



# **ICT Test Bed Project benchmarking procedure analyses**

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## ***Methodological Note***

### ***Analysis of School Based Data***

Benchmarking for schools was completed for the first time using performance data from the academic year 2002/2003 and was reported in the January 2004 Annual Report. The procedure for benchmarking these institutions, and their identified comparators remains the same for the analyses reported here as for the first year, and will do so for the remainder of the evaluation.

The list of comparator schools initially established for the first year of analysis was drawn up to consist of schools matched according to the following measures: proximity (where feasible two within the ICT Test Bed LEA and two within other English authorities), size (total number of pupils), location (urban/rural), acorn group type (1 to 15) which provides demographic information on the schools based on their postcodes, phase of education, type of establishment, statutory lowest and highest ages of entry, and sex. Where possible institutions were also matched according to their faith denomination. Comparator institutions were also subsequently matched according to the number of permanent exclusions made at each school in the academic year 2000/2001 and also according to the percentage of half days missed due to unauthorised absence in the academic year 2002/2003. The final ratio of TB to comparator schools was one to four for all but two schools<sup>1</sup>.

### ***Analysis of LEA Based Data***

A second series of analyses were conducted using performance data from all schools within the three ICT Test Bed Local Education Authorities (LEA's) and from all schools within specifically chosen comparator LEA's. The comparator LEA's were matched according to The English Indices of Deprivation 2004 report compiled by the Office of the Deputy Prime Minister using the measures of rank of local concentration, rank of income scale, and rank of employment scale. Definitions of these measures are as follows:

**Rank of local concentration:** Local concentration is one way of identifying a district's 'hot spots' of deprivation which involves putting into rank order the mean score of the population weighted rank of a district's most deprived areas.

**Rank of income scale:** This scale captures the proportions of the population experiencing income deprivation in an area and is measured as the proportion of households living below 60% of median income. The rank score is based on a series of indicators such as the number of adults and children in Income Support Households and in Income Based Job Seekers Allowance households.

**Rank of employment scale:** This scale measures employment deprivation conceptualised as involuntary exclusion of the working age population from the world of work and combines indicators such as the unemployment

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<sup>1</sup> Whitworth Special School and Crook Nursery are not included in the benchmarking analyses due to a lack of suitable comparator schools and available performance data.

claimant count of women aged 18-59 and men aged 18-64 averaged over four quarters and the number of claimants of incapacity benefit.

### **Findings Summary**

The findings presented here are the result of two separate methods of benchmarking as documented above. Initially we present data from an analysis based on comparator LEAs. There is a rich data-set available to us at this level and we are confident of the equivalence of these LEAs on a range of variables. However, although such variables as ethnicity, social deprivation and educational skills and training have been taken into account, the ICT Test Bed LEAs start at a lower academic performance level than their peers and so any impact should be in judged in terms of narrowing the gap rather than outperforming comparator LEAs. Such a narrowing has taken place at KS2. The lack of findings at KS3 and 4 may well be a sample size issue; that is too few data points to reveal trends.

Benchmarking at LEA level, while providing relevant results, does not specifically identify the impact of ICT Test Bed on individual institutions. For this we have returned to the original mode of benchmarking with one ICT Test Bed school to four comparator schools.

### ***Benchmarking of LEAs***

#### ***Key Stage 2***

The regression analyses showed that whether LEAs were classified as a ICT Test Bed or Comparator LEA was key to predicting performance on the tests sat by Key Stage 2 children. Analyses completed between 2002 and 2004 showed that Comparator LEAs outperformed ICT Test Bed LEAs on a range of performance variables but that the gap between the LEAs was narrowing in 2004; that is the rate of improvement in ICT Test Bed LEAs was higher than that for the Comparator LEAs. This improved rate of change in performance was apparent in science tests on 2004 but was already showing in mathematics in 2003.

#### ***Key Stage 3 Tests***

There were no significant differences for ICT Test Bed and Comparator LEAs level of performance on the KS3 tests.

#### ***GCSE's***

In terms of rates of change the ICT Test Bed and Comparator LEAs showed no significant differences in student performance. At GCSE level Comparator LEAs consistently outperformed ICT Test Bed schools in 2002, 2003, 2004. Comparator schools achieved more 5 or more A\*-C grades and more A\*-G grades in 2002, 2003 and in 2004. We also found the a student's average point score was likely to be predicted by whether or not their school was in a ICT Test Bed LEA or a Comparator LEA with once again the Comparator LEAs outperforming the ICT Test Bed LEAs.

#### ***Post-16 Results***

As with the GCSE findings Comparator LEAs had higher student point scores and overall average point scores per examination entry for 2003 and 2004.

***Does performance within the ICT Test Bed LEAs differ between academic years?***

Performance within the ICT Test Bed LEAs was found to have significantly improved over the course of the project in the KS2 and KS3 English tests, KS3 Maths tests and the number of students achieving GCSE A\* to C grades. A significant change was also detected for the KS3 science test although performance on this test within the ICT Test Bed LEAs was found to have decreased rather than increased between 2003 and 2004.

***Does performance within the Comparator LEAs differ between academic years?***

Performance within the Comparator LEAs was also assessed and increases in performance between 2002 and 2004 were found for the KS2 and KS3 English tests, KS2 average point, KS3 Maths tests, the number of students achieving GCSE A\*-C grades and also for the GCE average point score per student and average point score per exam entry scores. As for the ICT Test Bed LEAs, however, significant decreases in performance were found for KS3 science tests and in addition there was a decline in performance for the KS2 science tests.

***Benchmarking of Individual Schools***

***Key Stage 1 Results***

Regression analyses using average point scores from 2002/2003 and experimental status of the school as the predictor variables found that the overall model was significant with performance in 2002/2003 as the only significant predictor of performance in the 2003/2004 tests (that is 2004 performance was higher than 2003). ICT Test Bed or Comparator status was not found to predict performance on the KS1 reading, writing or maths tests.

***Key Stage 2 Results***

Regression analyses using performance in 2002, 2003 and school experimental status (Comparator or ICT Test Bed) as predictor variables and performance in 2004 as the outcome variable found that performance on the 2002 and 2003 KS2 tests were significant predictors of success on the 2004 tests. Mean scores indicated that the average point score at KS2 increased steadily over the three year period, with all schools, both ICT Test Bed and Comparators, performing better in 2004 than in 2002 and 2003.

***Key Stage 3 Results***

Regression analyses with performance in 2002 and 2003 and the experimental status of the schools as predictor variables, and performance in 2004 as the outcome variable was found to be significant, with the one significant predictor of performance in the 2004 test being performance on the 2002 tests. As with the KS2 findings, mean scores indicated that the average point score for the KS3 tests had also steadily improved between 2002 and 2004.

### ***GCSE Results***

Regression analyses with performance in 2002 and 2003 and school status as predictors of performance in 2004 was also found to be significant with performance on the 2003 tests for all comparator schools being the only significant predictor of success on the tests in 2004. Mean scores show that average point scores in 2004 were higher than for previous years.

### ***GCE Results***

Analyses conducted with performance on the Post-16 tests in 2002 and 2003 and the type of school (ICT Test Bed or comparator) as the predictor variables and performance on the 2004 tests as the outcome variable found that the interaction between performance on earlier tests and the experimental status of the schools was able to predict performance in 2004. In contrast to the performance scores for KS2 to 4 (GCSE), performance for all institutions, both ICT Test Bed and Comparators, had decreased on average point scores for the Post-16 tests between 2002 and 2004, with performance in 2004 lower than in both 2002 and 2003.

### ***Does performance within the ICT Test Bed schools differ between academic years?***

Performance on the KS3 Maths test was found to have improved significantly for the ICT Test Bed schools since the year before the project (2002) to the first two years that the project had been running (2003, 2004).

### ***Does performance within the Comparator schools differ between academic years?***

Analyses for the KS3 test average point scores revealed a significant difference between performance in the pre-ICT Test Bed year and performance in the 2<sup>nd</sup> year of the project and for the GCSE average point scores, significant differences in performance were found for the years 2002-2003 and 2002-2004. Further significant improvements in performance were also found for the KS3 English and Maths tests in 2002, 2003 and 2004.