National Foundation

for Educational Research

The longer term impact of Creative Partnerships on the attainment of young people

Final Report

Anna Eames
Tom Benton
Caroline Sharp
Lesley Kendall

February 2006

Contents

1 Introduction

The National Foundation for Educational Research conducted a programme-level evaluation of Creative Partnerships between Autumn 2002 and Summer 2004 (Sharp *et al.* 2005). The programme-level evaluation focused on measuring the 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 equipped 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 explore whether Creative Partnerships has had a significant positive impact on longer-term educational attainment.

2 Approach

We used the National Pupil Database (NPD) to explore the relationship between young people's attendance at Creative Partnerships activities 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 2003 and 2004 has been merged with pupil-level data that the NFER programme-level evaluation collected for a two-year period (see Eames *et al*. 2004, 2005a and 2005b).

The national evaluation focused on schools involved in Phase One of Creative Partnerships. It studied all 398 core schools selected by the first 16 Creative Partnerships areas in 2002 to launch the programme. These schools received significant investment in projects and programmes, hosted a broad range of projects designed to explore learning needs, capabilities and overall ambitions and in many cases went on to become exemplars and advocates of Creative Partnerships work.

The attendance data was collected via 'attendance data sheets' which were distributed to schools taking part in the national evaluation. These were distributed on a termly basis and covered two academic years (2002/3 and 2003/4). The data sheets were sent to the Creative Partnerships coordinator in each school, who was asked to provide information on young people involved in activities that were whole- or part-funded by Creative Partnerships. The data requested, for each young person was as follows:

- Name
- Gender
- Date of birth

- Year group
- School/educational organisation attended.

By combining the two datasets (the NPD and the NFER evaluation data) this study was able to provide a national dataset with pupils involved in Creative Partnerships flagged for each year. A statistical technique known as multilevel modelling[1] was used to examine whether there was a difference between those young people involved in Creative Partnerships and those not, when all relevant background factors are taken into account[2].

The evaluation involved young people from a wide range of year groups (from Foundation Stage to year 13). For this study, we have grouped the young people in relation to the end of key stage assessments, as follows:

- For young people in Year 6, we compared progress from key stage 1 to key stage 2 for those involved in Creative Partnerships and those not.
- For young people in Year 9, we looked at progress from key stage 2 to key stage 3.
- For young people in Year 11 we looked at progress from key stage 3 to GCSE.

This report presents the following information:

- A description of the sample of young people included in the analysis
- The overall differences in performance and progress between young people who attended Creative Partnerships activities and other young people nationally.
- The overall differences in performance and progress between young people in Creative Partnerships schools and similar young people in non-Creative Partnerships schools nationally.
- The overall differences in performance and progress between young people in Creative Partnerships schools who were known to participate in Creative Partnerships activities and other young people in the same schools who were not known to attend Creative Partnerships activities.

[1] Multilevel modelling is a development of a common statistical technique known as 'regression analysis'. It is used for finding the relationship between a measure of interest and one or more other related variables.

2 It was initially proposed to consider whether Creative Partnerships had had a significant impact on subject choice. However, it was not possible to investigate this because the pupils in the sample had made their GCSE subject choices before taking part in the Creative Partnerships activity. Therefore involvement in Creative Partnerships activity or attendance at a Creative Partnerships school could not have impacted upon young people's subject choices.

The appendix includes additional information used in the analysis. This information has not been included in the main report because it does not directly answer the central question posed in the research. The appendix includes additional information on:

- the profile of the young people in the sample
- data on the attainment of young people in the sample known to have attended Creative Partnerships activities compared to attainment data of all young people in the same schools and all young people nationally
- the variables used in the multilevel modelling.

3 Background

3.1 Sample information

This report starts by providing some basic information about the sample used in the analysis. This section presents data on:

- the number of young people in the sample
- the gender composition of the sample
- the proportion of young people in the sample who have special educational needs (SEN)
- the proportion of young people in the sample who are eligible for free school meals (FSM)
- the proportion of young people in the sample who speak English as an additional language (EAL)
- the ethnicity of young people in the sample
- the average prior attainment of young people in the sample.

For ease of comparison, the data is presented in tables which show three different groups of young people side by side. These are:

- young people known to have attended Creative Partnerships activities
- young people in schools involved with Creative Partnerships (whether or not they attended Creative Partnerships activity)
- all young people in England (whether or not they attended a Creative Partnerships school).

Please note that in these analyses, the groups are not mutually exclusive: it would be possible for a single individual to be a member of one, two or all three groups.

Table 1 shows the total number of young people in each sample group. The data for young people known to have attended Creative Partnerships activities

and for young people in schools involved in Creative Partnerships came from the NFER programme-level evaluation. The data for young people nationally has been taken from the NPD (for young people who sat their tests and examinations in the summer of 2003 and 2004).

Table 1 Number of young people in the analysis

	Young people known to have attended Creative Partnership activities	All young people in schools involved with Creative Partnerships	All young people nationally
KS2	7,428	17,903	1,260,891
KS3	4,165	44,747	1,234,560
KS4	1,587	44,321	1,267,719

Table 2 shows the number of schools involved with Creative Partnerships and nationally.

Table 2 Number of schools in the analysis

	Core schools involved with Phase 1 of Creative Partnerships	All schools nationally
KS2	230	17,087
KS3	151	4,771
KS4	153	5,849

Information on the gender, special educational needs (SEN) status, Free School Meal (FSM) status and English as an Additional Language (EAL) was also of potential interest because these factors have been shown to impact on pupil performance in English National Curriculum Assessments (see Benton *et al*., 2003; and Schagen and Benton, 2003). This information is presented in Table 3 and discussed below.

Table 3 Profile of young people in the sample

	Young people known to have attended Creative Partnerships		All young people in Creative Partnerships schools		All young people nationally	
KS2	**N**	**%**	**N**	**%**	**N**	**%**
Male	3,680	50	9,060	51	615,331	51
Female	3,716	50	8,730	49	587,383	49
Total	7,396	100	17,790	100	1,202,714	100
School Action Plus	1,556	21	3,726	21	223,755	19
Statement	180	2	853	5	45,062	4
Eligible for FSM	1,834	25	5,252	30	211,958	18
EAL	1,177	16	3,125	18	115,966	10
KS3	**N**	**%**	**N**	**%**	**N**	**%**
Male	2,107	51	21,498	49	611,740	51
Female	2,042	49	22,835	52	586,995	49
Total	4,149	100	44,333	100	1,198,735	100
School Action/Plus	653	16	8,171	18	169,413	14
Statement	130	3	2,109	5	51,700	4
Eligible for FSM	944	23	12,207	28	192,302	16
EAL	513	12	6,462	15	102,586	9
KS4	**N**	**%**	**N**	**%**	**N**	**%**
Male	704	45	21,007	48	593,324	51
Female	879	56	22,728	52	574,594	49
Total	1,583	100	43,735	100	1,167,918	100
School Action/Plus	273	17	7,136	16	141,635	12
Statement	51	3	2,155	5	50,375	4
Eligible for FSM	450	28	10,938	25	163,955	14
EAL	240	15	6,539	15	103073	9

Full tables for each Key Stage can be found in the appendix
Note that due to incompleteness of PLASC data, totals may differ from totals in Table 1

Table 3 shows that the sample profile across key stage 2, key stage 3 and key stage 4 is very similar[3]. A number of points are worth noting:

- There is a higher proportion of young people with School Action Plus[4] in the group of young people who took part in Creative Partnerships activities and the group who attended Creative Partnerships schools than amongst the national population.
- There is a higher proportion of young people with SEN statements in Creative Partnerships schools than in other schools, but a lower proportion of young people involved in Creative Partnerships activities with SEN statements than in other schools.
- At all key stages, there is a higher proportion of young people eligible for FSM in CP schools than in other schools nationally.
- At key stage 2 and key stage 3, there is a lower proportion of young people eligible for FSM in the group who attended Creative Partnerships activities than in the group who attended Creative Partnerships schools.
- At key stage 4 there is a higher proportion of young people eligible for FSM amongst those who attended Creative Partnership activities than amongst those who attended Creative Partnerships schools.
- There is a higher proportion of young people with EAL in the group who attended Creative Partnerships activities and Creative Partnerships schools than in the national sample.

Taken together, this information about the sample suggests that schools involved in Creative Partnerships are more disadvantaged than all schools nationally, but young people within Creative Partnerships schools who are known to have taken part in Creative Partnerships activities are less likely to be disadvantaged than pupils within these schools generally.

Tables 4, 5 and 6 show a breakdown of the ethnic backgrounds of the sample in key stage 2, key stage 3 and key stage 4[5].

[3] Due to large sample sizes, many of the differences in characteristics are statistically significant, even though some of them are very small.

[4] *School Action Plus* means that interventions such as providing additional adult support or different teaching methods have not helped the child to make adequate progress. The school requests outside advice from the LEA's support services, or from health or social work professionals and receives a report giving recommendations as to how to work differently with the child in class. For further details please refer to: http://www.teachernet.gov.uk/management/atoz/s/senidentificationandassessment/ [11th January 2006].

[5] Information on young people's ethnic background is taken from the PLASC

Table 4 Key stage 2 sample: ethnic background

KS2	Young people known to have attended Creative Partnerships activities		All young people in Creative Partnerships schools		All young people nationally	
	N	**%**	**N**	**%**	**N**	**%**
White - British	5,512	75	12,983	73	978,563	83
White - Other	132	2	354	2	22,305	2
Gypsy/Roma	11	<1	18	<1	1,244	<1
Mixed	290	4	677	4	33,186	3
Asian - Indian	296	4	514	3	25,579	2
Asian - Pakistani	356	5	899	5	31,817	3
Asian - Bangladeshi	137	2	522	3	11,822	1
Asian - Other	35	<1	73	<1	7,155	<1
Black - Caribbean	229	3	555	3	17,522	2
Black - African	179	2	581	3	19,884	2
Black - Other	33	<1	95	<1	4,406	<1
Chinese	24	<1	71	<1	3,738	<1
Other	77	1	249	1	9,293	<1
Refused to supply	51	1	139	<1	16,413	1
Total	7,362	100	17,730	100	1,182,927	100

Table 5 Key stage 3 sample: ethnic background

KS3	Young people known to have attended Creative Partnerships activities		All young people in Creative Partnerships schools		All young people nationally	
	N	**%**	**N**	**%**	**N**	**%**
White - British	3,220	78	33,062	76	976,624	84
White - Other	60	2	874	2	22,879	2
Gypsy/Roma	2	<1	33	<1	611	<1
Mixed	138	3	1,329	3	25,139	2
Asian - Indian	209	5	1,572	4	26,080	2
Asian - Pakistani	173	4	1,790	4	27,236	2
Asian - Bangladeshi	53	1	1,132	3	11,037	1
Asian - Other	41	1	279	<1	6,820	<1
Black - Caribbean	85	2	1,242	3	17,774	2
Black - African	56	1	1,156	3	17,263	2
Black - Other	32	<1	314	<1	5,277	<1
Chinese	22	<1	176	<1	4,145	<1
Other	27	<1	469	1	8,995	<1
Refused to supply	16	<1	271	<1	18,562	2
Total	4,134	100	43,699	100	1,168,442	100

Table 6 Key stage 4 sample: ethnic background

KS4	Young people known to have attended Creative Partnerships activities		All young people in Creative Partnerships schools		All young people nationally	
	N	**%**	**N**	**%**	**N**	**%**
White - British	1,136	72	32,345	76	944,344	83
White - Other	17	1	776	2	21,556	2
Gypsy/Roma	1	<1	14	<1	491	<1
Mixed	68	4	1,131	3	21,657	2
Asian - Indian	75	5	1,766	4	28,072	3
Asian - Pakistani	94	6	1,782	4	27,118	2
Asian - Bangladeshi	43	3	1,086	3	10,690	1
Asian - Other	6	<1	265	<1	6,431	<1
Black - Caribbean	78	5	1,214	3	17,372	2
Black - African	37	2	1,140	3	16,411	1
Black - Other	6	<1	315	<1	4,954	<1
Chinese	2	<1	197	<1	4,170	<1
Other	10	<1	483	1	87,373	<1
Refused to supply	7	<1	349	<1	21,325	2
Total	1,580	100	42,827	100	1,133,328	100

In summary, these three tables show a number of points worth noting[6]:

- The young people in the sample were predominantly from white-British backgrounds in all three groups.
- The proportion of the sample from white-British backgrounds was lower amongst those in Creative Partnerships schools and those attending Creative Partnerships activities than amongst those in all schools, at all three key stages.
- Looking at the pattern within Creative Partnerships schools, the proportion of the sample from white-British backgrounds was higher amongst those known to have attended Creative Partnerships activities, compared with those in Creative Partnerships schools at key stages 2 and 3.
- At key stage 4, the proportion of young people from white-British backgrounds known to have attended Creative Partnerships activities was lower than that within Creative Partnerships schools.
- At key stage 2 a slightly higher proportion of the sample who attended Creative Partnerships activities and schools had Asian-Indian, Asian-Pakistani and Black-Caribbean backgrounds, compared with the national sample.

[6] Due to large sample sizes, many of the differences in characteristics are statistically significant, even though some of them are very small.

- At key stage 3 a slightly higher proportion of the sample who attended Creative Partnerships activities and schools had Asian-Indian and Asian-Pakistani backgrounds, compared with the national sample.
- At key stage 4 a slightly higher proportion of the sample who attended Creative Partnerships activities and schools had Asian-Indian, Asian-Pakistani, Asian-Bangladeshi and Black-Caribbean backgrounds, compared with the national sample.

This study was primarily interested in the progress of young people attending Creative Partnerships activities. The first step in establishing progress is to find out about the attainment of the young people before taking part in any Creative Partnerships activity or before their school became involved in Creative Partnerships. The measure we used for this purpose was 'mean prior attainment'. The information on this variable is presented in Table 7. The information for young people in key stage 1 shows the mean prior attainment of the key stage 2 sample group; the information for the young people in key stage 2 relates to the key stage 3 sample group; and the key stage 3 data relates to the key stage 4 sample group. Attainment is described in terms of *average point scores*. (An explanation of point scores is provided in the appendix.)

Table 7 Mean prior attainment of young people in the sample

	Young people known to have attended Creative Partnerships activities	All young people in schools involved with Creative Partnerships	All young people nationally
KS2 Cohort			
KS1 Overall Reading	15.3	14.8	15.8
KS1 Writing	13.7	13.3	14.0
KS1 Mathematics	15.4	15.0	15.6
KS3 Cohort			
KS2 English	26.7	25.6	26.6
KS2 Mathematics	26.6	25.4	26.2
KS2 Science	28.4	27.3	28.1
KS4 Cohort			
KS3 English	32.0	31.3	33.0
KS3 Mathematics	32.8	32.3	34.6
KS3 Science	31.6	31.1	33.3

Data is presented as average point scores

Table 7 shows that the mean prior attainment of young people in the sample from schools involved in Creative Partnerships was lower than that of young people nationally. However, the mean prior attainment of those young people

known to have taken part in Creative Partnerships activities was slightly higher than other young people from the same schools. The mean prior attainment of these young people was still slightly lower than the mean prior attainment of young people from all schools. This fits with the information provided earlier in this section which suggested that Creative Partnerships schools were more disadvantaged than other schools, yet those young people within the schools who took part in Creative Partnerships activities tended to be somewhat less disadvantaged than others in the same school. (However, it is important to bear in mind that subtle differences could be masked by the use of averages.)

4 How did the progress of young people who took part in Creative Partnerships activities compare with that of other young people?

The focus of this report is to examine the relationship between attendance at Creative Partnerships activities and the performance of young people in subsequent examinations (completed in 2003 and 2004). Clearly, it is insufficient to look simply at 'raw' examination results, as these could simply reflect the prior attainment of those young people involved in Creative Partnerships activities.

Multilevel modelling enabled us to take account of pupil-level differences (most importantly, prior attainment, but also gender, ethnicity, SEN status and eligibility for FSM) and school-level differences (such as type, size and proportion of pupils eligible for FSM) between young people and schools involved in Creative Partnerships activities and those who were not. The results estimate any differences in attainment that would be seen if prior attainment and other background characteristics were equal between the groups.

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 with young people in other schools, and there may be elements of similarity between different schools in the same LA. Explicitly estimating the similarities within nested groups allows multilevel modelling to produce more accurate estimates than simpler regression techniques.
However, while multilevel modelling is a useful tool in analysing patterns of relationships within datasets, it is only able to take account of the effect of variables included in the model. The smaller the extent of the differences between groups, the more likely it is that other variables, not included in the model (such as parental support) may be influencing the observed results.

4.1 Overall differences in progress

In relation to this report, multilevel modelling was used to investigate the following questions:

- What is the overall difference in progress between young people who are known to have attended Creative Partnerships activities and all other young people nationally (i.e. those attending schools not involved in Creative Partnerships)?
- What is the overall difference in progress between young people who attended Creative Partnerships schools but are not known to have attended any CP activities and all other young people nationally?
- What is the overall difference in progress within Creative Partnerships schools, comparing young people known to have attended Creative Partnerships activities with those not known to have attended such activities?

In order to address these questions, the models effectively compared the progress of three mutually exclusive groups of young people:

- those known to have attended Creative Partnerships activities
- those in Creative Partnerships schools, but not known to have attended Creative Partnerships activities
- those in non-Creative Partnerships schools.

The variables that were included in the analysis are detailed in the appendix. Results for key stage 2, key stage 3 and key stage 4 were analysed separately, although a similar procedure was followed in each case.

In summary, the variables included in the models relate to pupil, family and school characteristics. Such variables are considered relevant because of their association with pupil performance in English National Curriculum Assessments (see Benton *et al.,* 2003; Schagen and Benton, 2003). A number of variables relating directly to Creative Partnerships were included in the model. These were:

- Overall Creative Partnerships 'engagement score'
- Missing engagement information
- Attendance at Creative Partnerships activity in both 2002/3 and 2003/4
- Attendance at Creative Partnerships activity in 2002/3
- Attendance at Creative Partnerships activity in 2003/4.

The engagement score was a method designed to profile the degree of engagement that participating schools had with the initiative. The Creative Directors were asked to rank participating schools in their area on a scale of one to four, with four being the highest level of engagement.

4.1.1 Results of multilevel modelling at key stage 2

The first model for key stage 2 (shown in Table 8) included all pupils in the NPD with valid key stage 1 prior attainment and key stage 2 outcomes, including young people known to have taken part in Creative Partnerships activities.

The tables show the difference calculated in both point scores and effect sizes. The point score shows the amount of difference attendance at Creative Partnerships may have in terms of young people's termly progress. The effect size allows different outcomes to be compared, for example it shows the extent to which Creative Partnerships may be positively associated with attainment in English.

Effect sizes represent a calculation of gain scores divided by the standard deviation of the scores in the population. These 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 25.0 or more is likely to represent a finding which is of educational, as well as statistical significance (Gray *et al.,* 1990, Slavin and Fashola, 1998).

A statistically significant result means that the observed difference is unlikely to be due to chance alone. An educationally significant result would suggest that differences are large enough to indicate that the programme is making a noticeable difference to educational standards and may be considered for wider adoption.

The first model for key stage 2 (shown in Table 8) included all pupils in the NPD with valid key stage 1 prior attainment and key stage 2 outcomes, including young people known to have attended Creative Partnerships activities.

Table 8 Results of multilevel modelling at key stage 2 (A)

Outcome	Overall difference between young people known to have attended Creative Partnerships activities and similar young people nationally	
	Point score	**Effect size**
key stage 2		
Average	0.06	1.2
English	0.06	1.0
Mathematics	0.07	1.3
Science	0.04	0.9

Note that 1 point is roughly equal to 1 term's progress
**Denotes statistical significance*
Effect sizes are scaled such that 100 is an effect equivalent to one standard deviation in the outcome

- There was no statistically significant positive association between the progress of young people in key stage 2 who had attended Creative Partnerships activities compared to similar young people nationally.

The second model for key stage 2 (shown in Table 9) included all pupils in the NPD with valid key stage 1 prior attainment and key stage 2 outcomes, including young people known to have attended a Creative Partnerships school but not a Creative Partnerships activity.

Table 9 Results of multilevel modelling at key stage 2 (B)

Outcome	Overall difference between young people in Creative Partnerships schools not known to have attended Creative Partnerships activities and similar young people nationally	
	Point score	**Effect size**
key stage 2		
Average	-0.26*	-5.5
English	-0.25*	-4.3
Mathematics	-0.15	-2.6
Science	-0.27*	-6.0

Note that 1 point is roughly equal to 1 term's progress
**Denotes statistical significance*
Effect sizes are scaled such that 100 is an effect equivalent to one standard deviation in the outcome

- There was a statistically significant negative association between average progress, progress in English and progress in science in key stage 2 of young people who attended Creative Partnerships schools but were not known to have taken part in Creative Partnerships activities compared to similar young people nationally.

The third model for key stage 2 (shown in Table 10) included all pupils in the NPD with valid key stage 1 prior attainment and key stage 2 outcomes, but limited to young people known to have attended a Creative Partnerships school.

Table 10 Results of multilevel modelling at key stage 2 (C)

Outcome	Overall difference between young people known to have attended Creative Partnerships activities and similar young people within the same schools not known to have attended Creative Partnership activities	
	Point score	**Effect size**
key stage 2		
Average	0.32*	6.7
English	0.30*	5.4
Mathematics	0.22*	3.9
Science	0.31*	6.9

Note that 1 point is roughly equal to 1 term's progress
**Denotes statistical significance*
Effect sizes are scaled such that 100 is an effect equivalent to one standard deviation in the outcome

- There was a statistically significant positive association between average progress in key stage 2 of young people known to have attended Creative Partnerships activities compared to other young people in the same schools.
- There was a statistically significant positive association between progress in English in key stage 2 of young people known to have attended Creative Partnerships activities compared to other young people in the same schools.
- There was a statistically significant positive association between progress in mathematics in key stage 2 of young people known to have attended Creative Partnerships activities compared to other young people in the same schools.
- There was a statistically significant positive association between progress in science in key stage 2 of young people known to have attended Creative Partnerships activities compared to other young people in the same schools.

4.1.2 Results of multilevel modelling at key stage 3

The first key stage 3 model (shown in Table 11) included all pupils in the NPD with valid key stage 2 prior attainment and key stage 3 outcomes, including young people known to have taken part in Creative Partnerships activities.

Table 11 Results of multilevel modelling at key stage 3 (A)

Outcome	Overall difference between young people known to have attended Creative Partnerships activities and similar young people nationally	
	Point score	**Effect size**
key stage 3		
Average	0.42*	6.3
English	0.28	3.9
Mathematics	0.34*	4.2
Science	0.50*	7.1

Note that 1 point is roughly equal to 1 term's progress
**Denotes statistical significance*
Effect sizes are scaled such that 100 is an effect equivalent to one standard deviation in the outcome

- There was a statistically significant positive association between average progress in key stage 3 of young people who attended Creative Partnerships activities compared to similar young people nationally.
- There was a statistically significant positive association between the progress in mathematics in key stage 3 of young people who attended Creative Partnerships activities compared to similar young people nationally.
- There was a statistically significant positive association between the progress in science in key stage 3 of young people who attended Creative Partnerships activities compared to similar young people in nationally.
- There was no statistically significant difference between the progress in English at key stage 3 of young people who attended Creative Partnerships activities compared to similar young people nationally.

The second key stage 3 model (shown in Table 12) included all pupils in the NPD with valid key stage 2 prior attainment and key stage 3 outcomes, including young people known to have attended Creative Partnerships schools but not a Creative Partnerships activity.

Table 12 Result of multilevel modelling at key stage 3 (B)

Outcome	Overall difference between young people in Creative Partnerships schools, not known to have attended a Creative Partnerships activity and similar young people nationally	
	Point score	**Effect size**
key stage 3		
Average	-0.04	6.9
English	-0.10	5.2
Mathematics	0.00	4.2
Science	-0.03	7.5

Note that 1 point is roughly equal to an improvement of one grade in one subject
**Denotes statistical significance*

Effect sizes are scaled such that 100 is an effect equivalent to one standard deviation in the outcome

- There was no statistically significant difference between the progress of young people in key stage 3 who had attended Creative Partnerships schools compared to similar young people nationally.

The third model for key stage 3 (shown in Table 13) included all pupils in the NPD with valid key stage 2 prior attainment and key stage 3 outcomes, but limited to young people who attended a Creative Partnerships school.

Table 13 Results of multilevel modelling at key stage 3 (C)

Outcome	Overall difference between young people known to have attended Creative Partnerships activities and similar young people within the same schools not known to have attended Creative Partnership activities	
	Point score	**Effect size**
key stage 3		
Average	0.46*	6.9
English	0.38*	5.2
Mathematics	0.34*	4.2
Science	0.53*	7.5

Note that 1 point is roughly equal to 1 term's progress
**Denotes statistical significance*
Effect sizes are scaled such that 100 is an effect equivalent to one standard deviation in the outcome

- There was a statistically significant positive association between average progress in key stage 3 of young people known to have attended Creative Partnerships activities compared to other young people in the same schools.
- There was a statistically significant positive association between progress in English in key stage 3 of young people known to have attended Creative Partnerships activities compared to other young people in the same schools.
- There was a statistically significant positive association between progress in mathematics in key stage 3 of young people known to have attended Creative Partnerships activities compared to other young people in the same schools.
- There was a statistically significant positive association between progress in science in key stage 3 of young people known to have attended Creative Partnerships activities compared to other young people in the same schools.

4.1.3 Results of multilevel modelling at key stage 4

The first key stage 4 model (shown in Table 14) included all pupils in the NPD with valid key stage 3 prior attainment and GCSE outcomes, including young people known to have taken part in Creative Partnerships activities.

Table 14 Results of multilevel modelling at key stage 4 (A)

Outcome	Overall difference between young people known to have attended Creative partnerships activities and similar young people nationally	
	Point score	**Effect size**
key stage 4		
Total points score	0.75	3.7
Best 8 points scores	0.24	1.6
English	-0.02	-1.1
Mathematics	-0.02	-0.9
Science	0.10	5.1

Note that 1 point is roughly equal to an improvement of one grade in one subject
**Denotes statistical significance*
Effect sizes are scaled such that 100 is an effect equivalent to one standard deviation in the outcome

- There were no statistically significant differences between the progress of young people in key stage 4 who attended Creative Partnerships activities compared to similar young people nationally.

The second key stage 4 model (shown in Table 15) included all pupils in the NPD with valid key stage 3 prior attainment and key stage 4 outcomes, including young people known to have attended a Creative Partnerships school but not a Creative Partnerships activity.

Table 15 Results of multilevel modelling at key stage 4 (B)

Outcome	Overall difference between young people in Creative Partnerships schools not known to have attended a Creative Partnerships activity and similar young people nationally	
	Point score	**Effect size**
key stage 4		
Total point score	-0.03	3.8
Best 8 points score	-0.43	4.5
English	-0.05	1.8
Mathematics	0.01	-1.3
Science	0.02	4.2

Note that 1 point is roughly equal to 1 term's progress
**Denotes statistical significance*
Effect sizes are scaled such that 100 is an effect equivalent to one standard deviation in the outcome

- There were no statistically significant differences between the progress of young people in key stage 4 who had attended Creative Partnerships schools compared to similar young people nationally.

The third model for key stage 4 (shown in Table 16) included all pupils in the NPD with valid key stage 3 prior attainment and key stage 4 outcomes, but limited to young people who attended a Creative Partnerships school.

Table 16 Results of multilevel modelling at key stage 4 (C)

Outcome	Overall difference between young people known to have attended Creative Partnerships activities and similar young people within the same schools not known to have attended Creative Partnership activities	
	Point score	**Effect size**
key stage 4		
Total points score	0.78*	3.8
Best 8 points scores	0.68*	4.5
English	0.03	1.8
Mathematics	-0.02	-1.3
Science	0.08*	4.2

Note that 1 point is roughly equal to an improvement of one grade in one subject
**Denotes statistical significance*

- There was a statistically significant positive association between average progress in key stage 4 (in terms of both total points and best 8 points scores) of young people known to have attended Creative Partnerships activities compared to other young people in the same schools.
- There was a statistically significant positive association between progress in science in key stage 4 of young people known to have attended Creative Partnerships activities compared to other young people in the same schools.
- There was no statistically significant positive association between progress in English or mathematics in key stage 4 of young people known to have attended Creative Partnerships activities compared to other young people in the same schools.

5 Summary and conclusion

This report has looked at data from a sample of key stage 2, key stage 3 and key stage 4 young people in three groups: those who are known to have attended Creative Partnerships activities; young people who attended a Creative Partnerships school but were not known to have attended CP activities; and all young people nationally.

A statistical technique called multilevel modelling was used to examine the relationship between attendance at Creative Partnerships activities (or schools) and how well young people performed in subsequent examinations. The following sections summarise the key findings from this analysis.

5.1 Summary of the difference between young people known to have attended Creative Partnerships activities and other young people nationally

- There was a statistically significant positive association between average progress in key stage 3 of young people who attended Creative Partnerships activities compared to similar young people nationally. However, the effect size was small and cannot be said to be educationally significant.
- There was a statistically significant positive association between the progress in mathematics in key stage 3 of young people who attended Creative Partnerships activities compared to similar young people nationally. However, the effect size was small and cannot be said to be educationally significant.
- There was a statistically significant positive association between the progress in science in key stage 3 of young people who attended Creative Partnerships activities compared to similar young people in nationally. However, the effect size was small and cannot be said to be educationally significant.
- There was no statistically significant difference between the progress in English at key stage 3 of young people who attended Creative Partnerships activities compared to similar young people nationally.
- There was no statistically significant difference between the progress of young people in key stage 2 or key stage 4 who had attended Creative Partnerships activities compared to similar young people nationally.

5.2 Summary of the difference between young people who attended Creative partnerships schools and young people in other schools

- There was a statistically significant negative association between average progress, progress in English and progress in science in key stage 2 of young people who attended Creative Partnerships schools but were not known to have taken part in Creative Partnerships activities compared to similar young people in other schools. However, the effect size was small and cannot be said to be educationally significant.

- There was no statistically significant difference between progress in mathematics in key stage 2 of young people who attended Creative Partnerships schools but were not known to have taken part in Creative Partnerships activities compared to similar young people in other schools
- There was no statistically significant difference between the progress of young people in key stage 3 or key stage 4 who had attended Creative Partnerships schools but were not known to have taken part in Creative Partnerships activities compared to similar young people in other schools.

5.3 Summary of the difference between young people known to have attended Creative Partnerships activities and other young people in the same schools

- Young people known to have attended Creative Partnerships activities out performed those in the same schools (but not known to have attended Creative Partnerships activities) to a statistically significant extent at all three key stages. This was evident in average scores, English, mathematics and science in key stages 2 and 3 and in total points scores, best 8 points scores and science at key stage 4 (but not in English or mathematics). However, the effect sizes were small and the observed differences cannot be said to be educationally significant.

5.4 Conclusion

This analysis has provided information about the sample of young people involved in Creative Partnerships and their academic progress.

An analysis of the sample characteristics showed that, compared with the national population, the initiative has reached schools serving more disadvantaged communities and with a higher proportion of people from diverse minority ethnic backgrounds. At school level, however, the young people who attended Creative Partnerships activities tended to be less disadvantaged than those in the same schools – in terms of having a statement of special educational needs, eligibility for free school meals (at key stages 2 and 3) and prior attainment.

When compared with national data, the analysis of young people's progress showed no evidence of an impact of attending Creative Partnerships activities at key stage 2 or key stage 4 and a very small positive impact at key stage 3.

An analysis of within-school data revealed that young people who are known to have attended Creative Partnerships activities outperformed their peers in the same schools to a statistically significant extent at all three key stages. However, given the fact that the differences in progress are small, and that other factors which were not included in the analysis could have influenced performance, it cannot be concluded with any certainty that Creative Partnerships has caused the observed differences.

References

BENTON, T., HUTCHISON, D., SCHAGEN, I. and SCOTT, E. (2003). *Study of the performance of maintained Secondary Schools in England. Report for the National Audit Office* [online]. Available: http://www.nfer.ac.uk/publications/other-publications/downloadable-reports/study-of-the-performance-of-maintained-schools-in-england.cfm

EAMES, A., BENTON, T., SHARP, C. and PYE, D. (2004). *Young people's attendance at Creative Partnerships activities during 2002/3*. NFER: unpublished

EAMES, A., BENTON, T., SHARP, C. and PYE, D. (2005a). *Young people's attendance at Creative Partnerships activities during 2003/4.* NFER: unpublished

EAMES, A., BENTON, T., SHARP, C. and PYE, D. (2005b). *Young people's attendance at Creative Partnerships activities during 2002/3 and 2003/4.* NFER: unpublished

GRAY, J., JESSON, D. and SIME, N. (1990). 'Estimating differences in the examination performances of secondary schools in six LEAs: a multi-level approach to school effectiveness', *Oxford Review of Education*, **16**, 2, 137–58.

SCHAGEN, I. and BENTON, T. (2003). 'The relationships between school and pupil background factors and progress from Key Stage 1 to Key Stage 2.' Paper presented at the British Educational Research Association Annual Conference, Heriot-Watt University, Edinburgh, 13 September [online]. Available: http://nfer.ac.uk/research/papers/ISTBbera03.doc [23 September, 2004]

SHARP, C.; PYE, D.; BLACKMORE, J.; BROWN, E.; EAMES, A.; EASTON, C.; FILMER-SANKEY, C.; TABARY, A.; WHITBY, K.; WILSON, R.; BENTON, T. (2005). *National Evaluation of Creative Partnerships; Draft Final Report*. Unpublished report.

SLAVIN, R.E. and FASHOLA, O.S. (1998). *Show Me the Evidence! Proven and Promising Programs for America's Schools.* London: Corwin Press.

Appendix

This appendix contains technical information on three areas of the analysis. These are:

- the profile of the young people in the sample
- data on the attainment of young people in the sample known to have attended Creative Partnerships activities compared to attainment data of other young people in the same schools and young people from non-Creative Partnerships schools
- the variables used in the multilevel modelling

A1.1 The profile of young people in the sample

Tables A1, A2 and A3 show the profile of young people in the sample from key stage 2, key stage 3 and key stage 4 respectively. Each table presents the information from three groups within the total sample; young people known to have attended a Creative Partnerships activity; all young people in Creative Partnerships schools and young people nationally. Data includes gender, SEN status, FSM status, ethnicity and EAL status.

A summary of the information was presented in these tables was provided in section 3 of the main report.

Table A1 The profile of young people in the sample from key stage 2

KS2	Young people known to have attended Creative Partnerships activities		All young people in Creative Partnerships schools		All young people nationally	
	N	**%**	**N**	**%**	**N**	**%**
Male	3,680	50	9,060	51	615,331	51
Female	3,716	50	8,730	49	587,383	49
Total	7,396	100	17,790	100	1,202,714	100
No SEN	5,660	77	13,211	74	933,812	78
School Action/Plus	1,556	21	3,726	21	223,755	19
Statement	180	2	853	5	45,062	4
Total	7,396	100	17,790	100	1,202,629	100
Not eligible for FSM	5,562	75	12,534	71	990,636	82
Eligible for FSM	1,834	25	5,252	30	211,958	18
Total	7,396	100	17,786	100	1,202,594	100
White - British	5,512	75	12,983	73	978,563	83
White - Other	132	2	354	2	22,305	2
Gypsy/Roma	11	<1	18	<1	1,244	<1
Mixed	290	4	677	4	33,186	3
Asian - Indian	296	4	514	3	25,579	2
Asian - Pakistani	356	5	899	5	31,817	3
Asian - Bangladeshi	137	2	522	3	11,822	1
Asian - Other	35	<1	73	<1	7,155	<1
Black - Caribbean	229	3	555	3	17,522	2
Black - African	179	2	581	3	19,884	2
Black - Other	33	<1	95	<1	4,406	<1
Chinese	24	<1	71	<1	3,738	<1
Other	77	1	249	1	9,293	<1
Refused	51	1	139	<1	16,413	1
Total	7,362	100	17,730	100	1,182,927	100
No EAL	6,216	84	14,658	82	1,086,019	90
EAL	1,177	16	3,125	18	115,966	10
Total	7,393	100	17,783	100	1,201,985	100

Table A2 The profile of young people in the sample from key stage 3

KS3	Young people known to have attended Creative Partnerships activities		All young people in Creative Partnerships schools		All young people nationally	
	N	%	N	%	N	%
Male	2,107	51	21,498	49	611,740	51
Female	2,042	49	22,835	52	586,995	49
Total	4,149	100	44,333	100	1,198,735	100
No SEN	3,366	81	34,053	77	977,622	82
School Action/Plus	653	16	8,171	18	169,413	14
Statement	130	3	2,109	5	51,700	4
Total	4,149	100	44,333	100	1,198,735	100
Not eligible for FSM	3,205	77	32,086	72	1,005,580	84
Eligible for FSM	944	23	12,207	28	192,302	16
Total	4,149	100	44,293	100	1,197,882	100
White - British	3,220	78	33,062	76	976,624	84
White - Other	60	2	874	2	22,879	2
Gypsy/Roma	2	<1	33	<1	611	<1
Mixed	138	3	1,329	3	25,139	2
Asian - Indian	209	5	1,572	4	26,080	2
Asian - Pakistani	173	4	1,790	4	27,236	2
Asian - Bangladeshi	53	1	1,132	3	11,037	1
Asian - Other	41	1	279	<1	6,820	<1
Black - Caribbean	85	2	1,242	3	17,774	2
Black - African	56	1	1,156	3	17,263	2
Black - Other	32	<1	314	<1	5,277	<1
Chinese	22	<1	176	<1	4,145	<1
Other	27	<1	469	1	8,995	<1
Refused	16	<1	271	<1	18,562	2
Total	4,134	100	43,699	100	1,168,442	100
No EAL	3,635	88	37,829	85	1,093,669	91
EAL	513	12	6,462	15	102,586	9
Total	4,148	100	44,291	100	1,196,255	100

Table A3 The profile of young people in the sample from key stage 4

KS4	Young people known to have attended Creative Partnerships activities		All young people in Creative Partnerships schools		All young people nationally	
	N	**%**	**N**	**%**	**N**	**%**
Male	704	45	21,007	48	593,324	51
Female	879	56	22,728	52	574,594	49
Total	1,583	100	43,735	100	1,167,918	100
No SEN	1,259	80	34,444	79	975,905	84
School Action/Plus	273	17	7,136	16	141,635	12
Statement	51	3	2,155	5	50,375	4
Total	1,583	100	43,735	100	1,167,915	100
Not eligible for FSM	1,133	72	32,765	75	1,002,370	86
Eligible for FSM	450	28	10,938	25	163,955	14
Total	1,583	100	43,703	100	1,166,325	100
White - British	1,136	72	32,345	76	944,344	83
White - Other	17	1	776	2	21,556	2
Gypsy/Roma	1	<1	14	<1	491	<1
Mixed	68	4	1,131	3	21,657	2
Asian - Indian	75	5	1,766	4	28,072	3
Asian - Pakistani	94	6	1,782	4	27,118	2
Asian - Bangladeshi	43	3	1,086	3	10,690	1
Asian - Other	6	<1	265	<1	6,431	<1
Black - Caribbean	78	5	1,214	3	17,372	2
Black - African	37	2	1,140	3	16,411	1
Black - Other	6	<1	315	<1	4,954	<1
Chinese	2	<1	197	<1	4,170	<1
Other	10	<1	483	1	87,373	<1
Refused	7	<1	349	<1	21,325	2
Total	1,580	100	42,827	100	1,133,328	100
No EAL	1,343	85	37,164	85	1061918	91
EAL	240	15	6,539	15	103073	9
Total	1,583	100	43,703	100	1164991	100

A1.2 Descriptive information about the attainment of young people in the sample

A1.2.1 Attainment data

Information about the attainment of young people in the sample formed part of the analysis. Table A4, A5 and A6 show how the attainment of young people known to have attended Creative Partnerships activities compares to data on attainment of all young people in Creative Partnerships schools and non-Creative Partnerships schools in 2003 and 2004. The data in Tables A4, A5 and A6 is presented in terms of National Curriculum Levels.

Table A4 Key stage 2 attainment data

		Young people known to have attended Creative Partnerships activities		Young people in Creative Partnerships schools		All young people nationally	
		N	**%**	**N**	**%**	**N**	**%**
KS2 English	Below level of test	421	6	1,503	9	73,045	6
	Level 2	73	1	229	1	12,165	1
	Level 3	1,296	18	3,332	19	193,184	16
	Level 4	3,860	53	8,704	50	622,087	50
	Level 5	1,682	23	3,758	21	339,752	27
	Total	7,332	100	17,526	100	1,240,233	100
KS2 Mathematics	Below level of test	339	5	1,295	7	64,103	5
	Level 2	95	1	233	1	12,976	1
	Level 3	1,580	22	3,890	22	240,041	19
	Level 4	3,271	45	7,747	44	544,572	44
	Level 5	2,043	28	4,410	25	378,220	31
	Total	7,328	100	17,575	100	1,239,912	100
KS2 Science	Below level of test	128	2	682	4	28,199	2
	Level 2	26	<1	91	<1	5,010	<1
	Level 3	909	12	2,257	13	123,609	10
	Level 4	3,489	48	8,409	48	561,919	45
	Level 5	2,785	38	6,148	35	523,520	42
	Total	7,337	100	17,587	100	1,242,257	100

Table A5 Key stage 3 attainment data

		Young people known to have attended Creative Partnerships activities		Young people in Creative Partnerships schools		All young people nationally	
		N	**%**	**N**	**%**	**N**	**%**
KS3 English	Below level of test	267	7	4,244	10	84,199	7
	Level 3	148	4	1,821	4	36,686	3
	Level 4	684	17	8,648	21	188,631	16
	Level 5	1,559	39	15,612	38	435,813	37
	Level 6	994	25	8,540	21	297,986	26
	Level 7	356	9	2,701	7	121,049	10
	Total	4,008	100	41,566	100	1,164,364	100
KS3 Mathematics	Below level of test	60	2	1,175	3	23,334	2
	Level 2	23	<1	350	<1	6,572	<1
	Level 3	320	8	4,571	11	85,764	7
	Level 4	630	16	8,476	20	186,872	16
	Level 5	823	21	10,101	24	261,703	22
	Level 6	1,115	28	10,750	25	335,215	28
	Level 7	855	21	5,952	14	232,538	20
	Level 8	175	4	1,027	2	54,101	5
	Total	4,001	100	42,402	100	1,186,099	100
KS3 Science	Below level of test	55	1	1,451	3	25,399	2
	Level 2	32	<1	475	1	8,102	<1
	Level 3	309	8	4,619	11	82,025	7
	Level 4	895	22	10,848	26	239,845	20
	Level 5	1,234	31	13,242	31	367,205	31
	Level 6	993	25	8,945	21	324,931	28
	Level 7	510	13	2,845	7	133,759	11
	Total	4,028	100	42,425	100	1,181,266	100

Table A6 Key stage 4 attainment data

		Young people known to have attended Creative Partnerships activities		Young people in Creative Partnerships schools		All young people nationally	
		N	**%**	**N**	**%**	**N**	**%**
Highest English Grade	U	129	8	4,315	10	87,841	7
	G	70	4	1,507	8	27,983	2
	F	132	8	3,306	8	63,542	5
	E	215	14	5,718	13	122,795	1
	D	324	20	8,434	20	208,744	17
	C	345	22	9,979	23	185,549	23
	B	245	15	6,442	15	242,153	19
	A	99	6	3,013	7	154,712	12
	A*	27	2	628	1	52,838	4
	Total	1,586	100	43,342	100	1,246,157	100
Highest Mathematics Grade	U	182	12	5,228	12	104,744	8
	G	98	6	2,638	6	46,682	4
	F	167	11	5,316	12	108,253	9
	E	241	15	7,683	18	180,680	14
	D	282	18	7,182	16	194,422	16
	C	296	19	7,864	18	253,359	20
	B	232	15	5,237	12	212,078	17
	A	75	5	2,040	5	104,845	9
	A*	13	<1	536	1	48,078	4
	Total	1,586	100	43,724	100	1,253,411	100
Highest Science Grade	U	170	11	5,323	12	104,904	9
	G	95	6	2,612	6	47,976	9
	F	154	10	4,963	12	101,543	8
	E	226	14	6,398	15	154,930	13
	D	157	16	7,609	18	209,278	17
	C	417	26	9,619	22	300,788	24
	B	163	10	3,714	9	148,379	12
	A	78	5	1,947	5	106,862	9
	A*	25	2	735	2	63,151	5
	Total	1,585	100	42,920	100	1,237,811	100

A1.2.2 Average point scores of young people in the sample

National Curriculum levels can be converted into point scores[7]. 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:

Point score = 6 x level + 3

For example level 4 has a point score of 6 x 4 + 3 = 27

Table A7 Point score equivalent for National Curriculum Levels

Level or grade	Point score equivalent
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

The average point score can be calculated for a number of different purposes. For example, within a school for a particular subject or for a group of young people nationally.

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.

[7] For further details on the calculation of point scores and average point scores please refer to: http://www.ofsted.gov.uk/documents/schooltraining/interpretingdata/informationsheets/interpretingdata_infosheet1_interpretks13scores.doc

How do the average point scores of young people known to have attended Creative Partnerships compare to all young people in the same schools and those in other schools?

Table A8 Key stage 2 average point scores

	Young people known to have attended Creative Partnerships activities	All young people in schools involved with Creative Partnerships	All young people nationally
	Mean	Mean	Mean
KS2 Average	26.9	26.2	27.2
KS2 English	26.2	25.4	26.5
KS2 Mathematics	26.4	25.7	26.6
KS2 Science	28.2	27.6	28.5

Table A9 Key stage 3 average point scores

	Young people known to have attended Creative Partnerships activities	All young people in schools involved with Creative Partnerships	All young people nationally
	Mean	Mean	Mean
KS3 Average	33.7	31.8	33.8
KS3 English	32.9	31.4	33.1
KS3 Mathematics	35.7	33.3	35.5
KS3 Science	33.3	31.2	33.3

Table A10 Key stage 4 average point scores

	Young people known to have attended Creative Partnerships activities	All young people in schools involved with Creative Partnerships	All young people nationally
	Mean	Mean	Mean
Total points score*	39.2	35.7	41.2
Capped points score*	32.6	30.1	34.9
English Grade	4.0	4.0	4.6
Mathematics Grade	3.6	3.5	4.2
Science Grade	3.7	3.5	4.2

*Old system

A1.3 Coefficients from multilevel modelling

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 shown are statistically significant. Non-significant coefficients have been blanked out.

Table A11 – Significant coefficients in models looking at key stage 2 attainment

Description of background variable	Outcome of interest			
	Average KS2 points score	English KS2 points score	Maths KS2 points score	Science KS2 points score
Constant Term	28.260	27.340	28.080	29.320
Took exam in 2004 (rather than 2003)	-0.151	-0.035	-0.198	-0.222
School involved with Creative Partnerships	-0.261	-0.246		-0.273
Pupil known to have attended a Creative Partnerships activity	0.316	0.305	0.224	0.315
Key Stage 1 Overall Reading	0.257	0.351	0.144	0.267
Key Stage 1 Writing	0.146	0.248	0.110	0.085
Key Stage 1 Spelling	0.018	0.066	0.025	-0.043
Missing Key Stage 1 Spelling Information	-0.282	-0.940	-0.253	0.414
Key Stage 1 Maths	0.337	0.144	0.594	0.289
Key Stage 1 Science TA	0.086	0.077	0.100	0.092
Interaction - (Year of taking exam by key stage 1 average)	0.017	-0.014	0.022	0.042
Total age in months (when took exam)	-0.043	-0.030	-0.063	-0.038
Female pupil	-0.216	0.596	-0.926	-0.359
SEN - School Action/Plus	-1.616	-2.063	-1.848	-0.940
SEN - Statement	-3.030	-4.058	-3.088	-2.365
Eligible for free school meals?	-0.348	-0.373	-0.315	-0.390
English as an additional language	0.151	0.147	0.347	
Ethnicity - White Non-UK	0.343	0.373	0.366	0.359
Ethnicity - Gypsy/Roma	-0.705	-0.660	-0.757	-0.937
Ethnicity - Mixed	0.135	0.257	0.083	0.098
Ethnicity - Asian Indian	0.190	0.209	0.450	-0.058
Ethnicity - Asian Pakistani	-0.078	0.100		-0.405
Ethnicity - Asian Bangladeshi	0.407	0.659	0.502	0.106
Ethnicity - Asian Other	0.395	0.322	0.811	0.150
Ethnicity - Black Caribbean	-0.341	-0.183	-0.465	-0.372
Ethnicity - Black African	0.069	0.291		
Ethnicity - Black Other	-0.180		-0.278	-0.300
Ethnicity - Chinese	0.823	0.644	1.389	0.530
Ethnicity - Other	0.446	0.387	0.749	0.306
Ethnicity - Refused	0.086	0.056	0.102	0.130
Ethnicity - Unknown	-0.173	-0.186	-0.158	-0.161
Pupil moved schools between KS1 and KS2	-0.284	-0.259	-0.388	-0.226
First & Middle School				
Junior school		-0.125		
Faith school	0.059	0.125	0.054	
% pupils in school known to be eligible for free school meals	-0.005	-0.005	-0.005	-0.008
% pupils in school with statements of SEN			-0.003	0.005
% EAL pupils in school			-0.003	0.004
No. of pupils aged 11 in school	0.001			0.002
Census - Deprivation index (standard deviation of	-0.012	-0.013	-0.012	-0.012

15)				
Census - Overcrowding index (standard deviation of 15)	-0.001	-0.001	-0.001	-0.002
Census - Migration index (standard deviation of 15)				
No matching census information				

Table A12 – Significant coefficients in models looking at key stage 3 attainment

Description of background variable	**Outcome of interest**			
	Average KS3 points score	**English KS3 points score**	**Maths KS3 points score**	**Science KS3 points score**
Constant Term	34.340	32.850	35.850	34.200
Took exam in 2004 (rather than 2003)	-0.152		0.243	-0.646
School involved with Creative Partnerships				
Pupil known to have attended a Creative Partnerships activity	0.464	0.378	0.343	0.531
Key Stage 2 English	0.435	0.604	0.323	0.386
Key Stage 2 Maths	0.487	0.225	0.859	0.386
Key Stage 2 Science	0.347	0.236	0.318	0.481
Pupil has KS2 average below level 3	0.252	-0.363	0.675	0.440
Interaction - (Below level 4 by key stage 2 average)	-0.716	-0.568	-0.855	-0.739
Interaction - (Year of taking exam by key stage 2 average)	-0.025	-0.026	-0.051	
Total age in months (when took exam)	-0.027		-0.042	-0.037
Female pupil	0.187	1.554	-0.430	-0.572
SEN - School Action/Plus	-1.850	-2.514	-1.795	-1.428
SEN - Statement	-2.298	-3.331	-2.348	-1.253
Eligible for free school meals?	-0.617	-0.766	-0.584	-0.691
English as an additional language	0.273	0.248	0.427	0.094
Ethnicity - White Non-UK	0.354	0.407	0.247	0.327
Ethnicity - Gypsy/Roma	-1.226	-1.225	-1.556	-1.123
Ethnicity - Mixed	0.114	0.316		
Ethnicity - Asian Indian	0.481	0.400	0.814	0.248
Ethnicity - Asian Pakistani		0.242		-0.352
Ethnicity - Asian Bangladeshi	0.327	0.634	0.419	
Ethnicity - Asian Other	0.857	0.545	1.192	0.818
Ethnicity - Black Caribbean	-0.274	0.103	-0.538	-0.398
Ethnicity - Black African	0.359	0.721	0.166	0.232
Ethnicity - Black Other	-0.228	0.155	-0.518	-0.328
Ethnicity - Chinese	1.418	0.674	2.102	1.295
Ethnicity - Other	0.693	0.597	0.838	0.601
Ethnicity - Refused	-0.199	-0.198	-0.270	-0.183
Ethnicity - Unknown	-0.543	-0.499	-0.547	-0.586
Pupil joined school after year 7	-0.635	-0.660	-0.709	-0.677

Secondary modern school		-0.389		
Comprehensive to 16			-0.088	
Selective school	2.508	2.261	2.920	2.347
Other non Comp-18 secondary school	0.261		0.409	
Faith school	0.267	0.374	0.232	0.215
Boys' school	0.302	0.513	0.324	
Girls' school	0.557	0.484	0.507	0.713
Technology Specialist School	0.182	0.236	0.098	0.193
Arts Specialist School				
Science Specialist School	0.255	0.395		0.266
Sports Specialist School		0.198		
Language Specialist School	0.148	0.192		0.225
Maths and Computing Specialist School				
Business and Enterprise Specialist School				
Other Specialist School			-0.304	
% pupils in school known to be eligible for free school meals	-0.042	-0.036	-0.039	-0.046
% pupils in school with statements of SEN	0.012	0.010	0.009	0.014
% EAL pupils in school	0.007	0.005	0.006	0.006
No. of pupils aged 14 in school			0.001	
Census - Deprivation index (standard deviation of 15)	-0.030	-0.033	-0.028	-0.032
Census - Overcrowding index (standard deviation of 15)	-0.004	-0.003	-0.004	-0.007
Census - Migration index (standard deviation of 15)				
No matching census information	-0.129		-0.138	-0.131

Table A13 – Significant coefficients in models looking at key stage 4 attainment

Description of background variable	**Outcome of interest**				
	Total GCSE points score	**Total GCSE points score from best 8 GCSEs**	**English Grade**	**Maths Grade**	**Science Grade**
Constant Term	40.100	34.840	4.664	4.142	4.211
Took exam in 2004 (rather than 2003)		-0.248	-0.321		-0.082
School involved with Creative Partnerships					
Pupil known to have attended a Creative Partnerships activity	0.780	0.677			0.081
Key Stage 3 English	0.867	0.621	0.106	0.036	0.049
Key Stage 3 Maths	0.731	0.511	0.039	0.131	0.067
Key Stage 3 Science	0.849	0.610	0.054	0.056	0.116
Pupil has KS3 average below level 4	-1.371	-1.754	-0.088	-0.156	-0.167
Interaction - (Below level 4 by key stage 3	-1.402	-0.764	-0.065	-0.106	-0.110

average)					
Interaction - (Year of taking exam by key stage 3 average)		-0.023	0.005	-0.004	0.001
Total age in months (when took exam)	-0.114	-0.083	-0.005	-0.012	-0.013
Female pupil	3.059	2.207	0.370	0.030	
SEN - School Action/Plus	-5.344	-4.310	-0.462	-0.312	-0.338
SEN - Statement	-3.722	-2.917	-0.486	-0.183	-0.110
Eligible for free school meals?	-2.470	-1.921	-0.198	-0.172	-0.177
English as an additional language	3.636	2.504	0.133	0.244	0.236
Ethnicity - White Non-UK	2.138	1.337	0.100	0.057	0.070
Ethnicity - Gypsy/Roma	-4.353	-3.457	-0.366	-0.352	-0.362
Ethnicity - Mixed	0.441	0.458	0.086		0.047
Ethnicity - Asian Indian	3.619	2.349	0.206	0.368	0.356
Ethnicity - Asian Pakistani	3.407	2.681	0.279	0.300	0.330
Ethnicity - Asian Bangladeshi	4.080	3.154	0.303	0.323	0.363
Ethnicity - Asian Other	3.325	2.432	0.155	0.392	0.403
Ethnicity - Black Caribbean	1.978	1.616	0.220	0.134	0.200
Ethnicity - Black African	4.600	3.796	0.424	0.396	0.514
Ethnicity - Black Other	1.153	0.950	0.130	0.042	0.110
Ethnicity - Chinese	3.527	1.607		0.339	0.279
Ethnicity - Other	3.275	2.415	0.149	0.236	0.279
Ethnicity - Refused	-1.515	-1.120	-0.072	-0.107	-0.118
Ethnicity - Unknown	-2.999	-2.230	-0.172	-0.205	-0.231
Pupil changed school between KS3 and KS4	-7.155	-5.345	-0.491	-0.445	-0.566
Secondary modern school					
Comprehensive to 16				0.030	0.035
Selective school			-0.056		-0.081
Other non Comp-18 secondary school	4.687	2.426	0.290	0.319	0.355
Faith school	0.864	0.451	0.079	0.049	0.038
Boys' school			0.048		-0.082
Girls' school				0.066	0.057
Technology Specialist School	1.523	0.470	0.038	0.047	0.052
Arts Specialist School	0.922	0.329			
Science Specialist School					
Sports Specialist School					
Language Specialist School	0.878	0.350			
Business and Enterprise Specialist School	0.883				0.059
Other Specialist School					
% pupils in school known to be eligible for free school meals	0.024	0.009	-0.001	-0.003	-0.003
% pupils in school with statements of SEN		-0.011			
% EAL pupils in school	-0.016	-0.017			
No. of pupils aged 16 in school	-0.003				0.000
Census - Deprivation index (standard deviation of 15)	-0.114	-0.087	-0.009	-0.008	-0.008
Census - Overcrowding index (standard deviation of 15)	-0.005	-0.004	0.000	0.000	-0.001
Census - Migration index (standard deviation of 15)	-0.015	-0.012	-0.001	-0.001	-0.001
No matching census information	-0.754	-0.560	-0.043	-0.057	-0.058