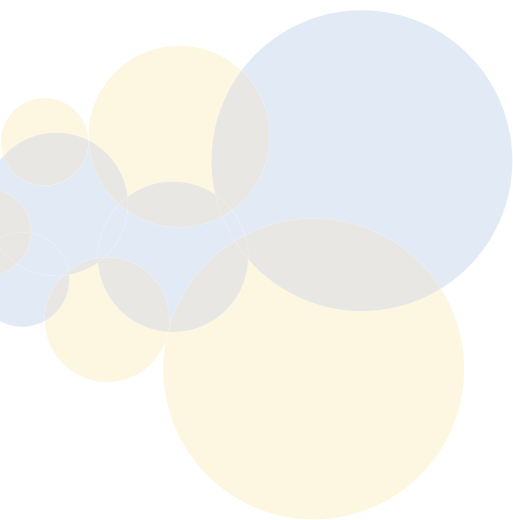


TRANSITIONS18

CONTINUING THE CONVERSATION

Program - 15th & 16th October 2018
Copenhagen, Europe

 **iilet** INNOVATIVE LEARNING
ENVIRONMENTS AND
TEACHER CHANGE



TRANSITIONS 2018 EUROPE

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

Monday 15th & Tuesday 16th October, 2018.
University College Carlsberg, Copenhagen.

Organised by The Innovative Learning Environments and Teacher Change project.

This research is supported under Australian Research Council's Linkage Projects funding scheme (project LP150100022). The views expressed herein are those of the authors and are not necessarily those of the Australian Research Council.



Australian Government

Australian Research Council

Abstracts were blind peer-reviewed for Transitions 2018.

Design and layout: Lachlan Stewart.
Editing: W.Imms, M.Mahat.

Acknowledgements

We would like to thank Joann Cattlin, Marian Mahat, Roz Mountain, Chris Bradbeer, Terry Byers, and Lachlan Stewart for their contributions to Transitions.

Cover images: (top to bottom): Sundskolen, Teddy Strandqvist photography; Hiukkavaara School, Juha Sarkkinen photography; Nordagerskolen, Teddy Strandqvist photography; Nordagerskolen, Teddy Strandqvist photography.

Transitions Europe 2018

University College Carlsberg, Copenhagen.

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 15th October

8:30 – 9:00	Registration and networking
9:00 – 9:15	Welcome by ILETC 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 Partner – Colin Campell, Ecophon Saint Gobain, Sweden
9:15 – 10:00	Keynote address – Dr. Julia Atkin, Learning by design, 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, DLR Group and American Institute of Architects, USA Healthy, active design guidelines for school architecture: A collaborative research model for architecture, public health & education. (30 Min) Bodil Bojer, The Royal Danish Academy of Fine Arts Schools of Architecture, Design and Conservation, Denmark Can participatory design support the transition into innovative learning environments? (10 min) Mariagrazia Marcarini, University of Bergamo, Italy, & Chiara Filios, NORMALEARCHITETTURA, Italy The students redesign their school (with teachers) heart, mind, hand. (10 min) Sara Tomasoni & Cecilia Raimondi, Polytechnic of Milan, Italy A creative collaboration to design innovative learning spaces. (10 min) Q&A + discussion.
12:00 – 13:00	Lunch
13:00 – 14:40	Session 1B: Research to inform the early stages of designing and building an ILE. Em. Prof. Bridget Shield, London South Bank University, United Kingdom The need for an appropriate acoustic environment for teaching and learning. (40 min) Dr. Jackie Lightfoot, University of Brighton & Studio 93 Limited, United Kingdom Understanding school furniture issues through visual research in participatory design. (10 min) Evert Binard, Catholic University of Leuven, Belgium Linking pedagogy and space with ALINA. (10 min) Prof. Marco Braga, Federal Center for Technology and Education, Brazil Setting up ILEs from the mapping of flows of knowledge. (10 min) Q&A + discussion.
14:40 – 15:00	Afternoon tea
15:00 – 15:45	Session 2A: Innovative Learning Environments and Teacher Change project A/Prof. Wesley Imms & Dr. Marian Mahat, The University of Melbourne, Australia Innovative Learning Environments and Teacher Change: Shifting teacher practices. (30 mins) Q&A + discussion.
15:45 – 17:00	Session 2B: 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. Q&A and discussion.
17:00 – 18:30	Drinks in the foyer

Schedule Day 2 – Tuesday 16th October

8:30 – 9:00	Registration and networking
9:00	Chair – Dr. Marian Mahat, The University of Melbourne, Australia
9:00 – 9:10	Reflections of Day 1 – Knud Nordentoft, cphfacilitation, Denmark
9:10 – 10:40	<p>Session 3A: Research informing implementation of an ILE</p> <p>Prof. Neuza Pedro, University of Lisbon, Portugal Future Classroom Labs in Portugal: a descriptive study on the learning spaces and pedagogical projects behind Portuguese Innovative Learning Environments. (30 min)</p> <p>Mark Dudek, Mark Dudek & Associates, United Kingdom Learning to live with innovation in the primary school environment. (10 min)</p> <p>Mie Guldbaek Brons, LOOP.bz, Denmark Professional collaboration in teaching teams – sharing students, space and time. (10 min)</p> <p>Niamh Barry, University of Limerick, Ireland Negotiating Learning Spaces in Irish Post Primary Schools. (10 min)</p> <p>Q&A + discussion.</p>
10:40 – 11:10	<u>Morning tea</u>
11:10 – 12:40	<p>Session 3B: Research informing implementation of an ILE</p> <p>Assunta Sassone & Cristiano Scevola, Commune of Milan, Italy Spazi Colore: A project for didactic innovation. (30 min)</p> <p>Dr. Aine Moran, Le Cheile Secondary School, Ireland Campfire, Watering Hole, Cave, Life – David Thornburg interpreted in Ireland. (10 min)</p> <p>Raffaella Carro & Elena Mosa, National Institute of Documentation, Innovation and Educational Research (INDIRE), Italy Beyond the classroom: Learning spaces for a new generation of schools in Italy. (10 min)</p> <p>Terry White, Edunovaspace & Chair A4LE, United Kingdom Pedagogy and space. (10 min)</p> <p>Transitions at Plymouth School of Creative Arts</p> <p>Q&A + discussion.</p>
12:40 – 13:30	<u>Lunch</u>
13:30 – 15:00	<p>Session 4A: Consolidation – the long-term inhabitation and evaluation of the impact of ILEs</p> <p>Prof. Anneli Frelin & A/Prof. Jan Grannäs, University of Gävle, Sweden Research on educational environments – New perspectives and empirical examples. (20 min)</p> <p>Raffaella Carro, Silvia Panzavolta, National Institute of Documentation, Innovation and Educational Research (INDIRE), Italy Wellbeing and environments: An exploratory study in primary schools in Italy. (10 min)</p> <p>Viveka Lyberg-Åhlander, Lund University, Sweden Better Communication and Learning in the Classroom – Continuation. (10 min)</p>

Continued next page



A/Prof. Patrizia Sandri & Mariagrazia Marcarini, University of Bologna, Italy

The teachers' and students' perceptions about inclusion through innovative learning environments. (10 min)

Patricia Baeta, University of Lisbon, Portugal

Innovative Educational Environments: Are the strategies developed by teachers working? (10 min)

Q&A + discussion.

15:00 - 15:20

Afternoon tea

15:20 - 16:40

Session 4B: Research informing consolidation, inhabitation and evaluation of ILEs.

Giuseppina Cannella, Samuele Borri & Stefania Chipa, National Institute of Documentation, Innovation and Educational Research (INDIRE), Italy

A post occupancy evaluation attempt: The Italian way. (30 min)

Julie Velissaratou, Consultant to the OECD, &

Alastair Blyth, University of Westminster, Consultant to the OECD

OECD School User Survey: Improving learning spaces together. (20 min)

Q&A + discussion.

16:40 - 17:15

Closing Keynote - Dr Julia Atkin

Closing remarks and thanks- A/Prof. Wesley Imms

ILETC 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

Challenging transitions: Reflections from 30 plus years of learning deeply with educators and architects

DR. JULIA ATKIN

Learning by Design, Australia



Dr. Julia Atkin is an independent education and learning consultant who works across education settings in Australia and internationally. She has a passion for learning and understanding how we learn. Julia's initial research involved developing an understanding of the thinking processes involved in deep learning and in helping learners learn how to learn. For over 30 years Julia has worked with teachers, school leaders, designers and architects across early childhood to tertiary settings to transform all facets of education from the industrial era to the knowledge era and the learning demands of 21C.

She has been recognised as an Apple Distinguished Educator Award; a fellow of the Australian College of Educators, the Sir Harold Wyndham Medal, one of The Bulletin's Australia's Smart 100 and awards for the design of educational facilities in collaboration with Mary Featherston, Hayball and Gray Puksand.

Transitions Copenhagen presenters (listed alphabetically)

Innovative educational environments: Are the strategies developed by teachers working?

PATRÍCIA BAETA & A/PROF. NEUZA PEDRO

University of Lisbon, Portugal

This paper assumes as main focus the analysis the educational activities currently developed in the Innovative Educational Environments (IEE's), with the aim of verifying if the strategies developed in these spaces have some impact on student's learning outcomes. Data were collected through: (i) video recording of the classes dynamized in the IEE's of three public schools; and ii) the student's learning outcomes. The instrument selected to analyze the activities developed in the IEE's was the Linking Pedagogy, Technology and Space (LPTS) observational metric (Byers, 2017). The results obtained showed the influence of the space in the adoption of diversified pedagogical dynamics. In its turn, the analysis to the student's learning outcomes revealed that the strategies developed in the IEE's enhance the learning process. It is hoped to contribute to highlighting the potentialities that such spaces may represent in the change of the pedagogical strategies adopted in today's Portuguese schools.



Patrícia Baeta is a doctoral student in Education- Technology Enhanced Learning and Societal Challenges, at the Institute of Education of the University of Lisbon, Master in Education and Digital Technologies. Member of the research project 'Technology enhanced learning at Future Teacher Education Project' (teL@FTE-Lab), at the Institute of Education of the University of Lisbon.

Neuza Pedro is a Professor in Education and Teacher training at the Institute of Education-University of Lisbon. PhD in ICT in Education. Coordinator of the Masters Degree Program in Digital Technologies and Education of the Institute of Education. Coordinator of E-learning Lab of University of Lisbon.

Negotiating learning spaces in Irish post primary schools

NIAMH BARRY

University of Limerick, Ireland

This research is investigating how learning spaces may be negotiated, designed and inhabited to support and influence active learning and teaching approaches in the Irish second level education system. The research is being carried out in tandem with a curricular 'Junior Cycle Profile of Achievement' (JCPA) innovation, which is replacing the current Junior Certificate in a move towards collaboration, project-based assessment and continuous assessment in second level education (12 – 15 years) in Ireland. The research investigates the negotiation of the physical attributes of a learning space in Irish second level schools will support the implementation of the curricular change. Ireland has for many years used curriculum reform as an accelerant for the adoption of learner-centred pedagogies in teaching and learning (NCCA, 2011). This work consists of a small-scale, qualitative, longitudinal case study investigations across three post-primary schools.



Niamh Barry is a post-primary school teacher seconded as an Assessment Advisor with Junior Cycle for Teachers Department of Education and Skills Support Service. Niamh graduated with a Bachelor of Science in Biology and Physical Education from Dublin City University in 2010 and a Master in Education degree from University College Dublin in 2014. Niamh's Doctoral research at the University of Limerick (2016-2021) is supported by the John Coolahan Research Support Framework awarded by the Teacher Council of Ireland Research Support Framework. The framework is part of the Teaching Council of Ireland Research Series (Collaboration and Research for Ongoing Innovation).

Linking pedagogy and space with ALINA

EVERT BINNARD¹ & IRIS PEETERS²

1: Science, Engineering and Technology Group of KU Leuven, 2: Leuven Engineering and Science Education Center, Belgium

Research in higher education often explores the transition towards active learning from either a pedagogical or learning space perspective. The Flanders-wide project ALINA chose a holistic approach, consulting all stakeholders involved in the process of designing and using learning spaces to bridge the gap between pedagogy and learning spaces. Quantitative and qualitative data was collected through a range of methods, providing insights into the perspectives of students, lecturers and experts. The results describe a vicious circle that reoccurs on different levels within Flanders higher education: paucity of innovative teaching practices reduced demand for collaborative rooms, reinforcing traditional habits of teachers. ALINA acts as a mediator, translator and change manager to break this vicious circle and serves as tjos Project's main result. Recommendations were made and a concept tool has been developed to link teaching methods and learning spaces. Another initiative is the foundation of a multidisciplinary taskforce discussing barriers and opportunities for active learning within KU Leuven.



Evert Binnard, bachelor in social work, master in cultural studies and certified high school teacher in humanities has a great affinity with education. He is the project researcher of ALINA (Active Learning classrooms in the KU Leuven Association, OOF2014/43), a Flanders-wide project that aims to bridge the gap between active learning methods and next generation classrooms.

Setting up ILEs from the mapping of flows of knowledge

PROF. MARCO BRAGA

Federal Center for Technology and Education, Brazil

The study about flows of knowledge is a fundamental issue for developing an ILE. The detection of bottlenecks in the flow of information can contribute to improving the design of space. For this purpose, the N@melab is designing and developing a new ILE lab in Brazil with the goal to study the exchange of knowledge among teacher, students, and things. This ILE is being set up in a High School with double functions: teaching and research. The learning environment will have a flexible layout for project-based learning with several work zones (creation; development; investigation; presentation). The research environment will have cameras at four different points and one in the center of the ceiling to track the interactions. The footage from this set of cameras will allow the creation of interactions maps aided by "Social Network Analysis" software.



Marco Braga was born in a Portuguese family that immigrated to Brazil in the middle of XX century. He has a PhD in Production Engineering from Federal University of Rio de Janeiro and since then has worked STEM education at Federal Center for Technology and Education (CEFET/RJ) in Rio de Janeiro. Since 2008 he heads the Graduate Program of Science, Technology, and Education in CEFET/RJ focuses his work on the use of Knowledge Management in STEM environments. In 2016 he created a research project that applies elements of KM to design of Innovative Learning Environments (ILE). He was Visiting Scholar in University of California at Berkeley in Spring Semester in 2018. Orcid: 0000-0002-1289-9178.

Professional collaboration in teaching teams – sharing students, space and time

MIE GULDBÆK BRØNS
LOOP.bz, Denmark

I argue that successful teacher collaboration is dependent on utilising the transparency and the openness of modern learning environments (MLEs), as well as the teachers' working hours, in a team organisation. My ethnographic study explores how, by observing each other and executing activities together, the teachers incorporate peer learning as a natural professional development which supports their practices both as individuals and as a team. I analyse how the community of practice develops within the team when they are supported by the school management and trusted with an autonomous organisation. In typical educational environments, which are often based on a classroom structure where teachers are distributed (by themselves) between the rooms, it is rare to experience deep collaboration amongst the teachers (OECD, 2016; Schleicher, 2016, p. 29). Transitioning to MLEs could be a key to unlock deep collaboration and joint commitment within teacher teams.



Mie Guldbæk Brøns works as a consultant in innovative learning environments. The past 8 years she has been studying physical spaces and social behaviour, mainly in educational environments. With a M.Ed in Educational Anthropology, she does in depth research on teachers' collaboration and the interdependency with physical space. Her observations often take place in innovative learning environments that has an emphasis on 21st Century learning. She studies schools on a more general level by visiting schools all over the world looking at the connection between spaces and pedagogical approaches.

Can participatory design support the transition into innovative learning environments?

BODIL BØJER

The Royal Danish Academy of Fine Arts Schools of Architecture, Design and Conservation, Denmark

When changing from traditional classrooms to innovative learning environments it is crucial to include the users of the environment in the design process. However, participatory processes might be limited by contrasting expertise, cultures, priorities or project restrictions, which poses a risk to the alignment of spatial design and pedagogical practices. To meet this challenge, the paper proposes a post-design participatory activation process aimed to support the transition into new learning spaces. This is exemplified in an empirical case, where co-design methods and physical design objects have been explored as tools to foster spatial literacy and competencies in a fifth grade (teachers and students), and potentially match pedagogical practices with spatial affordances. Participatory activation is believed to be an ongoing process, because learning environments are not static designs – they keep evolving based on people, pedagogics and practices.



Bodil Bøjer is an Industrial PhD candidate, based in the Design Agency Rune Fjord Studio and enrolled at The Royal Danish Academy of Fine Arts. Her research examines the relationship between learning space design and pedagogical practices in primary and secondary schools by using a Research through Design approach in several cases and design experiments. The aim is to create new knowledge about participatory building design and the potential use of design as a tool to support learning. Bodil holds a MA in Art History and Aesthetics and Culture and has 10 years of practical experience working with spatial design.

A post occupancy evaluation attempt: The Italian way

GIUSEPPINA CANNELLA, SAMUELE BORRI & STEFANIA CHIPA

National Institute for Documentation, Innovation and Educational Research (INDIRE), Italy

The main purpose of the study is to investigate how teachers use innovative school buildings using active pedagogy and if the new spaces impact on teachers' and students' behaviour. A mixed method research will be used, combining qualitative and quantitative tools (questionnaire, principals' and teachers' interviews, classroom observations). Tools to measure functional aspects (light, air quality, comfort) of the school will be employed. Five case studies will be produced (3 primary refurbished schools and 2 upper secondary schools that have modified one or more spaces) in order to highlight differences and common aspects in transition from traditional to ILEs. We expect to identify the most used teaching strategies in innovative spaces and what spatial elements can foster the implementation of active pedagogies. Thanks to the Indire National role, the research results could have implications for other schools that can learn good practices of innovation and for policy makers that could realize the necessity to change (or to invest in transforming) the learning environments.



Since 2003 she has been working for Indire (www.indire.it), as instructional designer and researcher. She was in charge of the project "Classi 2.0" whose main aim is to create ICT enriched settings and innovative methodologies for the everyday classroom activities, that was the focus of her PhD. Lately her research activities focus on two main topics: the development of distance learning models to overcome isolation using ICT and the relation between Pedagogy and Space whose findings were reported in the Indire website, <http://www.indire.it/progetto/architetture-scolastiche>

Beyond the classroom: Learning spaces for a new generation of schools in Italy

RAFFAELLA CARRO & ELENA MOSA

Istituto Nazionale di Documentazione, Innovazione e Ricerca Educativa (Indire), Italy

What happens when the lesson is no more limited within the walls of the classroom? What if a teacher could expand the learning environment to any other school places in order to promote differentiated and more powerful learning opportunities for the students? INDIRE's research builds on these ideas and takes shape in its "Manifesto 1+4 for effective learning environments" where a new school concept is depicted and extended beyond the classroom. "1+4" is a formula where "1" stands for the former classroom, now a modern learning environment that is open to the rest of the school and to the world and "4" stands for the school's main types of spaces: Agorà, Individual area, Informal area, Exploration Lab. The Manifesto has inspired a number of Italian schools who have shifted from the "chalk and talk lessons" to a more active and inquiry-based approach, affecting the design of their learning environment accordingly. This paper describes some of these best practices and the lessons learnt.



Raffaella Carro is a researcher at INDIRE where she has been working since 1998. Formerly involved in managing training actions and on research activities dealing with the use of ICT in the didactics, she is now focusing on how school physical environment supports the changing of pedagogical practices. Elena Mosa is researcher at INDIRE, where she has worked for 13 years dealing with educational research. She has started as an instructional designer, while she is now working in the wider topic of school innovation from an organizational and methodological point of view. Among her research interest, worth mentioning is the topic of new (physical) learning environments.

Well being and environments: An exploratory study in primary schools in Italy

RAFFAELLA CARRO, SILVIA PANZAVOLTA & SARA MORI

Istituto Nazionale di Documentazione, Innovazione e Ricerca Educativa (Indire), Italy

The study aims at investigating the impact on psycho-socio-cognitive variables when the school environments are restructured. In particular, students' performances in terms of attention and concentration (D2-R test), students' self-regulation strategies (AMOS tests) and school well-being and risk factors will be taken into account, triangulated with data derived from test administration on teachers and families (QBS test). As for teachers' reactions, positive emotions, motivation and professional satisfaction will be considered by administering the MESI test. In addition to this quantitative analysis, a qualitative analysis protocol will be used, including focus groups with all the stakeholders and classroom activities observations. The sample will be created against a definition of school environments revision that draws on the "Manifesto for school environments", developed by Indire. At semi-experimental research design will be put in place, with experimental and control schools selected againsts balanced socio-economic criteria.



Sara Mori, cognitive-behavioral psychotherapist, Phd in Evaluation of Educational Process and Systems, is a psychologist at Indire. She has been working since 2011 on the effect of change and innovation on educational improvement. Silvia Panzavolta - psychologist, psychotherapist and language mediator - is a researcher at Indire, where she has been working since 1998, dealing with educational documentation and knowledge sharing. At present she researching on the different angles of school innovation.

Learning to live with innovation in the primary school environment.

MARK DUDEK

Mark Dudek Associates, United Kingdom

The objectives of this research are firstly to understand how teachers adapt to radical transformations in their school buildings, and how this affects their needs further down the line. To then provide suitable adjustments to the 'loose parts', which can assist in these adaptations if required. Secondly can we assess and quantify the extent to which these changes affect educational outcomes and other positive aspects of schooling and learning? Working with four new schools, two in The Netherlands and two in London UK, we will present the preliminary results prior to broadening the scope of the research. We are using questionnaires and an adapted form of Space Syntax analysis. Other data analysis will be added to the study.



Mark Michael Dudek is a British architect, designer, writer and educator, and is the founder and principal of Mark Dudek Associates (est. 1991), with considerable expertise in the design of schools, children's centres and early years facilities. His built projects include The Glasshouse Café for the Royal Horticultural Society in Surrey, UK, The Wyndham Nursery and School for Children with Learning Difficulties at Wyndham, Richmond upon Thames, UK and Thomas MacDonagh's Heritage Centre in Cloughjordan, Irish Republic. He has spoken at conferences world-wide on the subject of schools and children's spaces, and was a Research Fellow at the School of Architecture, University of Sheffield between 2002 and 2014. He has written a number of influential books on school buildings and children's urban culture. Dudek's research is recognized as providing some of the strongest evidence of the links between architectural space, pedagogy and educational outcomes.

Research on educational environments – new perspectives and empirical examples

PROF. ANNELI FRELIN & A/PROF. JAN GRANNAS
University of Gävle, Sweden

Having researched educational environments for over 10 years, our point of departure is holistic, meaning that we consider educational environments as ecologies that are connected to particular educational purposes. Researching educational environments involves particular places, times, relationships and activities which are entangled. The overall aim is to explore the physical, social and conceived spaces in schools and how these relate to teaching and learning. In a recent project, a spatial perspective was used to analyze students' photo stories describing a) spaces that supported and/or impeded their learning, and b) safe and unsafe spaces, in a newly opened secondary school. A recently initiated project studies pedagogical processes in a new activity based learning environment that is being implemented in an iterative process, where design features will be analyzed, tested and verified. The presentation will include examples from both projects.



Anneli Frelin is Professor of Curriculum Studies at the University of Gävle, Sweden. She has conducted projects on topics such as whole-school approaches to creating sustainable educational environments, safe schools, teacher-student relationships, teacher professionalism, principals' work, and teacher commitment. She is co-founder of the research group STORIES and research network DRAPES. Jan Grannäs is Associate professor in Curriculum Studies at the University of Gävle. His current research project focuses pedagogical processes during the process of establishing a national laboratory school environment. He has published several papers on school improvement processes, and educational environments as a space for teaching and learning democratic literacy.

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.

Understanding school furniture issues through visual research in participatory design

DR. JACKIE LIGHTFOOT

Studio 93 Limited, United Kingdom

This paper uses visual research, as part of a human-centred design project, to illustrate issues that children and teachers have with school furniture in a typical English primary classroom. Understanding the expectations and behaviours surrounding these issues provides valuable information for designers seeking to improve contemporary classroom furniture and for those in education transitioning from traditional to innovative learning environments. Selected studies represent the experiences of a primary class teacher, primary pupils, and the designer/researcher's own observations. Typical school furniture designs (in England) derive from the 1970s. As classroom furniture is innately connected to teaching practice, and school culture, these out-of-date designs are inappropriate for 21st century teaching and learning. A European standard for school furniture provides information on size and safety testing but there is little else available regarding today's classroom furniture requirements to guide designers and to stimulate much needed change.



Research-led furniture designer Dr Jackie Lightfoot has focussed on school furniture for over a decade. Her PhD - at the University of Brighton and funded by the Arts and Humanities Research Council - investigated the socio-cultural and design factors affecting children's seated posture in primary schools. She has designed an innovative primary school seat, with and for young children to support their natural good posture and healthy inclination to move. This is currently being user-trialled in UK classrooms. Her design company, Studio 93 Limited, aspires to transform children's education through participatory-research-led furniture design and the practical application of good ergonomics.

Better communication and learning in the classroom - continuation

A/PROF. VIVEKA LYBERG-ÅHLANDER & SUVI KARJALAINEN

Lund University, Faculty of Medicine, Department of Clinical Sciences Lund, Logopedics, Phoniatrics and Audiology, Sweden

Media frequently reports about following challenges in Swedish schools; teachers' work conditions, well-being and pupils' results. Poor sound environments affect both teachers' vocal health, general well-being and pupils' performance. It is necessary to combine optimized acoustics with other preventive measures such as vocal training and evidence-based tools to improve classroom communication to support teachers' vocal health, well-being and students' performance. The purpose of this study is to explore the effects of an intervention program for teachers targeting classroom communication in different acoustic environments. Teachers (n=25) teaching in school year 3-6 participated in the program. Assessments were done pre/post intervention and at 5-weeks and 3-months follow-up. The teachers made self-assessments by answering questionnaires on vocal health, stress, burnout and self-efficacy. The effects of the intervention showed significant results at follow-up. In conclusion the intervention program helps teachers improve vocal health, decrease their perception of stress and burnout whilst increasing their self-efficacy.



Viveka Lyberg-Åhlander is a reg. Speech Pathologist and A/Prof. at the department of Logopedics, Phoniatrics and Audiology, Lund University. Her research-focus is voice and voice disorders with starting point from the teacher voice in relation to the sound environment in the classroom and the teachers' occupational and vocal health. She is the main supervisor for Suvi Karjalainen. Suvi Karjalainen's PhD project, 'Better communication and learning in the classroom - a study on the effects of a teacher intervention program in different sound environments', investigates the effects of an intervention on both teachers, their pupils and if the effects differ due to variations in the classrooms' acoustics.

The students redesign their school (with teachers): heart, mind, hand

MARIAGRAZIA MARCARINI¹, PROF. CHIARA FILIOS² & PROF. ARNALDO ARNALDI²

1: University of Bergamo, Italy, 2: NORMALEARCHITETTURA, Italy

Through a collaborative design approach, Don Milani high school (Montichiari-Brescia-Italy), 1800 students and 200 teachers, tried to re-design their own school replacing the spatial rigidity with disciplinary classrooms, allocated to the teachers, having a more flexible setting and creating a Campus connecting three different school buildings. The action-research methodology has been used. All teachers, students, parents and workers were involved through a questionnaire to identify the problems. All teachers attended two training meetings; afterwards, a group of teachers attended four training workshops and with a group of students participated to three collaborative design workshops to gather all their desires and needs. The project curators proposed a renovation and reorganisation plan leveraging the stakeholders' suggestions. The first phase was developed between May 2017-April 2018 to aim the construction phase scheduled for summer 2018. The collaborative design would help teachers and students to work better together and to increase the school identity.



Mariagrazia Marcarini, PhD in Human Capital Formation and Labor Market Relations, pedagogist and educator in secondary school of Council of Milan, responsible for "School Architecture" of ADi (Italian Teachers and Headteachers Association), Teaching Assistant of Special Education (University of Bergamo).

Arnaldo Arnaldi and Chiara Filios (NORMALEARCHITETTURA[®]) are architects and Professors of Interior Design (Politecnico Milano – NABA Milano). Since 2011 Arnaldo and Chiara have been working in architecture for schools through a collaborative design method that involves all the school's stakeholders in the design process.

Campfire, Watering Hole, Cave, Life - David Thornburg interpreted in Ireland

DR. AINE MORAN

Le Cheile Secondary School, Ireland

This study seeks to measure changes in student engagement when a whole school approach is taken to changing the learning environment. The study includes observation of learning environments, questionnaires administered to all teachers, to a randomly selected group of students and parents who sit on the parents council. Results indicated that technology is used extensively in teaching and learning. Classrooms have become more porous, students have taken greater ownership of their learning. Initial findings have encouraged us to begin a 'tinkering' module to reflect real life. 1st, 2nd and Transition Year students will take part in a morning of 'tinkering' on their own project work every Monday in the coming academic year. Timetabling has become more fluid and students are being given choices as to which classes they attend. Teachers have to step back from traditional planning of classes.



Dr. Aine Moran is principal of a new and innovative Secondary School in Dublin 15, Ireland. Her undergraduate degree is in economics and law and she holds post graduate qualifications in Education, Theology and Education Management. Her doctorate thesis developed a grounded theory of school chaplaincy for a pluralist Ireland. In recent times she has been very actively engaged with architects, educators and furniture providers and designers to create a unique learning environment for the students at Le Cheile Secondary School.

Future classroom labs in Portugal: A descriptive study on the learning spaces and pedagogical projects behind portuguese innovative learning environments

PROF. NEUZA PEDRO

Institute of Education-University of Lisbon, Portugal

Since 2015, in Portugal, public elementary and secondary schools have been engaging with projects for developing innovative classrooms that could support the development of students 21st- century skills such as communication and collaboration competences, creative and critical thinking, problem solving skills as well as Information, Media and Technology literacy skills. Under the scope of the Future Classrooms Lab Project, a total of 42 innovative learning environments (ILE) have been created. These spaces features and underlying projects have been put into analysis, specifically: i) the motives for the creation of a ILE in the school, the characteristics of the space (equipment and layout), and iii) types of activities developed. Data was collected by an online survey that were sent to the teachers/directors who were responsible for these ILE and the results will be presented.



Prof. Neuza Pedro has a PhD in ICT in Education, Master's in Educational Psychology. She is a certified in 'E-teaching' by the University of Adger in Norway and in 'E- assessment' by the University of Wisconsin-Stout. She is a coordinator of the Master Program in Education and Digital Technologies and also assumes the coordination of the E-learning Lab of University of Lisbon, since 2010.

The teachers' and students' perceptions about inclusion through innovative learning environments

A/PROF. PATRIZIA SANDRI¹ & MARIAGRAZIA MARCARINI²

1: University of Bologna, Italy, 2: University of Bergamo Italy

The research investigates for understanding how the organisation of learning spaces could be beneficial for the inclusion of all students, especially those with severe learning disabilities. It is an exploratory and ongoing research and it has been conducted in six different schools, from primary to secondary schools, four of them in Italy and two in Denmark. For data collection a variety of techniques has been used: maps and documents; videos and photographs surveys; statistical and dimensional data; direct observation of the school premises; group and individual interviews with principals, teachers and students. In inclusive schools the teachers are more aware of the organisation of the learning spaces, the informal exchange between the teachers and students helps create a collaborative atmosphere and educational community, the flexible and changeable setting enables inclusion, multiple teaching strategies and learning personalisation.



Patrizia Sandri is associate professor in Teaching and Special Pedagogy of the Department of Educational Sciences "G.M. Bertin" of the University of Bologna (Italy), with suitability of Chair professor. Director of the Study and Research Centre for Disability, Education and Inclusion (CEDEI) of the Department of Educational Sciences. He carries out training and research activities in Italy and in international context. Her research activity, documented in numerous books and articles, focuses on the analysis of educational and didactic methodology to ensure the inclusion of all people, including those who have a serious impairment, and on the special teaching of Mathematics and Conventional Time systems.

Spazi Colore: A project for didactic innovation

ASSUNTA SASSONE, CRISTIANO SCEVOLA & SABINA BANFI

Comune di Milano, Italy

The aim of the study is to experiment, in a relevant school context for Milan, the modification of learning spaces for the benefit of didactic innovation. The Manzoni Linguistic High School welcomes about 1400 students and 200 teachers. The collection of data is based on direct observation and surveys for teachers and students who use the three spaces already prepared (the “color spaces”). The sample consists of students and teachers who have carried out structured activities in those environments. Direct observation has concerned the entire scholastic community that can still benefit from those spaces. The implications will impact on the teaching of the Liceo Manzoni and on the supply of furnishings to the city schools by the Municipality of Milan. The passwords are vision and practicality.



Assunta Sassone has a Masters Degree in Physical Education and is a qualified teacher for middle and secondary schools where she taught for 15 years, and recently graduated in Management of School and Educational Institutions at Politecnico of Milan. Currently she is Chief of Staff at the Education Department and also looks after their special projects. Cristiano Scevola obtained a Masters Degree in Architecture (Hons) from Politecnico of Milan and worked with them as a subject matter expert. Since 2006 he has been working as the leader of the School Network Office at the Education Department of the Municipality of Milan. On January 2018 he graduated in Management of School and Educational Institutions at Politecnico of Milano.

The need for an appropriate acoustic environment for teaching and learning

PROF. BRIDGET SHIELD¹ & PROF. JULIE DOCKRELL²

1: School of the Built Environment and Architecture, London South Bank University, United Kingdom,

2: Institute of Education, University College London, United Kingdom

Research into the impact on pupils and teachers of poor acoustic design of schools has been ongoing since the 1960s. This paper will review the results of research carried out jointly since 1999 by London South Bank University, the Institute of Education and the University of Salford. The research in primary (aged 5 to 11) and secondary (aged 11 to 16) schools in England has included questionnaire surveys of pupils and teachers; acoustic and noise surveys; experimental testing of pupils in different noise levels; comparison of standardised test results with noise levels; and design of open plan classrooms so that pupils can hear and understand their teachers. The results of have shown that, at all ages, performance in verbal and non-verbal tasks is adversely affected by noise, that pupils are aware of noise causing problems in hearing and understanding their teachers. The results of all studies show that it is essential that spaces for teaching and learning have an acoustic design that minimises noise levels and enhances speech intelligibility.



Professor Shield is Professor Emerita at London South Bank University and a Visiting Professor at Brunel University London. She retired as Professor of Acoustics at London South Bank University in 2014 after nearly 30 years of teaching, research and consultancy in environmental and architectural acoustics. She has received many government research grants and is the author of over 130 published papers. For many years she has advised the Department of Education on regulations for the acoustic design of schools, and she was an author of the Department of Health report on the effects of environmental noise on health, published in 2010. Professor Shield is an Honorary Fellow and former President of the UK Institute of Acoustics and a Fellow of the Acoustical Society of America.

Healthy, Active Design Guidelines for School Architecture: A Collaborative Research Model for Architecture, Public Health & Education

DINA SORENSEN¹ & DR. DIETER BREITHECKER²

1: DLR Group & AIA Committee on Architecture for Education, United States,

2: Federal Ministry of Health, Germany

More and more health-oriented concepts in architecture that emphasize quality light, color, materials, acoustics and climate are reflected in a growing national priority to plan and design high performance school environments. Research has shown that school design is known to impact student behavior, development, and academic performance by contributing to the health, well-being and cognitive capacity of children and adolescents. Alongside growing public interest in how physical designs of school buildings (architecture, interior spaces, and landscaping) promote healthy behaviors, there is an emergent need to address the impact of school design on psycho-social outcomes like well-being, concentration, social interaction, and mental capacities which are known to be strongly dependent on environmental factors. School pedagogues talk about space as “the third teacher” in which the living environment of space directly and indirectly influences the complex physical, mental and emotional interaction of the whole person. However, work to develop tools and research focused at the building scale has been limited. The green school building industry has successfully established environmental sustainability as a normative part of built environment practice, policy making, and investment. We explore the value of this industry’s experience as a template to integrate health-promoting design strategies, like Active Design, in the school environment as The Third Teacher.



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. Trained at Parsons School of Design in NYC/Paris, and the University of Virginia, 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.

A creative collaboration to design innovative learning spaces

SARA TOMASONI & CECILIA RAIMONDI

Politecnico di Milano - Dipartimento di Architettura e Studi Urbani, Italy

Our master's degree thesis is part of the renewal project of a twentieth-century secondary school, carried out by our architecture department and a research group in education science. We asked for feedback from students and teachers through a survey, so as to identify their problems and wishes and plan the improvement strategies accordingly. The survey was completed by 60% of the students (257 out of 427) and 22% of the teachers (12 out of 53). We then discussed the results of the survey with the teachers and decided to hand out a second survey to the students, which was more focused on the problems identified by the first one. On the basis of the data collected, we chose to begin by redesigning the hallways. We are currently working on multiple design proposals that we are going to submit to the teachers. Our goal is to demonstrate that a creative, participatory approach is a good way to introduce and encourage new usage habits. We hope that an overhaul of the space outside the classroom might give momentum to a wider innovation process of the building. (revised abstract added 8/8)



We are Sara Tomasoni and Cecilia Raimondi(r). In 2012, we started studying environmental architecture at Politecnico di Milano, Italy. In 2014, Cecilia was an Erasmus student at Uppsala University, Sweden. In 2016, we earned a bachelor's degree in environmental architecture. Cecilia's thesis explored the influence of architectural space in human relationships, while Sara worked on the redevelopment of a farm. Since 2017, we are studying architecture and heritage conservation at Politecnico di Milano. We are working at our master's degree under the supervision of prof. Maria Fianchini. Our thesis' subject – originated from Sara's internship – is the renovation of a school.

OECD School User Survey: Improving learning spaces together

JULIE VELISSARATOU¹ & ALASTAIR BLYTH^{1,2}

1: Consultant to the OECD, Europe, 2: University of Westminster, United Kingdom

The design of the physical learning environment can foster, or hinder, the teaching and learning of 21st century skills. The OECD School User Survey: Improving learning spaces together gives voice to those who use schools on a daily basis. This unique OECD tool consists of three self-assessment questionnaires designed for students, teachers and school leaders. They can be used to collect and triangulate evidence on the actual use of learning spaces, as well as to solicit user perspectives. Survey results can be used at the school level to support continuous improvement and the intelligent use or refurbishment of educational facilities. They can provide deeper insights into how physical learning environments shape teaching practices and affect students' learning outcomes and well-being. They may also contribute to monitoring the implementation of the Sustainable Development Goal (4.1.a.) on the quality of the physical learning environment in schools. The survey is freely available to schools and was developed under the OECD Learning Environments Evaluation Programme (LEEP).



Julie Velissaratou is a freelance architect and a Consultant to the OECD on Effective Learning Environments; she was the Project Manager of the Learning Environments Evaluation Programme (LEEP) of the Organisation for Economic Cooperation and Development (OECD) until December 2017. Since 2010 Julie was working for the Greek public sector agencies "Buildings Infrastructure" and "School Buildings Organisation". Alastair Blyth is a Senior Lecturer at the University of Westminster in the Department of Architecture. He joined the University in 2016 from the Organisation of Economic Co-operation and Development where he was a policy analyst in the Directorate for Education and Skills focusing on learning environments. At Westminster he is continuing his research into the impact and effectiveness of learning environments.

Pedagogy and Space, Transitions at Plymouth School of Creative Arts

TERRY WHITE

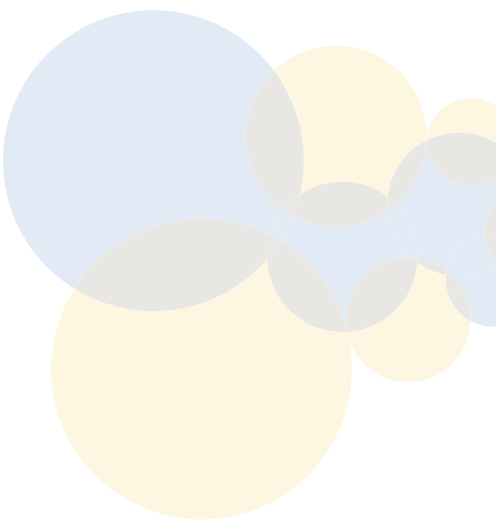
Edunovaspace & Chair A4LE, United Kingdom

A presentation of work that is evolving, through a structured approach, to support and engage staff and students transitioning from traditional classroom practices. Open and connected learning spaces with a range of studio spaces had been designed throughout the new building for Plymouth School of Creative Arts, a 4-16 inner city school in Plymouth UK. The school had already evolved a 21st century curriculum model involving rigour and more personalised approaches. However, observations within the 11-16 learning zones, pointed to many staff continuing to plan, develop and organise teaching-and-learning, based on a familiar model which was limiting the potential learning experiences and opportunities that the new environments could facilitate. To address this the leadership team, with external support, devised a variety of spatial typologies for staff to test out, to promote new thinking about linking pedagogy and space. From September 2018, staff will be trialling various models which will provide evidence for reflection and future development.

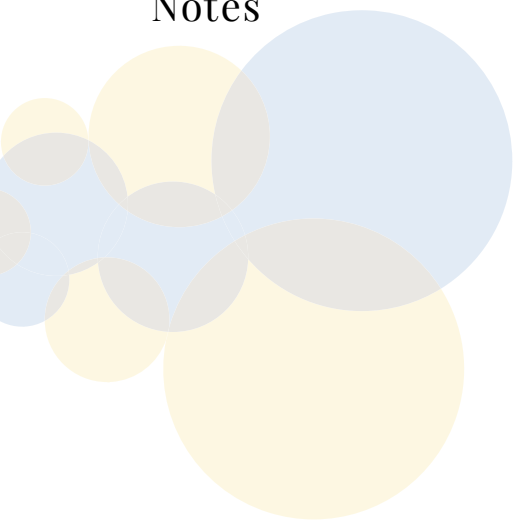


Terry has a passion for excellence in the design of schools and environments for learning. He has extensive experience in schools and colleges as a headteacher and principal. He has worked in the public and private sectors of education, with national and local government, schools, industry, universities, contractors and design professionals. He was a director of WSP Buildings and a founding director of Edunova. (integrated education consultancy). He has been the lead Education Design Advisor on large scale school building programmes, developing and delivering the design brief for over 40 schools. Through learning-led design he is ensuring there is a strong emphasis on learning and teaching with the improvement of educational outcomes and the professional learning of all staff, when designing and remodelling learning environments and supporting schools through the process of change.

Notes



Notes



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