

TRANSITIONS18

CONTINUING THE CONVERSATION

Program - 8th & 9th October 2018
Phoenix, North America

iletc INNOVATIVE LEARNING
ENVIRONMENTS AND
TEACHER CHANGE



TRANSITIONS 2018 NORTH AMERICA

What are teachers doing (well) when transitioning from traditional classrooms to innovative learning environments? An international symposium for graduate and early career researchers.

Monday October 8th & Tuesday October 9th, 2018.
Canyon View High School, 6024 N. Perryville Road, Waddell, Arizona.

Organised by The Innovative Learning Environments and Teacher Change project.

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Australian Government
Australian Research Council

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Transitions North America 2018

Canyon View High School, Arizona

Welcome to Transitions18

Transitions18 is a series of three research symposia held in Australasia, North America and Europe organised by the Innovative Learning Environments and Teacher Change project (ILETC), which is part of the Learning Environments Applied Research Network (LEaRN) based at The University of Melbourne, Australia.

These events aim to engage researchers, architects, educators and policy makers in active discussion about the way teachers are adapting their practices in new types of learning spaces and how this impacts on student learning. The research featured in these events is undertaken not only by graduate researchers but also by policy makers, architects, teachers and researchers from across the world. The format invites questions, discussion and sharing of knowledge between the presenters and the audience. The research team from the ILETC project will use the insights and feedback from these events to inform our research.

These symposia have been held at The University of Melbourne for seven years as part of the cross disciplinary network LEaRN. The opportunity to hold these events in USA and Europe for the first time in 2017 developed out of discussions with the ILETC project partners – Ecophon in Sweden and Steelcase in USA. Both were aware of growing interest in learning spaces development in schools and universities and the need to support teachers to adapt their practices when they moved into new or refurbished spaces. They were also aware that while many companies and schools were interested in using research to inform their practices, they did not find it easy to access or apply research.

This year we are grateful for the support once again of our project partners Steelcase and Ecophon Saint Gobain and sponsorship from DLRGroup. In particular, we are grateful to Andrew Kim and Aileen Strickland (Steelcase), Colin Campbell (Ecophon Sweden) and Raechel French and Pam Loeffelman (DLR Group) for their time and expert insights. We would also like to acknowledge the generosity of Dr Dennis Runyan (Agua Fria Union High School District) and Phil Nowlin (Canyon View High School) for providing the wonderful venue and event support.

Best wishes from the ILETC team

- Associate Professor Wesley Imms, Spatial Pedagogies & ILETC Lead Chief Investigator
- Dr Marian Mahat, ILETC Senior Research Fellow and Research Manager
- Chris Bradbeer, ILETC Research Fellow
- Joann Cattlin, ILETC Project Manager

SPONSORS



Schedule Day 1 – Monday 8th October

8:30 – 9:00	Registration open and network
9:00 – 9:15	Welcome by ILETC & Steelcase Lead CI – A/Prof. Wesley Imms, The University of Melbourne, Australia Chair – Dr. Marian Mahat, The University of Melbourne, Australia Interlocutor – Chris Bradbeer, The University of Melbourne, Australia Partners & Sponsors: Steelcase, Agua Fria Union High School District, Canyon View High School
9:15 – 10:00	Keynote address – Philip Idle, EIW Architects, Australia
10:00 – 10:30	Morning tea
10:30 – 12:00	Session 1A: Research to inform the early stages of designing and building an ILE Dina Sorensen & Caroline Lobo, Committee on Architecture for Education, USA Re-Imagining Learning Environment Design through Research in Practice. (30 min) Nicholas Salmon, Collaborative Learning Network, USA, & Erin O'Reilly, University of Montana, USA Lessons from a seasoned furniture whisperer. (10 min) Dr. Marian Mahat, The University of Melbourne, Australia Co-creating learning spaces in higher education. (10 min) Q&A + discussion
12:00 – 1:00	Lunch
1:00 – 2:30	Session 2A: Research informing implementation of an ILE Andrew Kim & Aileen Strickland, Steelcase Education, USA Ecosystem of educator experience + evolution. (30 min) Dr. Anna Peterson, Queens University, Canada Inhabiting educational design: leveraging teachers' lived-experience. (10 min) Michael Stewart, Arizona State University, USA Reimagining educator preparation from the community to the classroom. (10 min) Taryn Kinney, Columbia University, USA Applying organisation change model to educational transition. (10 min) Chris Bradbeer, The University of Melbourne, Australia Enacting teacher collaboration in Innovative Learning Environments: Reifying pedagogical 'ownership'. (10 min) Q&A + discussion
2:30 – 3:00	Afternoon tea
3:00 – 4:00	Session 2B: Research informing implementation of an ILE A/Prof. Wesley Imms & Dr. Marian Mahat, The University of Melbourne, Australia Innovative Learning Environments and Teacher Change: Shifting teacher practices. (30 mins) A/Prof. Wesley Imms, The University of Melbourne, Australia Plans to pedagogy: Developing teachers' spatial competencies. (10 mins)
4:00 – 5:00	Session three: Workshop activity and discussion A/Prof. Wesley Imms, Dr. Marian Mahat & Chris Bradbeer, The University of Melbourne, Australia An opportunity for in-depth discussion and exploration of the issues raised in Day 1.
5:00 – 7:00	Reception at Wigwam Resort, 300 East Wigwam Blvd. Litchfield Park, Arizona. Coach departs Canyon View High School for Wigwam Resort at 5.15pm Coach will provide return to travel to local hotels at 7.30pm

Schedule Day 2 – Tuesday 9th October

8:30 – 9:00	Registration open and network
9:00 – 9:10	Reflections of Day 1 – A/Prof. Wesley Imms, The University of Melbourne, Australia
9:10 – 10:40	<p>Session 4A: Research informing implementation of an ILE</p> <p>A/Prof. Jill Castek, University of Arizona, USA Designing studio-based learning environments that promote equity and inclusion. (30 min)</p> <p>Dr. Mira Gambhir, Branksome Hall, Canada Empowering girls through pedagogy and space design. (30 min)</p> <p>Q&A + discussion</p>
10:40 – 11:10	<hr/> <p>Morning tea</p>
11:10 – 12:40	<p>Session 5: School tour and panel discussion</p> <p>Tour Canyon View High School to explore the variety of learning spaces and sustainable design elements then return to hear from those involved in bringing it to reality.</p> <p>Panel</p> <ul style="list-style-type: none">• Dr Dennis Runyan, Superintendent, Agua Fria Union High School District.• Phil Nowlin, Principal, Canyon View High School.• Sholanda Smith, Canyon View High School.• Pamela Loeffelman, DLR Group <p>Q&A + discussion</p>
12:40 – 1:30	<hr/> <p>Lunch</p>
1:30 – 3:00	<p>Session 6: Research informing consolidation, inhabitation and evaluation of ILEs</p> <p>Dr. Lennie Scott Webber, Insync, DLR Group, USA, & Jim French, FAIA, DLR Group, USA Student engagement index research for grades 9-12: Third pilot in a series. (30 min)</p> <p>Prof. Gary Natriello, Columbia University, USA Early lessons from a learning space designed to support ambitious learning, teaching and research. (10 min)</p> <p>Hui Soo Chae, Columbia University, USA Real time location tracking in innovative learning spaces. (10 min)</p> <p>Mario Chiasson, Université de Moncton, Canada Learning space contributing to the process of computational thinking. (10 min)</p> <p>Q&A + discussion</p>
3:00 – 3:30	<hr/> <p>Afternoon tea</p>
3:30 – 4:15	<p>Closing keynote – Philip Idle, EIW Architects, Australia</p> <p>Closing remarks and thanks– A/Prof. Wesley Imms, The University of Melbourne</p>

ILETC project team



Dr. Wesley Imms is Associate Professor of Education in the Melbourne Graduate School of Education, Head of Visual Art and Design, and Director of LEaRN@MGSE. He leads the Innovative Learning Environments and Teacher Change (ILETC) and the Plans to Pedagogy projects— which focus on teacher spatial competency skills in schools across Australia and New Zealand. He also led the recently completed Evaluating 21st century Learning Environments ARC Linkage project. He has authored more than 80 scholarly papers, government and industry research reports and books on learning environments including the forthcoming ‘Teacher Transition into Innovative Learning Environments’ due to be published by Springer in 2018.



Dr. Marian Mahat is a Senior Research Fellow at the University of Melbourne. As the lead research fellow and research manager of the Innovative Learning Environments and Teacher Change (ILETC) project (ARC Linkage Project) she oversees all research activities and the dissemination of project findings including the management of Research Fellows and graduate researchers. Marian has more than twenty years of professional and academic experience, spanning several Australian universities, the Australian Federal and local governments, as well as the private sector. Highly proficient in both quantitative and qualitative research methods, she has worked on collaborative projects, written numerous publications and presented in conferences in education. Her research focus is in student learning and outcomes in different learning and teaching contexts.



Chris Bradbeer is a Research Fellow (part time), on The University of Melbourne’s Innovative Learning Environments & Teacher Change Project, an Associate Principal at Stonefields School in Auckland, Chair-elect for Learning Environments Australasia, and currently completing a PhD focusing on the enactment of collaborative teacher practices in Innovative Learning Environments in New Zealand primary schools. When not focusing on the above he is section-hiking the Te Araroa trail through New Zealand and to date has reached Arthur’s Pass in the South Island.



Joann Cattlin is the Project Manager for the ILETC project. Her role is to coordinate project activities, information management, engagement with partners and stakeholders, social media, staffing, event management and finances. Joann has worked in universities for the last 15 years as a researcher, project manager and librarian. Joann has co-authored a number of articles, book chapter, project reports, conference papers and websites. She is an experienced reference librarian with a Masters of Information Management (RMIT) and undertakes practice based research in research engagement and knowledge mobilisation.

Keynote address

Do you see what I see?

PHILIP IDLE

EIW ARCHITECTS AND ASSOCIATION FOR LEARNING ENVIRONMENTS, AUSTRALIA



As we move through this period of uncertainty - of unpredictable actions, of confusion in decision making, of challenges to belief structures, of normal being redefined, of knowledge being challenged, of the exponential development of ideas, of media tailored to please, not inform, and of change driven by trends, not always vision - we seek to navigate through the noise and bring clarity to learning and encouragement to inquiry. Through history, learning experiences have been interwoven into our built environment and shaped the ways we perceive and interact with space.

Architects seek to enhance the user experience through engaging collaborative processes and investigating the behavioural impact of the spaces we design. In building this dialogue, we can identify how users perceive space, movement and choices. We can develop mutual understanding, empower relationships and build a dialogue in support of the learning needs. In the provision of authentic learning settings that move beyond superficial trends, this moment in history demands meaningful engagement leading to quality design that empowers teachers and engages learners.

Philip is an architect with over 30 years experience in the briefing, planning, design and delivery of education projects in Australia, and more recently in Tanzania and China. His work encompasses both the private and government sectors in Australia and has extended to service work in Tanzania and the International School sector in China. With expertise in the design and planning of educational facilities, Philip leads the consultation phases of projects that has led to him developing great empathy for learners and teachers resulting in designing contemporary and innovative learning environments.

An original Australasian member of the Association for Learning Environments (formerly CEFPI), Philip will take up the position of Chair of the International Board in November, 2018. Philip has encouraged the leadership to develop a more comprehensive way of viewing cultural and geographic differences as potential opportunities for sharing knowledge and developing quality learning environments for learners and teachers alike.

Enacting teacher collaboration in innovative learning environments: Reifying pedagogical ‘ownership’

CHRIS BRADBEER

THE UNIVERSITY OF MELBOURNE, AUSTRALIA

The New Zealand Ministry of Education’s policy move towards rolling out ‘up-scaled’ communities of students in Innovative Learning Environments (ILEs) across primary schools amplifies the requirement for teacher collaboration. For teachers, the principles underpinning the pedagogical, spatial and relational enactment of collaboration set to potentially challenge long held notions of ‘ownership’ of students and space. To determine how this is enacted in practice the paper draws on observational data, and interviews with teachers, students and school leaders. It describes a range of pedagogical and spatial approaches encountered during a case study conducted across six ILE sites. Implications for teacher teams are discussed though the development of a continuum placing enactment practices on a trajectory from fixed to fluid. It contributes towards the pedagogy/ space discourse through a process of reification – taking the conceptual into the concrete. Data utilised in this research was obtained adhering to the ethical protocol current at the time of data collection. The research forms part of a PhD thesis and has been approved by the Human Research Ethics Committee (1442559.1)



Chris Bradbeer is a Research Fellow (part time), on The University of Melbourne’s Innovative Learning Environments & Teacher Change Project 2016–2019, an Associate Principal at Stonefields School in Auckland, Chair-elect for Learning Environments Australasia, and currently completing a PhD focusing on the enactment of collaborative teacher practices in Innovative Learning Environments in New Zealand primary schools. When not focusing on the above he is section-hiking the Te Araroa trail through New Zealand and to date has reached Arthur’s Pass in the South Island.

Designing studio-based learning environments that promote equity and inclusion

A/PROF. JILL CASTEK & A/PROF. BLAINE SMITH

UNIVERSITY OF ARIZONA, USA

In today’s educational climate, organizations are creating learning spaces for hands-on activities, often called makerspaces, co-working spaces, innovation labs, or fablabs. When designed well, these physical spaces create communities that contextualize learning around participants’ goals. Despite their potential, makerspaces still struggle to create a sense of inclusivity for women and other diverse language and cultural groups. Sustainable programs for diversifying access to physical learning spaces, require researchers to identify and address existing barriers to participation. This NSF funded research brings together a community of collaborators from multiple stakeholder groups including academia, public libraries, museums, community based organizations, non-profits, media makers and educators within and beyond K-12 schools. The presenters aim to identify issues, discuss possible solutions, and facilitate discussions about technology-focused learning that invite experimentation with distributed learning technologies among organizations, researchers, and practitioners who serve diverse learners.



Jill Castek is Associate Professor of New Literacies and Bi/Multilingual Immigrant Learners in the Department of Teaching, Learning and Sociocultural Studies at the University of Arizona. Jill’s research addresses digital literacies and learning across the lifespan, in classrooms and the community. Prior to joining the University of Arizona, she was the Director of the Literacy, Language and Technology Research group at Portland State University in Oregon and a Neag fellow in the New Literacies Research Lab at the University of Connecticut. She completed a post-doc at the University of California, Berkeley working with the Learning Design Group at the Lawrence Hall of Science. Jill examines and implements supports for diverse learners in partnerships with a range of educational and community-based organizations.

Learning space contributing to the process of computational thinking

MARIO CHIASSE

UNIVERSITÉ DE MONCTON, CANADA

The massive and evolving changes in the world require the educational system to reflect seriously on developing competencies needed in this innovative and modern society, such as computational thinking. This research, conducted in a school in New Brunswick, Canada, examines the link between the characteristics of the learning space and the process of computational thinking in a school environment. It uses a qualitative case study methodology involving 44 mid-level students. In addition, it draws on the anchored theory of analysis method to answer the following research question: How does a learning space contribute to the process of computational thinking? Based on semi-structured interviews, field observations as well as digital traces to address the phenomenon under study, this study aims to explicitly explain the process of computational thinking and to identify the characteristics of the learning space contributing to the process.



Mario is enrolled in a PhD program at Université de Moncton, Moncton, New Brunswick, Canada. His research focuses on learning spaces that contribute to the learning process of skills development such as 21st century skills. Over 20 years, Mario has been a teacher, a Technology Mentor, a District Information & Communication Technology (ICT) and Vocational Trades Supervisor, and a Supervisor of Data and Accountability for Anglophone East School District. Mario has been part of many provincial projects including 1 to 1 laptop/iPad projects, learning commons, provincial and international collaborative projects. He is a Microsoft Innovative Teacher, a Cisco IT Essential Teacher, an Apple Distinguished Educator.

Empowering girls through pedagogy and space design

DR. MIRA GAMBHIR

CHANDRIA RESEARCH CENTER, BRANKSOME HALL, CANADA

The collaborative, creative and engaged learner is the hallmark of an innovative learning environment. This presentation shares the experiences of 14 teachers and more than 150 students in four renovated classrooms in a Canadian K-12 school. Through surveys, observations, and interviews, we identify the teaching and learning challenges that arise from adapting to new spaces in an all-girls context. The findings reinforce that inclusive pedagogy; flexibility and professional support are cornerstones of effective spaces. In addition to contributing to scholarship in the field, we offer suggestions on how equity and the teacher-researcher can impact space design.



Dr. Mira Gambhir is the Director of the Chandria Research Centre at Branksome Hall. She is establishing and leading the first applied research centre in an all-girls independent school in Canada. She began her career as a classroom teacher working in several countries and across the Kindergarten to Grade 12 continuum. At the University of Toronto, she was faculty in the Master of Teaching program and taught many courses including Anti-discriminatory Education. As a researcher and consultant, she has worked with marginalized groups and future teachers to identify their needs and create supports for diversity in education. Most recently she has been exploring with the school community their experiences in four newly renovated classrooms. Dr. Gambhir is a published author in the fields of international education, diversity studies and teacher education.

Plans to pedagogy: Developing teachers' spatial competencies

A/PROF. WESLEY IMMS

THE UNIVERSITY OF MELBOURNE, AUSTRALIA.

Plans to Pedagogy (P2P) is a research collaboration between The University of Melbourne, Learning Environments Applied Research Network and schools to use this expertise to develop staff and student 'good ILE use' capacity. The P2P project is partnering academics with dynamic teacher/administration teams in individual schools to design and implement evidence based programs and tools, customised to suit to each school's particular needs. It provides staff with the latest thinking on good spatial design and use, and supports use of this knowledge in schools. The aim is to facilitate the development of spatial competencies in teachers and students alike; skills that help people get the most out of ILEs. This presentation will feature early findings from this ongoing project.



Dr. Wesley Imms is Associate Professor of Education in the Melbourne Graduate School of Education, Head of Visual Art and Design, and Director of LEaRN@MGSE. He leads the Innovative Learning Environments and Teacher Change (ILETC) and the Plans to Pedagogy projects— which focus on teacher spatial competency skills in schools across Australia and New Zealand. He also led the recently completed Evaluating 21st century Learning Environments ARC Linkage project. He has authored more than 80 scholarly papers, government and industry research reports and books on learning environments including the forthcoming 'Teacher Transition into Innovative Learning Environments due to be published by Springer in 2018.

Innovative Learning Environments and Teacher Change: Shifting teacher practices

A/PROF. WESLEY IMMS & DR. MARIAN MAHAT

THE UNIVERSITY OF MELBOURNE, AUSTRALIA.

While physical spaces in schools do contribute to a quality education there is limited evidence that links the types of spaces, how teachers use them and student outcomes. A major Australian research study is underway at The University of Melbourne focussing on supporting teachers to develop skills and knowledge to maximise the potential of learning spaces. The project leader, A/Professor Wesley Imms will present findings from the project including survey data on the types of learning spaces in Australian and New Zealand schools, how spaces can positively impact learning and plans to develop resources to support teachers and school designers.



Dr. Wesley Imms is Associate Professor of Education in the Melbourne Graduate School of Education, Head of Visual Art and Design, and Director of LEaRN@MGSE. He is the lead Chief Investigator of the Innovative Learning Environments and Teacher Change (ILETC). Dr. Marian Mahat is a Senior Research Fellow at the University of Melbourne. As the Lead Research Fellow and Research Manager of the Innovative Learning Environments and Teacher Change (ILETC) project, she oversees all research activities and the dissemination of project findings.

Ecosystem of educator experience + evolution

ANDREW KIM & AILEEN STRICKLAND

STEELCASE EDUCATION, USA

The aim of this research was to understand needs of educators, and the process of change educators and schools go through when moving from traditional to innovative ways of teaching and learning, in Higher Education and K-12. Interviews, surveys and DScout missions were completed with over 200 teachers, administration and support staff. The findings of the study speak to the similarities and differences between Higher Education and K-12 educator motivations, rewards, and challenges, and layout a process for successful change, highlighting the accelerators, barriers, and principles within that process. The implications extend to teachers, administration, at individual and school levels, and those involved with helping schools adopt innovative practices or environments.



Andrew Kim earned a bachelor of arts with honors from Dartmouth College and a master of design with an emphasis in innovation and product planning from the Institute of Design, Illinois Institute of Technology.

Aileen Strickland McGee is a design researcher, passionate about the ways in which the built environment shapes our experiences. As a member of WorkSpace Futures, Aileen is a part of a team that dives into deeply understanding the ways that people live, work, and learn. By asking big questions and exploring complex answers, the team helps Steelcase envision possibilities and frame real-world choices for the present and future of living, working, and learning

Applying organizational change model to educational transition

TARYN KINNEY, RAECHEL FRENCH & DR. MARILYN DENISON

TEACHERS COLLEGE, COLUMBIA UNIVERSITY, UNITED STATES

Research shows that change initiatives fail fifty to seventy percent of the time (Passmore 2015). If this is the case, how will schools successfully implement new pedagogies in new, innovative environments, to better prepare students for the rapidly changing, global workplace of the future? To explore this challenge, we are combining doctorate-level research in teacher transitions and culture creation with previous Masters-level action change research. We are investigating the question, “If an organization change model is utilized and policies and practices intentionally developed, will change be implemented more effectively when shifting to an innovative learning environment?” Our interdisciplinary research team is piloting a holistic approach that bridges organization, learning, and design with Canyon View High School, a newly constructed comprehensive high school with an innovative learning environment design. We will share lessons learned, current measurements, and future goals of this school that will open in August of 2018.



After practicing architecture for fifteen years, Taryn Kinney recently completed a Masters in Organizational Psychology. She pursued this degree to better understand and support change for her educational clients.

Raechel French is pursuing her doctorate with the University of Melbourne. She is specifically exploring the best way for teachers to transition learning to be more innovative and to inhabit innovative learning environments effectively.

Marilyn Denison, EdD, is a career educator who has focused her work and research on creating successful cultures that support constant improvement. She is actively contributing to the development of artificial intelligence and architecture to transform learning.

Co-creating learning spaces in higher education

DR. MARIAN MAHAT¹ & MOLLIE DOLINGER²

1: THE UNIVERSITY OF MELBOURNE, AUSTRALIA; 2: LA TROBE UNIVERSITY, AUSTRALIA

Learning does not just take place in the mind of the learner, nor the community in which he or she learns. It also takes place in an environment, whether it is a classroom, a lecture theatre, a maker space, or library. The evolution of design practices of learning spaces such as user-centred approaches and co-designing is changing the landscape of design practice. Drawing on insights globally, this presentation makes the argument that the co-creation of learning spaces should include the largest user group—the students. This presentation advances a multi-dimensional framework in which staff and students can co-create learning spaces in higher education. The framework can guide future design interventions and practices, and in doing so offers considerable benefits not only for universities but also for students' learning, engagement and employability.



Mollie Dollinger is a PhD candidate at The University of Melbourne's Centre for the Study of Higher Education and Associate Lecturer of Student Success at La Trobe University in Melbourne, Australia. Her research areas pertain to improving the student experience and understanding value in the higher education sector. She completed her bachelors degree at University of Arizona and received her Masters degree from Indiana University.

Early lessons from a learning space designed to support ambitious learning, teaching, and research

PROF. GARY NATRIELLO & HUI SOO CHAE

TEACHERS COLLEGE, COLUMBIA UNIVERSITY, USA

In this study we examine the use and impact of a new innovative learning environment, the Learning Theater at Teachers College, Columbia University, during the first two years of operation. Data for the study are drawn from: a) initial patron applications to use the space, b) the written plans developed by patrons and staff, c) observations and video recordings of events, d) post-event interviews with users of the space, and e) post-event reports by staff. The analysis focused on locating events on a utilization continuum ranging from routine (activities that could be conducted in a traditional classroom) to ambitious (activities that made use of one or more unique dimensions of the immersive technology-rich environment). We found that users were more likely to make ambitious use of the new space if they had participated in an earlier event held there and if they had spent significant time in advance working with staff to plan their learning activities. We conclude that providing exemplar use cases and high quality staff support are key ingredients in encouraging ambitious use of this innovative learning environment.



Gary Natriello is the Ruth L. Gottesman Professor of Educational Research and Professor of Sociology and Education in the Department of Human Development at Teachers College. He teaches graduate courses in the social organization of schools and classrooms, the social dimensions of assessment and analytic processes, the sociology of online learning, and research methods. Professor Natriello is the Director of the Teachers College EdLab, a design and development unit devoted to creating new educational possibilities for the information age. Professor Natriello is the executive editor of the Teachers College Record and the Director of the Gottesman Libraries at Teachers College. Professor Natriello holds an A.B. (English) from Princeton University, an A.M. (Sociology) from Stanford University, and a Ph.D. (Sociology of Education) from Stanford University.

Inhabiting educational design: Leveraging teachers' lived-experience

DR. ANNA PETERSON
QUEEN'S UNIVERSITY, CANADA

There is a scarcity of foundational knowledge about how teachers themselves perceive, engage, and adapt to new and innovative learning environments (ILEs). Teachers at the intersection of innovations in design and practice need strategies and tools to leverage their lived-experience of inhabiting educational design. This paper describes patterns of interaction to enable teacher transitions to ILEs identified through the use of a novel conceptual framework and visual-research tool. Ten teachers at two schools in Helsinki, Finland took 276 photographs and self-selected 100 for discussion at individual photo-elicitation interviews. Analysis identified the need for authentic teacher engagement throughout the design phase, the importance of teacher agency, and the efficacy of specific design choices to support teachers' pedagogy, professionalism and life at school. When a balance exists between teachers' experiences and the design of educational facilities, teachers are more likely to engage in meaningful ways with innovative school spaces and pedagogical potentialities.



Anna Peterson is an early career researcher and elementary school teacher interested in developing a common language through which educators and architects can refine the relationship between innovations in teaching, learning, and design. With the support of the Social Sciences and Humanities Research Council (SSHRC) Joseph-Armand Bombardier Canada Graduate Scholarship, Anna completed her PhD in Education at Queen's University, Canada. Her international, interdisciplinary research contributes an educational and humanistic perspective to the study of school architecture and is featured in the Fall 2018 American Institute of Architects – Committee on Architecture for Education – Research Task Force publication Learning by Design: DIALOGUES.

Lessons from a seasoned furniture whisperer

NICHOLAS SALMON¹ & ERIN O'REILLY²

1: COLLABORATIVE LEARNING NETWORK, UNITED STATES, 2: UNIVERSITY OF MONTANA, UNITED STATES

Even the most future-focused schools typically purchase too much furniture, furniture that is too heavy and serves a single-purpose. This redundancy limits flexibility; reduces movement, reinforces the prevalence of teacher-led instruction and impacts the ability for teachers to do (well) when transitioning from traditional classrooms to innovative learning environments. Before initiating any planning effort, we spend time in existing learning environments observing how time, space, furniture and technology are currently deployed. These observations now number in the thousands across 6 continents, 9 countries and 38 US states. From these observations and workshops, we have developed the expertise of "furniture whispering"– resulting in dramatically transformed learning environments with little effort. Five key principles include reduce the educator footprint, reduce the casework, shift the technology & share it, count the seats and strike the set. Schools embracing these principles are spending less on furnishings and discovering greater flexibility in their learning environments.



Nick Salmon of the Collaborative Learning Network is a ninth-generation educator focused on educational facility planning, professional development of teachers and design support for future-flexible learning environments. Recent experiences include: Montana Conference of Educational Leadership, Association For Learning Environments, SXSWEDU, Ohio School Facilities Commission, University of Montana, Montana State University, Harvard University Learning Environments For Tomorrow Institute.

Erin O'Reilly is a doctoral candidate and Adjust Professor in Teaching & Learning at the University of Montana with a focus on professional development for technology integration. Erin is innovative, flexible, and organized educational professional with both K-12 and Higher Education teaching experience.

Student Engagement Index® research for grades 9–12: Third pilot in a series

DR. LENNIE SCOTT WEBBER¹ & JIM FRENCH²

1: INSYNC, UNITED STATES, 2: DLR GROUP

The purpose was: (1) to establish statistically reliable and valid online survey instruments (students and teachers) to be used post building occupancy for grades nine to twelve, and (2) answer this research question, “Can we demonstrate that the design of the built environment for grades 9–12 impacts student academic engagement levels?” This third trial had six convenience schools from the USA; students (n=3004), teachers (n=245). Students’ academic engagement performance increased in reaction to the design of these spaces (i.e., overall and classrooms). Findings were consistent across user groups and on multiple levels; implications for education decision-makers and design community.



“Dr. Lennie” is a leading thinker on the evolution of what we know about learning, the learner and the learning place. She has pioneered research strategies addressing how the built environment impacts engagement factors and learner success, and has designed future-focused, evidence-based design applications for 20+ years. Currently, she is the Owner & Principal of INSYNC: Education Research + Design. Jim leads DLR Group’s Global K–12 Studio and is one of the most respected K–12 designers in the United States. Jim is a member of the American Architectural Foundation’s Design for Learning team and speaks regularly to education audiences at events across the country.

Real-time location tracking in innovative learning spaces

HUI SOO CHAE, CHING-FU LAN, GEORGE NANTWI & PROF. GARY NATRIELLO

EDLAB, TEACHERS COLLEGE, COLUMBIA UNIVERSITY, UNITED STATES

Informal learning spaces are increasingly prominent in education systems throughout the world. Simultaneously, technological advances such as real-time locating systems (RTLS) have created exciting learning opportunities and are predicted to be more widely adopted in the next few years. In this pilot study, we used a real-time locating system in an innovative technology-rich learning space that features collaboration, exploration and customized configuration, and tracked participants’ movements around an educational technology exhibition. RTLS tracking data are especially useful for understanding participants’ engagement with learning objects in a non-traditional learning space. Survey responses indicate that participants’ interests in exhibition objects are reflected in the length of time they stayed around the objects. Such data can help facilitators and educators to effectively support self-directed learning activities in this innovative learning space. RTLS also provides potential (with further software design and development) for real-time feedback and personalized learning experiences in open learning environments.



Hui Soo Chae is Senior Director of Research, Development, and Strategy for the EdLab and the Gottesman Libraries at Teachers College Columbia University.

Ching-Fu Lan is a researcher at EdLab, Columbia University. His research interests include creative technologies and learning experiences in innovative learning spaces.

George Nantwi is a researcher and product manager at EdLab, Columbia University. His research interests include youth and emerging technologies, online identities, and self-directed learning.

Gary Natriello is the Ruth L. Gottesman Professor in Educational Research and Professor of Sociology and Education in the Department of Human Development at Teachers College, Columbia University.

Re-imagining learning environment design through research in practice

DINA SORENSEN & CAROLINE LOBO

COMMITTEE ON ARCHITECTURE FOR EDUCATION, UNITED STATES

As architects, designers, and planners of educational environments we recognize the implications a vast majority of research on teaching, learning, and the physical environment has on our end users. In 2015, the AIA-CAE (American Institute of Architects – Committee on Architecture for Education) established the Research Task Force as an established international ThinkTank aiming to align and advance the American Institute of Architect's strategic research goals to link professional practice and academic communities to build on the mutually beneficial interests of both. We need now more than ever to cultivate dialogue across disciplines for research in practice to fully benefit design as a profession; clients and the public as end users. With the key objective to help form an architectural research agenda and action plan, we'll share and highlight innovative researchers, initiatives, and provocations for research literacy in practice; conducting, consuming, translating, and acting upon what matters most to enrich learning outcomes.



Dina Sorensen's research is focused on people's use space, how they relate to each other and the built/natural environment to engage their learning potential and voice. Dina's recent primary research focused the impact of school architecture on health and physical activity, as well as socio-cultural norms among students and staff.

Caroline Lobo brings a research, design, and sustainability focus to the design of learning and healing environments. After earning degrees in architecture and technology in Mumbai, India; Caroline pursued a PhD in Environmental Design from Arizona State University.

Reimagining educator preparation from the community to the classroom

MICHAEL STEWART, BEN SCRAGG & ROBERT MORSE

ARIZONA STATE UNIVERSITY, MARY LOU FULTON TEACHERS COLLEGE, UNITED STATES

This presentation highlights three teams from Arizona State University, Mary Lou Fulton Teachers College, Teacher Preparation Division, Educator Workforce Initiatives Team and Community Design Team, progressive and innovative work with local school districts to re-invigorate the teaching profession utilizing new differentiated roles new designs in teacher preparation. Moving from the one teacher one classroom model to a team of educators with distributed expertise in open and collaborative spaces will not only impacts student outcomes it also to impacts educator job satisfaction and educator retention. Team teaching allows educators more significant opportunity to evaluate the impact on student learning, collaborate with peers, create opportunities to increase dialogue to check for understanding and build relationships built on trust in a safe environment so that all students can improve. Additional tenants include working with community organizations, school districts, parents, students and local stakeholders to create cultures not just in the school but the community.



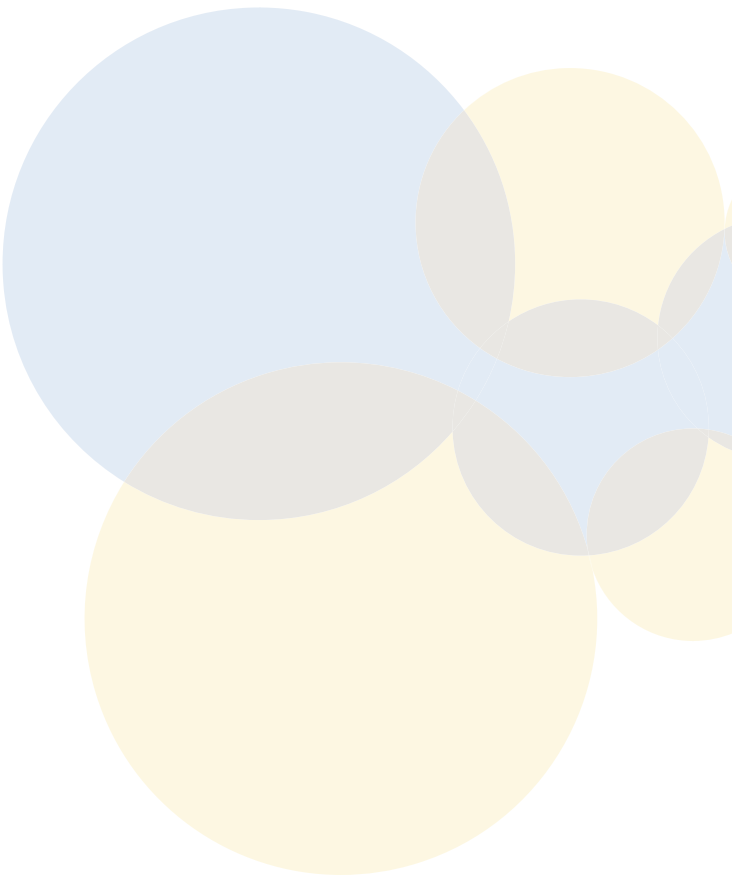
All three authors work at Arizona State University's Mary Lou Fulton Teachers College, Robert Morse, Co-Director for the Office of Clinical Experiences (B.S. Degree in Global Business/Marketing, Master of Education Degree in Curriculum and Instruction, and a Master of Education Degree in Educational Leadership from ASU.).

Michael Stewart, Director of Educator Workforce Initiatives. (BS in Sociology from the University of Notre Dame, MS in Counseling and Human Services, Indiana University).



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