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# Innovative Learning Environments and Teacher Change Project

# Phase One Report

2016-2017



**Australian Government**  
**Australian Research Council**



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## *Innovative Learning Environments and Teacher Change Project: Phase One Report*

Created by ILETC, The Innovative Learning Environments and Teacher Change  
ARC Linkage project (2016-2019).



**Australian Government**

**Australian Research Council**

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# Overview



The ILETC project presents a unique opportunity for a team of experts in education and architecture from across governments, schools, business and academia to co-design new solutions to the challenges of delivering 21<sup>st</sup> century learning to students in Australia and New Zealand.

The Innovative Learning Environments and Teacher Change project (ILETC) commenced officially in June 2016. The aim of this 4 year project is to build understanding of how physical classroom space impacts on learning and how best to support teachers in making the most of the spaces in their schools. It will develop resources and strategies to support educators, school leaders, policy makers and architects in developing and inhabiting new learning spaces.

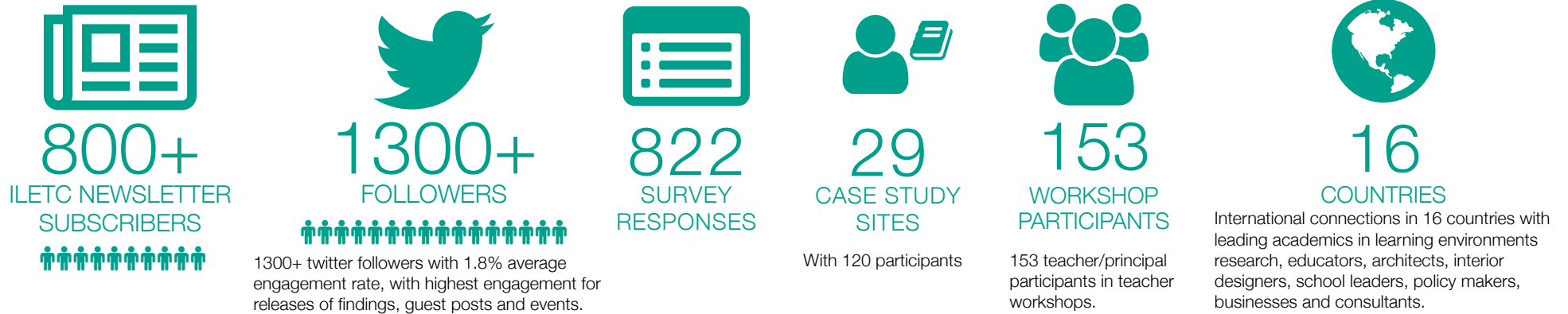
In its busy first 18 months the project has not only accomplished all planned milestones, but has achieved extensive engagement with partners, teachers, architects and researchers both within Australasia and internationally. This highly efficient and collaborative, cross-disciplinary group has maximised the expertise of the project team and partners in building a comprehensive base of evidence about teaching in innovative learning spaces in Australasia. The group has made it a priority to not only conduct their research in an open and transparent way, with regular newsletter updates, blog posts and articles, but to publish findings as soon as data is analysed

and share these with an ever growing following of educators, designers and other researchers.

This report provides a summary of the project's activities, findings and engagement in the first 18 months of research. It draws together the many outputs, events, media and activities to highlight some of the key discoveries and how these inform the next stage of investigations.

*Taylor Primary School, Small Quinton Coleman Architects. Photography: Ben Andrews - Lux & Lens.*

# ILETC 2016-2017 AT A GLANCE



PhDs now 8 in total, with 4 PhD workshops, 4 confirmations and high level of engagement with project team, co-authoring outputs, articles, reports and presenting at research conferences.

59 abstracts submitted for Transitions 2017 (all events) and 240 participants from 16 countries

High level of engagement from project partners with full attendance at 2017 partners meeting, sponsorship of international events by 3 partners, increased connections between partners and multiple members of the project team including CIs, research fellows and PhDs.



Publications including 1 peer reviewed journal article, 2 open access reports, 3 conference proceedings, 6 fact sheets, 64 blog posts, 17 conference presentations

Figure 1: ILETC 2016-2017 at a glance.

# Research

Phase One June 2016 - December 2017



## Survey

Survey of principals in our partner schools in Australia and New Zealand, asking them:

- What sort of classrooms and learning spaces are in their schools?
- How teachers are using them, and
- How they would characterize the kinds of learning happening.

### Outcomes:

- 822 survey responses
- **Technical Report 1/2017. *Type and Use of Innovative Learning Environments in Australasian Schools* (Imms, Mahat, Byers, & Murphy), and**
- ***The 'state of play' concerning New Zealand's transition to innovative learning environments: Preliminary results from phase one of the ILETC project* (Bradbeer, Mahat, Byers, Cleveland, Kvan, & Imms).**

### Key findings:

1. Traditional classrooms were the dominant classroom type, amounting to approximately 75% of all spaces;
2. The dominant teaching approach was characteristic of teacher led pedagogies;
3. Participants from schools with a higher prevalence of traditional classroom spaces reported a lower assessment along the teacher mind frame continuum, with the reverse in more flexible learning spaces; and
4. Students in traditional classrooms exhibited fewer deep learning characteristics, with the opposite in more flexible learning environments.



## Existing Research

Systematically searching all existing research relating to:

- Learning spaces and their impact on deep learning,
- Learning spaces and how teachers interact with them, and
- Learning spaces and how they impact on students' learning outcomes.

The process of conducting this review involved all members of the research team and created a collection of all existing research on key topics as a resource for the team.

### Outcomes:

- Three technical reports (forthcoming 2018).

### Key findings:

The systematic literature reviews found only 21 empirical studies that evaluated impact of the physical environment on student learning outcomes in schools. It highlighted how little is understood about the long-term impact of different learning spaces and reinforced the importance of building evidence through our study.

The results will be published in 3 technical reports which will be available in 2018 on the project website.



## Teacher Workshops

We conducted workshops with teachers in Australia and New Zealand about:

- How innovative learning spaces affected teachers' practices.
- Teachers' mind frames and belief systems.
- Student deep learning and the innovative learning environment.
- Transition journey maps.
- Changing teacher practice.

### Outcomes:

- 153 workshop participants in 12 workshops.
- **Technical Report 2/2017. *"In the real world..." Teachers' perceptions of ILEs – ILETC Phase 1 teacher workshops* (Mahat, Grocott, & Imms).**

### Key findings:

- Teachers associate ILEs with the notion of student-centred learning - ways of teaching that shift the focus of instruction from the teacher to the student.
- Innovative learning environments help students to be active, responsible participants in their own learning placing the teacher as a facilitator of learning for individuals rather than for the class as a whole.
- One of the key barriers identified was on issues around loss of teacher control, changing 'old' practices and on taking risks.

# ILETC MILESTONES



## Research Symposia & Think-Tank meetings

In 2017 the project organised the Transitions symposia and industry think-tank meetings in Australasia, Europe and North America with the support of our partners Telstra, Ecophon and Steelcase. The aim of these events was to gain a global perspective on research currently under way on innovative learning environments internationally and to connect with educators and architects interested in and active in this field.

### Outcomes:

- 240 participants from 16 countries,
- 59 abstract submissions, and
- 3 published proceedings.

The events provided an international perspective on current research and practice in design and use of innovative learning environments, increased awareness of the project and enhanced connections with our project partners and their networks.

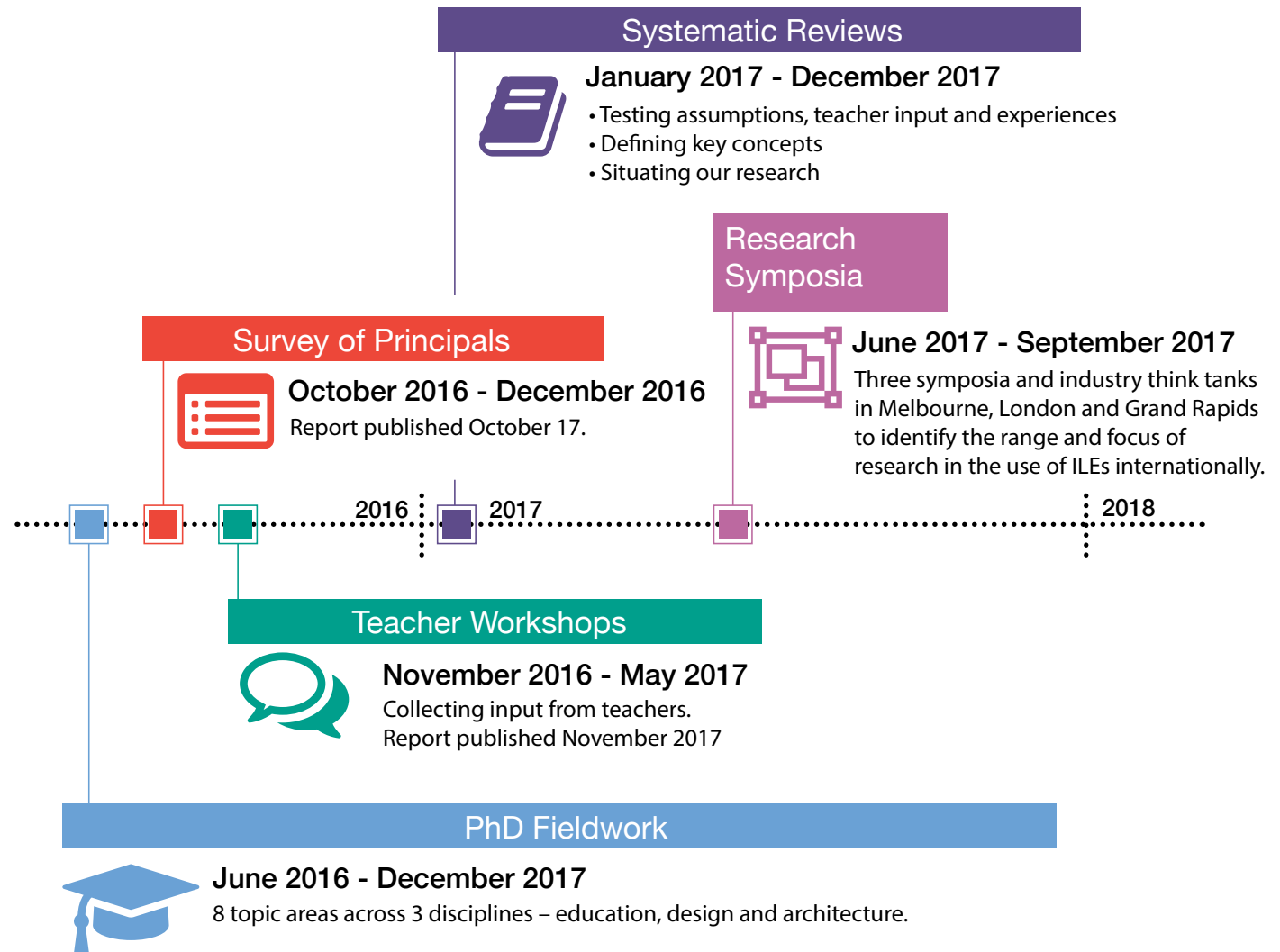


Figure 2: ILETC milestones.

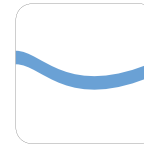
# Research

## Findings - Phase 1 June 2016 - December 2017

Phase One provided a rich and broad array of solid evidence concerning research that explains learning environments and teacher transition. This was intentionally collected from a diversity of sources in order to triangulate the ILETTC knowledge base:

- **From academia**, through a set of three systematic reviews of the literature that identified existing evidence concerning ILEs and teacher mindframes, student deep learning, and student learning outcomes;
- **From teachers**, through a series of workshops conducted across Australia and New Zealand, that has gained practitioner knowledge about transitions to ILEs, teacher mindframes, student deep learning, and associated concepts;
- **From external observers** (the PhDs) who conducted multiple case studies within Australian and New Zealand schools, museums and galleries about the ways teachers utilise space to maximize educational outcomes;
- **From principals**, through a large survey that gathered data on types of spaces, their use, and the learning that occurs in them;
- **From international sources** through:
  - **Three graduate-research symposia** in Australasia, Europe, and North America, where local projects helped explain problems and solutions around this topic;
  - **Three industry think-tank meetings** in Australasia, Europe, and North America, where current and required research was explored by industry partners;
- **From a critique of the literature** by our PhDs to create a common understanding of key terms and concepts critical to this topic.

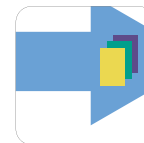
The data collected via these strategies were coded and common themes identified.



Our data shows there exists a logical, reasonably common pathway that teachers follow as they transit into an ILE. In ILETTC, an 'innovative learning environment' is the combination of innovative design and innovative teaching/learning practices (ILE = ILD + ILP).



This pathway is constituted of a large variety of change strategies that facilitate teachers' transition into an ILE across time. In ILETTC, a 'strategy' is an explicit concept, theory or practice that the case studies indicate enhance teachers' use of innovative learning environments.



It is possible from our data to make tangible the spatial learning tools that teachers use to turn those strategies into actions which help them transit into an ILE. In ILETTC, a 'tool' is an identifiable activity or protocol, that implements a strategy.



This pathway is often highly individualized, at the school and the teacher levels.



Taken as a whole, this constitutes the pathway/s along which teachers and schools travel as they grow their ILE-relevant mindframes.

Figure 3: Key findings, phase 1.

The themes identified during the Phase 1 analysis arguably represent the common issues being addressed by key players (policy, school administrators, teachers, and researchers) as teachers transit from traditional classrooms to an ILE.

# Research

## Phase Two January 2018 - June 2019

The key themes identified in Phase 1 are mapped in Figure 4. The reasonably common pathway is indicated by the dark dotted line. The oval emphasises that a wide range of methods are used by teachers and schools to undertake this transition. The individual 'cells' contain the tools that teachers use to proceed down this pathway. These are organised according to the 'phases' of transition our research shows exist;

- Early planning stages,
- Implementation stages as ILEs are occupied, and
- Consolidation stage where practices, design, affordances are continually refined to best meet the overall educational vision of each school.

Phase two research will, therefore, be spent in populating this pathway schema using observed and to-be-constructed tools. It will test the usefulness of this pathway through trials with a broad range of ILETC schools. It will test our methods of evaluating the pathway's effectiveness.

In this way, ILETC will be positioned to offer the educational community a theoretical and practical resource that supports the building of spatial learning capacity in schools. It will provide robust, confidence-building evidence of what works.

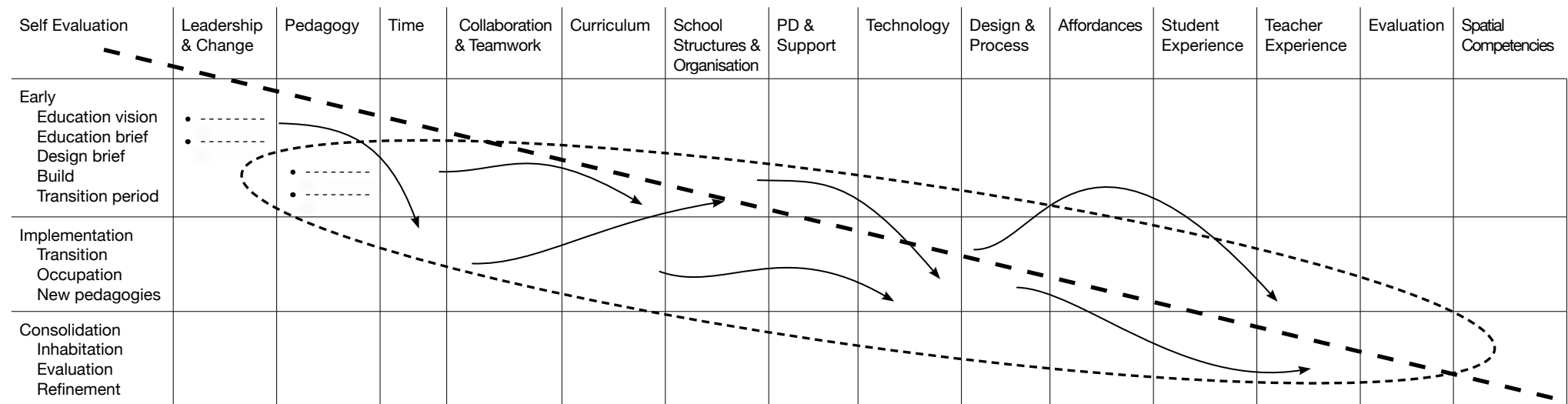


Figure 4: Model of ILETC Teacher Transition Pathway.

# Community

## Partners

The team of partner organisations is key to informing the research by providing expert advice and contextual knowledge on school infrastructure, design, teacher professional development, pedagogy, curriculum, acoustics, furniture, technology and student learning. Our partners help in practical ways too by providing guidance to our PhD researchers, trialling workshops and tools and providing feedback.

In addition to regular conversations, information sharing and meetings, the project team has been collaborating with partners through:

- Partner meetings, held annually, to enable collegial input on project directions, opportunities for engagement with teachers and dissemination.
- Partner reference group meetings and staff briefings throughout the year to support partners' input to the project and engagement with outputs.
- Identifying data collection sites – with data collection in 29 partner schools, museums and galleries by our PhD researchers.
- Symposia and think tanks, e.g. support from Ecophon and Steelcase in hosting, marketing and logistics for Transitions 2017 & 2018.
- Three partner events- presentations at an international partner conference in Singapore, and regional forums in Brisbane and Melbourne.

We aim to involve our partners in the research process as much as possible and also welcome opportunities to inform their research activities with overlapping ILETC project activity.

- In 2017 we were approached by two partners to contribute project insights and expertise to assist in undertaking nested research with direct relevance to partner priorities.
  - Specialist input from partners that extend research in the specialist fields of acoustics and ICT.
  - Sharing partner resources, expert and contextual input to research activities, network connections, extension of project reach within own organisations.

## Research team

We have developed routines and practices to support effective collaboration between our cross-disciplinary, dispersed team. The project management team works closely to maximise use of project resources to not only meet all project goals, but to capitalise on all opportunities to extend the reach and impact of project activities and findings, while also supporting development of independent PhD researchers.

The team of lead academics meets on a regular basis to review progress and provide specialised input on key project activities. In addition to this, regular email updates and informal communications ensure that all Chief Investigators (CIs) are engaged with the project. CIs also provide valuable multi-disciplinary, expert input to data collection and analysis, publications and events.

The project Research Manager and Project Manager work closely with researchers Terry Byers (QLD) and Chris Bradbeer (NZ) to shape the research activities, analyse data and write publications. Terry and Chris also provide valuable local insights and connections in their regions to support links with partners and project participants. The team had additional research support from Kirra Liu in conducting the systematic literature review and data analysis and Lachlan Stewart in development and design of publications.

Since the beginning of the project our team of graduate researchers has grown to 8, with the addition of new members in 2017 who will expand the focus areas addressed in our research, range of expertise and workforce capacity for data collection and analysis. These researchers not only contribute their own research data and analysis to the project, they also bring with them a wealth of professional expertise and academic skills.

## Network

The project is achieving significant engagement and reach beyond the project team and partners in Australia and overseas by building an informal network of professionals and academics. Our ever growing mailing list (over 800) and Twitter following (1300) receive regular updates on blog posts, publications, events, key findings and activities. This ensures our findings, which we publish in accessible reports and fact sheets, are shared with a wide audience and will support broad participation in our Phase 3 trial of resources, as well as stimulating interest in learning environments research more broadly. The network also provides input to the project by connecting us with researchers and practitioners in our region and beyond.

1. *Anne Knock*, teachers approaches to collaborative or team teaching.
2. *Dan Murphy*, developing measures for impact of spaces on teachers and students.
3. *Dion Tuckwell*, using design thinking in effecting change in education.
4. *Ethel Villafranca*, what we can learn from museum educators use of learning spaces.
5. *Fiona Young*, what are the design affordances that support teaching and learning?
6. *Raechel French*, characteristics of 'good transition'.
7. *Mark Osborne*, leadership practices that lead to the successful implementation of an innovative learning environment.
8. *Vicky Leighton*, teacher spatial competencies, and ways to measure these.



1.



2.



3.



4.



5.



6.



7.



8.

# Outputs

## The project has published findings in two reports that are publicly available.

- Technical Report 1 - Survey findings:
  - Teachers utilise ILEs better than we believed (the assumption that they are not 'transitioning' is being questioned), and
  - Their practices, even in traditional classrooms, suggest that ILEs are a useful way to assist better teaching, but we need to be mindful of their importance relative to pedagogy (they certainly are not a revolution).
- Technical Report 2 - Teacher workshop findings:
  - Teachers' definition of ILEs
  - They felt their practices were supported by the flexibility of spaces
  - When new to a space they are concerned about how the difference will impact on students.
  - The need for support mechanisms for teachers to adapt practice to new space.

## Publications and presentations

### *Journals/Periodicals*

1. Bradbeer, C. (2017). Think piece: If teacher collaboration in ILEs is the answer, then what was the question? *Education Review*, 8(5), 5-6.
2. Bradbeer, C., Mahat, M., Byers, T. Cleveland, B., Kvan, T. & Imms, W. (2017). The 'state of play' concerning New Zealand's transition to innovative learning environments: Preliminary results from phase one of the ILETC project. *Journal of Educational Leadership, Policy and Practice*, 32(1), 22-38
3. Byers, T. & Imms, W. (2017) Solution? Evolution? Or Revolution? *Learning Spaces*, 3(3), 50-58.

### *Books*

1. Imms, W., & Kvan, T. (forthcoming). *Teacher Transition into Innovative Learning Environments*. Springer.

### *Reports*

1. Imms, W., Mahat, M., Byers, T. & Murphy, D. (2017). *Type and use of innovative learning environments in Australasian Schools*. ILETC Survey No. 1. Melbourne: ILETC, LEARN, The University of Melbourne. Retrieved from: <http://www.iletc.com.au/publications/reports/>
2. Mahat, M., Grocott, L., & Imms, W. (2017). *"In the real world...": Teachers' perceptions of ILEs*. ILETC phase 1 teacher workshops. Melbourne: University of Melbourne, LEARN, Retrieved from: <http://www.iletc.com.au/publications/reports/>
3. McEntee, K, Brandalise, I., Goncalves, R. D, Riendeau, S., Thao, K. & Grocott, L. (2016). *Pilot project: Archipelago of possibilities: Priming teachers to reflect on intrinsic motivations for change*. Melbourne: ILETC, LEARN, The University of Melbourne. Retrieved from: <http://www.iletc.com.au/publications/reports/>.

### **Factsheets**

1. ILETC (2017). *Factsheet 6: Changing teacher practices*. Retrieved from: <http://www.iletc.com.au/publications/fact-sheets-brochures/>
2. ILETC (2017). *Factsheet 5: Transition Journeys*. Retrieved from: <http://www.iletc.com.au/publications/fact-sheets-brochures/>
3. ILETC (2017). *Factsheet 4: Deep learning and the ILE*. Retrieved from: <http://www.iletc.com.au/publications/fact-sheets-brochures/>
4. ILETC (2017). *Factsheet 3: Mind frames and belief systems*. Retrieved from: <http://www.iletc.com.au/publications/fact-sheets-brochures/>
5. ILETC (2017). *Factsheet 2: ILEs and teacher practice*. Retrieved from: <http://www.iletc.com.au/publications/fact-sheets-brochures/>
6. ILETC (2017). *Factsheet 1: Learning Spaces in Australia and New Zealand*. Retrieved from: <http://www.iletc.com.au/publications/fact-sheets-brochures/>

### **Brochures**

1. ILETC (2017). *Can altering teacher mind frames unlock the potential of innovative learning environments?* Melbourne, Australia: ILETC, LEARN. Retrieved from: <http://www.iletc.com.au/publications/fact-sheets-brochures/>

### **Video**

1. ILETC (2017). *Innovative Learning Environments and Teacher Change*. Melbourne: ILETC, LEARN. Retrieved from: <https://youtu.be/inzssGYi6MM>

### **Public Workshops**

1. Changing teacher practices in ILEs, Department of Education, Brisbane, 2017
2. Transitioning into ILEs; Journey maps, Charles Weston Primary School, Canberra, 2017
3. Deep Learning and ILEs: Learning from deep learning experiences, Avonside Girls High School, Christchurch, 2016
4. Mind Frames and belief systems: Learning from ideals and teaching practices, Stonefields School, Auckland, 2016
5. ILEs in the classroom: Learning from practice and potential, Department of Education, Sydney, 2016

### **Conference Proceedings**

1. Mahat, M. & Imms, W. (2017). Transitions Australasia: What is needed to help teachers better utilize space as one of their pedagogic tools? *Proceedings of Transitions: Inhabiting Innovative Learning Environments*. Melbourne Graduate School of Education: Melbourne.

2. Imms, W. & Mahat, M. (Eds.). (2018). Transitions Europe: What is needed to help teachers better utilize space as one of their pedagogic tools. *Proceedings of an international symposium for graduate and early career researchers in London, UK*. Retrieved from: <http://www.ilet.com.au/publications/proceedings/>
3. Imms, W. & Mahat, M. (Eds.). (2018). Transitions North America: What is needed to help teachers better utilize space as one of their pedagogic tools. *Proceedings of an international symposium for graduate and early career researchers in Grand Rapids, Michigan*. Retrieved from: <http://www.ilet.com.au/publications/proceedings/>

## Presentations at conferences

### Keynote address

1. Imms, W & Mahat, M. (2018) *International perspectives*. Presentation at Talking Spaces 8, 22-23<sup>rd</sup> February 2018, The University of Melbourne.
2. Imms, W. (2017). Keynote address. School Infrastructure Forum, Sydney, 27<sup>th</sup> November 2017.
3. Imms, W. (2017) *Ensuring sustainable innovative learning space practices: the critical need for quality evidence*. Presentation at School Learning Space Design, Aligning future focused pedagogies with 21<sup>st</sup> century learning environments, Melbourne, Australia. 24-25<sup>th</sup> October 2017.
4. Imms, W., Byers, T & Mahat, M.(2017) *Workshop at School Learning Space Design, Aligning future focused pedagogies with 21<sup>st</sup> century learning environments*. Presentation at School Learning Space Design Conference, Melbourne, Australia. 24-25<sup>th</sup> October 2017.
5. Imms, W & Young, F. (2017) *Keynote presentation*. Presentation at Learning Environments Regional Day Out, Anglican Church of England Grammar, Brisbane.

6. Imms, W. (2017). *International perspectives on teacher transition to innovative learning environments; an update on the ILET project*. Presentation at School Infrastructure Forum, Sydney. 24-25<sup>th</sup> October, 2017.
7. Imms, W. (2017). Keynote address. Presentation at School Planning Conference. Melbourne 22-23<sup>rd</sup> May, 2017.
8. Imms, W. (2017). Keynote address. Presentation at School Learning Space Design Conference, Criterion Conferences, Sydney, 17-18<sup>th</sup> May, 2017.
9. Imms, W. (2017). *Evidence*. Presentation at Innovative Learning Environments conference, Auckland University of Technology, Auckland. 13-15<sup>th</sup> Feb, 2017.
10. Imms, W. (2016). *Aligning pedagogy and space: An Australian evidence-based approach*. Presentation at International conference on school design and learning spaces for schools in the Third Millennium, Istituto Nazionale Documentazione Ricerca Educativa, Rome, Italy. (Proceedings in press).

### Conference Papers (Academic)

1. Tuckwell, D., Edwards, A. Grocott, L. Mahat, M. & Imms, W. (2017). *Designing stakeholder engagement: How experiential workshops create space for teachers to question, propose and share narratives around innovative learning environments*. Paper presented at Australian Association for Research in Education, Canberra.
2. Mahat, M. & Imms, W. (2017). *Are we measuring what we are measuring? A measurement tool to measure teacher mind frames and student deep learning in the context of innovative learning environments*. Paper presented at Australian Association for Research in Education, Canberra.

3. Mahat, M. & Imms, W. (2017). *The development of a sampling frame to investigate teacher practices and student learning in 'traditional' and 'non-traditional' learning spaces*. Paper presented at the Australian Association for Research in Education, Canberra.
4. Mahat, M., Cleveland, B., Leonard, R., Horton, L., Campbell, C., Fisher, K., Kim, A., Newton, C., Strickland-McGee, A, Imms, W, Steigler-Peters, S. & Smith, M. (2017). *Industry and academic collaboration in learning space design and use*. Symposium at the 2017 European Educational Research Association (ECER), Copenhagen, Denmark.
5. Mahat, M. & Campbell, C. (2017). *Making it work: The effective use of acoustics in learning spaces*. Paper presented at the 2017 European Educational Research Association (ECER), Copenhagen, Denmark.
6. Cleveland, B., Leonard, R. & Horton, L. (2017). *Embodying an Educational Vision in School Architecture: Untangling the Messy Business of Collaborative Translational Design*. Paper presented at the 2017 European Educational Research Association (ECER), Copenhagen, Denmark.
7. Newton, C., Fisher, K., Strickland-McGee, A. Kim, A. (2017). *Facilitating Learning Through Furniture and the Design of Learning Spaces*. Paper presented at the 2017 European Educational Research Association (ECER), Copenhagen, Denmark.
8. Imms, W., Steigler-Peters, S. & Smith, M. (2017). *Developing Spatial Literacy through Advanced Communication Strategies*. Paper presented at the 2017 European Educational Research Association (ECER), Copenhagen, Denmark.
9. Mahat, M., Byers, T., Newton, C. & Imms, W. (2017). *Innovative Learning Environments and their impact on learning and instruction*. Paper presented at the 2017 European Association for Research on Learning and Instruction (EARLI), University of Tampere, Finland.
10. Bradbeer, C., Cleveland, B., Mahat, M. & Imms, W. (2017) *The Innovative Learning Environment and Teacher Change (ILETC) project: What are we learning?* Paper presented at the 17<sup>th</sup> Annual Conference of the Learning Environments Australasia, Marina Bay Sands, Singapore.
11. Leighton, V. (2017) *Teaching space*. Paper presented at the 2017 Transitions Australasia, The University of Melbourne, Melbourne
12. Villafranca, E. (2017). *Curating Learning*. Paper presented at the 2017 Museum Galleries Australia National Conference, Brisbane Convention and Exhibition Centre, Brisbane.
13. Byers, T. (2017). *Evaluation through observation and feedback to users*. Paper presented at 2017 Talking Spaces, The University of Melbourne, Melbourne.
14. Imms, W. (2017). *Learning in complex environments*. Paper presented at 2017 Talking Spaces, The University of Melbourne, Melbourne.
15. Imms, W. (2017). *Assessing the value of new learning spaces*. Paper presented at 2017 Talking Spaces, The University of Melbourne, Melbourne.
16. Mahat, M. & Imms, W. (2016). *Innovative Learning Environments: A critical review of its effects on teacher mind frames and student deep learning*. Paper presented at the 2016 Australian Association for Research in Education, Melbourne Cricket Ground, Melbourne.
17. Imms, W. (2016). *How new are 'new generation learning environments'?* *Emerging research on space and quality teaching*. Paper presented at the 2016 Australian Association for Research in Education, Melbourne Cricket Ground, Melbourne.

# Events



## 12 Workshops with teachers and principals

In 2016/2017 the project organised a series of workshops for teachers and principals in our partner schools and education regions to find out about educators' views on and experiences of innovative learning environments.

The workshops were:

- Sydney, November 2016, Future Learning, Department of Education.
- Melbourne, November 2016, Woodleigh School,
- Auckland, November 2016, Stonefields School.
- Christchurch, November 2016, Avonside Girls' High School.
- Adelaide, December 2016, Australian Science and Mathematics School,
- Brisbane, March 2017, Anglican Church Grammar School.
- Canberra, March 2017, Charles Weston Primary School.
- Melbourne, April 2017, Methodist Ladies College.
- Brisbane, May 2017, Autism and Reading Hub, Department of Education & Training.
- Brisbane, May 2017, Anglican Church Grammar School.
- Melbourne, May 2017 Woodleigh School.
- Sydney, May 2017, Northern Beaches College.

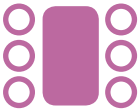
Key findings:

- Teachers defined an innovative learning environment as one with adaptable spaces and ubiquitous resources and technologies, which can evolve and change to support transitions between different types of student-centred learning. Participants identified changing teacher practices through transforming teacher mindsets and resistance as a barrier to effective use of innovative learning spaces.

- Key elements that supports teacher practices are flexibility of space to meet varying learning needs, the ability to use different teaching approaches regardless of the space, as well as the use of technology within the space
- Elements of the physical environment that would enhance student deep learning included a variety of space, moveable furniture and fit-outs, access to a range of tools and materials for hands-on activities to meet a range of teaching approaches.
- Teachers transitioning into innovative spaces are concerned with configuration of the new space, the use of furniture in that space, and how students transition into the space. Two important considerations are the mindsets and lack of professional development for teachers
- Support required to enable teachers to undertake change in their practices include human resources, tools, equipment, resources, facilities and assets. Teachers noted the importance of the cycle of improvements to ensure that its direction-setting and resourcing processes, core activities of learning, its enabling systems and infrastructure are continuously monitored and improved.



## 3 Research symposia



## 3 Think-tank meetings

In 2017 the project organised the Transitions symposia and industry think-tank meetings in Melbourne, London and Grand Rapids with the support of our partners Telstra, Ecophon and Steelcase. The aim of these events was to gain a global perspective on research currently under way on innovative learning environments internationally and to connect with educators and architects interested in and active in this field.

The symposia featured presentations by graduate and early career researchers, leading academics and peak bodies, with facilitated discussion sessions following presentations. The presenters were invited to submit full papers and these have now been published as proceedings and some will be further developed for inclusion in *Teacher Transition into Innovative Learning Environments* (upcoming book 2018).

The think tank meetings were invitation only half day discussions involving business, educators, researchers and architects. The discussion focussed on identifying the current research available and what research needed to be done. The transcripts of these meetings are being analysed and will be published in *Teacher Transition into Innovative Learning Environments*.

### Transitions symposia and think-tank findings:

The content was surprisingly similar across the continents.

- Current research is addressing issues of 'inhabiting design', 'risk and change', 'teacher practices' and 'measurement/impact'.
- There was a common sense of optimism about teachers' willingness to discuss change.
- There was a common expression of students' adaptability to new spaces, and how this had a perceived positive effect on the quality of their school experience.
- There was a common understanding that while the need for change is immediate, it will take time.

There were also notable dissimilarities. In broad terms,

- The Australian papers had a stronger focus on 'carry-over' impacts of good design,

such as spatial literacy, formative evaluation, and iterative design. They tended to argue that spaces have changed dramatically, so teaching must follow. However this was hindered by a perceived preoccupation with learning outcome metrics that dictated restrictive pedagogic practices, particularly in the senior years.

- The European papers focussed on regional strengths and weaknesses, and tended to argue that teachers need to acknowledge that change is required. A major challenge was (not surprisingly) the fragmentation of knowledge caused by differing agendas across its many countries.
- The North American papers focused strongly on students' schooling experiences, and argued (in direct comparison with the Australian event) that teaching and learning is changing, so spaces must follow. The key challenge identified was the influence of educational policy on practice, and in particular the negative impact of funding models.

The events identified some future directions for research in learning environments that would assist architects, educators and governments frame their practices and policies for development of school spaces, pedagogy, design and supporting student learning:

- **Mechanisms that support greater collaboration** and consultation between designers and teachers in development of learning spaces.
- **Linking existing academic research** and evaluation research on impact of learning environments on student outcomes, engagement, teacher practice and building performance.
- **Identifying how 21st century learning is supported** through research into blending virtual and physical learning spaces.
- **Raising awareness of the affordances of physical space** to support teaching through teacher education programs, networks and dissemination of research.
- **Building collaborative research projects** to gather evidence of how learning spaces impact on student outcomes.

The full proceedings for the events are available at:  
<http://www.ilet.com.au/publications/proceedings/>



# ILETC project reach

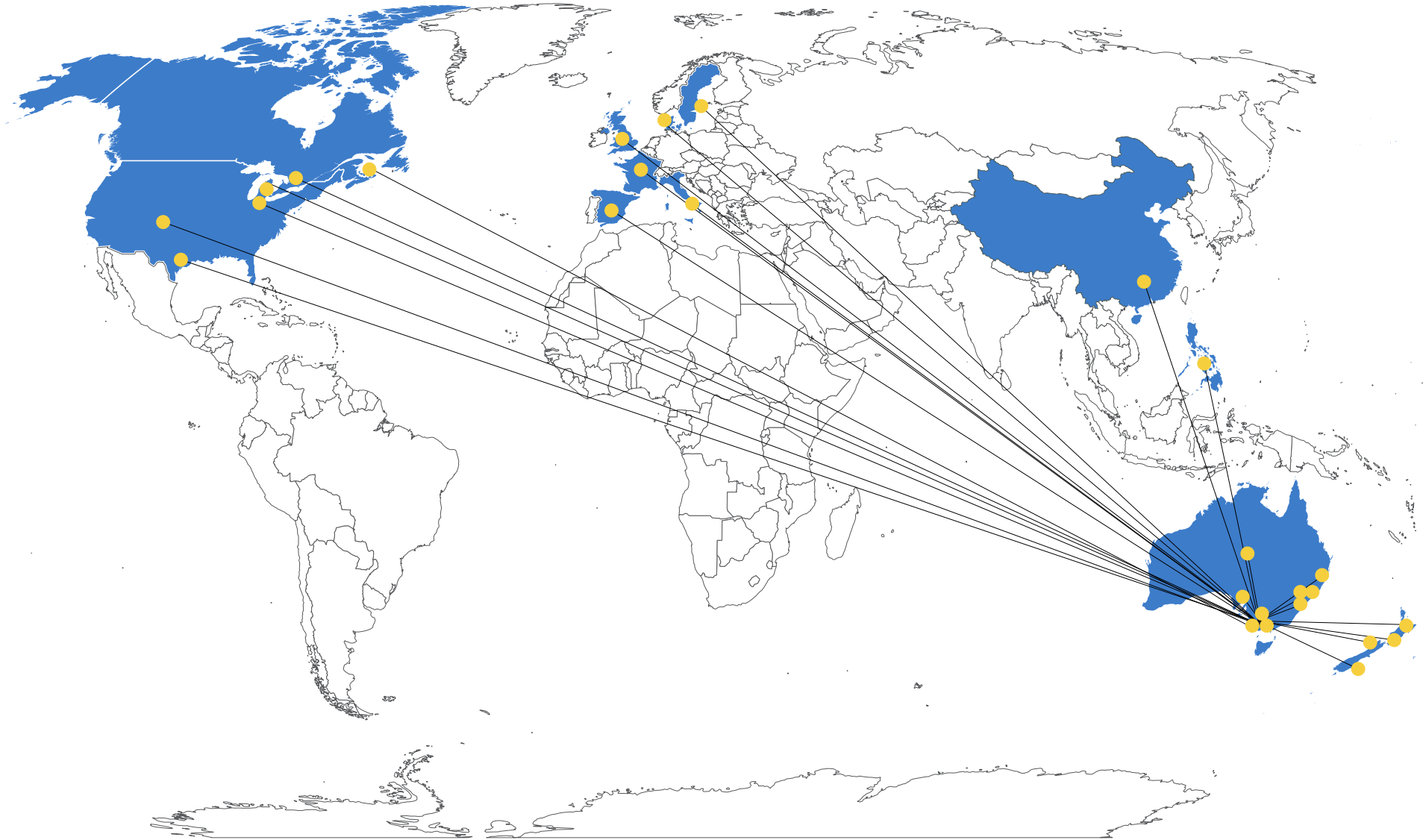


Figure 5: ILETC project reach - participant partners in project events and activities.

# Our Partners

