National Foundation
for Educational Research

The longer-term impact of Creative Partnerships on the attainment of young people: Results from 2005 and 2006

Final Report

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September 2008

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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. Between Autumn 2002 and Summer 2004, the National Foundation for Educational Research (NFER) conducted a programme-level evaluation of Creative Partnerships (Sharp *et al.*, 2006). It 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 intended to address the issues of the impact that involvement in Creative Partnerships may have on young people's academic attainment. 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.

A previous study examined the relationship between attendance at Creative Partnership schools and activities and national assessment results, 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 Partnership activities and attainment: see Eames *et al.* (2006).

Arts Council England decided to commission a further study to investigate the extent to which the impact of the programme was sustained or enhanced over a longer period. This study used attainment data for 2005 and 2006 to explore the longer-term impact of participation in Creative Partnerships.

Key findings

The characteristics of young people in Creative Partnerships schools

- Schools involved in Creative Partnerships were more disadvantaged than all schools nationally but, within Creative Partnerships schools, young people known to have taken part in Creative Partnerships activities were slightly less disadvantaged than other young people in the same schools.
- Young people attending Creative Partnerships schools had slightly lower average levels of prior attainment (that is, attainment as measured before they had experienced Creative Partnerships) than did young people nationally. The prior attainment of young people known to have taken part in Creative Partnerships activities was slightly higher than that of other young people in Creative Partnerships schools.

Comparing outcomes for young people known to have attended Creative Partnerships activities and other young people nationally

- At key stage 2, there were no statistically significant differences in progress between young people known to have attended Creative Partnerships activities and other young people nationally for average key stage 2 score or attainment in English, mathematics or science.
- At key stage 3, for all four outcome measures considered (average key stage 3 score, English, mathematics and science), the progress of young people known to have taken part in Creative Partnerships was statistically significantly greater than that of similar pupils nationally.
- At key stage 4, for four of the outcome measures considered (total GCSE point score, best 8 point score, English and science), the progress of young people known to have taken part in Creative Partnerships was statistically significantly greater than that of similar young people nationally. No difference was found for young people's progress in mathematics.

Comparing outcomes for young people who attended Creative Partnerships schools and young people in other schools

- For the average key stage 2 score and for science at key stage 2, the progress of young people who attended Creative Partnerships schools but who were not known to have taken part in Creative Partnerships activities was statistically significantly less than that of similar young people nationally.
- At key stages 3 and 4, there were no statistically significant differences in progress between young people known to have attended Creative Partnerships schools and other young people nationally.

Comparing outcomes for young people known to have attended Creative Partnerships activities and other young people in the same schools

- For all three key stages and for all outcome measures except mathematics at key stages 2 and 4, the progress of young people who attended Creative Partnerships schools and who were known to have taken part in Creative Partnerships activities was statistically significantly greater than that of other young people in the same schools.

Conclusions

The pattern of results in 2005 and 2006 was consistent with that reported in 2003 and 2004 (Eames *et al*., 2006). The academic progress of young people attending Creative Partnerships activities was greater than that of other young people in the same schools, although the differences were relatively small, with effect sizes of less than 0.1 of a standard deviation[1]. At key stages 3 and

[1] The What Works Clearinghouse considers effect sizes of 0.25 to be the minimum level indicating that an intervention is having an impact (see http://ies.ed.gov/ncee/wwc/)

4, young people attending Creative Partnerships activities also made more progress than young people in schools not involved in Creative Partnerships (though effect sizes were small, ranging from 0.03 to 0.1). There were no significant differences between these groups at key stage 2.

The academic progress of young people attending Creative Partnerships Phase 1 schools but not involved in Creative Partnerships activities was similar to, or slightly less than, that of similar young people nationally, which may suggest that Creative Partnerships has not yet become a whole school initiative, affecting all young people within the school community whether or not they are directly involved in Creative Partnerships activities.

However, there are positive messages for Creative Partnerships. While effect sizes are small, the results of this study suggest that Creative Partnerships is contributing to improved levels of attainment. For example, young people who have attended Creative Partnerships activities made, on average, the equivalent of 2.5 grades better progress in GCSE than similar young people in other schools. This study has not been able to explore other areas such as aspirations, self-esteem, attitudes to school and to learning, or skills not assessed as part of the national curriculum, where Creative Partnerships may also be having an impact.

Because there was evidence of impact even though the measures used were not ideal or immediate, we conclude that Creative Partnerships is making a small but valuable contribution to improving levels of attainment at key stage 4 and, to a lesser extent, at key stage 3.

1. Introduction

Between Autumn 2002 and Summer 2004, the National Foundation for Educational Research (NFER) conducted a programme-level evaluation of Creative Partnerships (Sharp *et al.*, 2006). It 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 Partnership 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 Partnership activities and attainment: see Eames *et al.* (2006).

Arts Council England was interested in examining the extent to which the impact of the programme was sustained or enhanced over a longer time-period. This report uses attainment data for 2005 and 2006 to explore the further impact of participation in Creative Partnerships.

2. Approach

The approach used was essentially similar to that used in Eames *et al.* (2006), drawing on attendance data collected during the national evaluation.

The national evaluation of Creative Partnerships focused on primary and secondary schools involved in Phase 1 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.

Information on young people's attendance at Creative Partnerships activities was collected using 'attendance data sheets'. These were distributed on a termly basis during the academic years 2002/3 and 2003/4 to schools taking part in the national evaluation. 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. Not all young people attending Creative Partnerships schools took part in Creative Partnerships activities, although it was more common for primary schools to involve all their pupils in the initiative (see Eames *et al.*, 2005).

The data requested for each young person was as follows:

- name
- gender
- date of birth
- year group
- school attended.

By combining attendance data with information from the NPD, a national dataset of young people involved in Creative Partnerships was created. A statistical technique known as multilevel modelling was used to examine whether there was a difference in academic attainment between those young people involved in Creative Partnerships and those not, when all relevant background factors are taken into account. Young people attending schools which joined Creative Partnerships after Phase 1 were effectively excluded from the analysis.

The evaluation involved young people from a wide range of year groups (from Foundation Stage to year 13). For the present study, three sets of comparisons were made:

- for young people in Year 6 in 2005 or 2006, comparing progress from key stage 1 to key stage 2 for those involved in Creative Partnerships and those not
- for young people in Year 9 in 2005 or 2006, looking at progress from key stage 2 to key stage 3
- for young people in Year 11 in 2005 or 2006, looking at progress from key stage 2 to GCSE.

This report presents the following information:

- a brief 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 (but not known to have taken part in Creative Partnerships activities) and similar young people in non-Creative Partnerships schools nationally
- the overall differences in performance and progress between young people 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.

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:

- 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. Sample information: the young people in the analysis

- At key stage 2, the analysis included over 12,000 young people attending 158 Phase 1 Creative Partnerships schools, and over one million young people nationally.
- At key stage 3, the analysis included almost 25,000 young people from 73 Phase 1 Creative Partnerships schools and over 1,100,000 young people nationally.
- At key stage 4, the analysis included almost 24,000 young people attending 73 Phase 1 Creative Partnerships schools and almost 1,100,000 young people nationally[2].

Further details of the numbers of schools and young people involved are given in Tables A1 and A2 in the Appendix.

Information on certain characteristics of the young people 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).

The following variables were included in the analysis:

- gender
- special educational needs (SEN) status
- Free School Meal (FSM) entitlement
- ethnic group
- whether English is an additional language (EAL)
- prior attainment.

Information on the characteristics of the sample is summarised below, and further detail is given in Tables A3 to A5 in the Appendix.

[2] 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.

3.1 Creative Partnerships schools and disadvantage

Young people attending Phase 1 Creative Partnerships schools were more likely to be entitled to Free School Meals, to have English as an additional language, and to have been identified as requiring additional support through School Action or Action Plus[3], than were young people in the national population.

- Within Phase 1 Creative Partnerships schools, young people known to have attended Creative Partnerships activities were less likely to be entitled to Free School Meals than were other young people in the same schools. This was particularly marked among those young people who were in key stage 3 when the attendance data was collected, i.e. those who completed key stage 4 in 2005 or 2006.
- At key stages 2 and 4, young people known to have attended Creative Partnerships activities were less likely to have English as an additional language than other young people in the same schools.

In summary, schools involved in Creative Partnerships were more disadvantaged than all schools nationally but, within Creative Partnerships schools, young people known to have taken part in Creative Partnerships activities were slightly less disadvantaged than other young people in the same schools.

These findings are broadly similar to those obtained in the previous study (Eames *et al.*, 2006), although differences within Creative Partnerships schools are less marked in the present study. In particular, for those completing key stage 4 in 2003 or 2004, young people taking part in Creative Partnerships activities were rather more disadvantaged than others in the same schools, whereas for those completing key stage 4 in 2005 or 2006 young people known to be taking part in Creative Partnerships activities were less disadvantaged than others in the same school.

3.2 Creative Partnerships schools and ethnicity

- Young people in Creative Partnerships schools were predominantly from White British backgrounds.
- Young people attending Phase 1 Creative Partnerships schools were less likely to be from White British backgrounds than young people attending other schools.

[3] Schools meet most children's learning needs by tailoring teaching approaches to suit individual pupils. Where children do not make adequate progress, additional support is provided through School Action and School Action Plus. For further details please refer to: http://www.teachernet.gov.uk/management/atoz/s/senidentificationandassessment/.

- At key stage 2, young people known to have taken part in Creative Partnerships activities were slightly more likely to be from White British backgrounds and slightly less likely to be from Pakistani backgrounds than other young people in the same schools.
- At key stage 3, young people known to have taken part in Creative Partnerships activities were very similar in terms of ethnic background to other young people in the same schools.
- At key stage 4, young people known to have taken part in Creative Partnerships activities were slightly more likely to be from White British backgrounds and slightly less likely to be from Bangladeshi backgrounds than other young people in the same schools.

These findings are generally very similar to those of Eames *et al.* (2006), although the differences between Creative Partnerships schools and schools nationally are less marked in the current study.

3.3 Creative Partnerships schools and prior attainment

In general, the attainment of a young person at the end of any key stage is strongly related to their attainment at earlier stages. It is therefore important to use a sound measure of prior attainment to assess their attainment before they or their schools became involved in Creative Partnerships.

For the key stage 2 sample, the prior attainment measures are point scores at the end of key stage 1. For the key stage 3 sample, the prior attainment measures are scores at the end of key stage 2. Key stage 2 scores are also used for the key stage 4 sample: Creative Partnerships was launched while these young people were still in key stage 3, and their key stage 3 scores may, therefore have already been influenced by their schools' involvement in Creative Partnerships[4]. For this reason, it was decided to use their key stage 2 scores in order to include the maximum possible number of young people in the analysis.

Table A6 summarises young people's prior attainment in terms of point scores. One point represents the progress expected to be made during one term of education, with level 2 (15 points) being the expected level of attainment at the end of key stage 1, and level 4 (27 points) being the expected level of attainment at the end of key stage 2. (See also Section A2 in the Appendix.)

Overall, young people attending Creative Partnerships schools had slightly lower average levels of prior attainment than did young people nationally. The

[4] Note that Eames *et al*. (2006) was able to use key stage 3 scores as measures of prior attainment for key stage 4 because the young people had completed key stage 3 before participating in Creative Partnerships.

prior attainment of young people known to have taken part in Creative Partnerships activities was slightly higher than that of other young people in Creative Partnerships schools. However, it is important to remember that these are average scores and that there is considerable variation between schools, and between young people in the same school.

The information about prior attainment is consistent with other information about the samples, indicating that Creative Partnerships schools were generally rather more disadvantaged than schools, while young people known to have taken part in Creative Partnerships activities were slightly less disadvantaged than others in the same schools. The pattern of findings is very similar to that reported in the earlier study.

4. How did the progress of young people attending Creative Partnerships schools and activities compare with that of other young people?

The main aim of this report is to explore the relationship between taking part in Creative Partnerships activities, or attending a school which took part in the Creative Partnerships initiative, and academic attainment.

Creative Partnerships focuses on the most disadvantaged communities in England, and young people in these communities will, overall, have lower levels of attainment than those living in less disadvantaged areas. To explore whether Creative Partnerships has an impact on attainment, this report did not look at young people's attainment in isolation, but instead examined the progress made by young people in relation to their involvement with Creative Partnerships.

To do this, a statistical technique known as multilevel modelling was used. 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 (in this case, measures of attainment at the end of key stages 2, 3 and 4) and one or more other related variables. This technique takes account of a wide range of factors relating to young people (including prior attainment, gender, ethnicity, special educational needs, and entitlement to Free School Meals) as well as school-related factors such as the type and size of school and the proportion of its young people entitled to Free School Meals. The last of these is an overall measure of the level of disadvantage of the young people attending a school. The results of the analysis estimate the differences in attainment that would be seen if prior attainment and other background and contextual characteristics were equal between the groups being compared.

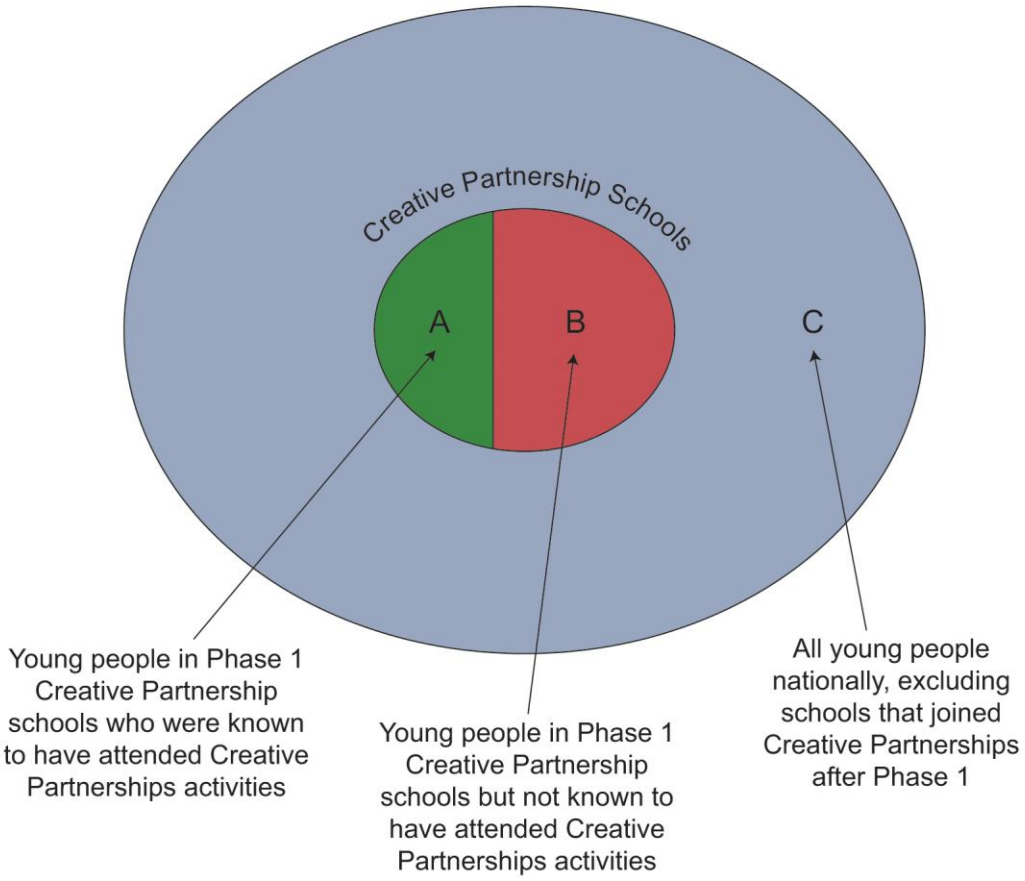
Multilevel modelling takes account of the fact that data is grouped into similar clusters at different levels. For example, individual young people are grouped into schools, and those schools are grouped within local authorities (LAs). There may be more in common between young people within the same 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.

It should be noted that, while the available data includes a wide range of information about young people and their schools, it is not possible to include all the factors, such as the extent of parental support and young people's attitudes to school, which may influence academic progress.

The groups of young people considered in this report are shown diagrammatically in Figure 1.

- The green area (**A**) represents young people attending Phase 1 Creative Partnerships Schools and known to have attended Creative Partnerships activities.
- The red area (**B**) represents young people attending Phase 1 Creative Partnerships schools but not known to have attended Creative Partnerships activities in 2002/3 or 2003/4.
- The blue area (**C**) represents all similar young people in the equivalent age group in England who did not attend Phase 1 Creative Partnerships schools, excluding those in schools that joined Creative Partnerships after Phase 1.

Figure 1: The groups of young people included in the analysis



Tables in Section 4 include the three groups of young people. Results are presented comparing:

- the progress of young people who attended Creative Partnerships activities with that of other young people nationally (i.e. comparing young people in groups A and C in Figure 1)
- the progress of young people in Creative Partnerships schools not known to have taken part in Creative Partnerships activities with that of other young people nationally (i.e. comparing young people in groups B and C in Figure 1)
- the progress of young people known to have taken part in Creative Partnerships activities with that of other young people in the same schools (i.e. comparing groups A and B in Figure 1).

4.1 Overall differences in progress

The comparisons allow investigation of 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 Creative Partnerships 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?

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 in 2005 and 2006 were analysed separately, and a similar procedure was followed in each case.

In summary, the variables included in the models relate to pupil, family and school characteristics. In addition, variables were included to show:

- whether each young person attended a Phase 1 Creative Partnerships school
- for those young people attending Phase 1 Creative Partnerships schools, whether the young person was known to have attended a Creative Partnerships activity.

Results are presented in terms of differences in point scores, with their statistical significance levels, and effect sizes. 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.A statistically significant result means that the observed difference is unlikely to be due to chance alone. In this section, only statistically significant differences are noted, although for completeness non-significant differences are given in the tables.

Effect sizes allow different outcomes to be compared, even when they are measured on different scales (for example key stage 3 outcomes based on end of key stage assessments and key stage 4 outcomes based on GCSE and equivalent examinations).

The effect size of a difference is 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 (Gray *et al.*, 1990, Slavin and Fashola, 1998). The US What Works Clearinghouse[5], 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.

So what does an effect size of, say, 25, mean in practice? If we have a normal distribution of scores for a group of young people, half of these will have scores below the mean and half will have scores above the mean. Suppose some of these young people then take part in some form of programme or intervention designed to improve their scores. If the programme has an effect size of 25, a young person with an average score before the programme (i.e. a young person out-performing about 50 per cent the group) would, as result of the programme, have a score which out-performs about 60 per cent of the group. If the effect size is 10, this same young person would outperform 54 per cent of the group.

4.1.1 Results of multilevel modelling at key stage 2

The results in this section relate to young people completing key stage 2 in 2005 or 2006. Four outcome measures are considered:

- the average key score 2 score
- English
- mathematics
- science.

Table 1 compares the key stage 2 progress of young people known to have taken part in Creative Partnerships activities with that of similar young people nationally who were not attending Creative Partnerships schools (that is, those pupils in groups A and C in Figure 1).

[5] See http://ies.ed.gov/ncee/wwc/

Table 1 Results of multilevel modelling at key stage 2

A↔C 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	-0.01	-0.1
English	0.09	1.6
Mathematics	-0.01	-0.1
Science	-0.09	-1.9

Note that one point is roughly equal to one 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 differences in progress between young people known to have attended Creative Partnerships activities and other young people nationally at key stage 2. This is similar to the findings of the 2003/04 study.

Table 2 compares young people in Creative Partnerships schools who were not known to have attended Creative Partnerships activities with similar young people nationally who were not attending Creative Partnerships schools (that is, those in groups B and C in Figure 1).

Table 2 Results of multilevel modelling at key stage 2

B↔C 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	-0.18*	-3.9
English	-0.18	-3.4
Mathematics	-0.04	-0.6
Science	-0.30*	-6.3

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

For the average key stage 2 score and for science, the progress of young people who attended Creative Partnerships schools but were not known to have attended Creative Partnerships activities was less than that of similar young people nationally.

Table 3 compares the progress of young people in key stage 2 known to have attended Creative Partnerships activities with that of other young people in the same schools (those in groups A and B in Figure 1).

Table 3 Results of multilevel modelling at key stage 2

A↔B 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 Partnerships activities	
	Point score	**Effect size**
Key stage 2		
Average	0.18*	3.7
English	0.27*	5.0
Mathematics	0.03	0.5
Science	0.21*	4.4

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

The progress at key stage 2 of young people who attended Creative Partnerships schools and who were known to have taken part in Creative Partnerships activities was greater than that of other young people in the same schools for the average key stage 2 score, for English and for science.

4.1.2 Results of multilevel modelling at key stage 3

The results in this section relate to young people completing key stage 3 in 2005 or 2006. As at key stage 2, four outcome measures are considered:

- the average key score 3 score
- English
- mathematics
- science.

Table 4 compares the progress from key stage 2 to key stage 3 of young people known to have taken part in Creative Partnerships activities with that of similar young people nationally who were not attending Creative Partnerships schools (those in groups A and C in Figure 1).

Table 4 Results of multilevel modelling at key stage 3

A↔C 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	0.41*	6.2
English	0.56*	8.1
Mathematics	0.39*	4.8
Science	0.38*	5.4

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

For all four outcome measures, the progress of young people known to have taken part in Creative Partnerships activities was greater than that of similar young people nationally.

Table 5 compares the key stage 3 progress of young people in Creative Partnerships schools not known to have attended Creative Partnerships activities with that of similar young people nationally who were not attending Creative Partnerships schools (those in groups B and C in Figure 1).

Table 5 Result of multilevel modelling at key stage 3

B↔C 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	-0.05	-0.8
English	-0.12	-1.8
Mathematics	-0.06	-0.7
Science	-0.10	-1.4

Note that one point is roughly equal to one 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 differences in progress at key stage 3 between young people in Creative Partnerships schools not known to have attended Creative Partnerships activities and other young people nationally

Table 6 compares the key stage 3 progress of young people known to have attended Creative Partnerships activities with that of other young people in the same schools (those in groups A and B in Figure 1).

Table 6 Results of multilevel modelling at key stage 3

A↔B 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 Partnerships activities	
	Point score	**Effect size**
Key stage 3		
Average	0.46*	7.0
English	0.69*	9.8
Mathematics	0.45*	5.5
Science	0.48*	6.8

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

Table 6 shows that, for all four key stage 3 outcome measures, the progress of young people known to have taken part in Creative Partnerships was greater than that of similar young people attending the same schools but not known to have taken part in Creative Partnerships activities.

4.1.3 Results of multilevel modelling at key stage 4

The results in this section relate to young people completing key stage 4 in 2005 or 2006. Five outcome measures are considered:

- the total point score based on GCSE and equivalent qualifications
- the 'best 8' point score (sometimes known as the capped point score) based on GCSE and equivalent qualifications
- GCSE grades for English, mathematics and science.

Table 7 compares the key stage 4 progress of young people known to have taken part in Creative Partnerships activities with that of similar young people nationally who were not attending Creative Partnerships schools (those in groups A and C in Figure 1).

Table 7 Results of multilevel modelling at key stage 4

A↔C 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 point score	15.57*	10.1
Best 8 point score	8.00*	7.7
English	0.84*	6.9
Mathematics	0.33	2.8
Science	0.87*	6.4

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

For the total and best 8 scores, for English and science, young people known to have attended Creative Partnerships activities made greater progress than similar young people nationally. The difference was equivalent to about 2.5 grades for the total point score and over one grade for the best 8 point score. Differences for English and science were more modest, although still statistically significant, at slightly less than one sixth of a grade.

Table 8 compares progress during key stages 3 and 4 of young people attending Creative Partnerships schools but not known to have taken part in Creative Partnerships activities with that of similar young people nationally who were not attending Creative Partnerships schools (those in groups B and C in Figure 1).

Table 8 Results of multilevel modelling at key stage 4

B↔C 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	1.88	1.2
Best 8 point score	-0.13	-0.1
English	-0.37	-3.1
Mathematics	0.09	0.7
Science	0.16	1.1

Note that an increase of six points is roughly equal to an improvement of one grade in one GCSE 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 differences between the progress of young people in key stage 4 who had attended Creative Partnerships schools and were not known to have attended Creative Partnerships activities and that of similar young people nationally.

Table 9 compares the key stage 4 progress of young people known to have attended Creative Partnerships activities with that of other young people attending the same schools (those in groups A and B in Figure 1).

Table 9 Results of multilevel modelling at key stage 4

A↔B 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 point score	13.69*	8.8
Best 8 point scores	8.14*	7.8
English	1.21*	9.9
Mathematics	0.24	2.0
Science	0.72*	5.2

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

For the total and best 8 scores, and for English and science, young people taking part in Creative Partnerships activities made more progress during key stages 3 and 4 than similar young people in the same schools. The difference was equivalent to:

- just over two grades for the total point score
- slightly more than one grade for the best 8 score
- about a fifth of a grade for English (1.21 divided by 6)
- just over a tenth of a grade for science (0.72 divided by 6).

5. Discussion and conclusion

This report presents findings relating to young people completing key stages 2, 3 or 4 in 2005 or 2006. The study considered young peoples' attainment in relation to a wide range of factors related to young people and their schools, including the prior attainment of the young people, using a statistical technique called multilevel modelling.

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

Table 10 summarises results in 2005 and 2006. The second column of Table 10 summarises the findings of this study in relation to comparisons between young people known to have taken part in Creative Partnerships activities and other young people nationally.

At key stage 2, there were no statistically significant differences in progress between young people known to have attended Creative Partnerships activities and other young people nationally.

At key stage 3, for all four outcome measures considered (average key stage 3 score, English, mathematics and science), the progress of young people known to have taken part in Creative Partnerships activities was greater than that of similar pupils nationally. However, effect sizes were small and cannot be said to be educationally significant.

At key stage 4, for four of the outcome measures considered (total GCSE point score, best 8 point score, English and science), the progress of young people known to have taken part in Creative Partnerships was greater than that of similar young people nationally. However, effect sizes were relatively small and cannot be said to be educationally significant. No differences were found for young people's progress in mathematics.

Table 10 Summary of comparisons: 2005 and 2006 attainment data

Outcome	Overall difference in point scores between young people: known to have attended Creative Partnerships activities and similar young people nationally A↔C	in Creative Partnerships schools not known to have attended Creative Partnerships activities and similar young people nationally B↔C	known to have attended Creative Partnerships activities and similar young people within the same schools A↔B
Key stage 2			
Average		-0.18	0.18
English			0.27
Mathematics			
Science		-0.30	0.21
Key stage 3			
Average	0.41		0.46
English	0.56		0.69
Mathematics	0.39		0.45
Science	0.38		0.48
Key stage 4			
Total point score	15.57		13.69
Best 8 point score	8.00		8.14
English	0.81		1.21
Mathematics			
Science	0.87		0.72

At key stage 2 and 3, one point is roughly equivalent to one term's progress.
At key stage 4, six points are approximately equivalent to an improvement of one grade in one subject at GCSE.

5.2 Summary of the differences between young people who attended Creative Partnerships schools and young people in other schools

The third column of Table 10 summarises the findings of this study in relation to comparisons between young people attending Phase 1 Creative Partnerships schools but not known to have attended Creative Partnerships activities and other young people nationally.

For the average key stage 2 score and for science at key stage 2, the progress of young people who attended Creative Partnerships schools but who were not known to have taken part in Creative Partnerships activities was statistically

significantly less than that of similar young people nationally. Effect sizes were very small.

At key stages 3 and 4, there were no statistically significant differences in progress between young people known to have attended Creative Partnerships schools and other young people nationally.

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

The final column of Table 10 summarises the findings of this study when comparing young people known to have taken part in Creative Partnerships activities with other young people in the same schools.

For all three key stages and for all outcome measures except mathematics at key stages 2 and 4, the progress of young people who attended Creative Partnerships schools and who were known to have taken part in Creative Partnerships activities was greater than that of other young people in the same schools. However, effect sizes were relatively small.

5.4 Summary of results obtained in 2003/4 and 2005/6

Creative Partnerships was launched in 2002 and Eames *et al.* (2006) considered attainment at the end of key stage 2, 3 and 4 in 2003 and 2004, when the schools had been involved in Creative Partnerships for at most two years. In the present study, there was a greater interval (of up to four years) between when schools and young people first experienced Creative Partnerships and the assessment of academic outcomes. This allows some consideration of the possible longer-term impact of Creative Partnerships. However, comparisons between the two studies need to be treated with considerable caution, for the reasons set out below.

- Both studies use attendance data collected during the 2002/3 and 2003/4 academic years but the young people for whom attendance data is available were in the whole range of years groups, from Foundation stage to post-16, at that time. Because young people in the study were of different ages, they will have taken their end of key stage assessments in different years. This means that the subset of young people included in the earlier study differs from the subset used in the present study.
- Young people included in the key stage 4 analysis in the earlier study were in key stage 4 when the attendance data was collected, i.e. they had already made subject choices for key stage 4. In contrast, most of the young people

in the key stage 4 analysis for the present study were in key stage 3 when attendance data was collected.

- Information about the extent of an individual young person's involvement with Creative Partnerships is limited to whether or not they attended a Creative Partnerships activity in 2002/3 or 2003/4. No information is available about the extent of this involvement, or of any subsequent participation.
- Changes in the method of scoring GCSE and equivalent qualifications at the end of key stage 4 mean that particular caution is needed when considering key stage 4 findings. In particular, young people in more disadvantaged schools may be disproportionately likely to be taking non-GCSE qualifications, which now have a higher weighting in the total and best 8 scores than was the case in 2003 or 2004. Also, while Eames *et al.* (2006) used key stage 3 assessments as the measure of prior attainment, the current study used key stage 2 assessments.

Table 11 is similar to Table 10, but summarises the findings from the earlier study.

Table 11 Summary of comparisons: 2003 and 2004 attainment data

Outcome	Overall difference in point score between young people: known to have attended Creative Partnerships activities and similar young people nationally A↔C	in Creative partnerships schools not known to have attended Creative Partnerships activities and similar young people nationally B↔C	known to have attended Creative Partnerships activities and similar young people within the same schools A↔B
Key stage 2			
Average		-0.26	0.32
English		-0.25	0.30
Mathematics			0.22
Science		-0.27	0.31
Key stage 3			
Average	0.42		0.46
English			0.38
Mathematics	0.34		0.34
Science	0.50		0.53
Key stage 4†			
Total point score			4.68
Best 8 point score			4.06
English			
Mathematics			
Science			0.48

At key stage 2 and 3, one point is roughly equivalent to one term's progress.
At key stage 4, one point is approximately equivalent to an improvement of one grade in one subject at GCSE.
† Note that the 2003/04 key stage 4 modelling results are on a different scale to those for 2005/06. In an attempt to make comparisons we have multiplied the 2003/4 values by six but this ignores differences in the points systems adopted in the two years.

Comparison of Tables 10 and 11 shows a marked similarity between the findings of the two studies at key stages 2 and 3. At key stage 4, the pattern is less consistent between the studies, but as noted above, there are a number of reasons to regard these results as less comparable.

5.5 Comparing effect size

The use of effect size is a useful means of comparing between different interventions. On the whole, the research literature suggests that greatest effect sizes are reported for interventions that are aimed at individuals or small groups, are intensive (in terms of the amount of time young people are 'exposed' to the initiative) and where individuals' progress is based on assessments that measure the intended outcomes of the initiative and are made close to the beginning and end of the initiative.

For example, in 1984, Bloom reported the impact of different instruction methods on US pupils' test scores. The article compared various approaches to teaching, and one-to-one tutoring proved the most effective, with an effect size of 2. Given individual tutoring, the average student performed about two standard deviations above the average of the control class (who received no additional help). Another way of explaining the difference is to say that the average school student, given tutoring, outperformed 98 per cent of students in the control group.

Very few programmes achieve effect sizes of this magnitude. Although the use of effect size is not widespread in this country, we are aware of two studies that provide a useful comparison. Sharp *et al*. (2001) investigated the impact of a national study support initiative for underachieving young people called *Playing for Success.* Compared with an equivalent control group, young people attending *Playing for Success* performed better in numeracy tests. For young people in key stage 2, the effect size was 85 and for those in key stage 3 it was 44. These results were obtained using a test of numeracy designed for the evaluation and trialled using a national sample of young people. The tests were administered immediately before and after participation in the initiative.

A recent study of a reading intervention scheme for young people in key stage 2 with low literacy levels obtained an effect size of 10 (Smith *et al.*, 2007). This study also used a control group design: pupils in both the control and intervention groups completed reading tests before and after pupils in the intervention group used the scheme.

There are several ways in which Creative Partnerships differs from these examples:

- Creative Partnerships has a range of key objectives in addition to raising academic attainment (i.e. it is less specifically focused on raising attainment)
- It is much less intensive (i.e. it involves groups or whole classes of young people, rather than small groups or individuals)

- The analysis described here used national curriculum assessments and GCSE attainment, rather than tests designed specifically for the purpose of evaluating Creative Partnerships
- For many of the young people in this study, there may have been a relatively long period between when they were most actively engaged in Creative Partnerships activities and the assessment of their levels of attainment.

Given these factors, it would be surprising if this study of Creative Partnerships showed effect sizes as large as one-to-one tutoring or *Playing for Success*.

5.6 Conclusion

This report examined the attainment of young people completing key stages 2, 3 or 4 in 2005 or 2006 focusing on schools in Phase 1 of the Creative Partnerships initiative. The pattern of results was very similar to that obtained in 2003 and 2004 (Eames *et al*., 2006).

As the academic progress of young people attending Creative Partnerships Phase 1 schools but not involved in Creative Partnerships activities was similar to, or slightly less than, that of similar young people nationally, this may suggest that Creative Partnerships has not yet become a whole school initiative, affecting all young people within the school community whether or not they are directly involved in Creative Partnerships activities.

There are, however, some positive messages for Creative Partnerships. While effect sizes are small relative to the value of 25, the results of this study suggest that Creative Partnerships is contributing to improved levels of attainment. For example, the most positive result showed that young people who have attended Creative Partnerships activities made, on average, the equivalent of 2.5 grades better progress in GCSE than similar young people in other schools. This study has not been able to explore other areas such as aspirations, self-esteem, attitudes to school and to learning, or skills not assessed as part of the national curriculum, where Creative Partnerships may also be having an impact.

The measures used to assess attainment were not ideally suited to assessing the learning gained in Creative Partnerships, neither were they taken immediately before and after young people's participation when effects on educational attainment might be expected to be greater. Nevertheless, there were positive indications of impact, even though the overall effect was small. We therefore conclude that Creative Partnerships is making a small but valuable contribution to improving levels of attainment at key stage 4 and, to a lesser extent, at key stage 3.

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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 with the 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 The profile of young people in the sample

A summary of the information presented in these tables is given in Section 3 of the main report.

Tables A1 and A2 show the numbers of young people and schools included in the analysis. Note that pupils with incomplete data, for example with missing end of key stage assessments, are excluded from these figures. Note also that Phase 1 Creative Partnerships schools include only those returning attendance data from 2002 to 2004.

Table A1 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 in Phase 1	All young people nationally
Key stage 2	8,670	12,102	1,005,105
Key stage 3	6,493	24,883	1,104,907
Key stage 4	5,188	23,921	1,081,248

Table A2 Number of schools in the analysis

	Schools involved with Phase 1 of Creative Partnerships	All schools nationally
Key stage 2	158	14,126
Key stage 3	73	3,053
Key stage 4	73	3,034

Tables A3 to A5 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 of young people:

- those known to have attended a Creative Partnerships activity
- all young people in Phase 1 Creative Partnerships schools
- all young people nationally.

Data includes gender, identified special educational needs (SEN), entitlement to Free School Meals (FSM), ethnicity and English as an additional language (EAL).

Table A3 The profile of young people in the sample from key stage 2

Key stage 2	Young people known to have attended Creative Partnership activities		All young people in Creative Partnerships schools in Phase 1		All young people nationally	
	N	**%**	**N**	**%**	**N**	**%**
Male	4,415	51	6,197	51	511,151	51
Female	4,255	49	5,905	49	493,954	49
Total	**8,670**		**12,102**		**1,005,105**	
No SEN	6,534	75	9,151	76	780,415	78
School Action/Plus	1,936	22	2,666	22	202,341	20
Statement	200	2	285	2	22,349	2
Total	**8,670**		**12,102**		**1,005,105**	
Not eligible for FSM	6,553	76	8,925	74	839,063	83
Eligible for FSM	2,117	24	3,177	26	166,042	17
Total	**8,670**		**12,102**		**1,005,105**	
No EAL	7,421	86	10,118	84	909,340	90
EAL	1,249	14	1,984	16	95,765	10
Total	**8,670**		**12,102**		**1,005,105**	
White – British	6,592	76	8,951	74	818,853	81
White – Other	148	2	233	2	21,923	2
Gypsy/Roma	6	0	9	0	988	0
Mixed	342	4	462	4	30,710	3
Asian – Indian	328	4	416	3	21,271	2
Asian – Pakistani	328	4	677	6	29,019	3
Asian – Bangladeshi	261	3	423	3	11,935	1
Asian – Other	32	0	54	0	5,174	1
Black – Caribbean	255	3	346	3	14,917	1
Black – African	160	2	217	2	16,211	2
Black - Other	38	0	56	0	3,809	0
Chinese	29	0	42	0	2,999	0
Other	62	1	87	1	6,980	1
Refused to supply	80	1	111	1	11,483	1
Missing	9	0	18	0	8,833	1
Total	**8,670**		**12,102**		**1,005,105**	

Table A4 The profile of young people in the sample from key stage 3

Key stage 3	Young people known to have attended Creative Partnership activities		All young people in Creative Partnerships schools in Phase 1		All young people nationally	
	N	**%**	**N**	**%**	**N**	**%**
Male	3,267	50	11,736	47	559,045	51
Female	3,226	50	13,147	53	545,862	49
Total	**6,493**		**24,883**		**1,104,907**	
No SEN	4,991	77	19,424	78	909,796	82
School Action/Plus	1,328	20	4,855	20	170,378	15
Statement	174	3	604	2	24,733	2
Total	**6,493**		**24,883**		**1,104,907**	
Not eligible for FSM	4,848	75	18,401	74	948,206	86
Eligible for FSM	1,645	25	6,482	26	156,701	14
Total	**6,493**		**24,883**		**1,104,907**	
No EAL	5,336	82	20,482	82	1,018,865	92
EAL	1,157	18	4,401	18	86,042	8
Total	**6,493**		**24,883**		**1,104,907**	
White – British	4,461	69	17,399	70	920,377	83
White - Other	217	3	619	2	22,761	2
Gypsy/Roma	7	0	11	0	551	0
Mixed	248	4	899	4	27,122	2
Asian – Indian	363	6	1,229	5	23,279	2
Asian – Pakistani	383	6	1,459	6	25,473	2
Asian – Bangladeshi	180	3	815	3	9,840	1
Asian - Other	69	1	235	1	6,442	1
Black – Caribbean	202	3	736	3	14,406	1
Black – African	171	3	639	3	14,190	1
Black - Other	67	1	182	1	4,321	0
Chinese	20	0	81	0	3,194	0
Other	67	1	297	1	7,337	1
Refused to supply	25	0	116	0	11,664	1
Missing	13	0	166	1	13,950	1
Total	**6,493**		**24,883**		**1,104,907**	

Table A5 The profile of young people in the sample from key stage 4

Key stage 4	Young people known to have attended Creative Partnership activities		All young people in Creative Partnerships schools in Phase 1		All young people nationally	
	N	**%**	**N**	**%**	**N**	**%**
Male	2,508	48	11,213	47	545,084	50
Female	2,680	52	12,708	53	536,164	50
Total	**5,188**		**23,921**		**1,081,248**	
No SEN	4,223	81	18,954	79	907,445	84
School Action/Plus	841	16	4,295	18	147,598	14
Statement	124	2	672	3	26,205	2
Total	**5,188**		**23,921**		**1,081,248**	
Not eligible for FSM	4,215	81	18,231	76	947,164	88
Eligible for FSM	973	19	5,690	24	134,084	12
Total	**5,188**		**23,921**		**1,081,248**	
No EAL	4,548	88	19,918	83	1,000,628	93
EAL	640	12	4,003	17	80,620	7
Total	**5,188**		**23,921**		**1,081,248**	
White – British	3,893	75	16,846	71	901,209	85
White – Other	133	3	622	3	21,799	2
Gypsy/Roma	2	0	14	0	417	0
Mixed	168	3	786	3	22,599	2
Asian – Indian	244	5	1,171	5	24,058	2
Asian – Pakistani	253	5	1,421	6	23,220	2
Asian – Bangladeshi	66	1	800	3	9,489	1
Asian – Other	41	1	151	1	5,264	0
Black – Caribbean	148	3	660	3	14,309	1
Black – African	86	2	571	2	11,231	1
Black - Other	43	1	178	1	4,214	0
Chinese	22	0	100	0	3,362	0
Other	28	1	239	1	6,558	1
Refused to supply	31	1	154	1	14,047	1
Missing	30	1	208	1	19,472	2
Total	**5,188**		**23,921**		**1,081,248**	

Tables A6 summarises the prior attainment (that is, their attainment before the implementation of Creative Partnerships) of young people included in the analysis. 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 A6 Mean prior attainment of young people in the sample

	Young people known to have attended Creative Partnerships activities	All young people in Creative Partnership schools in Phase 1	All young people nationally
Key stage 2 cohort	**Mean**	**Mean**	**Mean**
Key stage 1 Overall Reading	15.7	15.4	16.0
Key stage 1 Writing	14.1	13.9	14.4
Key stage 1 Mathematics	16.1	15.9	16.4
Key stage 3 cohort			
Key stage 2 English	26.4	26.0	26.7
Key stage 2 Mathematics	26.5	26.1	26.7
Key stage 2 Science	28.2	27.9	28.6
Key stage 4 cohort			
Key stage 2 English	27.2	26.5	27.2
Key stage 2 Mathematics	26.8	26.1	26.9
Key stage 2 Science	26.5	25.8	26.5
Key stage 2 Science	28.4	27.7	28.3

Data is presented as mean point scores – see Section A2

A2 The attainment of young people in the sample

The main aim of this study was to compare the attainment of young people experiencing Creative Partnerships with that of similar young people not attending schools involved with Creative Partnerships. This section summarises these attainments.

The attainment of young people is assessed at the end of key stages 1, 2 and 3. The levels achieved in these assessments can be converted into point scores, allowing young people's attainment in different subjects to be compared. The formula for converting national curriculum levels into point scores is:

Point score = 6 x level + 3

For example, level 4 – the expected level of attainment at the end of key stage 2 – has a point score of 27 (6 x 4 + 3) [6].

Table A7 Point score equivalents 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

In order to convert point scores to 'months of progress', it is possible to use the assumption underlying the National Curriculum that young people progress by one 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, or one term, of progress.

[6] 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_interpretkey stage 13scores.doc

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

Table A8 Key stage 2 outcome measures (mean point scores)

	Young people known to have attended Creative Partnerships activities	All young people in Creative Partnerships schools in Phase 1	All young people nationally
	Mean	**Mean**	**Mean**
Average	27.3	27.1	27.8
English	26.7	26.5	27.1
Mathematics	26.6	26.5	27.1
Science	28.6	28.4	29.0

Table A9 Key stage 3 outcome measures (mean point scores)

	Young people known to have attended Creative Partnerships activities	All young people in Creative Partnerships schools in Phase 1	All young people nationally
	Mean	**Mean**	**Mean**
Average	34.8	33.9	35.2
English	33.6	32.8	33.8
Mathematics	36.5	35.6	36.9
Science	33.7	32.8	34.3

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[7]. 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.

[7] For further information, see http://www.dcsf.gov.uk/performancetables/schools_06/s8.shtml.

Table A10 Key stage 4 outcome measures (mean point scores)

	Young people known to have attended Creative Partnerships activities	All young people in Creative Partnerships schools in Phase 1	All young people nationally
	Mean	**Mean**	**Mean**
Total point score	363.0	376.1	340.3
Best 8 point score	294.2	296.7	272.4
English	36.9	36.8	34.0
Mathematics	37.0	36.8	34.3
Science	34.8	34.1	31.8

A3 Coefficients from multilevel modelling

The tables below show the coefficients of all variables used in the multilevel modelling. Each coefficient shows the amount of change in a given outcome related to a change of one unit in the appropriate background variable, assuming that all other background variables are held constant. In some cases the background variables are categorical, in which case the coefficient shows the difference between young people with and without certain attributes (e.g. females are compared to males). 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 one per cent in this variable.

All coefficients shown in the following tables are statistically significant. Blank cells in the table indicate that the relevant coefficient was not statistically significant.

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

	Outcome of interest			
Description of background variable	**Average point score**	**English point score**	**Maths point score**	**Science point score**
Constant term	22.120	20.450	21.580	24.790
Pupil in a school in Creative Partnerships Phase 1	-0.181			-0.298
Pupil known to have attended a Creative Partnerships activity	0.175	0.272		0.207
Pupil in a school that joined Creative Partnerships after Phase 1				
Key Stage 1 Overall Reading	0.252	0.350	0.137	0.265
Key Stage 1 Writing	0.135	0.223	0.108	0.083
Key Stage 1 Spelling	0.014	0.071	0.013	-0.046
Missing Key Stage 1 Spelling Information	-0.429	-1.060	-0.323	0.062
Key Stage 1 Maths	0.366	0.143	0.653	0.314
Key Stage 1 Science TA	0.081	0.065	0.095	0.089
Total age in months (when took exam)	-0.046	-0.037	-0.066	-0.041
Female pupil	-0.114	0.664	-0.730	-0.281
SEN – School Action/Plus	-1.390	-1.751	-1.623	-0.877
SEN – Statement	-2.776	-3.623	-2.820	-2.567
Missing SEN info	7.156	13.200		
Eligible for free school meals?	-0.354	-0.357	-0.325	-0.393
Missing FSM info	-5.827	-8.488	-5.107	-5.767
English as an additional language	0.205	0.174	0.371	0.117
Missing EAL info				
Ethnicity – White Non-UK	0.294	0.340	0.350	0.225
Ethnicity – Gypsy/Roma	-0.333		-0.399	-0.606
Ethnicity – Mixed	0.088	0.189		0.082
Ethnicity – Asian Indian	0.144	0.154	0.391	-0.095
Ethnicity – Asian Pakistani	-0.168			-0.518
Ethnicity –Asian Bangladeshi	0.370	0.594	0.505	
Ethnicity – Asian Other	0.478	0.439	0.822	0.226
Ethnicity – Black Caribbean	-0.377	-0.155	-0.547	-0.375
Ethnicity – Black African	0.062	0.276		
Ethnicity – Black Other	-0.172		-0.226	-0.230
Ethnicity – Chinese	0.709	0.566	1.176	0.427
Ethnicity – Other	0.436	0.460	0.629	0.275
Ethnicity –Refused	0.080		0.068	0.119
Ethnicity – Unknown	-0.138	-0.101	-0.181	-0.108

Pupil moved schools between key stage 1 and key stage 2	-0.262	-0.226	-0.347	-0.217
First & Middle School	-0.208	-0.223	-0.201	-0.192
First school				
Junior school		-0.077		
Faith school	0.033	0.099		
% of pupils in school known to be eligible for free school meals	-0.005	-0.008	-0.006	-0.006
% of pupils in school with statement of SEN				
% EAL pupils			-0.002	0.004
Pupil/teacher ratio				
No. of pupils aged 11		-0.002		0.002
Census – general measure of deprivation (standard deviation 15)	-0.011	-0.012	-0.012	-0.010
Census –- proportion of white people and overcrowding (standard deviation 15)	-0.002	-0.001	-0.001	-0.002
Census – migration measure (standard deviation 15)				-0.001
No matching census information				
Pupil in key stage 2 2006 cohort	-0.293	-0.458		-0.247
Year of taking exam by key stage 1 average	0.021	0.048		0.006

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

	Outcome of interest			
Description of background variable	**Average point score**	**English point score**	**Maths point score**	**Science point score**
Constant term	27.600	21.710	9.523	13.250
Pupil in a school in Creative Partnerships Phase 1				
Pupil known to have attended a Creative Partnerships activity	0.463	0.685	0.454	0.476
Pupil in a school that joined Creative Partnerships after Phase 1				
Key stage 2 English	-0.043	0.300	0.221	0.303
Key stage 2 Maths	0.036	-0.055	0.814	0.313
Key stage 2 Science	-0.057	-0.044	0.324	0.517
Total age in months (when took exam)	-0.022	0.006	-0.030	-0.030
Female pupil	0.183	1.675	-0.434	-0.617
SEN – School Action/Plus	-1.647	-2.206	-1.429	-1.052
SEN – Statement	-2.073	-3.243	-0.649	0.210
Missing SEN information	-1.950	-2.146	-2.156	-2.351
Eligible for free school meals?	-0.583	-0.688	-0.574	-0.615
English as an additional language	0.345	0.253	0.572	0.248
Ethnicity – White Non-UK	0.325	0.416	0.291	0.316
Ethnicity – Gypsy/Roma	-1.179	-1.467	-0.827	-0.897
Ethnicity – Mixed	0.069	0.336	-0.069	
Ethnicity – Asian Indian	0.519	0.592	0.845	0.162
Ethnicity – Asian Pakistani		0.353	0.113	-0.405
Ethnicity – Asian Bangladeshi	0.429	0.711	0.668	
Ethnicity – Asian Other	0.900	0.653	1.375	0.739
Ethnicity – Black Caribbean	-0.263	0.214	-0.538	-0.515
Ethnicity – Black African	0.485	0.960	0.356	0.222
Ethnicity – Black Other	-0.163	0.362	-0.436	-0.481
Ethnicity – Chinese	1.344	0.651	2.248	1.279
Ethnicity – Other	0.706	0.683	0.981	0.561
Ethnicity – Refused	-0.076		-0.144	-0.099
Ethnicity – Unknown	-0.269	-0.211	-0.337	-0.319
Pupil joined school after year 7	-0.750	-0.720	-0.831	-0.793
Secondary modern school				
Comprehensive to 16	0.097	0.126		0.134
Selective school	2.526	2.502	3.274	2.659
Faith school	0.282	0.502	0.210	0.176
% entitled to FSM	-0.042	-0.035	-0.045	-0.049
% pupils with statement of SEN	-0.033	-0.034	-0.031	-0.032

	Outcome of interest			
Description of background variable	**Average point score**	**English point score**	**Maths point score**	**Science point score**
% EAL pupils	0.013	0.012	0.014	0.015
Pupil/teacher ratio	-0.057	-0.053	-0.064	-0.066
Census – general measure of deprivation (standard deviation 15)	-0.028	-0.032	-0.028	-0.030
Census – proportion of white people and overcrowding standard deviation 15)	-0.004	-0.003	-0.004	-0.006
Census – migration measure (standard deviation 15)	-0.001	-0.001	-0.001	-0.001
No matching census information	-0.091	-0.070	-0.115	-0.122
Pupil in key stage 3 2006 cohort		-1.345	2.021	0.248
Pupil participated in CP before their key stage 2 tests			0.327	0.253
Year of taking exam by key stage 2 average	0.018	0.045	-0.034	0.016
Key stage 2 squared	0.023	0.013		

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

	Outcome of interest				
Description of background variable	**Total GCSE point score**	**Total GCSE point score from best 8 GCSEs**	**GCSE English score**	**GCSE Maths score**	**GCSE Science score**
Constant term	750.200	567.500	65.780	63.800	74.900
Pupil in a school in Creative Partnerships Phase 1					
Pupil known to have attended a Creative Partnerships activity	13.690	8.138	1.208		0.718
Pupil in a school that joined Creative Partnerships after Phase 1	6.499	3.377			
Key stage 2 English	7.099	4.834	0.549	0.607	0.515
Key stage 2 Maths	6.574	4.197	0.622	0.699	0.577
Key stage 2 Science	5.704	3.788	0.387	0.453	0.636
Total age in months (when took exam)	-1.141	-0.772	-0.083	-0.081	-0.123
Female pupil	23.700	15.800	1.386	1.325	-0.174
SEN – School Action/Plus	-75.250	-54.200	-4.713	-4.326	-5.870
SEN – Statement	-64.810	-46.880	-4.611	-3.582	-4.755
Missing SEN information	-222.300	-174.800	-9.477	-7.523	-20.190
Eligible for free school meals?	-29.850	-20.770	-1.892	-1.849	-2.302
English as an additional language	33.480	20.500	1.542	1.554	1.993
Ethnicity – White Non-UK	14.710	8.577	0.644	0.611	0.615
Ethnicity – Gypsy/Roma	-67.050	-53.040	-4.557	-4.805	-6.497
Ethnicity – Mixed	3.645	2.993	0.363	0.296	0.199
Ethnicity - Asian Indian	34.980	21.250	2.492	2.451	3.098
Ethnicity –Asian Pakistani	25.110	19.090	2.099	1.756	2.427
Ethnicity – Asian Bangladeshi	35.910	27.210	2.801	2.591	3.371
Ethnicity – Asian Other	36.200	24.720	3.002	2.651	3.860
Ethnicity – Black Caribbean	15.120	12.010	0.909	0.966	1.197
Ethnicity – Black African	39.100	29.640	3.019	2.755	3.891
Ethnicity – Black Other	6.803	6.333	0.368	0.457	0.802
Ethnicity – Chinese	61.130	30.690	3.195	3.319	4.459
Ethnicity - Other	34.670	23.220	2.225	2.081	2.866
Ethnicity - Refused	-9.778	-6.487	-0.627	-0.584	-0.712
Ethnicity - Unknown	-21.140	-14.520	-1.194	-1.281	-1.681
Pupil joined school after year 7	-81.640	-57.690	-4.521	-4.313	-6.651
Total no. of pupils	0.030	0.017	0.002	0.002	0.002

	Outcome of interest				
Description of background variable	**Total GCSE point score**	**Total GCSE point score from best 8 GCSEs**	**GCSE English score**	**GCSE Maths score**	**GCSE Science score**
No. of pupils aged 14	-0.142	-0.074	-0.014	-0.013	-0.012
Secondary modern school					
Comprehensive to 16		5.048	0.432	0.561	0.827
Selective school	56.890	22.370			3.460
Faith school	9.665	3.983	0.364	0.261	0.448
% entitled to FSM		-0.453	-0.100	-0.094	-0.110
% pupils with statement of SEN				-0.208	-0.069
% EAL pupils	-0.143		0.019	0.015	0.019
Pupil/teacher ratio	-1.864	-1.250	-0.136	-0.137	-0.176
Census – general measure of deprivation (standard deviation 15)	-1.374	-0.946	-0.088	-0.085	-0.105
Census – proportion of white people and overcrowding (standard deviation 15)	-0.127	-0.085	-0.007	-0.007	-0.014
Census –migration measure (standard deviation 15)	-0.157	-0.110	-0.009	-0.008	-0.012
No matching census information	-10.130	-7.173	-0.700	-0.726	-0.899
Pupil in key stage 4 2006 cohort	12.270	12.620	-1.122	14.850	
Year of taking exam by key stage 2 average		-0.264	0.027	-0.432	0.008
Key stage 2 squared	0.611	0.326	0.039	0.043	0.049