



Air Quality in Schools

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There has never been a more important time for people to have access to fresh air. COVID-19 has highlighted the significance of air quality to indoor spaces and there are fewer more critical spaces than learning environments. Prior to COVID-19 Edmund Rice College (ERC), with the help of Edmiston Jones, worked on strategies for improving the air quality and environmental comfort of their teaching spaces. The benefits go well beyond minimising the potential of airborne viruses, offering the potential to improve a child's learning outcomes.



Dr Lidia Morawsk is a professor and director of the International Laboratory for Air Quality and Health at Queensland University of Technology. In an interview with Jonathan Green on the ABC's Blueprint she highlights some misconceptions regarding air quality. One is that air flow should be minimised to indoor spaces. On the contrary, air flow is critical, introducing fresh air to replace polluted air. Polluted air containing high levels of carbon dioxide (CO₂) results from people breathing in oxygenated air and exhaling. The outcome of limited fresh air is occupants breathe in air with a high CO₂ concentration which impacts our concentration levels and ability to absorb information. Dr Morawsha mentions it is not as simple as opening a window. We need to be able to monitor the quality of air in a space and act accordingly. At ERC, all classrooms are now fitted with energy efficient commercial grade ducted air conditioning systems and sensors that automatically monitor CO₂ levels introducing fresh air as required to ensure a learning environment with optimal air quality for the students and teachers.

Professor Priya Rajagopalan, Senior Lecturers Mary Myla Andamon and Jin Woo from RMIT University also emphasise the importance of air quality in learning environments. Their report notes that, pre COVID-19, on average Australian students spent over 1,075 hours in school buildings annually translating to 25 hours per week. The acceptable level of CO₂ indoors is 850 parts per million (ppm). During the analysis period a typical classroom averaged CO₂ levels between 442ppm to 1,510ppm during autumn, and 718ppm to 2,114ppm in winter. Maximum CO₂ concentrations regularly exceeded 2,900ppm however. They note this elevated level of CO₂ can cause headaches and drowsiness. These pollutants can even cause respiratory infections and can have a major impact of developing children, particularly for those under the age of 15. Good air ventilation is therefore critical in avoiding the build-up of airborne pollutants and creating a healthy environment for students to learn in.



To conclude, air quality in classrooms is one of the most pressing issues facing schools today. We have seen through the COVID-19 pandemic that separating students from collective learning has had negative impacts and is not a sustainable solution for education. Edmund Rice College is leading the way to bring their students back to healthy learning environments and Edmiston Jones are ready to assist other schools meet the same standard.