

Briefings

Thought leadership for the independent schooling sector

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MORE PRIVATE INVESTMENT IN EDUCATION SHOULD BE ENCOURAGED

From the Executive Director

Former New South Wales Minister for Education and now director of the University of NSW Gonski Institute for Education¹, Professor Adrian Piccoli², has called for governments to fully fund private primary schools (Sydney Morning Herald 11/8/20).

Under the proposal, non-government primary schools would stop charging fees and agree to abide by the same enrolment and accountability rules as public schools. Piccoli argues that this would address “the biggest structural problem in Australian education” which he believes to be a broken schools choice model which is driving an “ever-growing” segregation of students between schools.

Fully publicly funded non-government schools is not a new concept; it has been debated in the Australian context on previous occasions. It would result in a schooling structure similar to that operating in New Zealand where there are a relatively small number of independent schools which do not receive any government funding.

Piccoli says “eliminating primary school fees means the cost is no longer a factor when parents look to choose a school” and as a result “Australia would then have a much more equitable education system where all schools and all students are funded on the same basis and have the same enrolment rules”.

He estimates the additional cost to Governments of the proposal would be around \$500 million a year and says this would be a relatively small investment given Australian governments spend almost \$60 billion a year of school education.

The proposal sounds appealing (particularly to parents), however, Independent Schools Queensland (ISQ) would argue now is not the time to reduce private investment in schooling. In fact, increased private investment should be encouraged in order to resource all schools appropriately.

It is difficult to comprehend how fully publicly funded metropolitan non-state primary schools would provide a benefit to public schools in rural and remote areas of the country. In fact, the additional expenditure by governments is likely to be at the expense of such schools.

For many years, Federal Governments have highlighted our aging population and as a consequence, our shrinking tax base from which public services are funded. This coupled with record levels of Government debt which have increased significantly as a result of the COVID-19 pandemic, suggests the capacity of Government to fund schooling into the future will be severely challenged.

¹ See <https://www.gie.unsw.edu.au/> for details of the Gonski Institute.

² Adrian Piccoli was a National Party member of the NSW Parliament from 1999 to 2017 and NSW Minister for Education from April 2011 to January 2017.

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An alternative pathway would be to encourage greater private investment in schooling – whether it be public or non-government schools. As recently outlined in the ISQ Issues Paper *A Catalyst for Change* by Professors Jim Watterston and Yong Zhao³, the coronavirus pandemic has provided the opportunity for a fundamental look at our schools and their purpose. This might be extended to the structure of Australian schooling which has essentially been a large public system and not-for-profit non-state schools supported by parents and communities.

As recent ISQ research⁴ has found, by not taking a fully funded place at a public school, independent school families free up \$1.02 billion in recurrent and capital funding annually for governments to spend on public education and other essential services and national-building programs.

Students attending independent schools are entitled to a place at a state school. On average independent schools receive a lower per student rate of government funding than state schools. Independent schools deliver direct savings to government, and therefore taxpayers. The estimated savings in 2017-18 were \$812.3 million in recurrent costs and \$212.2 million in capital costs.

Parents' investment in school education, based on choice, is significant. It would be difficult to understand why governments would want to discourage such an investment and replace it with public funds.

The unique and significant value of independent schools would also be lost under the Piccoli proposal. The recent ISQ publication *The Value of Independent Schools*⁵ makes a comprehensive argument about the

benefits of independent schooling including not only the economic benefits but the choice and diversity it provides to parents, the community connections, value to society and education innovation.

These benefits include enhanced educational outcomes across a range of indicators. Whilst many factors influence enhanced academic outcomes both at the school and student level, the autonomy of independent schools and their responsiveness to community and student needs are clear contributors to the success of independent schools. Building and supporting more autonomous schooling models across Australia would be a more positive step in addressing inequities in our education systems.

Whilst Piccoli sees fully publicly funded non-state primary schools as a first step in reforming the structures of schooling, this ignores the fact that primary school catchments tend to be very local with younger students, not unexpectedly, not travelling long distances to schools. This makes the primary sector less likely to be "segregated". Further, there very few, if any, selective primary schools in Australia. It is therefore surprising that any proposal to fully publicly fund non-state schools would not start at the secondary level if the objective is to change "the separation of Australia's education system into different sectors".

Also ignored is the increasing "separation" in the public system across Australia with the increased number of selective and specialist government schools in recent years. This seems to be acceptable to governments (perhaps because of parental demands).

Proponents of the Piccoli proposal will argue that full public funding of non-state schools will also mean they can be made accountable in the same way

³ Available at https://rms.isq.qld.edu.au/files/Weblive_OSOF/Catalyst_for_change_2020.pdf

⁴ *Economic Significance of Independent Schools to the Queensland Economy – 2020 Update* available at <https://www.isq.qld.edu.au/advocacy-representation/economic-significance-of-independent-schools>

⁵ Available at https://rms.isq.qld.edu.au/files/Weblive_CorpDocs/The%20Value%20of%20Independent%20Schools_2020.pdf

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as public schools. This argument displays a complete lack of understanding of the accountabilities of independent schools not only to governments but most importantly to fee paying parents. The direct accountability to parents is perhaps one of the most powerful drivers of the success and value of independent schools. It should not be ignored or lost.

Whilst any proposal to improve our schooling structures should be considered in the context of addressing Australia's declining educational outcomes, caution should be taken about fully publicly funding non-state schools, particularly at a time when there will be increasing pressures on governments' ability to fund well-resourced schools across all sectors.

Eliminating a significant amount of private investment in education is unlikely to achieve the equity outcomes intended. Reform of Australian education should focus on attracting more private investment in schooling whether through parents and the payment of fees, business and community support, or perhaps even asking those who choose public schooling to make a financial contribution where they can afford to pay.

DAVID ROBERTSON
*Executive Director
Independent Schools Queensland*



OPTIMISING THE LEARNING ENVIRONMENT FOR BETTER STUDENT OUTCOMES



SHARI ARMISTEAD
Director (Strategic Relations)

Light, temperature and air quality – are very important, collectively accounting for about half of the impact of the classroom on learning...

(BARRETT, 2020, p. 21)

Spatially adept teachers can learn to manipulate space to actively promote a range of student outcomes.

(LEIGHTON & BYERS, 2020, p. 31)

The learning environment is more than just buildings, classroom design and furniture. There is a growing volume of evidence to show the holistic learning environment, and how well the space is used by teachers, has a significant effect on student outcomes.

The Physical Learning Environment

The Holistic Evidence and Design, or HEAD, study in the United Kingdom is important research for schools. In 2015, after eight years of assessment, researchers from the University of Salford found clear evidence of the effect of the environment on student performance:

“...taken all together, differences in the physical characteristics of 153 classrooms in 27 schools accounted for 16% of variation in the learning progress of 3766 children in those spaces” (Barrett et al., 2015a).

This is a major finding using real-life physical learning environments in existing schools. Individual elements such as light, temperature and air-quality were measured before, however, this was one of the first research studies to take a holistic approach to the environment and how it related to individual student progress.

The HEAD study also involved a broader conceptual holistic analytical framework of Stimulation, Individualisation and Naturalness (SIN) (Barrett, 2020). The underpinning

Figure 1:
Key Factors of the SIN Framework

STIMULATION

Visual complexity and colour.

INDIVIDUALISATION

Ownership (personalisation and distinctiveness), flexibility of the layout, and connection (or way-finding).

NATURALNESS

Light, temperature, air quality, sound and links to nature.

hypothesis is that students’ academic progress will be dependent on a full range of factors drawn from across all three of the design principles (see Figure 1 and Figure 2).

The Learnometer Project

Professor Stephen Heppell’s Learnometer Project builds on work he has been doing for three decades, designing better learning environments and understanding how learner-led design increases achievement in measurable ways. The Learnometer is an Internet of Things device that monitors various aspects of the environment in a classroom such as light, CO₂ and sound, and the effect this has on learning. There are Learnometer boxes in schools all over the world, including Australia, with millions of hours of data being tracked. The more schools involved, the more big data that is available for the benefit of everyone (Heppell, 2019).

The Learnometer research, like the HEAD and other subsequent studies, “confirms that poor light levels, the wrong temperatures, inappropriate sound volumes and rhythms, humidity, air pollution, CO₂, and air pressure can all impair learning. [The] Learnometer research tool automatically samples the classroom environment and makes suggestions through a unique algorithm as to what might be changed to allow students to learn and perform at their best. Although each of these variables matter individually, [the] research embraces the aggregation of marginal gains” (Heppell, Learnometer, n.d., para. 5).

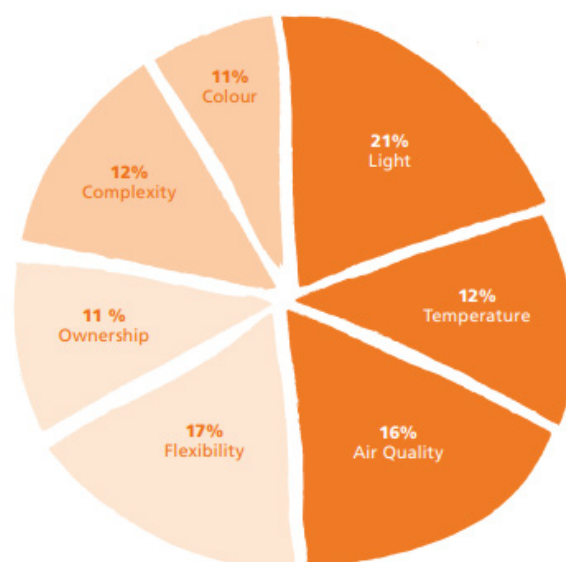
The Remedies

After the Learnometer diagnoses the problems Professor Heppell recommends the following remedies based on the data and longitudinal research.

- Light (lux) above 500 for learning work - aim for 750+ in schools and a minimum of 250 lux if there is only conversation taking place.
- Temperature between 18 and 21°C.
- CO₂ levels under 2,200 parts per million. Concentration starts to suffer noticeably above 2,200.
- Sound in normal circumstances should be under 70db with 72 as the point when things start to get distracting.
- A rapid sound tempo seems to damage concentration – under 100bpm would be very desirable, and under 80bpm would seem wise until more is known. That means fan tempos, and other mechanical rhythms as well as any background musak.

Learnometer is less clear about the impact on learning of pollution and air pressure, although there are projects exploring both. Likewise, it is looking further into humidity, although it tracks with temperature largely, and crucially,

Figure 2:
Relative Importance of Stimulation, Individualisation and Naturalness on Learning in Primary Schools



The HEAD study found that Naturalness accounted for half the learning impact, and Individualisation and Stimulation approximately a quarter each.

“The single most important finding reported here, is that there is clear evidence that the physical characteristics of primary schools do impact on pupils’ learning progress in reading, writing and mathematics” (Barrett et al., 2015b, pp. 14-15).

the project is still working on the interrelationships: for example if light is too low *and* it’s too hot is there a multiplier effect? (Heppell, 2019)

When Professor Heppell visited Australia earlier this year, he worked with a number of Queensland schools and he spoke with Independent Schools Queensland’s podcast *The School Bell*, explaining his work and summarising the issues and remedies (Independent Schools Queensland, 2020).

Professor Heppell’s is one of the most popular ISQ podcast episodes with schools clearly interested in practical ways they can optimise the learning environment to improve student outcomes. For example, he spoke of the Bring Your Own Plant project

where students bring a plant to school in a white pot to reflect light and make up for the plants themselves absorbing light. He said one plant per student is enough to convert the CO₂ from each student back into oxygen. Good ventilation also helps with CO₂ levels, he says “it is just simple science.” When it comes to light, he says it needs to be bright, “the brighter the light, the brighter you are. Super bright white LED lights, not fluorescent tubes” to get the best daylight light you can get. When you make what Professor Heppell says are some pretty quick fixes: “the kids you thought were the naughty kids in the corner, they turn out to be the bright kids in what used to be the naughty corner” (Independent Schools Queensland, 2020, 6:53).

“For productive learning, pupils optimally need classroom spaces that are healthy (naturalness); distinctive and allow pupil ownership and personalization (individualization); and present a combination of the visual complexities of the space and colour scheme (stimulation).”

EMERITUS PROFESSOR PETER BARRETT, UNIVERSITY OF SALFORD (HEAD STUDY)

OPTIMISING THE LEARNING ENVIRONMENT FOR BETTER STUDENT OUTCOMES CONTINUED

Working with Architects

Lead researcher in the HEAD study, Emeritus Professor Peter Barrett, came to the following conclusion based on Oxford University's Department of Education longitudinal studies in the UK *Building Schools for the Future* initiative, which incidentally Professor Heppel worked on.

"Given that buildings last for decades, the implication seems to be that the basic build should be good and, as far as possible, that flexibility to support options for different teaching practices should be built in from the start...The design of spaces could be seen as a matter of mutual respect between designers and educational practitioners" (Barrett, 2020, pp. 22-23).

Dovey and Fisher argue the proliferation of new learning spaces, such as 'meeting' spaces and 'outdoor learning' areas, are largely driven by long-standing changes in pedagogical theory and practice to include both formal and informal learning and a move from teacher-centred to student-centred learning. The traditional classroom is a product of a teacher-centred pedagogy, with the teacher at the front of the room closing out other activities and distractions. Student-

centred pedagogies are seriously constrained by traditional classrooms (Dovey & Fisher, 2014).

Most principals will tell you that master planning needs to be a collaborative experience between the school (including the leadership team, teachers, staff and students) and the architects. Good architects work with schools, listening to gain understanding and to ensure inclusive master planning.

M3 Architecture Founding Partner Dr Michael Banney has thirty years' experience in architectural practice, twenty of those years working on schools. Dr Banney told *The School Bell* in November 2019 he believes in the role of designing learning spaces where students and staff can "find their place" (ISQ, 2019). Dr Banney approaches each school project from a social perspective, whereby the user experience – how they feel when they are there – and the physical and cultural contexts are central to the design of the buildings and the connecting landscape and spaces in between. He tries to find a story that encapsulates all the idiosyncrasies of a place:

"Usually it's the story that precedes the plan... it's an approach to... culture [and] pedagogy that you can then

begin to see through architecture and planning. What we find is it's the story that's the hard thing to find, it's the drawing that follows that's almost the easy bit" (Michael Banney in ISQ, 2019, 24:36).

Spatial Competency

Teachers are taught how to teach curriculum content and pedagogy; however, they are rarely trained on how to use their classroom space to advance and support their teaching to maximise learning experiences for students (Leighton & Byers, 2020, p. 31).

The term 'spatial competency' began in the work of Lawton in the 1970s relating to the elderly and the environment. In 2008 Lackney adapted the idea for education and argued teachers who did not understand how to use their space would negatively impact student learning (Imms et al., as cited in Leighton & Byers, 2020).

Despite major government investment in school buildings such as the AUD\$16 billion Rudd Government Building the Education Revolution and subsequent capital works programs, the traditional classroom is still the main place for teaching and learning accounting for about 75 percent of all learning spaces according to Australian Research Council's Innovating Learning Environments and Teacher Change project (Imms et al., as cited in Leighton & Byers, 2020).

University of Melbourne PhD Candidate and Director of Staff Development and Research at Anglican Church Grammar School, Vicky Leighton, shines a spotlight on the teacher's role and the skills they need to effectively use the space to optimise learning.

Vicky Leighton's work aims to help schools work with teachers to develop spatial competencies that in turn

"The design of spaces could be seen as a matter of mutual respect between designers and educational practitioners."

(BARRETT, 2020, p. 23)

enhance teaching effectiveness. Leighton has worked with Novum Architects, a Brisbane firm that has an increasing number of schools in its portfolio, and developed an app to assist teachers understand how they are using learning spaces and to further recognise potential improvements in their practice.

Her PhD study into teacher spatial behaviour follows ten years of research at The Anglican Church Grammar School (Churchie) in Brisbane. The Churchie study found teacher spatial competence was a clear indicator of the success of pedagogical function. The study included real-time classroom observation data and analysis of teacher focus groups and student attitudinal and academic outcomes. In addition to isolating the impact of different learning environments and how they influence student and teacher activity and behaviour (Leighton & Byers, 2020, p. 31).

“The evidence suggests that when considering the impact of the physical learning environment on learning, how it is inhabited is at least as important as design” (Leighton & Byers, 2020, p. 31).

Leighton’s work suggests that spatially aware teachers use their learning spaces to achieve better outcomes. Therefore, teachers need to understand their classroom space and what they can do in it to further their teaching goals.

Conclusion

Innovative schools inspired by learning space research may choose to adopt some of the suggested environmental changes outlined in this paper. Professor Heppell and Emeritus Professor Barrett argue, based on their findings and ongoing work, a series of small interventions in the physical learning environment can have a big impact on student learning.

PhD Candidate Vicky Leighton and Dr Terry Byers would add that teachers need to use spaces effectively to “activate” the space to promote innovative practice. While this is a new area of research, early findings are promising and well worth consideration along with the environmental changes.

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ACN 614 893 140 ABN 88 662 995 577



**Independent Schools
Queensland**

choice & diversity

Head Office

Level 1, 96 Warren Street, Spring Hill Q 4000
PO Box 957, Spring Hill Q 4004
P (07) 3228 1515 E office@isq.qld.edu.au

Professional Learning Centre

Level 5, 500 Queen Street, Brisbane Q 4000
P (07) 3228 1507 E events@isq.qld.edu.au

www.isq.qld.edu.au