

Well-designed classrooms can boost learning progress in primary school pupils by up to 16 percent

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Professor Peter Barrett revealed that classroom design has an impact on childrens' learning

For the first time, clear-evidence has been found that well-designed primary school classrooms can boost learning progress in reading,

writing and maths.

This is according to the results of the HEAD Project (Holistic Evidence and Design), funded by the Engineering and Physical Sciences Research Council (EPSRC) and Nightingale Associates (now IBI Group), and undertaken by The University of Salford. Published today¹ (Wednesday 25 February 2015) in a new report - 'Clever Classrooms' - the research reveals how differences in the [physical characteristics](#) of classrooms, such as air quality, colour and light, can together increase the learning progress of primary school pupils by as much as 16% in a single year.

The research shows that the impact of moving an 'average' child from the 'least effective' to the 'most effective' classroom can increase the "average child's" performance by as much as 1.3 sub-levels of the national curriculum in a single year. This is significant given that guidance from the Department for Education says primary school pupils are expected to progress by 2 sub-levels in a single year. In total, the study collected performance statistics for 3,766 pupils.

The Salford research team, led by Peter Barrett, Professor of Management in Property and Construction from the University's School of the Built Environment, spent the last three years collecting pupil data and carrying out detailed surveys of 153 classrooms from 27 very diverse schools across three local authorities: Blackpool Council, Hampshire County Council and the London Borough of Ealing Council.



Front cover of Professor Peter Barrett's Clever Classrooms report

This is the first time that clear evidence of the effect on learning progress of the overall design of the physical learning space has been isolated in real-life situations. Individual factors including air quality have been studied in the past, but how individual factors come together as a whole for real children, in real spaces, has proven difficult to quantify.

This study considered a wide range of sensory factors and used statistical modelling techniques to isolate the effects of classroom design from the influences of other factors, such as the pupils themselves and their teachers. Surprisingly, the research found that whole-school factors, such

as navigation routes within a school, specialist and play facilities are not significant compared with the design of the individual classrooms. This point is reinforced by clear evidence that it is typical to have a mix of more and less effective classrooms within the same school.

A very positive finding from the research is that teachers can readily action many of the findings of the research to make a real difference to primary school pupils' learning progress. The report produced by the University contains very simple, quick and cost-effective advice and tips for teachers. For example, advice contained in the report covers how to consider alternative layouts of a classroom, how to approach the use of displays on classroom walls, or in what way to change the colour of walls, all to increase learning potential. Suggestions to be taken into account at the design stage of building are also provided.

Lead Researcher Professor Peter Barrett, said: "The research identifies many simple, quick and cost-effective ways for teachers to change their classrooms to make a real difference to a child's performance in reading, writing and maths. We're not talking about major investment on behalf of the school or local authority - quite the opposite - simple choices in how classrooms are used and evidence-based decisions when schools are being built. I hope our 'Clever Classrooms' report will become a valuable asset for teachers and school designers across the UK and can make a real and lasting impact on children's learning progress at such an important stage in a child's development."

Speaking about the findings, John Coe, Chair of the National Association for Primary Education (NAPE), said: "It is unusual and refreshing to welcome research which considers the impact of [primary school](#) design upon the lives and learning of young children. Perhaps surprisingly, the findings indicate that the salient features of the whole school do not matter most to pupils. The most powerful impact is made by the physical design of the particular classroom in which they spend

such a vitally important time with their teacher.

The researchers, by differentiating design features from aspects of teaching and learning, show that considerations of daylight, temperature and [air quality](#) have the most influence on children's progress. The children's feelings of ownership of their surroundings are also important as is a classroom environment which is neither over stimulating nor unduly calming. The research offers sound sense and teachers, putting children first as always, can improve their [classrooms](#) without spending a lot of money."

More information: "The impact of classroom design on pupils' learning: Final results of a holistic, multi-level analysis," *Building and Environment*, Volume 89, July 2015, Pages 118-133, ISSN 0360-1323, [dx.doi.org/10.1016/j.buildenv.2015.02.013](https://doi.org/10.1016/j.buildenv.2015.02.013)

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