

# Learnometer trials at Kindergarten Starters School in Dubai

Case Studies, Chemicals (TVOCs), CO<sub>2</sub>, Environment



Kindergarten Starters in Dubai is an Early Years and KS1 school of 5,000 students serving the local community, with a very high demand for entry, and a very happy cohort of pupils. The Principal, Asha Alexander, is truly inspirational, and very innovative in her approach to enriching student experiences, with climate change, environmental awareness, recycling, outdoor learning and team work all featuring highly in daily learning activities.

The school has recently been trialing the new Gratnells Learnometer in classrooms, monitoring classroom environments and changes throughout the teaching day. These trials have shown some very interesting findings, and the school has initiated some significant changes to improve working conditions for teachers and students alike.

Traditionally the students have stayed in a fixed classroom location for several continuous lessons, with just the teachers changing over at the change of subject. Monitoring the environment across three lesson periods with the Learnometer, it was noticed that CO<sub>2</sub> levels were rising from one lesson to the next, and by the time of the third lesson had reached levels that could certainly impair concentration and attention span. After consultation with teachers it was decided to trial a movement of the students between each lesson, even if only to rotate with the neighbouring classroom. This movement of students and opening of doors, was enough to lower, and manage, CO<sub>2</sub> levels to an acceptable level, and improve air quality in each classroom. Teachers reported improvements in engagement levels and student participation during lessons as a result of these changes.

Professor Stephen Heppell, a founder of the Learnometer project, recommends that we aim for CO<sub>2</sub> levels of below 1000ppm in the classroom for optimal learning performance (below 600ppm would be ideal), but full classrooms with little air change can easily reach 2000ppm, which has been shown to clearly impair concentration.

Another initiative trialed by Kindergarten Starters was increasing the amount of plants in the teaching environment. During the day, plants absorb CO<sub>2</sub> and emit Oxygen, assisting in the maintenance of good air quality. The students became really engaged with the initiative, getting involved in caring for and nurturing the plants which in turn raises awareness of the natural world and living things.

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When reviewing data on the Learnometer dashboard, which can track environmental conditions over any period of time, it was noticed that at regular points each day there was a rise in VOC (chemicals) readings. This was traced to the cleaning cycle, and the use of chemical based surface cleaners. With a change of cleaning fluids to more environmentally friendly products, it was noticed that VOC levels were significantly lowered.

The Learnometer is now being used in different classroom locations around the school so teachers can compare conditions between brighter and darker rooms, rooms with air conditioning, larger and smaller rooms. Plans also include ideas to get the students involved with the Learnometer data, by developing related STEM projects to bring this data into everyday classroom experiences.



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