DJCOALITION

LIGHTING HELPS STUDENTS ACHIEVE BETTER RESULTS

STUDENT HEALTH → **STUDENT THINKING** → **STUDENT PERFORMANCE**

We know from studies in our education system that light quality in teaching spaces has a big effect onstudent health. This effect is more pronounced in younger students. Children a re more sensitive to light exposure than adults as they have larger pupils and significantly greater light -induced melatonin suppression.

Young adolescents have greater circadian-system sensitivity to light exposure than older adolescents. Further, low levels of indoor light, in combination with less time spent outdoors, has been associated with increased risk of myopia.

Based on this knowledge, a number of studies have been undertaken to define the link between lighting and student thinking. Research tells us that a high school student exposed to blue enriched white light (300lx 5500K) in the early morning during winter shows faster cognitive processing speed and better concentration performance than a student in standard lighting conditions (300lx 3500K). Softer, warm coloured light has been shown to induce a calming effect in children. This matches what we know about light driving our circadian rhythms.

Also, teenagers are more likely to suffer from "social jet lag" as their circadian clocks lag; their basic cognitive processes remain low until 11am. This contributes to chronic sleep loss. Lighting systems can improve student thinking by promoting times for alertness and for rest during the school day that are in sync with student biorhythms.

We know improvements in lighting lead to improvements in cognitive processing which, in turn, lead to increased student performance. Children under high intensity 1000l x 6500K glare free lighting exhibit higher oral fluency scores compared with children under standard 500lx 2500K lighting. University students under 6500K daylight colour light reported higher levels of alertness, performed better on computerised tests and made fewer typing errors compared to when they were under 4000K or 3000K colour light.