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Impact of social background and behaviour on children's thermal comfort

Azadeh Montazami, Mark Gaterell, Fergus Nicol, Mark Lumley, Chryssa Thoua



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Abstract: This study investigates whether children's thermal perception at home and their dominant behaviour to achieve thermal comfort are related to their socio-economic background and contribute to their thermal perception at school.

The indoor operative temperatures of 27 classrooms were collected during the cooling season of 2014-2015 from eight primary schools located in the West-Midlands, UK. The perception of 603 students aged between 8 and 11 years old about thermal comfort at both home and school and their dominant behaviour in achieving thermal comfort within school was established through questionnaires. Behaviour was studied under two categories of personal behaviour (e.g. adjusting clothing) and environmental behaviour (e.g. asking teachers to open windows). The socio-economic background of the children was investigated through available data.

This paper reveals a relationship between children's socio-economic background and their perception of thermal comfort in primary schools. Results indicate that the behaviour of children differs depending on their socio-economic background. There is a strong relationship between children's thermal perception at home and at school among those that come from less privileged backgrounds. Those from less privileged backgrounds also find their classrooms warmer compared to the other children.

Key words: Primary school, Children's thermal perception, social background, behaviour

1. Introduction:

There is a significant relationship between children's perception of thermal comfort and their academic achievement [1-2]. Research suggests children's perception of thermal comfort is related to the outdoor temperature and there are significant differences between the perceptions of children and adults in the same space [3-7]. Other factors that influence building occupants' thermal perception relate to behavioural adjustment and physiological acclimatization [8-13] which are still among the least covered by scientific research [14].

Behaviour is 'the way in which an animal or person acts in response to a particular situation or stimulus' [15]. Literature suggests that behavioural adjustment depends on an occupants' preferences, their level of understanding and the level of opportunity to

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