Briefing Note: Innovative Learning Environments

To: Hon Chris Hipkins
Minister of Education

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Purpose

Jamie Strange, MP, has asked for notes on innovative learning environments (ILE) in New Zealand schools ahead of his speech at a symposium at Waikato University in October. This briefing updates information provided to you in BN 1203102 (March 2018), for you to forward to Mr Strange.

Summary

New Zealand Association for Research in Education is hosting a Special Interest Group Symposium titled ‘Learning environments: policy, practice, philosophies’ at Waikato University. Jamie Strange, MP, has been invited to speak on ‘Looking forward: 21st century innovative learning environments’ at the symposium.

The Ministry introduced policy related to modern learning environments (MLE) in 2010, but has used the term innovative learning environments (ILE) since 2013 to refer to the physical, social and pedagogical dimensions. The Ministry has used flexible learning spaces (FLS) to refer to the property elements.

Schools are responsible for determining how teaching and learning take place at their schools. The Ministry ensures that their educational vision informs the way the buildings operate by working closely with schools during the design phase of a redevelopment or a new build.

The Ministry does encourage adaptability as a feature of all redevelopments and new builds and this approach is based on local and international literature referenced on page 5 of this document.

Please note that the Ministry intends to proactively release this briefing as all of the information contained within can be obtained publicly and there is nothing sensitive/confidential.

Kim Shannon
Head of Education Infrastructure Service
Background

Terminology regarding Learning Environments

1. The Ministry introduced policy related to Modern Learning Environments in 2010. This included making investment in upgrading learning spaces Priority Three (behind urgent health and safety and essential infrastructure work) for the use of Five Year Agreement (5YA) Capital Funding, and releasing the Modern Learning Environment Assessment Tool to help schools understand how learning spaces might be modernised to better support teaching and learning today and in the future.

2. This work was informed by international research (including Kenn Fisher¹ in Australia and Prakash Nair² in the US), and considering how New Zealand’s National Curriculum could be best supported by physical environments.

3. In 2013, the Ministry switched to the term Innovative Learning Environments (ILE). ILE better aligns with the international community as it is the preferred term of the Organisation of Economic Co-operation and Development (OECD). Refreshing the terminology was also seen as a way to emphasise that learning environments comprise physical, social and pedagogical dimensions that need to be aligned to support good education outcomes.

4. At the same time, the Ministry started to use flexible learning spaces (FLS) to refer to the property elements.

5. Schools can describe their learning environments in whichever language suits them. What matters is that the physical environment is aligned with the people and practices within it, and that it effectively delivers the conditions known to effect learning outcomes: acoustics, lighting, indoor air quality and thermal comfort (more information in paragraphs 26-28).

Role of the Ministry in classroom design

6. The first step in a Ministry-run school property project is for the school to prepare an Education Brief, which describes the school’s specific vision for teaching and learning and what this will look like in practice. This is paired with a Technical Brief (describing the budget, the amount of space to be delivered, technical requirements in terms of acoustics, heating, ventilation and lighting, etc.) and drives the design and construction of the project. This means that schools themselves have significant influence over how learning spaces are configured to meet their needs.

7. The Ministry values school leaders’ and boards of trustees’ involvement in the design process as it ensures that the physical component of the learning environment meets

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² Nair, P. (2017) Design for learning in the creative age. TEDx Guilford College
https://www.youtube.com/watch?v=6rA92x_YJ9A
the needs of their students and communities, and aligns with their approach to teaching and learning.

8. At a minimum, the Ministry's expectation is that the internal classroom environment has good acoustics, thermal comfort, ventilation and lighting, and that internal walls are not load-bearing to ensure future adaptability. We encourage adaptability as a feature of all spaces we build or upgrade so they can easily be reconfigured as educational needs change over time.

9. Many schools are choosing to teach in more student-focused and flexible ways to reflect what the evidence says about effective teaching (see paragraph 21). The flexible spaces that are increasingly being included in school designs around the country are to support these kinds of teaching.

10. These designs reflect what individual school communities know about their students and what will work best for them.

11. Although the Ministry does not have a fixed view of what a learning space must look like, at the suggestion of schools we have developed reference designs for the upgrade of some standard school blocks. These provide a range of options for each block and their use is not compulsory, but they can accelerate the design process (reducing fees).

Improving school property

12. It is the Ministry's view that all schools should provide a learning environment that best supports educational success and wellbeing, and one that students, parents, whānau and communities can take pride in.

13. Additionally, we recognise that our education system needs to prepare young people for a world we can't yet imagine. They will need to be confident, connected, actively involved lifelong learners with competency in thinking, using language, symbols and texts, managing self, relating to others, participating and contributing.³

14. Physical learning environments at each of New Zealand's schools will need to be equipped to facilitate the development of these competencies. How this takes place, and the infrastructure that supports this approach to teaching and learning, will look different at each school.

15. This Government has set the target that all schools will be providing quality learning environments (with respect to property) by 2030. To support this target, the Ministry has developed a model to measure quality, based on asset condition, fitness for purpose and operational efficiency. In 2019 the Ministry is piloting collecting the necessary data and how this can inform asset management and investment decisions. Budget 2019 provided funding over the next four years to begin to roll out this model across the country.


The Government's target for all schools to provide quality learning environments by 2030 will drive investment and planning for the portfolio.
16. As part of this work, the Ministry has developed a user survey tool, the School Evaluation of the Physical Environment, which will replace the Innovative Learning Environment Assessment Tool that is currently part of 10 Year Property Plan preparation. The new tool is designed to better capture the suitability of a physical space to the teaching and learning that takes place within it. It informs Fitness for Purpose ratings, alongside measured performance for acoustics, thermal comfort, lighting and ventilation.

Evidence base supporting changing pedagogy

17. Both the Minister of Education and the Ministry are often asked to describe what evidence exists that ILEs contribute to tangible improvements in academic outcomes. Improving student outcomes comes from better teaching. Flexible spaces provide teachers more options, but it is the teacher that is key.

18. In answering these questions, we note first and foremost, that the biggest within school factor for academic outcomes is quality teaching - not buildings in and of themselves.

19. The New Zealand Curriculum empowers boards of trustees and school leaders with the scope, flexibility, and authority they need to design and shape their own curriculum so that teaching and learning is meaningful and beneficial to their particular communities of students.

20. In our education system, schools are best placed to decide how teaching and learning should take place, and what sort of property, technology and equipment is needed to facilitate this learning. Schools are best placed to decide how they continuously improve teaching.

21. Schools choosing to teach in more student-focussed and flexible ways reflect what the evidence says about effective teaching. More information about this is available from the Ministry’s Best Evidence Synthesis programme and from the OECD’s Innovative Learning Environments project.

22. The designs that may follow student-focused and flexible teaching are determined by school leaders to suit the educational vision of their schools.

Supporting schools through large build projects

23. The Ministry provides funding for release time for school leadership to participate in the design process for large building projects.

24. Grow Waitaha is an initiative that was developed following the Canterbury earthquakes to support the schools that were being redeveloped and rebuilt to transform their teaching and learning practices alongside the physical changes. The goal of Grow Waitaha is to assist schools to achieve their desired pedagogical change in a meaningful and manageable way, with a network of support, and to put learners at the centre of that change.

25. Budget 2019 provided funding to expand Grow Waitaha nationwide for new schools and major redevelopments to ensure they have the support they need.

Impact of Physical Design on Student Outcomes

26. Regarding the contribution of property to learning, in 2016 we undertook a literature review of local and international research (and supplementary research) on the impact

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4 [http://www.educationcounts.govt.nz/topics/BES](http://www.educationcounts.govt.nz/topics/BES)
6 [http://www.growwaitaha.co.nz/](http://www.growwaitaha.co.nz/)
of physical design on student outcomes and the findings have been published in two booklets, available here: [https://www.education.govt.nz/school/property-and-transport/projects-and-design/design/designing-learning-environments/case-studies/#full-reports](https://www.education.govt.nz/school/property-and-transport/projects-and-design/design/designing-learning-environments/case-studies/#full-reports).

27. In summary, there is a strong consensus that elements such as acoustics, ventilation, temperature and lighting can impact on student outcomes. The literature also demonstrates that the teaching and learning approach and physical environment should be aligned. Poor conditions have been shown to negatively affect student outcomes. These conditions include noisy, poorly lit, stuffy or overly hot/cold spaces.

28. As an example, the University of Salford’s *Clever Classrooms*[^7] showed that design parameters of classrooms contributed to 16% of the variation in academic progress in UK primary schools. Design parameters included commonly agreed building blocks of a good space such as temperature, air quality and acoustics, but also flexibility, ownership and complexity (both too complex and too sterile are to be avoided).

**Research on Innovative Learning Environments and Teacher Change (ILETC)**

29. The Ministry is a co-sponsor of the Innovative Learning Environments and Teacher Change (ILETC) project currently underway at the University of Melbourne. This is an Australian Research Council (ARC) Linkage Project funded for 4 years from 2016-2019. It brings together the expertise of leading researchers in education and learning environments, and partner organisations in education and learning environment design and technology.

30. The results to date provide descriptive information about the pedagogies and spatial designs used in ILEs. Key findings include:
   a. Traditional classrooms and teacher-led pedagogies make up the majority in New Zealand and Australian schools;
   b. Teachers in ILEs exhibit differing “mind frames” (teaching values and goals) to teachers in more traditional learning environments.

31. We anticipate that the findings may be useful for teachers and school leaders planning to make changes to their physical spaces and associated teaching and learning approaches. The findings may also be useful to Ministry staff supporting schools through such changes.

32. Additionally, we recognise that research to date has only made some effort to consider non-mainstream needs and this could go much further. We have provided feedback to the ILETC work underway in Melbourne, reiterating the need to ensure the research considers the needs of students requiring learning support - as well as Māori and Pacific students.

**Other research/evaluations**

33. The Ministry is involved with the OECD’s Learning Environment Evaluation Programme (LEEP), which is seeking to develop tools to measure the effectiveness of physical learning environments and create best practice guidelines supported by toolkits - to assist OECD countries in developing physical learning environments that meet the needs of 21st century learning and guide investment decisions.

[^7]: Barret et al. (2015; *Clever Classrooms* [http://www.salford.ac.uk/cleverclassrooms](http://www.salford.ac.uk/cleverclassrooms))
34. Throughout 2019, the Ministry has been working to establish relationships with researchers in New Zealand’s leading research institutes in academia and industry who are looking at learning environments. This will enable the Ministry to keep up to date with new findings in this field as they arise, and share these findings with schools.

35. The Ministry has also supported studies by New Zealand universities about the performance of specific aspects of flexible and traditional learning spaces, such as acoustics (Victoria University) and ventilation (Massey University).

36. We are measuring satisfaction levels for new school builds and major developments via post occupancy evaluation studies. We make these publically available but, more importantly, we take what we learn from these evaluations and feed them back into our design guidelines: [http://education.govt.nz/school/property/state-schools/design-standards/post-occupancy-evaluations-of-school-building-projects/]().

Do schools like the changes?
- Post-occupancy surveys are conducted for new schools and major redevelopments
- These are publically available
- The surveys show a high degree of satisfaction but there is always room for improvements
- The feedback informs revisions of our design guidelines