

# Indoor environmental quality in elementary schools and students' wellbeing

*Tuesday 7 November 2023 09:45 (15 minutes)*

Besides homes, schools are primary environments for children.

The aims are fourfold: firstly, to assess the impact of indoor environmental quality IEQ on elementary school students by evaluating ventilation rates and thermal comfort, as well as the role of Heating, Ventilation, and Air Conditioning (HVAC) systems. Secondly, it aims to investigate school building practices related to cleaning, hygiene, and materials. Thirdly, to explore the associations between IEQ in schools and students' health outcomes. Lastly, it aims to analyze the link between IEQ and students' academic performance.

The studies to be presented sampled schools from various regions: all elementary schools in Finland, 70 in the US, 5 in Nigeria, and 2 in Cardiff. The Finland study collected data through questionnaires, IEQ measurements, and standardized tests. In the US, IEQ parameters were measured alongside health and academic data from school districts. Nigerian and UK studies also measured IEQ parameters in classrooms.

The general conclusions drawn from the studies suggest that inadequate ventilation is associated with indoor temperature in temperate climates but not in tropical climates. Cleaning practices need improvement, and inadequate ventilation and temperature are linked to students' health outcomes. Maintaining recommended temperature levels and adequate ventilation can enhance students' learning achievements.

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**Session Classification:** Air Pollution and Health Effects

**Track Classification:** Air Pollution & Health Effects