

INNOVATIVE LEARNING ENVIRONMENTS: WHERE'S THE EVIDENCE?

MARK OSBORNE suggests that when teacher pedagogy and physical learning environments are aligned there are significant gains to be made in achievement.

With all the attention on innovative learning environments (ILEs) at the moment it's understandable that many people are seeking clear, empirical evidence that learning spaces positively impact on outcomes for learners. Teacher time is precious and resources are scarce; if we're going to implement a new approach, we should be fairly certain that it's going to make a difference for our learners before we embark on any kind of innovation. Helpfully, some key pieces of research are showing that learning environments can, and do, make a difference to outcomes for learners.

What's very clear from the research is that 'buildings alone are not enough; it is about relationships and changing cultures and practices'. No educator will be surprised to hear that bricks and mortar on their own won't change outcomes for learners, we know that learning is a lot more sophisticated than that. Having acknowledged that though, what's emerging from the research is how much impact a combination of skilled, reflective educators and complementary physical environments can have on learning.

INCLUSIVE SPACES

Recent advances in fields such as neuroscience have confirmed what many have suspected for a long time: that when it comes to learning 'variability is the rule, not the exception'. We all have different needs and preferences when it comes to learning and when those needs and preferences are met, we learn faster and we learn more. One of the drivers behind much of the work taking place in learning environments at the moment is a desire to ensure the physical environment is inclusive and supports all learners as well as it can.

Approaches such as Universal Design for Learning help us to ensure that all learner needs are met: those who need to read and reflect can find quiet spaces to do this; those who need to draw diagrams, build models, think aloud, explain to others, or work closely with a teacher can do so. This thinking extends to the choice and arrangement of furniture in a learning environment as well.

A couple of recent studies have demonstrated that providing learners with the opportunity to work at standing tables improved their working memory and increased their level of on-task behaviour by 12 per cent or an extra seven minutes per hour. In a world where primary-aged children sit on average for around nine hours a day, providing the opportunity to stand up is good for their bodies as well as their learning.

CULTURALLY RESPONSIVE SPACES

Another key driver in the design of learning environments at the moment is an acknowledgement that there is a strong link between wellbeing and achievement, and that students' wellbeing is strongly influenced by "a clear sense of identity, and access and exposure to their own language and culture".

For Māori learners this means an environment where *reo* and *tikanga* are supported and enhanced, but it also means being given the opportunity to learn in an environment that promotes approaches outlined in documents such as *Tātaiako*:

- *Ako*: learning from and with each other. Peer tutoring, *tuakana/teina*, reciprocal teaching and collaborative learning spaces.

- *Manaakitanga*: building on student strengths by providing spaces that allow learners to exercise those strengths: collaboration; reflection; digital media production; visual arts; physical movement and dance; performance.
- *Tangata whenuatanga*: acknowledging and linking to the history of the land to create authentic, real-world context for understanding ourselves and our community. The learning that takes place outside the classroom is just as important as the learning that takes place within it.
- *Wānanga*: spaces that allow larger groups to come together to collectively explore some big concept or to engage in problem-solving. The traditional classroom in schools works well for small and medium-sized groups but makes it very difficult to get diverse communities together to engage in learning.

What's also clear from a lot of this research is that what works for Māori often works for others, particularly Pasifika learners: we can raise achievement for all students by designing and using spaces that promote these *whakaaro*.

EMPIRICAL EVIDENCE

Beyond these guiding principles, there is also a growing body of hard, concrete evidence connecting learning environments and increased student achievement. In particular, two crucial studies have been published over the last two years.

The first is a study from the University of Salford entitled 'Clever Classrooms' that found that "differences in the physical characteristics of classrooms explain 16 per cent of the variation in learning progress over a year". This 16 per cent variation is significant; it's the equivalent of the impact that a teacher has on learning over the



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course of a year. One question the study gives rise to is, "What are these 'differences' in environment?"

The study suggests that outside of getting right things like temperature, air quality and acoustics, one of the crucial areas of focus is what the researchers refer to as 'individualisation', or the learning environment's ability to provide learners with what they need for their learning. In short, to accommodate our growing awareness that 'variability is the rule, not the exception'.

Some features of the physical environment that help educators to accommodate this kind of variability include:

- breakout zones or rooms: the study found that these impact positively on learning by ensuring that learners could find a quiet space to read or write or do something reflective; or a space where they could be noisy and excited without negatively impacting on other learners
- learning zones: a variety of learning settings that can accommodate a range of different kinds of teaching and learning activities, such as writing, research, performance, collaboration, peer-tutoring, direct instruction or experimentation
- varied floor plans: these support varied teaching and learning better than traditional 'box' classrooms, which often have a single 'front' to the room which is often occupied by the teacher.

A second study recently published by the University of Melbourne confirmed a connection between ILEs and student achievement in secondary schools.

The study compared two cohorts from the same school – one that learned in an ILE and one that learned in traditional classrooms. Factors such as curriculum, student ability, class construction, assessment and the teacher were controlled in order to focus solely on the impact of the learning environment.

The study found the ILEs led to increases in a range of outcomes for the students including increased behavioural and cognitive engagement, and increases in the range of active, collaborative, personalised, and student-centred learning experiences.

Perhaps the most crucial finding from this study was related to student achievement: the researchers found that overall student achievement for the ILE cohort increased by an average of 15 per cent across English, mathematics and humanities. That's a significant improvement in outcomes for learners, facilitated by a change in the learning environment.

As these last two studies attest, there is a growing body of research that suggests that when teacher pedagogy and physical learning environments are matching, there are significant gains to be made in achievement.

In a system that appears to be increasingly focused on quantitative measures of progress, it's important to remember that qualitative measures are also important. Metrics such as student (and teacher) wellbeing, sense of belonging, enjoyment (fun even!) directly impact on a learner's academic success in both early childhood centres and schools.

What's reassuring about the current crop of research into learning environments is that putting the needs of people first not only leads to positive affective results but positive gains in achievement too. 📖

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For references to this article please contact editor@educationreview.co.nz.