

## **Permanent Expansion of Primary Schools**

### **Background Paper: School Size and Effectiveness**

This paper sets out to inform the debate on the relationship between school size and effectiveness and to support policy making about the expansion of school places.

The size of the school age population in Kingston has increased rapidly over a short period of time and this has necessitated the development of a strategy for the permanent expansion of primary schools. The proposed strategy was agreed at the Council's Executive meeting of 1<sup>st</sup> December 2009 and is available on Kingston's website:

[http://moderngov.kingston.gov.uk/Published/C00000134/M00005661/\\$ADocPackPublic.pdf](http://moderngov.kingston.gov.uk/Published/C00000134/M00005661/$ADocPackPublic.pdf)

From the outset the Council's preferred strategy has been to build new schools wherever possible because building new schools is likely to be most cost effective and cause less disruption to children's learning. However, the shortage of suitable and available land in Kingston means that the proposed strategy for permanent expansion includes proposals for 1 new school and the expansion of 14 others.

Expanding existing schools is a challenge. Ofsted judges 15 of Kingston's 35 primary schools to be outstanding, a further 16 are judged good and 4 are judged satisfactory and improving. This is an excellent profile and much better than that of most Local Authorities. It is a profile that is highly valued and it has been hard won through excellent leadership in schools and a highly effective Local Authority strategy for school improvement. Additionally, the Council's informal consultation on the expansion of primary schools found that amongst approximately 9% of respondents there were concerns about the effectiveness of large primary schools and the well being of pupils in larger primary schools. This issue has also been voiced by some Governing Bodies and parents in discussions about expansion.

The Council is committed to further improving the lives of children and young people, and this includes ensuring all schools are good or outstanding and improving. Hence, prior to publishing the preferred strategy for expansion officers accessed a range of information and research on the relationship between school size and effectiveness. Data from Kingston schools was also used to consider the performance of differently sized schools within the particular context of Kingston.

Research is complicated because there is little agreement amongst researchers and educators on what constitutes small, medium and large schools in the context of primary education (Cotton 1996). In the UK descriptions of small schools vary between 100 to 200 children and a study of 264 Chicago elementary schools defined a small school as one with fewer than 400 students!

This paper particularly considers school size in relation to how many forms of entry the school admits. A one form entry school has 30 pupils in each school year. A 2 form entry school has 60 pupils in each school year etc. However, research on school size also takes account of the total school population and this is a different measure because it depends on the number of year groups that attend the school. An infant school with children from Reception to Year 2 has just 3 year groups, plus a possible nursery. A junior school has four year groups and an all through primary has 7 year groups.

This paper sets out

- The sources used for the research and conclusions drawn from the published research
- An analysis of data from Kingston schools and conclusions drawn from the data
- Final conclusions

## Summary

Available relevant research is insufficient and inconclusive. The relationship between school size and effectiveness is complex. There is no simple causal relationship between the size of schools and academic performance that can be used to determine policy.

In Kingston, school performance data and Ofsted judgements demonstrate that schools with the largest cohort per year group i.e. 3 forms of entry, attain standards and effectiveness that are comparatively better than those of 2 and 1 form entry schools.

However, the most compelling evidence about school effectiveness does not relate to size. Educational research repeatedly finds that school leadership, ethos and the quality of teaching and learning are the greatest determinants of children's success at school.

Decisions about the expansion of Kingston's existing schools should be made in partnership with schools, taking account of all of the quality of leadership, school ethos, and the quality of teaching and learning. These aspects should be considered in relation to the school context, including practical issues related to the expansion of buildings.

## **Sources used for the research**

A number of organisations, search engines and directories were contacted for evidence based research into effect on size in primary schools on achievement and attainment.

- Ofsted
- Department for Children Schools and Families
- Academic research including National Foundation for Education Research, London University, Institute of Education and Cambridge University Primary Review
- National Primary Database
- Other Local Authorities and London Boroughs
- Kingston

Very little British research has been carried out on the impact of school size and school effectiveness in the primary sector. Some research has been carried out in United States of America but the findings have to be viewed cautiously as they are drawn from a very different context. While there is some evidence from the United States that in areas of significant social disadvantage children achievement is greater in smaller schools, US researchers conclude that research findings are inconclusive in their ability to determine US policy on school organisation.

## **Ofsted**

1. In this rare UK study of school size and effectiveness, small schools were considered to be schools with less than one hundred pupils and very small schools had less than fifty pupils. While no Kingston schools are this small, the conclusions are of interest. The smallest schools in Kingston have 210 pupils in an all through primary or 180 pupils plus a nursery in an infant school; neither would be counted as a small school within the context of this study.

The report concludes:

2. The majority of small schools achieve standards which are higher than the

national average at the age of 7 and 11. However, these standards are less than those achieved in larger schools when socio-economic background is taken into account. The quality of education provided by small schools compares well with what is provided by larger schools. (Small Schools: How well are they doing? Ofsted, March 2000)

3. Ofsted's 2009 report on Twenty Outstanding Primary Schools does not mention school size as a determinant of school success. However, it is worth noting that the study identifies outstanding schools of all sizes. Analysis indicates 6 of the outstanding schools are 1 form entry schools, 9 are two/one and a half form entry schools, 4 are three/two and a half form entry and 1 school is a four form entry. The reason why the research does not focus on school size is because it is not relevant to the report's conclusions about what makes an outstanding school.
4. The report concludes that what makes a difference in these outstanding schools is excellent leadership, team work, quality of teaching, assessment, values, aspiration and inclusion. The report lists the following factors as the features of outstanding practice:
  - Excellence is down to vision and conviction; leadership and teamwork, and a constant focus on teaching and learning. Staff work together as teams and are passionate about finding ways of doing things better. Leaders 'walk the talk', leading by example to perfect teaching and the curriculum.
  - Pupils are treated as individuals; staff have high expectations for children and give them support to achieve. There is a relentless focus on progress and engaging with every child. Schools show the importance of assessment, analysing data to track pupil progress.
  - Schools appoint and develop staff who can achieve consistently high standards. Schools share their excellence with others through interaction and partnerships.
  - Daily contact with parents and carers helps to gain trust and opens the gates to learning. Schools don't wash their hands of difficult children and their families. They don't say 'we are not social workers' or blame the child for where they come from.
  - They show pupils how to learn for themselves in a purposeful, stable and structured way. They give them opportunities, responsibility and trust, building a child's self belief.

Both Ofsted reports indicate that small schools can be successful but the reports do not give a sufficient steer on school effectiveness in relation to size to help determine policy on school expansion. The features of outstanding schools which the report identifies are a useful tool. The report's findings give good indication of the values and practices we should see as indicative of capacity to improve, excel and expand.

### **The Department for Children, Schools and Families (DCSF) and previously Department for Education and Skills (DFES)**

Searches of government publications reveal little guidance on school size and effectiveness. The guidance which does exist relate to class size and funding arrangements and concern over schools which are too small. No guidance is available which helps to determine educational policy on school expansion:

1. The DfES publication 'Effect of class size on primary school attainment', (2005 London: DfES) deals with class size not school size and much research related to primary schools' size is actually about class size. In Kingston there is no intention to alter the policy on class size which has been capped at 30 for all year groups for some years.
2. The DCSF recently published an article 'Size Matters' ([www.teachernet.gov.uk](http://www.teachernet.gov.uk) 12<sup>th</sup> June 2009). The article argues against small primary schools of less than 210 pupils on the grounds of: ability to deliver a broad curriculum; opportunities for professional development, provision of enrichment activities and the efficient use of resources etc.

Kingston has no schools of less than 210 pupils in an all through primary or less than 180 in an infant school plus a nursery. The DCSF makes no mention of larger schools. The report echoes the earlier UK Audit Commission's 1990 Report on Rationalising Primary School Provision which argues that unit costs begin to rise steeply with schools below 100.

### **Academic Research**

Views about the optimal or recommended size of school vary widely in literature this is in part determined by where the research was conducted. The differing social, geographical and economic contexts of individual countries lead to different parameters for the research and conclusions. For example, the optimal size of Polish primary schools is described as approximately 690 students. The equivalent school in England would be between a 3 or 4 form entry all through primary school and considered large. Craig (2001) conducted a thorough review of the research available on school size and performance and concluded that for primary schools most studies suggest that the optimum size is somewhere between large and small; he suggests that 'medium' sized schools are the optimum with enrolments between 200 and 500.

However, Craig (2001) also writes convincingly that the optimal size of the school is not just about the number of children attending, and claims there are many other factors that affect the quality of education in schools. He argues that the optimum school size is dependent on a number of variables including its cohort's relative poverty or affluence. He suggests small schools may provide an achievement advantage for impoverished students, while affluent students may fare better in larger schools.

### National Foundation for Education Research (NFER)

A 2004 study by the NFER found that the evidence relating to primary school size was inconclusive. Smaller schools were found to obtain above average results at Key Stage 1 and 2 but small schools were in relatively affluent areas (Easton, C 2004). The impact of affluence and ethnicity is also cited by other researchers who believe that the significance of these factors may override the impact of school size.

The above research makes clear that poverty and affluence may have more impact on performance than size of school. While Kingston has some small pockets of deprivation, overall it is a relatively affluent borough.

### London University: Institute of Education

The Institute has published extensively in relation to class size (see Blatchford et al 2002, 2003) but nothing relevant in relation to school size and primary education. In 2004 the Social Sciences Research Unit of the university (EPPI) completed a comprehensive review of research in relation to school size and secondary education and concluded, similarly to

Craig above, that there is little good quality research to justify policies that aim to mandate particular school sizes.

### Cambridge University Primary Review

The Cambridge University Primary Review was a nationally commissioned study and it considers many aspects of childhood and education. One of the main themes included a question about 'What are the physical and organisational characteristics of our best primary schools?' However, disappointingly, the report's main findings have little to say about school size and effectiveness. The review does conclude that 'Small schools, particularly in rural areas where they can be at the heart of a community, should be protected.'

In Kingston there is no intention to enlarge all schools and the strategy would maintain a range and diversity of size of school, from one form entry to four form entry.

### Other Local Authorities

The Council contacted other Local Authorities to ask if they had a faced similar need to expand and asked what research they had conducted to determine policy. Three Local Authorities, one outer London Borough, a Shire County (Suffolk), which is a statistical neighbour to Kingston and a County Council responded.

1. The outer London Borough, focussed particularly on 4 form entry schools as it was considering opening one for the first time. The Borough has analysed the performance of 4 form entry schools across London. The findings are:
  - Approximately 5% of schools in England are 3FE and 7% are 4FE
  - More than 29,000 children are already educated in 4FE London schools. 17 of these schools are all through primary schools, 19 are infant schools and 18 are junior schools
  - 13 London Boroughs have at least one 4 FE school. These are predominantly in outer London, including Bromley and Croydon.
  - Most, 69%, of 4 FE schools in London are good or outstanding and no 4 FE schools in London are judged inadequate by Ofsted
  - The Ofsted reports on 4FE schools indicate that pupil care and well being is strong in the majority of schools.
  - Of the 115 4FE schools in England, London hosts almost half.

In conclusion, the overall effectiveness of 4FE schools closely mirrors the performance of all schools in London. The research on the effectiveness of 4FE schools could not justify an argument against 4FE schools.

2. The Shire County with many schools that are far smaller than those in Kingston produced a report for its Education Panel to promote discussion about optimal size of school. The report includes findings from an independent review of national research and an analysis of the performance of the county's primary schools using test and Ofsted data. The report found:
  - Ofsted grades for overall performance were significantly better for larger schools
  - Teaching was of higher quality in larger schools
  - Leadership and management was of higher quality in larger schools
  - There was little difference in pupil attitudes and behaviour across different sizes of school

The report concluded. The issues surrounding school effectiveness are complex. There is not a simple causal relationship between school size and national test results. In the primary phase, there are a number of factors relating to school effectiveness which show that, larger schools of 300+ pupils perform better than smaller schools. This research influenced officers to conduct school focussed analysis in Kingston.

3. One County Council's report on primary school size drew the following conclusion from its research base:

- There are few studies on the relationship between primary school size and performance. There is no clear evidence that primary school size is related to outcomes for pupils or that there is an optimum size for pupil performance. However there is some evidence, particularly in the United States, that small schools may have the edge – particularly where there is social disadvantage.
- A recent British EPPI systematic review of research into secondary school size (2004) concludes that there is no overall consistent relationship between school size and outcomes. This review highlights research by Spielhofer (2002) for NFER which suggested no significant effect of school size on KS2 outcomes in English, mathematics or science. No equivalent systematic review for primary schools has been located. EPPI <http://eppi.ioe.ac.uk/cms/Default.aspx?tabid=320>
- In the United States there is a growing small schools advocacy which has high media and political profile. The most recent paper found describes an analysis of 8 South Carolina studies (2006) and concludes that the size of a school to optimise learning and teaching while striving for cost efficiency in operation has yet to be found. The report suggests that finding the ideal school size is at least elusive and possibly so complex that an absolute ideal does not exist. NCEF <http://www.edfacilities.org/rl/size.cfm>
- Alspaugh 2003 suggests that in a sample of Missouri schools with socioeconomic status held constant small schools appear to have an academic advantage. Other researchers (Bickel and Howley 2000 and Abbott et al 2002) have suggested links with poverty and suggested that small schools have a greater benefit in disadvantaged areas but less effect in more affluent districts. However, statistical correlations are not convincing.
- US research evidence about attainment in elementary schools is inconclusive but draws attention to other benefits of small schools, nurture, a sense of belonging and community, engaging active pupil involvement through a positive, humane and caring atmosphere. There continues to be a debate about cost effectiveness and about the manageability for principals of teaching and leading small schools. (National Association of Elementary School Principals – Research Roundup 1999).
- The County Council conducted its own study of performance in Primary Schools and concluded: small schools, i.e. schools with less than 120, children seemed to have the edge over larger schools in all Ofsted judgements and the difference in judgements on achievement and standards supports evidence from national assessments collected in Suffolk over time. It is necessary to note that the difference between the size of schools in Kingston and the County Council is significant; the smallest schools in Kingston would be large schools in Suffolk.

This review confirmed Kingston's review of research and confirmed our literature search. The analysis of the performance of schools in Suffolk encouraged Kingston to look at the performance measures of Kingston's schools in relation to size.

### **National Pupil Database**

The National Pupil Database is constantly used by researchers to analyse and evaluate aspects of education. A crude analysis of the academic achievement of the nation's 2008 Year 6 pupils (based on their attainment at age 7) shows that:

- Pupils in one form entry schools made slightly better progress than pupils in two and three form entry schools.
- Pupils in four form entry schools made slightly better progress than pupils in three form entry schools but slightly less progress than those in one and two form entry schools.

Academics argue that the differences in progress are not as great as those made by having an effective class teacher for one year. They also point out that the analysis is too crude to determine a causal relationship. For example, further analysis shows that the results vary slightly again by excluding schools with a more deprived population or just including schools with a more affluent population. Academics point out that factors including social deprivation, affluence, ethnicity and locality would need to be taken into account to glean a causal relationship. This argument is strengthened by the lack of explanation as to why large four form entry schools perform better than smaller three form entry schools.

Academics also argue that the main contextual factors which determine why schools are small, i.e. they are in rural locations and they are often faith schools, are simply not possible to mirror in more heavily populated, multi faith, built up areas facing an increased demand for school places.

This analysis confirmed that Kingston needed to do its own analysis based on school performance and numbers of forms of entry.

## Kingston

An analysis of the performance of Kingston's primary schools by size concludes that Kingston's largest primary schools perform at least as well as and often better than smaller schools. The performance of three form entry schools was stronger than smaller schools in relation to pupils' attainment and pupils' progress as well as Ofsted judgements on school effectiveness, leadership and management, and pupils' well being and personal development.

Aspect	Main Finding	Schools Included
The proportion of schools with an Average Point Score for English, maths and science which is above the RBK average at end of Key Stage 2 in 2008.	1FE = 4 out of 9 schools = 44% 2 FE = 9/16 = 56% 3FE = 4/4 = 100%	Total forms of entry is 53, in 29 schools with Year 6. <ul style="list-style-type: none"> <li>9 one form entry primary</li> <li>16 two form entry primary (inc 2 x 1.5 form of entry)</li> <li>4 three form entry</li> </ul>
The proportion of schools with a significantly positive Contextual Value Added at the end of Key Stage 2 in 2008	1FE = 2 out of 9 schools = 22% 2 FE = 2/16 = 12.5% 3FE = 4/4 = 100%	Total forms of entry is 53, in 29 schools with Year 6. <ul style="list-style-type: none"> <li>9 one form entry schools</li> <li>16 two form entry schools (inc 2 x 1.5 form of entry)</li> <li>4 three form entry schools</li> </ul>
The proportion of schools receiving 'outstanding' judgments for overall effectiveness from Ofsted	1FE = 3 out of 10 schools = 30% 2FE = 6/18 = 33 % 3FE = 6/7 = 86 %	35 schools <ul style="list-style-type: none"> <li>7 three form entry schools</li> <li>18 two form entry schools (inc 2 x 1.5 form of entry)</li> <li>10 one form entry schools</li> </ul>
The proportion of schools receiving 'outstanding' judgments for leadership and management from Ofsted	1FE = 3 out of 10 schools = 30% 2FE = 6/18 = 33 % 3FE = 6/7 = 86 %	35 schools <ul style="list-style-type: none"> <li>10 one form entry schools</li> <li>18 two form entry schools (inc 2 x 1.5 form of entry)</li> <li>7 three form entry schools</li> </ul>
The proportion of schools receiving 'outstanding' judgments for pupils' well being and personal development from Ofsted	1FE = 6 out of 10 schools = 60% 2FE = 10/18 = 56% 3FE = 6/7 = 86%	35 schools <ul style="list-style-type: none"> <li>10 one form entry schools</li> <li>18 two form entry primary (inc 2 x 1.5 form of entry)</li> <li>7 three form entry schools</li> </ul>

This chart shows a very positive picture of the performance of Kingston's largest primary schools i.e. 3 form of entry. The data demonstrates that currently in Kingston our largest schools are highly successful and there is evidence to suggest even more successful than smaller schools. The chart demonstrates that it is possible to make a rational argument for more of Kingston's schools to be expanded; but it would be an error to draw this bald conclusion from the data alone.

Schools are complex organisations and no single measure will give the full picture of the quality of provision they offer or their capacity for expansion. This can only be achieved with excellent local knowledge and open discussion. Every school has its own history, catchment and context and within each 1 form entry, 2 form entry and 3 form entry group of schools there are outstandingly successful schools with excellent leadership and management and pupil outcomes.

## **In Conclusion**

The aim of the background paper was to summarise the main findings drawn from the research and information on the impact of school size on school effectiveness. It was important therefore to only consider research from well respected and unbiased organisations and to use data which is independent of the LA.

The research and information available makes it difficult to draw a direct conclusion to inform strategy because for every piece of research that makes a negative claim there will be another piece of research that makes a positive or inconclusive claim.

The clearest, most helpful research comes from two other local authorities and Kingston's own data. Evidence about the success of large schools demonstrates that expansion to create large schools of 3 and 4 form entry is very worthy of consideration. Evidence from Ofsted about the features of outstanding requires careful consideration in the decision making process.

Policy making about the expansion of a school relies on intimate local knowledge of individual schools. Schools should only be expanded in partnership with Governing Bodies and Headteachers who know their schools and communities best and when there is confidence that expansion will not threaten the quality of children's education and may well enhance it.

## Bibliography

- Blatchford, P., Bassett, P., Goldstein, H., and Martin, C. (2003) Are class size differences related to pupils' educational progress and classroom processes? Findings from the Institute of Education Class Size Study of children aged 5-7 Years. *British Educational Research Journal*, 29, 5, 709-730.
- Blatchford, P., Moriarty, V., Edmonds, S., & Martin, C. (2002). Relationships between class size and teaching: a multi-method analysis of English infant schools. *American Educational Research Journal*. Spring 2002 Vol. 39, No. 1, pp 101-132.
- Civitas (2008) Critical mass: Government's 'small' infant classes too big.  
<http://www.civitas.org.uk/press/prcs80.php>
- Cooper, H. M. (1989). Does reducing student-to-teacher ratios affect achievement? *Educational Psychologist*, 24 (1), 79-98.
- Cotton, K. (1996) School size, school climate and student performance in US. Available at:  
<http://www.nwrel.org/archive/sirs/10/c020.html>
- Craig, I. (2000), Primary School Size and its Relationship to School Effectiveness: An exploration of optimal size for primary schools, University of Canterbury
- Craig, I. (2001) Primary school size and its relationship to school effectiveness: an exploration of optimal size for primary schools. Ph.D., Kent, 51-12924.
- DfES (2005) Effect of class size on primary school attainment. London: DfES.
- Easton, C., Knight, S. and Kendall, L. (2004), Annual Survey of Trends in Education (Digest No. 16). Slough: NFER. Easton, C, Whitby, K. and Harris, S. (2004). The impact of school size and single-sex education on performance Thomas Spielhofer, Lisa O'Donnell, Tom Benton, et al. Research report, July 2002  
<http://www.nfer.ac.uk/research-areas/pims-data/summaries/spp-the-impact-of-school-size-and-single-sex-education.cfm>
- EPPI, (October 2004), Secondary School Size: a systematic review, EPPI-Centre, Social Science Research Unit, Institute of Education, University of London <http://eppi.ioe.ac.uk/cms/Default.aspx?tabid=320>
- Hansen, A. (2005) Research Brief: 'Class Size and School Size,' Northern Arizona University for The Principals' Partnership
- Hattie, J. (2005) The paradox of reducing class size and improving learning outcomes. *International Journal of Educational Research*, 43, 387-425
- Ofsted (2009) Twelve-outstanding-secondary-schools-Excelling-against-the-odds  
<http://www.ofsted.gov.uk/Ofsted-home/Publications-and-research/Browse-all-by/Documents-by-type/Thematic-reports/Twelve-outstanding-secondary-schools-Excelling-against-the-odds>
- National Pupil Database [www.bristol.ac.uk/Depts/CMPO/PLUG/userguide/2008ks2userguidev0.3.doc](http://www.bristol.ac.uk/Depts/CMPO/PLUG/userguide/2008ks2userguidev0.3.doc)
- KS2 Achievement and Attainment Tables 2008 available at DCSF  
[http://www.dcsf.gov.uk/performance/primary\\_08.shtml](http://www.dcsf.gov.uk/performance/primary_08.shtml)
- Plecki, M. (1991) The relationship between elementary school size and student achievement in US. Available at:  
[http://www.eric.ed.gov/ERICDocs/data/ericdocs2sql/content\\_storage\\_01/0000019b/80/14/96/58.pdf](http://www.eric.ed.gov/ERICDocs/data/ericdocs2sql/content_storage_01/0000019b/80/14/96/58.pdf)
- Suffolk LA (2006) School organisation review – pupil performance research findings. Available at:  
<http://www.suffolk.gov.uk/NR/rdonlyres/60FAFE9C-2ADB-4FE3-BAE3-A18B86762C77/0/Annex5PupilPerformanceReportPart2Final.pdf>
- The UK Audit Commission's 'Rationalising Primary School Provision' 1990