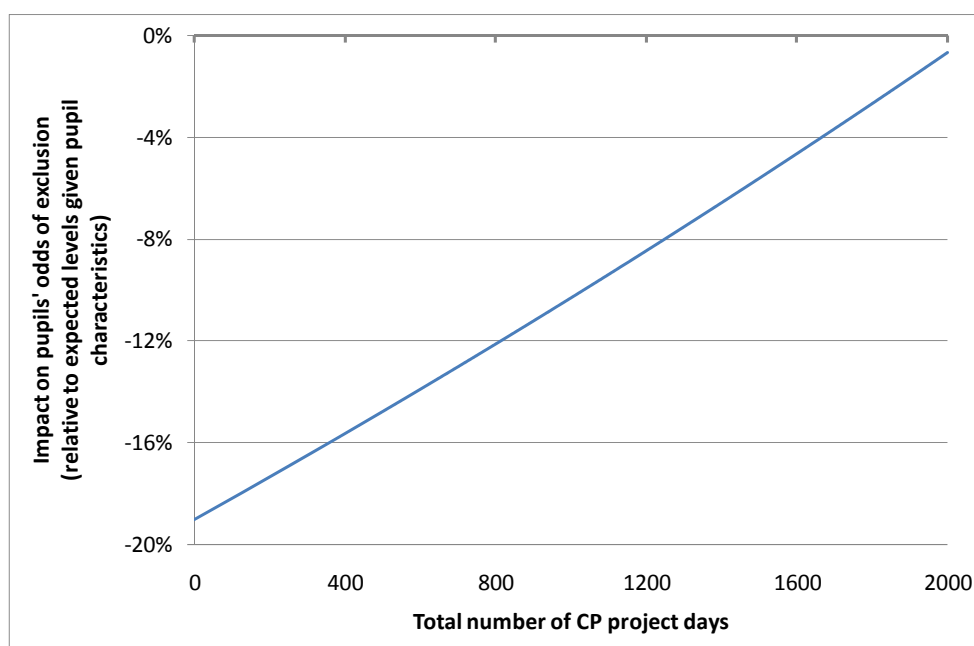


Figure 9 shows the relationship between the odds of a secondary pupil being excluded from school in 2007/08 and the number of Creative Partnerships’ project days (measured between the beginning and end of each project and totalled across all projects in a school). Creative Partnerships’ schools were less likely to use fixed-term exclusions. However, the effect was greatest in schools that had Creative

Partnerships' projects of shorter total duration: such schools were 15-20 per cent less likely to use fixed-term exclusions than non-Creative Partnerships' schools.

There were no statistically significant associations found between Creative Partnerships and permanent exclusion rates in secondary schools. A full set of results for the exclusions analysis can be found in the Appendix.

### **Summary of findings for attendance and exclusions**

This chapter considered the relationship between participation in Creative Partnerships and rates of attendance and exclusion in 2007/08. The results are as follows:

- There was a statistically significant relationship between attendance in primary schools and the duration of a school's involvement in Creative Partnerships. Primary schools that had taken part in Creative Partnerships for a short period of time had poorer attendance, but those that had taken part for more than three years had higher than expected attendance.
- There was no statistically significant relationship between Creative Partnerships and attendance in secondary schools.
- There was a relationship between involvement in Creative Partnerships and lower fixed-term exclusions in primary schools, but only for schools that had taken part for two years or more.
- Involvement in Creative Partnerships was associated with lower levels of fixed-term exclusions in secondary schools. However, secondary schools with a lower duration of Creative Partnerships' projects over a given period of time had lower levels of fixed-term exclusions than those with a greater duration of Creative Partnerships' projects in a given period of time.



## 6. Discussion and conclusions

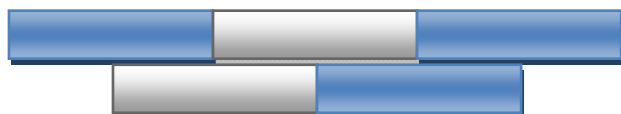
This analysis has found an interesting pattern of relationships between involvement in Creative Partnerships and outcomes for attainment and attendance. Although many of the analyses found no significant differences in outcomes between Creative Partnerships' schools and comparison schools, there were some positive relationships. In particular, Creative Partnerships involvement was associated with slightly higher average attainment at KS4 in 2007 and 2008. Primary and secondary schools taking part in Creative Partnerships had slightly lower rates of fixed-term exclusions.

There were also some indications that length of Creative Partnerships participation and the duration of Creative Partnerships' projects (the period between start and end of each project, totalled for each school) were important. Lower rates of fixed-term exclusions were found in primary schools which had been in Creative Partnerships for two years or more. On the other hand, Creative Partnerships' projects of greater total duration in a given period of time were correlated with lower attainment at key stage 2 in 2007 and at key stage 3 in 2008. The same relationship was found in school exclusions where Creative Partnerships' projects of greater duration in a given period of time were associated with greater levels of fixed-term exclusion and lower levels of school attendance. Taking these two 'process' variables together, our results could be interpreted as suggesting that a smaller number of projects spread out over a longer period of time has a more positive relationship with attainment and attendance than shorter periods of overlapping projects. This is represented in Figure 10.

**Figure 10 Alternative approaches to organising Creative Partnerships projects**

The following diagrams help to explain the implications of our findings in relation to project duration. Each coloured block represents a single Creative Partnerships project.

According to the results of this study, the worst scenario is several overlapping projects in a short period of time (A)



Better would be five consecutive short projects (B)



Or, equally, one long project lasting the same period of time (C)



Even better would be any of the following: (D, E or F)

A series of short projects with gaps in between (D)



More than one short project, not overlapping, over a longer period of time (E)



Two longer projects over a longer period of time, with a gap between (F)





Broadly speaking, the results reported here are consistent with those found in previous years (Eames *et al.*, 2006; and Kendall *et al.*, 2008a and b), although analysis at the school level has resulted in fewer statistically significant results than those previously obtained at the individual pupil level. With this in mind, we recommend Creative Partnerships and similar initiatives to collect data on participation at the pupil level, because this is likely to yield a more powerful analysis and possibly more conclusive results.



## 7. References

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## Appendix: technical information

This appendix provides technical information used in the analysis. It includes:

- the profile of the young people in the sample
- data on the attainment of young people in the sample known to attend Creative Partnerships schools compared to attainment data of all young people nationally
- details of attendance and exclusion in schools
- number of Creative Partnerships schools included in the attendance and exclusion analysis
- details of the multilevel modelling procedure.

### A1 The profile of young people in the sample

This section presents details of background characteristics of the 2006/07 and 2007/08 samples separately, grouped by key stage 2, key stage 3 and key stage 4. The first column details the background characteristics been considered. Here we have: gender, SEN status, free school meal eligibility, ethnicity and English as additional language information. We have each group split by young people in Creative Partnerships schools and nationally, both presenting actual numbers as well as percentage on young people.

**Table A1 Profile of young people in the 06/07 sample from key stage 2**

KS2 2006/07 cohort	Young people in Creative Partnership schools		All young people nationally	
	N	%	N	%
Male	8847	50.9	264798	51.1
Female	8535	49.1	253196	48.9
<b>Total</b>	<b>17382</b>	<b>100.0</b>	<b>517994</b>	<b>100.0</b>
No SEN	12278	70.6	396630	76.6
School Action/Plus	4486	25.8	106915	20.6
Statement	618	3.6	14449	2.8
<b>Total</b>	<b>17382</b>	<b>100.0</b>	<b>517994</b>	<b>100.0</b>
Not eligible for FSM	12866	74.0	436988	84.4
Eligible for FSM	4516	26.0	81006	15.6
Total	17382	100.0	517994	100.0
White - British	12614	72.6	423609	81.8
White - Other	387	2.2	12008	2.3
Travellers of Irish Heritage	8	0.0	248	0.0
Gypsy/Roma	18	0.1	616	0.1
Mixed	710	4.1	17147	3.3
Asian - Indian	642	3.7	11023	2.1
Asian -Pakistani	964	5.5	14603	2.8
Asian - Bangladeshi	581	3.3	6217	1.2
Asian - Other	138	0.8	3302	0.6
Black - Caribbean	390	2.2	7378	1.4
Black - African	513	3.0	9538	1.8
Black - Other	77	0.4	2134	0.4
Chinese	55	0.3	1543	0.3
Other	190	1.1	4051	0.8
Refused	95	0.5	4577	0.9
<b>Total</b>	<b>17382</b>	<b>100.0</b>	<b>517994</b>	<b>100.0</b>
No EAL	14294	82.2	467381	90.2
EAL	3088	17.8	50613	9.8
<b>Total</b>	<b>17382</b>	<b>100.0</b>	<b>517994</b>	<b>100.0</b>

**Table A2 Profile of young people in the 06/07 sample from key stage 3**

KS3 2006/07 cohort	Young people in Creative Partnership schools		All young people nationally	
	N	%	N	%
Male	18973	49.8	258161	50.9
Female	19091	50.2	249285	49.1
<b>Total</b>	<b>38064</b>	<b>100.0</b>	<b>507446</b>	<b>100.0</b>
No SEN	28244	74.2	402790	79.4
School Action/Plus	8433	22.2	85964	16.9
Statement	1387	3.6	18692	3.7
<b>Total</b>	<b>38064</b>	<b>100.0</b>	<b>507446</b>	<b>100.0</b>
Not eligible for FSM	30066	79.0	436254	86.0
Eligible for FSM	7998	21.0	71192	14.0
<b>Total</b>	<b>38064</b>	<b>100.0</b>	<b>507446</b>	<b>100.0</b>
White - British	29988	78.8	422816	83.3
White - Other	755	2.0	11234	2.2
Travellers of Irish Heritage	11	0.0	135	0.0
Gypsy/Roma	21	0.1	375	0.1
Mixed	1163	3.1	14356	2.8
Asian - Indian	1166	3.1	10811	2.1
Asian - Pakistani	1660	4.4	12825	2.5
Asian - Bangladeshi	685	1.8	4658	0.9
Asian - Other	278	0.7	3454	0.7
Black - Caribbean	745	2.0	6911	1.4
Black - African	726	1.9	8225	1.6
Black - Other	181	0.5	2036	0.4
Chinese	109	0.3	1581	0.3
Other	337	0.9	3659	0.7
Refused	239	0.6	4370	0.9
<b>Total</b>	<b>38064</b>	<b>100.0</b>	<b>507446</b>	<b>100.0</b>
No EAL	33507	88.0	466694	33507
EAL	4557	12.0	40752	4557
<b>Total</b>	<b>38064</b>	<b>100.0</b>	<b>507446</b>	<b>38064</b>

**Table A3 Profile of young people in the 06/07 sample from key stage 4**

KS4 2006/07 cohort	Young people in Creative Partnerships' schools		All young people nationally	
	N	%	N	%
Male	18621	48.8	259918	50.6
Female	19545	51.2	253659	49.4
Total	38166	100.0	513577	100.0
No SEN	29465	77.2	420542	81.9
School Action/Plus	7403	19.4	76248	14.8
Statement	1298	3.4	16787	3.3
<b>Total</b>	<b>38166</b>	<b>100.0</b>	<b>513577</b>	<b>100.0</b>
Not eligible for FSM	31342	82.1	453271	88.3
Eligible for FSM	6824	17.9	60306	11.7
<b>Total</b>	<b>38166</b>	<b>100.0</b>	<b>513577</b>	<b>100.0</b>
White - British	30825	80.8	436141	84.9
White - Other	752	2.0	10585	2.1
Travellers of Irish Heritage	10	0.0	109	0.0
Gypsy/Roma	14	0.0	224	0.0
Mixed	1007	2.6	12389	2.4
Asian - Indian	1217	3.2	10650	2.1
Asian -Pakistani	1467	3.8	11328	2.2
Asian - Bangladeshi	615	1.6	4313	0.8
Asian - Other	186	0.5	2921	0.6
Black - Caribbean	714	1.9	6644	1.3
Black - African	529	1.4	6268	1.2
Black - Other	201	0.5	1933	0.4
Chinese	92	0.2	1493	0.3
Other	289	0.8	3174	0.6
Refused	248	0.6	5405	1.1
<b>Total</b>	<b>38166</b>	<b>100.0</b>	<b>513577</b>	<b>100.0</b>
No EAL	34054	89.2	475835	92.7
EAL	4112	10.8	37742	7.3
<b>Total</b>	<b>38166</b>	<b>100.0</b>	<b>513577</b>	<b>100.0</b>



**Table A4 Profile of young people in the 07/08 sample from key stage 2**

KS2 2007/08 cohort	Young people in Creative Partnerships' schools		All young people nationally	
	N	%	N	%
Male	9058	51.0	268760	50.9
Female	8711	49.0	258837	49.1
<b>Total</b>	<b>17769</b>	<b>100.0</b>	<b>527597</b>	<b>100.0</b>
No SEN	12439	70.0	400546	75.9
School Action/Plus	4666	26.3	112716	21.4
Statement	664	3.7	14335	2.7
<b>Total</b>	<b>17769</b>	<b>100.0</b>	<b>527597</b>	<b>100.0</b>
Not eligible for FSM	13327	75.0	445264	84.4
Eligible for FSM	4442	25.0	82333	15.6
Total	17769	100.0	527597	100.0
White - British	12686	71.4	427075	80.9
White - Other	524	2.9	12847	2.4
Travellers of Irish Heritage	3	0.0	235	0.0
Gypsy/Roma	22	0.1	572	0.1
Mixed	742	4.2	18607	3.5
Asian - Indian	611	3.4	11435	2.2
Asian - Pakistani	1077	6.1	15564	2.9
Asian - Bangladeshi	586	3.3	6747	1.3
Asian - Other	127	0.7	3814	0.7
Black - Caribbean	453	2.5	7648	1.4
Black - African	528	3.0	10771	2.0
Black - Other	74	0.4	2272	0.4
Chinese	34	0.2	1596	0.3
Other	211	1.2	4409	0.8
Refused	91	0.5	4005	0.8
<b>Total</b>	<b>17769</b>	<b>100.0</b>	<b>527597</b>	<b>100.0</b>
No EAL	14585	82.1	473330	89.7
EAL	3184	17.9	54267	10.3
<b>Total</b>	<b>17769</b>	<b>100.0</b>	<b>527597</b>	<b>100.0</b>

**Table A5 Profile of young people in the 07/08 sample from key stage 3**

KS3 2007/08 cohort	Young people in Creative Partnerships' schools		All young people nationally	
	N	%	N	%
Male	18515	50.2	250998	51.0
Female	18345	49.8	241444	49.0
<b>Total</b>	<b>36860</b>	<b>100.0</b>	<b>492442</b>	<b>100.0</b>
No SEN	27293	74.0	385545	78.3
School Action/Plus	8333	22.6	90149	18.3
Statement	1234	3.3	16748	3.4
<b>Total</b>	<b>36860</b>	<b>100.0</b>	<b>492442</b>	<b>100.0</b>
Not eligible for FSM	28977	78.6	425267	86.4
Eligible for FSM	7883	21.4	67175	13.6
Total	36860	100.0	492442	100.0
White - British	27591	74.9	403984	82.0
White - Other	1475	4.0	13986	2.8
Travellers of Irish Heritage	5	0.0	124	0.0
Gypsy/Roma	32	0.1	320	0.1
Mixed	1194	3.2	14921	3.0
Asian - Indian	1218	3.3	10222	2.1
Asian - Pakistani	1740	4.7	12685	2.6
Asian - Bangladeshi	790	2.1	5013	1.0
Asian - Other	283	0.8	3770	0.8
Black - Caribbean	768	2.1	6650	1.4
Black - African	895	2.4	9044	1.8
Black - Other	209	0.6	2099	0.4
Chinese	85	0.2	1542	0.3
Other	379	1.0	4114	0.8
Refused	196	0.5	3968	0.8
<b>Total</b>	<b>36860</b>	<b>100.0</b>	<b>492442</b>	<b>100.0</b>
No EAL	31662	85.9	449722	91.3
EAL	5198	14.1	42720	8.7
<b>Total</b>	<b>36860</b>	<b>100.0</b>	<b>492442</b>	<b>100.0</b>

**Table A6 Profile of young people in the 07/08 sample from key stage 4**

KS4 2007/08 cohort	Young people in Creative Partnerships' schools		All young people nationally	
	N	%	N	%
Male	19350	49.9	261277	50.8
Female	19419	50.1	253340	49.2
<b>Total</b>	<b>38769</b>	<b>100.0</b>	<b>514617</b>	<b>100.0</b>
No SEN	29126	75.1	409348	79.5
School Action/Plus	8356	21.6	88286	17.2
Statement	1287	3.3	16983	3.3
<b>Total</b>	<b>38769</b>	<b>100.0</b>	<b>514617</b>	<b>100.0</b>
Not eligible for FSM	31853	82.2	455468	88.5
Eligible for FSM	6916	17.8	59149	11.5
<b>Total</b>	<b>38769</b>	<b>100.0</b>	<b>514617</b>	<b>100.0</b>
White - British	30468	78.6	433397	84.2
White - Other	963	2.5	11768	2.3
Travellers of Irish Heritage	8	0.0	64	0.0
Gypsy/Roma	15	0.0	301	0.1
Mixed	1192	3.1	13614	2.6
Asian - Indian	1218	3.1	10816	2.1
Asian - Pakistani	1671	4.3	11835	2.3
Asian - Bangladeshi	711	1.8	4376	0.9
Asian - Other	244	0.6	3294	0.6
Black - Caribbean	823	2.1	6517	1.3
Black - African	638	1.6	7192	1.4
Black - Other	195	0.5	2033	0.4
Chinese	100	0.3	1558	0.3
Other	334	0.9	3438	0.7
Refused	189	0.5	4414	0.9
<b>Total</b>	<b>38769</b>	<b>100.0</b>	<b>514617</b>	<b>100.0</b>
No EAL	34165	88.1	476055	92.5
EAL	4604	11.9	38562	7.5
<b>Total</b>	<b>38769</b>	<b>100.0</b>	<b>514617</b>	<b>100.0</b>

Table A7 and A8 summarise prior attainment for all young people in the analysis. Young people attending Creative Partnerships' schools and young people attending other schools are presented in two different columns. A7 presents prior attainment for the 2006/07 cohort. A8 presents prior attainment for the 2007/08 cohort.

National Curriculum assessments at the end of key stage 2 and 3 are expressed in terms of levels which can be converted to point scores. More details on this conversion are given in Section A2. The expected attainment at the end of key stage 1 is level 2, which is equivalent to a point score of 15. At key stage 2, the expected level is 4, a point score of 27.

**Table A7 Mean prior attainment of young people in the 2006/07 sample**

	Young people in Creative Partnerships' schools	All young people nationally
Key stage 2 cohort	Mean	Mean
Key stage 1 Overall Reading	15.1	16.0
Key stage 1 Writing	13.9	14.6
Key stage 1 Mathematics	15.5	16.2
Key stage 3 cohort		
Key stage 2 English	25.7	26.6
Key stage 2 Mathematics	25.8	26.7
Key stage 2 Science	27.7	28.5
Key stage 4 cohort		
Key stage 2 English	25.8	26.8
Key stage 2 Mathematics	25.8	26.7
Key stage 2 Science	27.8	28.4

*Data is presented as mean point scores – see Section A2*

**Table A8 Mean prior attainment of young people in the 2007/08 sample**

	Young people in Creative Partnerships' schools	All young people nationally
<b>Key stage 2 cohort</b>	<b>Mean</b>	<b>Mean</b>
Key stage 1 Overall Reading	14.9	15.8
Key stage 1 Writing	13.8	14.6
Key stage 1 Mathematics	15.4	16.2
<b>Key stage 3 cohort</b>		
Key stage 2 English	25.8	26.7
Key stage 2 Mathematics	25.9	26.8
Key stage 2 Science	28.0	28.8
<b>Key stage 4 cohort</b>		
Key stage 2 English	25.6	26.6
Key stage 2 Mathematics	25.7	26.6
Key stage 2 Science	27.8	28.6

*Data is presented as mean point scores – see Section A2*

## **A2 Average point score attainment**

The point scores show the difference between the groups in terms of a scoring system designed so that one point represents approximately the progress made in one term of education (for key stage 2 and 3) and one sixth of a GCSE grade (i.e. six points represents one additional grade in one GCSE subject) at key stage 4.

National Curriculum levels can be converted into point scores. This allows pupil attainment in different subjects to be easily compared. The standard formula for converting national curriculum levels into point scores is as follows:

$$\text{Point score} = 6 \times \text{level} + 3$$

For example level 4 has a point score of  $6 \times 4 + 3 = 27$

In order to convert point scores to 'months of progress' it is possible to use the assumption underlying the National Curriculum that young people would complete a Level in approximately two years (24 months). If one level is equivalent to six points, each point of improvement is equivalent to approximately four months of progress.

**Table A9 Point score equivalents for National Curriculum Levels**

<b>Level or grade</b>	<b>Point score equivalent</b>
W	3
1	9
2C	13
2B	15
2A	17
2 (undifferentiated)	15
3C	19
3B	21
3A	23
3 (undifferentiated)	21
4	27
5	33
6	39
7	45
8	51

Tables A10 and A11 compare the average point scores between Creative Partnerships' schools and non-Creative Partnerships' schools for the three key stage cohorts considered. Table A10 presents attainment for the 2006/07 cohort while table A11 shows attainment for the 2007/08 cohort.

The two of the four key stage 4 outcomes are binomial outcomes, which means that values for these variables are either 0 or 1. Because these variables - that are achieved 5 A-C and achieved 5 A-C including English and Maths- are not measured in point score but in number of young people achieving the results, these are omitted from the following two tables.

**Table A10 Mean attainment of young people in the 2006/07 sample**

	Young people in Creative Partnerships' schools	All young people nationally
<b>Key stage 2 cohort</b>	<b>Mean</b>	<b>Mean</b>
Key stage 2 English	26.3	27.5
Key stage 2 Mathematics	26.0	27.1
Key stage 2 Science	28.0	29.0
<b>Key stage 3 cohort</b>		
Key stage 3 English	32.0	33.5
Key stage 3 Mathematics	35.3	37.0
Key stage 3 Science	33.0	34.6
<b>Key stage 4 cohort</b>		
Total point score	365.6	381.1
Capped point score	286.1	302.5

\*new system

**Table A11 Mean attainment of young people in the 2007/08 sample**

	Young people in Creative Partnerships' schools	All young people nationally
<b>Key stage 2 cohort</b>	<b>Mean</b>	<b>Mean</b>
Key stage 2 English	26.3	27.3
Key stage 2 Mathematics	26.3	27.2
Key stage 2 Science	28.0	28.9
<b>Key stage 3 cohort</b>		
Key stage 3 English	32.2	33.6
Key stage 3 Mathematics	35.4	37.2
Key stage 3 Science	32.9	34.4
<b>Key stage 4 cohort</b>		
Total point score*	389.7	402.1
Capped point score*	303.4	315.9

\*new system

At the end of key stage 4, assessment is through GCSE examinations and other appropriate qualifications. These qualifications are all converted to a common scale by allocating points depending on the type of qualification and the level obtained.

For GCSE examinations, the points are allocated so that a grade A\* is awarded 58 points, grade A 52 points and so on, with grade G getting 16 points<sup>5</sup>. Note that this is different to the method used previously: changes have been introduced both to incorporate the wide range of qualifications now undertaken by young people up to the age of 16 and to give appropriate recognition to higher levels of attainment.

### A3 Multilevel modelling

The analysis done compares the progress in attainment of two separate groups of young people:

- those attending a Creative Partnership school
- those attending not attending a Creative Partnership school<sup>6</sup>.

For the purpose of the analysis, only pupils with enough background information are included in the models. Pupils should have at least one prior attainment measure and some measure of deprivation.

Propensity scores were employed to guarantee a fair comparison between the two groups of young people. In practice, this means that young people from Creative Partnerships' schools are compared only with young people in other schools that are, overall, very similar in background and school characteristics. So, if a school is a non-Creative Partnerships' school but has characteristics that suggest that it is not unlike at least one of the Creative Partnerships' schools, that school would be included in the modelling procedure<sup>7</sup>.

More than one factor affects the progress that young people made from one key stage to the next. Here we are only interested in the effect that Creative Partnerships' programme has on attainment. However, we have to make sure that we do not confuse the impact that our variables of interest has on attainment with the effect due to other variables. To see the difference in progress that each variable has on attainment, we include them in models. For the purpose of this analysis multilevel models were employed.

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<sup>5</sup> For further information, see [http://www.dcsf.gov.uk/performance/tables/schools\\_06/s8.shtml](http://www.dcsf.gov.uk/performance/tables/schools_06/s8.shtml).

<sup>6</sup> Previous studies on effect of Creative Partnership programme compared three groups, differentiating being in a Creative Partnerships' school but not taking part in Creative Partnerships' activities and being in a Creative Partnerships' school and taking part in Creative Partnerships' activities. This comparison was not investigated here for lack of up to date pupil level information on participation in Creative Partnerships' activities.

<sup>7</sup> In technical terms, non-Creative Partnerships' schools are included in the models if they were at least as likely to have taken part in Creative Partnerships' activities as the least likely Creative Partnerships' schools. Equally, Creative Partnerships' schools that are more likely to take part than the most likely non-Creative Partnerships' school would not be used here.



Besides accounting for the effect of background variables, multilevel modelling takes account of the fact that data is grouped into similar clusters at different levels. For example, individual young people are grouped into schools, and those schools are grouped within local authorities (LAs). There may be more in common between young people within the same school than there is with young people in other schools. Similarly, schools within an LA may be more similar than schools in general. By taking account of this hierarchical structure, multilevel modelling produces more accurate estimates of differences between groups and their statistical significance than would be obtained using other methods. The present data present 3 levels of clustering: pupil level, school level and LA level. These were accounted for when analysing the data.

### **A3.1 Coefficients for multilevel modelling: attainment**

The tables below show the coefficients of all variables used in multilevel modelling. Coefficients show amount of change in each outcome related to a change of 1 in the appropriate background variable. In some cases the background variables are categorical in which case the coefficient shows the difference between pupils with and without certain attributes (e.g. females are compared to males) adjusting for other differences in the background characteristics of each group. In other cases background variables are continuous. For example, the coefficient of “% of pupils in school known to be eligible for free school meals” shows the change in outcomes associated with an increase of 1% in this variable.

The constant term in each model shows the expected value of the outcome for a pupil with average levels of all continuous variables and zero for all indicator variables (i.e. a “typical” white male pupil).

All coefficients in the following tables followed by a ‘\*’ are statistically significant.

**Table A12 Significant coefficients in models looking at key stage 2 attainment for 2006/07 cohort**

Description of background variable	Outcome of interest			
	Average point score	English point score	Maths point score	Science point score
Constant term	21.59*	19.940*	21.680*	23.450*
Key stage 1 Reading Points	0.243*	0.408*	0.094*	0.222*
Key stage 1 Writing Points	0.144*	0.237*	0.125*	0.070*
Key stage 1 Maths Points	0.375*	0.154*	0.667*	0.315*
Key stage 1 Science Points	0.083*	0.073*	0.089*	0.087*
Total age in months (when took exam)	-0.050*	-0.043*	-0.071*	-0.038*
Female pupil	-0.253*	0.347*	-0.849*	-0.275*
SEN - School Action/Plus	-1.243*	-1.549*	-1.500*	-0.772*
SEN - Statement	-2.522*	-3.279*	-2.646*	-2.078*
Eligible for free school meals?	-0.345*	-0.349*	-0.302*	-0.393*
English as an additional language	0.204*	0.196*	0.339*	0.107*
Missing EAL information	-0.078	0.068	-0.055	-0.208
Ethnicity - White Non-UK	0.320*	0.342*	0.370*	0.270*
Ethnicity - Gypsy/Roma	-0.674*	-1.086*	-0.332	-0.793*
Ethnicity - Mixed	0.110*	0.219*	0.039	0.093*
Ethnicity - Asian Indian	0.153*	0.140*	0.382*	-0.051
Ethnicity - Asian Pakistani	-0.095*	0.009	0.032	-0.341*
Ethnicity - Asian Bangladeshi	0.325*	0.458*	0.418*	0.132*
Ethnicity - Asian Other	0.512*	0.461*	0.862*	0.269*
Ethnicity - Black Caribbean	-0.316*	-0.156*	-0.489*	-0.266*
Ethnicity - Black African	0.210*	0.333*	0.185*	0.163*
Ethnicity - Black Other	-0.093	0.063	-0.193*	-0.127*
Ethnicity - Chinese	0.691*	0.544*	1.179*	0.385*
Ethnicity - Other	0.440*	0.450*	0.634*	0.276*
Ethnicity - Traveller of Irish Heritage	-0.373	-0.381	-0.437	-0.885*
Ethnicity - Refused	0.157*	0.152*	0.175*	0.138*
Ethnicity - Unknown	-0.037	0.016	-0.039	-0.081
Pupil mobility between KS1 and KS2	-0.255*	-0.221*	-0.325*	-0.219*
First & Middle School	-0.019	0.063	-0.140	0.008
Junior school	0.062	-0.029	0.082	0.120*
Middle school	-0.136*	-0.209*	-0.178*	-0.025
Special school	-4.027*	-3.099*	-3.160*	-5.369*

Description of background variable	Outcome of interest			
	Average point score	English point score	Maths point score	Science point score
Other non Infant & Junior primary school	-2.077*	-2.277*	-1.528*	-2.941*
Faith school	0.045*	0.129*	0.046*	-0.010
Boys' school	1.882*	1.918*	1.001*	2.623*
Girls' school	0.000	0.000	0.000	0.000
% pupils eligible for free school meals	-0.004*	-0.007*	-0.005*	-0.003*
% pupils with statement of SEN	-0.007*	-0.010*	-0.005	-0.006
% EAL pupils (2007)	0.002*	0.001	0.000	0.004*
Pupil:teacher ratio	0.000	0.001	0.002	-0.002
Headcount of total No. of pupils (*)	0.000*	0.000*	0.000	0.001*
No. of pupils aged 11 (*)	-0.001	-0.002*	-0.002*	-0.002
Index of deprivation affecting children	-0.731*	-0.781*	-0.754*	-0.678*
School involved in Creative Partnerships' activities	-0.095	-0.129	-0.258	0.034
Total combined duration of projects in days	0.000	0.000	0.000	0.000
Number of projects in school	0.015	0.008	0.030	0.003
Days between first involvement and last involvement	0.000	0.000	0.000	0.000
Days since involvement ceased (prior to June 2007)	0.000	0.000	0.000	0.000

**Table A13 Significant coefficients in models looking at key stage 3 attainment for 2006/07 cohort**

Description of background variable	Outcome of interest			
	Average point score	English point score	Maths point score	Science point score
Constant term	9.094*	9.164*	8.570*	10.760*
Key stage 2 English	0.300*	0.494*	0.168*	0.234*
Key stage 2 Maths	0.452*	0.182*	0.826*	0.337*
Key stage 2 Science	0.360*	0.213*	0.333*	0.522*
Total age in months (when took exam)	-0.020*	0.004*	-0.038*	-0.029*
Female pupil	0.152*	1.506*	-0.679*	-0.368*
SEN - School Action/Plus	-1.549*	-2.155*	-1.537*	-1.134*
SEN - Statement	-0.744*	-2.210*	-0.397*	0.426*

Description of background variable	Outcome of interest			
	Average point score	English point score	Maths point score	Science point score
Missing EAL information	0.080	0.102	0.042	0.069
Eligible for free school meals?	-0.616*	-0.726*	-0.577*	-0.679*
English as an additional language	0.406*	0.320*	0.596*	0.385*
Ethnicity - White Non-UK	0.354*	0.407*	0.310*	0.354*
Ethnicity - Gypsy/Roma	-1.114*	-1.421*	-0.798	-1.101*
Ethnicity - Mixed	0.138*	0.359*	0.040*	0.010
Ethnicity - Asian Indian	0.500*	0.433*	0.768*	0.288*
Ethnicity - Asian Pakistani	0.108*	0.332*	0.303*	-0.265*
Ethnicity - Asian Bangladeshi	0.440*	0.603*	0.629*	0.169*
Ethnicity - Asian Other	1.014*	0.507*	1.636*	0.957*
Ethnicity - Black Caribbean	-0.175*	0.167*	-0.261*	-0.336*
Ethnicity - Black African	0.716*	0.908*	0.786*	0.536*
Ethnicity - Black Other	-0.030	0.282*	-0.007	-0.244*
Ethnicity - Chinese	1.606*	0.770*	2.591*	1.499*
Ethnicity - Other	0.916*	0.804*	1.227*	0.765*
Ethnicity - Refused	0.078	0.065	0.064	0.110
Ethnicity - Traveller of Irish Heritage	-1.051*	-1.305*	-1.044*	-0.786
Ethnicity - Unknown	-0.223*	-0.149*	-0.223*	-0.284*
Pupil mobility between KS1 and KS2	-0.856*	-0.803*	-0.945*	-0.969*
Secondary Modern	-0.088	-0.111	-0.006	-0.199
Comprehensive to 16	0.073	0.114	0.004	0.040
Grammar school	2.845*	2.579*	3.365*	2.722*
Special school	-1.750*	-2.830*	-1.753*	-1.353*
PRU school	-5.488*	-6.562*	-4.766*	-5.726*
Other non Comp-18 secondary school	0.167	0.180	0.239	0.088
Faith school	0.439*	0.550*	0.395*	0.394*
Boys' school	0.437*	0.471*	0.462*	0.313*
Girls' school	0.543*	0.494*	0.539*	0.590*
% pupils eligible for free school meals	-0.035*	-0.036*	-0.034*	-0.034*
% pupils with statement of SEN	0.000	0.015*	0.001	-0.012*
% EAL pupils (2007)	0.016*	0.019*	0.016*	0.013*
Pupil:teacher ratio	-0.048*	-0.032*	-0.054*	-0.059*
Headcount of total No. of pupils (*)	0.000	0.000	0.000	0.000
No. of pupils aged 14 (*)	0.001	0.000	0.002*	0.002

Description of background variable	Outcome of interest			
	Average point score	English point score	Maths point score	Science point score
Index of deprivation affecting children	-2.192*	-2.364*	-2.151*	-2.279*
Technology Specialist School	0.177*	0.060	0.255*	0.242*
Arts Specialist School	0.046	0.073	0.035	0.054
Science Specialist School	0.458*	0.386*	0.386*	0.614*
Sports Specialist School	-0.012	0.054	-0.056	-0.036
Language Specialist School	0.206*	0.182	0.192*	0.266*
Maths and Computing Specialist School	0.210*	0.096	0.383*	0.157
Business and Enterprise Specialist School	0.007	-0.004	0.008	0.033
Other Specialist School (Usually combination)	0.215*	0.093	0.157	0.399*
School involved in Creative Partnerships' activities	0.146	0.203	-0.127	0.201
Total combined duration of projects in days	0.000	0.000	0.000	0.000
Number of projects in school	-0.008	0.010	-0.001	-0.032
Days between first involvement and last involvement	0.000	0.000	0.000	0.000
Days since involvement ceased (prior to June 2007)	0.000	-0.001*	0.000	0.000

**Table A14 Significant coefficients in models looking at key stage 4 attainment for 2006/07 cohort**

Description of background variable	Outcome of interest			
	Total point score	Capped point score	Achieved at least 5 A-C	Achieved 5 A-C incl. Eng and maths
Constant term	139.000*	177.600*	-4.648*	-8.488*
Key stage 2 English	5.864*	3.977*	0.130*	0.169*
Key stage 2 Maths	5.560*	3.429*	0.118*	0.207*
Key stage 2 Science	4.832*	3.216*	0.110*	0.122*
Total age in months (when took exam)	-1.069*	-0.740*	-0.020*	-0.025*
Female pupil	23.320*	14.500*	0.383*	0.424*
SEN - School Action/Plus	-72.310*	-50.210*	-0.988*	-1.171*
SEN - Statement	-29.090*	-25.050*	-0.337*	-0.562*

Description of background variable	Outcome of interest			
	Total point score	Capped point score	Achieved at least 5 A-C	Achieved 5 A-C incl. Eng and maths
Eligible for free school meals?	-29.090*	-19.130*	-0.452*	-0.485*
English as an additional language	35.160*	21.380*	0.517*	0.449*
Missing EAL information	5.137	1.802	0.073	0.115
Ethnicity - White Non-UK	18.190*	9.944*	0.255*	0.225*
Ethnicity - Gypsy/Roma	-44.200*	-39.380*	-0.827*	-0.819*
Ethnicity - Mixed	6.350*	4.247*	0.142*	0.111*
Ethnicity - Asian Indian	38.580*	22.230*	0.737*	0.787*
Ethnicity - Asian Pakistani	26.210*	19.200*	0.470*	0.583*
Ethnicity - Asian Bangladeshi	38.300*	27.400*	0.713*	0.843*
Ethnicity - Asian Other	39.920*	26.310*	0.757*	0.790*
Ethnicity - Black Caribbean	20.390*	14.190*	0.310*	0.262*
Ethnicity - Black African	45.960*	32.280*	0.809*	0.864*
Ethnicity - Black Other	14.580*	10.470*	0.250*	0.240*
Ethnicity - Chinese	67.390*	32.720*	1.314*	1.190*
Ethnicity - Other	44.940*	28.430*	0.725*	0.715*
Ethnicity - Refused	-6.651*	-4.573*	-0.127*	-0.152*
Ethnicity - Traveller of Irish Heritage	-70.020*	-58.960*	-0.762*	-1.066*
Ethnicity - Unknown	-19.650*	-12.220*	-0.251*	-0.235*
Pupil joined school after year 7	-58.230*	-37.630*	-0.691*	-0.606*
Secondary modern school	1.927	-3.615	-0.073	-0.067
Comprehensive to 16	-3.296	1.239	0.093*	0.090*
Selective school	54.030*	33.730*	1.877*	1.888*
Special school	-33.500*	-55.340*	-1.779*	-0.919*
Other non Comp-18 secondary school	24.900*	4.611	0.174*	0.203*
Faith school	12.630*	8.562*	0.241*	0.240*
Boys' school	-1.772	1.440	0.172*	0.207*
Girls' school	1.491	3.728*	0.112*	0.190*
% pupils eligible for free school meals	0.446*	-0.412*	-0.009*	-0.014*
% pupils with statement of SEN	-0.128	-0.011	-0.002	-0.006
% EAL pupils (2007)	0.088	0.029	-0.004*	0.004*
Pupil:teacher ratio	-0.461	-1.075*	-0.044*	-0.045*
Headcount of total No. of pupils (*)	-0.004	0.001	0.000	0.000
No. of pupils aged 14 (*)	0.061	0.043*	0.001	0.001

Description of background variable	Outcome of interest			
	Total point score	Capped point score	Achieved at least 5 A-C	Achieved 5 A-C incl. Eng and maths
Index of deprivation affecting children	-100.200*	-65.420*	-1.633*	-1.740*
Technology Specialist School	19.610*	6.553*	0.227*	0.199*
Arts Specialist School	9.348*	4.162*	0.076	0.085*
Science Specialist School	6.968*	7.038*	0.172*	0.175*
Sports Specialist School	10.520*	2.580*	0.060	0.033
Language Specialist School	9.870*	4.924*	0.087	0.134*
Maths and Computing Specialist School	8.549*	5.135*	0.108*	0.154*
Business and Enterprise Specialist School	18.490*	5.551*	0.199*	0.118*
Other Specialist School (Usually combination)	5.504	4.693*	0.049	0.061
School involved in Creative Partnerships' activities	7.237	2.921	0.031	-0.121
Total combined duration of projects in days	-0.001	0.000	0.000	0.000
Number of projects in school	1.147	0.236	0.012	0.011
Days between first involvement and last involvement	-0.009	-0.004	0.000	0.000
Days since involvement ceased (prior to June 2007)	-0.001	-0.005	0.000	0.000

**Table A15 Significant coefficients in models looking at key stage 2 attainment for 2007/08 cohort**

Description of background variable	Outcome of interest			
	Average point score	English point score	Maths point score	Science point score
Constant term	22.070*	19.740*	22.640*	24.040*
Key stage 1 Reading Points	0.211*	0.329*	0.096*	0.206*
Key stage 1 Writing Points	0.134*	0.250*	0.109*	0.042*
Key stage 1 Maths Points	0.370*	0.148*	0.645*	0.326*
Key stage 1 Science Points	0.086*	0.074*	0.082*	0.100*
Total age in months (when took exam)	-0.048*	-0.033*	-0.072*	-0.043*
Female pupil	-0.171*	0.512*	-0.893*	-0.144*
SEN - School Action/Plus	-1.253*	-1.522*	-1.512*	-0.816*
SEN - Statement	-2.644*	-3.432*	-2.749*	-2.237*
Eligible for free school meals?	-0.353*	-0.384*	-0.286*	-0.397*
English as an additional language	0.207*	0.163*	0.339*	0.140*
Missing EAL information	0.009	0.169	0.038	-0.193
Ethnicity - White Non-UK	0.308*	0.364*	0.330*	0.258*
Ethnicity - Gypsy/Roma	-0.452*	-0.678*	-0.449*	-0.443*
Ethnicity - Mixed	0.116*	0.211*	0.047*	0.107*
Ethnicity - Asian Indian	0.134*	0.124*	0.353*	-0.071*
Ethnicity - Asian Pakistani	-0.080*	0.095*	0.059	-0.404*
Ethnicity - Asian Bangladeshi	0.248*	0.456*	0.385*	-0.060
Ethnicity - Asian Other	0.508*	0.447*	0.801*	0.290*
Ethnicity - Black Caribbean	-0.323*	-0.177*	-0.473*	-0.276*
Ethnicity - Black African	0.172*	0.356*	0.077*	0.142*
Ethnicity - Black Other	-0.184*	-0.022	-0.251*	-0.273*
Ethnicity - Chinese	0.536*	0.450*	0.876*	0.290*
Ethnicity - Other	0.389*	0.413*	0.548*	0.248*
Ethnicity - Refused	0.067*	0.061	0.047	0.090*
Ethnicity - Traveller of Irish Heritage	-0.563*	-0.414	-0.471	-0.903*
Ethnicity - Unknown	-0.127*	-0.083	-0.195*	-0.092
Pupil mobility between KS1 and KS2	-0.276*	-0.256*	-0.332*	-0.237*
First & Middle School	-0.035	0.020	-0.017	-0.064
Junior school	-0.039	-0.159*	-0.041	0.072
Middle school	-0.191*	-0.263*	-0.314*	-0.029
Special school	-4.228*	-3.274*	-2.874*	-5.104*



Description of background variable	Outcome of interest			
	Average point score	English point score	Maths point score	Science point score
Other non Infant & Junior primary school	-1.033*	-1.570*	-0.798	-0.937*
Faith school	0.073*	0.167*	0.046*	0.039*
Boys' school	2.073*	1.753*	1.484*	2.649*
% pupils eligible for free school meals	-0.003*	-0.006*	-0.002	-0.003*
% pupils with statement of SEN	-0.007	-0.013*	-0.012*	-0.008
% EAL pupils (2007)	0.003*	0.004*	0.000	0.006*
Pupil:teacher ratio	0.003	0.003	0.004	0.005
Headcount of total No. of pupils (*)	0.000	0.000	0.000	0.000*
No. of pupils aged 11 (*)	-0.002	-0.003*	-0.002	-0.001
Index of deprivation affecting children	-0.780*	-0.827*	-0.774*	-0.739*
School involved in Creative Partnerships' activities	0.008	0.042	-0.071	-0.006
Total combined duration of projects in days	0.000	0.000	0.000	0.000
Number of projects in school	0.005	0.007	0.001	0.011
Days between first involvement and last involvement	0.000	0.000	0.000	0.000
Days since involvement ceased (prior to June 2008)	0.000	0.000	0.000	0.000

**Table A16 Significant coefficients in models looking at key stage 3 attainment for 2007/08 cohort**

Description of background variable	Outcome of interest			
	Average point score	English point score	Maths point score	Science point score
Constant term	8.073*	8.186*	6.879*	11.360*
Key stage 2 English	0.328*	0.514*	0.199*	0.250*
Key stage 2 Maths	0.473*	0.189*	0.860*	0.354*
Key stage 2 Science	0.338*	0.191*	0.314*	0.486*
Total age in months (when took exam)	-0.022*	0.008*	-0.038*	-0.037*
Female pupil	0.129*	1.755*	-0.700*	-0.643*
SEN - School Action/Plus	-1.632*	-2.317*	-1.640*	-1.187*
SEN - Statement	-0.538*	-1.862*	-0.399*	0.597*

Description of background variable	Outcome of interest			
	Average point score	English point score	Maths point score	Science point score
Eligible for free school meals?	-0.710*	-0.840*	-0.681*	-0.723*
English as an additional language	0.483*	0.417*	0.695*	0.450*
Missing EAL information	-0.196*	-0.003	-0.280*	-0.290*
Ethnicity - White Non-UK	0.452*	0.536*	0.421*	0.423*
Ethnicity - Gypsy/Roma	-1.265*	-0.974*	-1.659*	-1.463*
Ethnicity - Mixed	0.195*	0.507*	0.035	0.045
Ethnicity - Asian Indian	0.688*	0.590*	0.980*	0.525*
Ethnicity - Asian Pakistani	0.266*	0.444*	0.445*	-0.056
Ethnicity - Asian Bangladeshi	0.561*	0.860*	0.627*	0.321*
Ethnicity - Asian Other	1.166*	0.821*	1.678*	1.077*
Ethnicity - Black Caribbean	-0.204*	0.318*	-0.475*	-0.339*
Ethnicity - Black African	0.916*	1.278*	0.952*	0.692*
Ethnicity - Black Other	0.092	0.549*	-0.058	-0.110
Ethnicity - Chinese	1.441*	0.599*	2.413*	1.392*
Ethnicity - Other	0.941*	0.929*	1.213*	0.801*
Ethnicity - Refused	0.025	0.020	0.031	0.005
Ethnicity - Traveller of Irish Heritage	-0.665	-0.912*	-0.733	-0.722
Ethnicity - Unknown	-0.255*	-0.203*	-0.298*	-0.301*
Pupil mobility between KS1 and KS2	-0.823*	-0.811*	-0.917*	-0.943*
Secondary Modern	-0.210	-0.323*	-0.319*	-0.132
Comprehensive to 16	-0.037	-0.007	-0.116	-0.007
Grammar school	2.919*	2.453*	3.208*	2.958*
Special school	-4.151*	-1.596	-3.503*	-4.339*
PRU school	-4.188*	-4.547*	-4.178*	-4.641*
Other non Comp-18 secondary school	0.241	0.210	0.315*	0.211
Faith school	0.427*	0.506*	0.337*	0.418*
Boys' school	0.461*	0.630*	0.473*	0.215
Girls' school	0.524*	0.267*	0.608*	0.649*
% pupils eligible for free school meals	-0.030*	-0.031*	-0.032*	-0.029*
% pupils with statement of SEN	0.028*	0.002	0.027*	0.018
% EAL pupils (2007)	0.012*	0.012*	0.013*	0.010*
Pupil:teacher ratio	-0.007	-0.006	-0.009	-0.013
Headcount of total No. of pupils (*)	0.000	0.001*	0.000	0.000

Description of background variable	Outcome of interest			
	Average point score	English point score	Maths point score	Science point score
No. of pupils aged 14 (*)	-0.001*	-0.003*	0.001	-0.001
Index of deprivation affecting children	-2.198*	-2.390*	-2.185*	-2.264*
Technology Specialist School	0.211*	0.168	0.231*	0.248*
Arts Specialist School	0.121	0.162	0.129	0.066
Science Specialist School	0.396*	0.281*	0.341*	0.557*
Sports Specialist School	-0.071*	-0.047	-0.026	-0.126
Language Specialist School	0.312	0.302*	0.334*	0.299*
Maths and Computing Specialist School	0.260*	0.237*	0.322*	0.189*
Business and Enterprise Specialist School	-0.022	0.062	-0.041	-0.070
Other Specialist School (Usually combination)	0.261*	0.314*	0.195	0.241*
School involved in Creative Partnerships' activities	0.072	-0.048	0.016	0.377
Total combined duration of projects in days	0.000*	0.000	0.000*	0.000*
Number of projects in school	0.009	0.019	0.008	-0.004
Days between first involvement and last involvement	0.000	0.000	0.000	0.000
Days since involvement ceased (prior to June 2008)	0.000	0.000	0.000	0.000

**Table A17 Significant coefficients in models looking at key stage 4 attainment for 2007/08 cohort**

Description of background variable	Outcome of interest			
	Total point score	Capped point score	Achieved at least 5 A-C	Achieved 5 A-C incl. Eng and maths
Constant term	142.800*	165.600*	-4.154*	-8.207*
Key stage 2 English	5.140*	3.340*	0.109*	0.149*
Key stage 2 Maths	5.615*	3.358*	0.115*	0.208*
Key stage 2 Science	5.271*	3.317*	0.120*	0.132*
Total age in months (when took exam)	-0.896*	-0.572*	-0.021*	-0.028*
Female pupil	22.740*	13.730*	0.379*	0.401*

Description of background variable	Outcome of interest			
	Total point score	Capped point score	Achieved at least 5 A-C	Achieved 5 A-C incl. Eng and maths
SEN - School Action/Plus	-66.020*	-41.100*	-0.975*	-1.098*
SEN - Statement	-28.100*	-21.340*	-0.356*	-0.515*
Eligible for free school meals?	-28.800*	-17.360*	-0.448*	-0.442*
English as an additional language	33.180*	18.140*	0.463*	0.416*
Missing EAL information	9.721*	4.606	0.227*	0.109
Ethnicity - White Non-UK	21.160*	11.300*	0.328*	0.292*
Ethnicity - Gypsy/Roma	-45.100*	-31.670*	-0.826*	-1.133*
Ethnicity - Mixed	5.839*	4.168*	0.151*	0.109*
Ethnicity - Asian Indian	37.630*	20.610*	0.818*	0.890*
Ethnicity - Asian Pakistani	26.010*	17.590*	0.511*	0.590*
Ethnicity - Asian Bangladeshi	39.980*	25.710*	0.799*	0.873*
Ethnicity - Asian Other	45.600*	28.830*	1.061*	1.145*
Ethnicity - Black Caribbean	18.860*	11.750*	0.349*	0.265*
Ethnicity - Black African	46.130*	29.920*	0.978*	1.025*
Ethnicity - Black Other	21.730*	12.760*	0.350*	0.410*
Ethnicity - Chinese	69.750*	32.310*	1.301*	1.143*
Ethnicity - Other	44.590*	25.590*	0.811*	0.829*
Ethnicity - Refused	-4.864*	-3.110*	-0.106*	-0.075
Ethnicity - Traveller of Irish Heritage	-22.970	-15.070	-0.676	-1.062*
Ethnicity - Unknown	-14.600*	-7.681*	-0.218*	-0.234*
Pupil joined school after year 7	-59.400*	-34.020*	-0.819*	-0.663*
Secondary modern school	6.072	-3.036	-0.057	-0.045
Comprehensive to 16	1.144	1.481	0.080*	0.090*
Grammar school	53.340*	31.840*	1.724*	1.784*
Special school	-95.520*	-46.150*	-0.718	-0.650
Other non Comp-18 secondary school	33.640*	12.310*	0.441*	0.322*
Faith school	5.251*	6.119*	0.188*	0.184*
Boys' school	3.814	4.401*	0.109	0.131
Girls' school	0.503	3.093*	0.135*	0.181*
% pupils eligible for free school meals	0.383*	-0.395*	-0.009*	-0.012*
% pupils with statement of SEN	0.336	-0.140	-0.013	-0.002
% EAL pupils (2007)	0.046	0.069*	-0.002*	0.004*
Pupil:teacher ratio	-0.672*	-0.513*	-0.015*	-0.011*

Description of background variable	Outcome of interest			
	Total point score	Capped point score	Achieved at least 5 A-C	Achieved 5 A-C incl. Eng and maths
Headcount of total No. of pupils (*)	0.008	0.005*	0.000	0.000*
No. of pupils aged 16 (*)	-0.020	0.002	0.000	0.000
Index of deprivation affecting children	-95.030*	-55.630*	-1.560*	-1.662*
Technology Specialist School	13.150*	5.913*	0.221*	0.242*
Arts Specialist School	5.281	3.703*	0.070	0.101*
Science Specialist School	5.176	5.827*	0.223*	0.174*
Sports Specialist School	8.871*	3.102*	0.115*	0.049
Language Specialist School	2.174	4.188*	0.137*	0.165*
Maths and Computing Specialist School	8.360*	3.392*	0.092	0.150*
Business and Enterprise Specialist School	15.650*	3.197*	0.148*	0.109*
Other Specialist School (Usually combination)	3.323	4.733*	0.132*	0.131*
School involved in Creative Partnerships' activities	19.970	2.943	0.359*	-0.045
Total combined duration of projects in days	0.003	0.001	0.000	0.000
Days between first involvement and last involvement	-0.016	-0.003	-0.008	0.008
Days since involvement ceased (prior to June 2008)	-0.015	-0.001	0.000	0.000
Number of projects in school	0.184	0.017	0.000	0.000

### A3.1 Coefficients for multilevel modelling: attendance

Table A18 show the coefficients on Creative Partnerships variables for three alternative model specifications for total absence at primary schools. In models 1 and 2 we included all the variables relating to Creative Partnerships' activity and then removed those which are least statistically significant. Whilst the 'Any Creative Partnerships' activity' and 'Total duration of projects' variables are negatively related to attendance, this is offset by a positive association with the amount of time between the first and last projects<sup>8</sup>.

In order to net out the opposing effects of total project duration and time between the first and last projects, in Model 3 we only included the latter variable. This is also adjusted so that it is centred on the maximum period of involvement – 5 years. The 'Any Creative Partnerships' activity' variable therefore now relates to the impact of 5 years involvement, with the duration of involvement showing the impact of duration relative to this position. Note however that the 'Any Creative Partnerships' activity' variable is now only significant at the 10% level.

**Table A18 Coefficients for total absence in primary schools**

<b>Additional days attendance per year</b>	<b>Model 1</b>	<b>Model 2</b>	<b>Model 3</b>
School involved in Creative Partnerships' activities	<b>-0.70*</b>	<b>-0.66*</b>	0.41
Total combined duration of projects in days	-0.02	<b>-0.03*</b>	
Number of projects in schools	-0.01		
Days between first involvement and last involvement	<b>0.11*</b>	<b>0.11*</b>	
Days since involvement ceased (prior to June 2008)	0.02		
Days between first and last projects (centred on 5 years)			<b>0.05*</b>

*Coefficients on time variables are presented per 100 days*

*\*Denotes statistical significance at 5% level*

Table A 19 shows the full set of coefficients for the unauthorised and total absence models. Note that results here are presented for percentage of sessions absent, not attendance. To convert into days' attendance per year the coefficients should be multiplied by  $-1.9^9$ .

<sup>8</sup> The way the variables are defined, the 'Any Creative Partnerships' activity' gives the impact in the unrealistic case where a school is involved in Creative Partnerships, but the total duration of the projects is zero.

<sup>9</sup> This figure is derived on the basis of 190 school days in a year.

**Table A19** Coefficients in models looking at primary school attendance for 2007/08 cohort

Description of background variable	Outcome of interest	
	Unauthorised absence	Total absence
Constant term	-0.171*	3.940*
Year 2 pupil	-0.048*	-0.676*
Year 3 pupil	-0.075*	-1.007*
Year 4 pupil	-0.064*	-1.046*
Year 5 pupil	-0.069*	-1.081*
Year 6 pupil	-0.055	-1.192*
Total age in months (when took exam)	0.006*	0.016*
Female pupil	0.016*	0.177*
SEN - School Action/Plus	0.337*	1.351*
SEN - Statement	0.160*	2.385*
Eligible for free school meals?	0.587*	1.617*
English as an additional language	0.047*	0.241*
Ethnicity - White Non-UK	0.250*	0.961*
Ethnicity - Gypsy/Roma	4.260*	11.97*
Ethnicity - Mixed	0.107*	0.201*
Ethnicity - Asian Indian	-0.138*	0.006
Ethnicity - Asian Pakistani	-0.057*	0.937*
Ethnicity - Asian Bangladeshi	0.072*	1.817*
Ethnicity - Asian Other	-0.194*	-0.402*
Ethnicity - Black Caribbean	-0.055*	-0.815*
Ethnicity - Black African	-0.575*	-2.38*
Ethnicity - Black Other	-0.180*	-1.285*
Ethnicity - Chinese	-0.305*	-1.505*
Ethnicity - Other	0.070*	0.097
Ethnicity - Refused	0.230*	0.525*
Ethnicity - Traveller of Irish Heritage	4.819*	15.91*
Ethnicity - Unknown	0.317*	0.717*
Pupil mobility between KS1 and KS2	-0.010*	-0.025*
First & Middle School	-0.029	0.066
Junior school	-0.318*	-0.752*
Middle school	-0.489*	-0.844*

Description of background variable	Outcome of interest	
	Unauthorised absence	Total absence
Special school	-0.297	0.502
Faith school	-0.039*	-0.127*
Boys' school	1.652*	0.468
% pupils eligible for free school meals	0.013*	0.017*
% pupils with statement of SEN	0.000	0.002
% EAL pupils (2007)	0.001*	-0.004*
Pupil:teacher ratio	-0.002	-0.011*
Headcount of total No. of pupils	0.000*	0.000*
Index of deprivation affecting children	0.618*	2.574*
School involved in Creative Partnerships' activities	0.039	-0.216
Total combined duration of projects in days	0.002	-
Number of projects in school	0.003	-
Days between first involvement and last involvement	-0.013	-
Days between first involvement and last involvement (centred on 1825)	-	-0.027*
Days since involvement ceased (prior to June 2008)	-0.001	-

*Coefficients on time variables for Creative Partnerships are presented per 100 days*

*\*Denotes statistical significance at 5% level*

None of the Creative Partnerships coefficients were found to be significant for secondary school attendance, even after stepwise removal of the least significant variables. Table A20 contains the full set of coefficients for the unauthorised and total absence models.

**Table A20 Coefficients in models looking at secondary school attendance for 2007/08 cohort**

Description of background variable	Outcome of interest	
	Unauthorised absence	Total absence
Constant term	-4.243*	-5.264*
Year 8 pupil	0.626*	1.203*
Year 9 pupil	1.34*	2.067*
Year 10 pupil	2.244*	3.115*



Description of background variable	Outcome of interest	
	Unauthorised absence	Total absence
Year 11 pupil	3.227*	4.794*
Key stage 2 English	-0.031*	-0.051*
Key stage 2 Maths	-0.013*	-0.067*
Key stage 2 Science	-0.038*	-0.078*
Total age in months (when took exams)	0.044*	0.109*
Female pupil	0.215*	0.726*
SEN - School Action/Plus	1.22*	2.59*
SEN - Statement	0.147*	0.926*
Eligible for free school meals?	1.338*	3.029*
English as an additional language	-0.584*	-1.397*
Ethnicity - White Non-UK	0.049	-0.021
Ethnicity - Gypsy/Roma	5.439*	10.900*
Ethnicity - Mixed	0.075*	-0.138*
Ethnicity - Asian Indian	-0.282*	-1.031*
Ethnicity - Asian Pakistani	-0.564*	-0.543*
Ethnicity - Asian Bangladeshi	-0.487*	-0.656*
Ethnicity - Asian Other	-0.465*	-1.465*
Ethnicity - Black Caribbean	-0.75*	-2.706*
Ethnicity - Black African	-1.209*	-4.234*
Ethnicity - Black Other	-0.411*	-2.278*
Ethnicity - Chinese	-0.613*	-2.936*
Ethnicity - Other	-0.612*	-1.813*
Ethnicity - Refused	0.319*	0.483*
Ethnicity - Traveller of Irish Heritage	4.691*	11.290*
Ethnicity - Unknown	0.493*	0.879*
Pupil joined school after year 7	-0.076*	-0.138*
Secondary modern school	0.104	0.179
Comprehensive to 16	0.064	0.087
Grammar school	-0.162	-0.773*
Special school	6.045*	12.120*
Other non Comp-18 secondary school	1.215*	2.191*
Faith school	-0.221*	-0.433*
Boys' school	0.685*	1.484*
Girls' school	0.012	-0.084

Description of background variable	Outcome of interest	
	Unauthorised absence	Total absence
% pupils eligible for free school meals	0.022*	-0.001
% pupils with statement of SEN	-0.055*	-0.110*
% EAL pupils (2007)	-0.012*	-0.015*
Pupil: teacher ratio	0.001	-0.028
Headcount of total No. of pupils (*)	0.000	0.000
Technology Specialist School	-0.347*	-0.645*
Arts Specialist School	-0.214*	-0.440*
Science Specialist School	-0.334*	-0.493*
Sports Specialist School	-0.218*	-0.508*
Language Specialist School	-0.254*	-0.454*
Maths and Computing Specialist School	-0.348*	-0.532*
Business and Enterprise Specialist School	-0.311*	-0.517*
Other Specialist School (Usually combination)	-0.208	-0.354*
Index of deprivation affecting children	2.656*	6.234*
School involved in Creative Partnerships' activities	-0.122	0.319
Total combined duration of projects in days	0.003	0.0128
Days between first involvement and last involvement	0.010	-0.011
Days since involvement ceased (prior to June 2008)	-0.008	-0.048
Number of projects in school	0.068	0.0209

*Coefficients on time variables for Creative Partnerships are presented per 100 days*

*\*Denotes statistical significance at 5% level*

### A3.1 Coefficients for multilevel modelling: exclusions

In order to assess the impact of Creative Partnerships on exclusions, we fitted a multilevel logistic regression model. This possesses the same characteristics as the multilevel models used for attainment, however the outcome of interest is binary (each pupil has only two possible outcomes – excluded or not excluded). We therefore employed a logistic regression model to consider the impact Creative Partnerships' activities at a school have on the probability<sup>10</sup> that its pupils are excluded.

Table A21 show the coefficients on Creative Partnerships variables for three alternative model specifications for fixed-term exclusions at primary schools.

<sup>10</sup> The dependent variable in the model is actually log-odds, which is closely related to the probability of exclusion.

Coefficients are presented as the percentage change in odds<sup>11</sup>. In models 1 and 2 we included all the variables relating to Creative Partnerships' activity and then removed those which were least statistically significant.

As for attendance, in Model 3 we adjusted the 'days between first and last activity' variable so that it was centred on the maximum period of involvement – 5 years. The 'Any Creative Partnerships' activity' variable therefore related to the impact of 5 years involvement, with the duration of involvement showing the impact of duration relative to this position.

**Table A21** Coefficients for fixed-term exclusions in primary schools

Change in odds of fixed-term exclusion	Model 1	Model 2	Model 3
School involved in Creative Partnerships' activities	<b>72%*</b>	37%	<b>-44%*</b>
Total combined length of projects in days	0.4%		
Number of projects in schools	0.9%		
Days between first involvement and last involvement	<b>-7.4%*</b>	<b>-4.8%*</b>	
Days since involvement ceased (prior to June 2008)	<b>-7.1%*</b>		
Days between first and last projects (centred on 5 years)			<b>-4.8%*</b>

*Coefficients on time variables are presented per 100 days*

*\*Denotes statistical significance at 5% level*

A full set of coefficients for this final specification is provided in Table A22.

<sup>11</sup> The odds of a pupil being excluded are calculated as the probability of exclusion divided by the probability that they are not excluded. In mathematical notation, Odds = P (excluded)/1-P (excluded).

**Table A22** Coefficients in models looking at primary school fixed-term exclusions for 2007/08 cohort

Description of background variable	Odds of fixed term exclusion
Constant term	-100% *
Year 2 pupil	-6%
Year 3 pupil	13%
Year 4 pupil	8%
Year 5 pupil	18%
Year 6 pupil	22%
Total age in months (when took exam)	3% *
Female pupil	-84% *
SEN - School Action/Plus	500% *
SEN - Statement	956% *
Eligible for free school meals?	83% *
English as an additional language	-42% *
Ethnicity – White UK	-25%
Ethnicity - White Non-UK	-29%
Ethnicity - Gypsy/Roma	33%
Ethnicity - Mixed	-12%
Ethnicity - Asian Indian	-63% *
Ethnicity - Asian Pakistani	-39% *
Ethnicity - Asian Bangladeshi	-60% *
Ethnicity - Asian Other	-54% *
Ethnicity - Black Caribbean	21%
Ethnicity - Black African	-13%
Ethnicity - Black Other	-15%
Ethnicity - Chinese	-85% *
Ethnicity - Other	-54% *
Ethnicity - Refused	-25%
Ethnicity - Traveller of Irish Heritage	17%
Pupil mobility between KS1 and KS2	-1% *
First & Middle School	4%
Junior school	-16% *
Middle school	-1%
Special school	-35%
Faith school	-14% *
Boys' school	133% *

Description of background variable	Odds of fixed term exclusion
% pupils eligible for free school meals	3%*
% pupils with statement of SEN	-1%
% EAL pupils (2007)	0%
Pupil: teacher ratio	0%
Headcount of total No. of pupils	0%
Index of deprivation affecting children	153%*
School involved in Creative Partnerships' activities	-44%*
Total combined duration of projects in days	-
Number of projects in school	-
Days between first involvement and last involvement	-
Days between first involvement and last involvement (centred on 1825)	-5%*
Days since involvement ceased (prior to June 2008)	-

*\*Denotes statistical significance at 5% level*

The same process was followed for secondary school fixed-term and permanent exclusions, the results for which are given in Table A23. Again, because of their rarity, for permanent exclusions a reduced set of background variables were necessary in order for the model-fitting algorithm to succeed. Those which were not found to be significant in the fixed-term exclusions model were selected for removal. However, none of the Creative Partnerships variables were found to be significant in the resulting model. The full set of coefficients for the final fixed-term and permanent exclusions models are provided in Table A24.

**Table A23 Coefficients for fixed-term exclusions in secondary schools**

Change in odds of fixed-term exclusion	Model 1	Model 2
School involved in Creative Partnerships' activities	-24%	<b>-19%*</b>
Total combined length of projects in days	1.2%	<b>1.0%*</b>
Number of projects in schools	-0.6%	
Days between first involvement and last involvement	0.3%	
Days since involvement ceased (prior to June 2008)	4.1%	

*Coefficients on time variables are presented per 100 day*

*\*Denotes statistical significance at 5% level*

**Table A24** Coefficients in models looking at secondary school exclusions for 2007/08 cohort

Description of background variable	Outcome of interest	
	Odds of fixed-term exclusion	Odds of permanent exclusion
Constant term	-100%*	-100%*
Year 8 pupil	63%*	126%*
Year 9 pupil	115%*	271%*
Year 10 pupil	144%*	322%*
Year 11 pupil	70%*	13%
Key Stage 2 English	-1%*	1%*
Key Stage 2 Maths	0%	
Key Stage 2 Science	-2%*	-2%*
Total age in months (when took exams)	3%*	4%*
Female pupil	-55%*	-60%*
SEN - School Action/Plus	203%*	465%*
SEN - Statement	123%*	170%*
Eligible for free school meals?	71%*	77%*
English as an additional language	-28%*	-37%*
Ethnicity - White UK	-14%*	41%
Ethnicity - White Non-UK	-17%*	24%
Ethnicity - Gypsy/Roma	95%*	303%*
Ethnicity - Mixed	28%*	125%*
Ethnicity - Asian Indian	-50%*	-1%
Ethnicity - Asian Pakistani	-17%*	50%
Ethnicity - Asian Bangladeshi	-26%*	3%
Ethnicity - Asian Other	-40%*	-11%
Ethnicity - Black Caribbean	48%*	144%*
Ethnicity - Black African	16%*	50%
Ethnicity - Black Other	37%*	257%*
Ethnicity - Chinese	-70%*	-16%
Ethnicity - Other	-25%*	56%
Ethnicity - Refused	3%	45%
Ethnicity - Traveller of Irish Heritage	55%*	216%
Pupil joined school after year 7	-2%*	-5%*
Secondary modern school	12%	
Comprehensive to 16	-7%	

Description of background variable	Outcome of interest	
	Odds of fixed-term exclusion	Odds of permanent exclusion
Grammar school	-59%*	-65%*
Special school	-35%	
Other non Comp-18 secondary school	21%*	102%*
Faith school	-10%*	-16%*
Boys' school	24%*	4%
Girls' school	2%	
% pupils eligible for free school meals	0%*	-1%
% pupils with statement of SEN	-1%	
% EAL pupils (2007)	-1%*	0%
Pupil: teacher ratio	-1%	
Headcount of total No. of pupils (*)	0%*	
Index of deprivation affecting children	255%*	348%*
School involved in Creative Partnerships' activities	-19%*	-23%
Total combined duration of projects in days	1%*	0%
Days between first involvement and last involvement	-	-1%
Days since involvement ceased (prior to June 2008)	-	5%
Number of projects in school	-	2%

*Coefficients on time variables for Creative Partnerships are presented per 100 days*

*\*Denotes statistical significance at 5% level*