

# Brightly lit classrooms 'hamper ability of pupils to concentrate'

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Forget all the talk about poor teaching standards or a "dumbing down" of the school curriculum and exams. The real reason why Britain's schoolchildren are not making as much progress as they could in state schools is because their classrooms are too bright.

A paper to be presented today to the British Educational Research Association conference warns that classrooms that are too light can cause headaches for pupils, making it less easy to concentrate in class.

Mark Winterbottom, a researcher from the University of Cambridge, will tell the conference – held at the University of London's Institute of Education – that "misguided policy decisions" over the kind of lighting used in classrooms were hampering the drive to improve standards.

One offender is the "whiteboard" installed in most classrooms which, until now, has been considered the most innovative resource to stimulate pupils' interest installed for decades. Dr Winterbottom will argue that the whiteboards, which are usually mounted on a wall at the front of the class, help direct light in the classroom into pupils' eyes. "Wherever possible, such boards should be tilted so that such reflected glare is directed towards the ceiling," he will say.

Dr Winterbottom will argue that the main offender is the kind of fluorescent lighting installed in more than 80 per cent of classrooms (100Hz lights with 100 vibrations per second are most commonly used). These, his research indicates, create an imperceptible flicker that can cause visual discomfort and make it more difficult to read properly.

Dr Winterbottom and his co-researcher, Professor Arnold Wilkins from Essex University, studied the effect of lighting in 90 classrooms and concluded that, in addition to tilting the whiteboards, local education authorities should replace the 100Hz lights with high-frequency 32Hz fluorescent lights, which are used in 20 per cent of classrooms. These, the duo will argue, did not cause discomfort, used less energy and had lower long-term running costs.

The study revealed that almost nine out of 10 classrooms were too bright. "We found that neither artificial light nor daylight could be adequately controlled due to classroom design, positioning of equipment and the poor state of blinds," Dr Winterbottom will say.

Advocates of the whiteboard, such as Thomas Telford School, in Shropshire, have dismissed any suggestion they could have played any part in lowering pupils' concentration.