



TRANSITIONS

INHABITING INNOVATIVE LEARNING ENVIRONMENTS

EUROPE - LONDON 2017



**What is needed to help teachers better utilise
space as one of their pedagogic tools?**

An international symposium on learning environments

TRANSITIONS 2017 EUROPE

***What is needed to help teachers better utilise space as one of their pedagogic tools?
An international symposium on learning environments.***

Thursday September 7th, 2017.

Tuke Common Room at Regent's Conferences & Events, Regent's University London,
Inner Circle, Regent's Park, London.

Organised by ILETC, Innovative Learning Environments and Teacher Change.



Australian Government

Australian Research Council

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.

Abstracts were blind peer-reviewed for Transitions 2017.

Co-hosted by Ecophon-St Gobain

Design: Lachlan Stewart.

Editing: W.Imms, M.Mahat.

Acknowledgements

We would like to thank Joann Cattlin, Kirra Liu, Marian Mahat, and Lachlan Stewart for their contributions to *Transitions*.

Cover image: De Werkplaats Kindergemeenschap, TenW Architecten. Photo by Thea van den Heuvel DAPh.

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Schedule - Transitions Europe



8:30 - 9:00	REGISTRATIONS OPEN
9:00	CHAIR Dr. Marian Mahat - The University of Melbourne, Australia
9:00 - 9:10	ECOPHON WELCOME Colin Campbell - Ecophon, Sweden
9:10 - 9:20	LEARN/ILETC WELCOME A/Prof. Wesley Imms - The University Of Melbourne, Australia
9:20 - 9:30	SETTING THE SCENE: THE EUROPE CONTEXT Michal Cohen - Walters and Cohen, United Kingdom
9:30 - 10:00	KEYNOTE ADDRESS 1 Prof. Stephen Heppell - Universidad Camilo José Cela, Spain & Bournemouth University, United Kingdom
10:00 - 11:00	SESSION ONE: INHABITING DESIGN INTERLOCUTOR Terry White - Association for Learning Environments, United Kingdom PRESENTATIONS (8 MINS) Emma Dyer - University of Cambridge, United Kingdom The reading nook project. Mie Guldbaek Broens - LOOP.bz, Denmark Teacher collaboration and physical space, how teachers divide and share open learning spaces through their practices. Leanne Rose-Munro - The University of Melbourne, Australia Innovative Learning Environments - Are they inclusive? Why evaluating the speaking and listening potential of the space matters. Siv Marit Stavem - Norconsult AS, Norway Norwegian teachers' thinking about classroom design. DISCUSSION
11:00 - 11:30	<hr/> MORNING TEA <hr/>

11:30 - 12:30 **SESSION TWO: TEACHER PRACTICES**

INTERLOCUTOR

Alastair Blyth - University of Westminster, United Kingdom

PRESENTATIONS (8 MINS)

[¹Silvia Sasot Ibanez & ²Esther Belvis - ¹UAB La Salle, ²Universitat Autònoma de Barcelona, Spain](#)

Hack the school. A creative toolkit to transform school spaces.

[Steve Hall - Staffordshire University, United Kingdom](#)

Where is the white space?

[Mariagrazia Marcarini - University of Bergamo, Italy](#)

Pedarchitecture: which Learning Environments for the Personalisation of Teaching and Learning? An Educational Architecture for the Schools of the Future.

DISCUSSION

12:20 - 13:30 **LUNCH**

13:30 - 14:00 **KEYNOTE ADDRESS 2**

Diana Bannister - University of Wolverhampton, United Kingdom

14:00 - 15:00 **SESSION THREE: CHANGE AND RISK**

INTERLOCUTOR

Knud Nordentoft - Learning Consultant and Former Head Teacher Hellerup School, Denmark

PRESENTATIONS (8 MINS)

[John Augeri - Paris Ile-de-France Digital University, France, Kyoto University, Japan](#)

International comparative study of innovative physical learning spaces.

[Bodil Bojer - The Royal Danish Academy of Fine Arts Schools of Architecture, Design and Conservation, Denmark](#)

How to transform space into a pedagogic tool for creative teaching and learning.

[Siebren Baars - Eindhoven University of Technology, Netherlands](#)

Towards modelling the relationship of the psychosocial learning environment and the physical learning environment.

DISCUSSION

15:00 - 15:30 **AFTERNOON TEA**

15:30 - 15:40 **HOW TO EVALUATE A LEARNING ENVIRONMENT:
THE EXPERIENCE OF LEEP**

Julie Velissaratou - OECD, Paris

15:40 - 16:40 **SESSION FOUR: MEASURING IMPACT**

INTERLOCUTOR

Emeritus Professor Peter Barrett - University of Salford, United Kingdom

PRESENTATIONS (8 MINS)

[Karolina Szynalska - University of Cambridge, United Kingdom](#)

Insight/inside learning - a participatory app for analysing the effectiveness of school environments.

[Imke Wies van Mil - The Royal Danish Academy of Fine Arts Schools of Architecture, Design and Conservation, Denmark](#)

Focused light in learning environments.

[¹Suvi Karjalainen; ¹Birgitta Sahlén; ²Anna Houmann; ¹Viveka Lyberg Åhlander - ¹Lund University, Sweden, ²Malmö Academy of Music, Sweden](#)

Better learning and communication in the classroom. An early report from an ongoing study of the effects of a teacher training program in students' and teachers' mutual every day sound environment

[Graeme Oliver - The University of Melbourne, Australia](#)

A framework of key factors for learning environment evaluation.

DISCUSSION

16:40 - 17:10 **CLOSING REMARKS**

Prof. Stephen Heppell - Universidad Camilo José Cela, Spain
& Bournemouth University, United Kingdom

A/Prof. Wesley Imms - The University of Melbourne, Australia

17:10 - 18:30 **COCKTAIL RECEPTION**

Keynote address



PROFESSOR STEPHEN HEPPELL

UNIVERSIDAD CAMILO JOSÉ CELA, SPAIN & BOURNEMOUTH UNIVERSITY, UNITED KINGDOM



Stephen's work is worldwide, he is the:

- CEO of Heppell.net,
- Professor of The Felipe Segovia Chair of Learning Innovation at Universidad Camilo José Cela, Madrid,
- Professor. Chair in New Media Environments, Centre for Excellence in Media Practice, Bournemouth University,
- Emeritus Professor Chair in New Learning Environments, Anglia Ruskin University, Executive chairman Learning Possibilities,
- A school teacher for more than a decade, and a professor since 1989.

Stephen's "eyes on the horizon, feet on the ground" approach, coupled with a vast portfolio of effective large scale projects over three decades, have established him internationally as a widely and fondly recognized leader in the fields of learning, new media and technology. A school teacher for more than a decade, and a professor since 1989, Stephen has worked, and is working, with learner-led projects, with governments around the world, with international agencies, Fortune 500 companies, with schools and communities, with his PhD students and with many influential trusts and organizations. Much of Stephen's work is on-the-ground, practical project-based. Around the world, a string of innovative schools are proud to trace their remarkable progress back to his direct involvement. Complementing the work designing on-line communities, Stephen is at the heart of a global revolution in physical learning space design, with a string of major new projects worldwide including a complete makeover of a national education system in the Caribbean. His research project in 2003 exploring for CABE and RIBA in the UK on the impact of new pedagogies on the design of learning spaces began a new rhetoric of third millennium school design in the UK and beyond. Stephen is designing, with his daughters Juliette and Melissa, a signature suite of affordable third millennium school furniture. He has received many awards and accolades, including from the Royal Television Society's Judges Award for Lifelong Services to Educational Broadcasting (2006), prestigious BETT Award for Outstanding Achievement in ICT Education (2008) and the UK's NAACE Award for Lifetime Achievement in educational technology (2014).

Keynote address



DIANA BANNISTER

UNIVERSITY OF WOLVERHAMPTON, UNITED KINGDOM



Diana Bannister MBE is the Assistant Director of Pedagogic Partnerships and Head of Postgraduate Taught Provision (Education) within the Faculty of Education, Health and Well-Being, University of Wolverhampton.

Diana started her career as a Primary teacher and Deputy Headteacher, moving to the University in 2001 to lead projects on technology and school improvement. In 2009 she began working throughout Europe across many different sectors, Diana works with many different sectors providing bespoke support to teachers or schools and more strategic development with Ministries of Education, regional advisers, external agencies and commercial providers to address effective implementation of technology and mainstreaming change in schools.

Her work includes development and research on the use of interactive technologies, 1:1 learning, 1:1 devices, development of learning spaces, pedagogical design, whole school strategic development and teacher professional development. Diana has worked with and visited schools in over 30 countries observing and documenting practice and understanding how to mainstream change in schools. Most recent project work includes Living Schools Lab and Creative Classrooms Lab.

As Head of Postgraduate Taught Provision, Diana leads on the strategic overview, curriculum design and accreditation across this portfolio within Education. Diana advocates the benefits to continuing engagement and further research in Higher Education to improve and develop professional practice.

Session 1: Inhabiting design

Interlocutor



TERRY WHITE

ASSOCIATION FOR LEARNING ENVIRONMENTS, UNITED KINGDOM



Terry has a passion for excellence in the design of schools and environments for learning and has ensured that the voice and needs of the learner are central to his work. He is committed to sharing good practice in the UK and through his international projects, study visits, working directly with learners, teachers, co-educators and design professionals.

He has extensive experience in schools and colleges as headteacher and principal. He has worked in public and private sectors of education, with national and local government, schools, industry, universities and design professionals. He was a director of WSP Buildings and a founding Director of Edunova (integrated education consultancy) He has been the lead Educational Design Advisor on large scale school building programmes, developing and delivering the design brief for over 30 schools.

He is an Executive Director of the Association for Learning Environments, working on their Global Steering Group and adjudicating on the International School of the Future Programme.

Through learning-led design he is ensuring there is a strong emphasis on learning and teaching with improvement of educational outcomes and professional learning of all staff, when designing and remodelling learning environments .He has developed leadership programmes to support all staff and students through the process of change, defining in partnership, the new behaviours for learning that are essential in future learning environments.

The reading nook project



EMMA DYER

UNIVERSITY OF CAMBRIDGE, UNITED KINGDOM

What do we know about the nature of reading and learning to read that might inspire teachers and architects to design innovative spaces in school for the beginner reader?

As a doctoral student engaged in researching the question above, I have co-designed and installed an innovative reading nook in two London primary schools: a challenging, alternative space that provokes questions about spatial practices by teachers and students and also offers insights into curriculum and assessment practices for reading that may not otherwise have become apparent.

Characteristics of this freestanding structure that creates a tiny library den for the Year One class include visual seclusion and privacy; an enclosed space that offers a freedom of movement - to sprawl across the floor sit and lean against the toughened cardboard walls of the reading nook.

In the current political climate in England, in which standardised, baseline designs are the new order of the day and an impetus to build all new schools “cheaper and faster” (gov.uk, 2015) with reduced dimensions and strictly no curves, the reading nook offers the opportunity to research an innovative learning environment in a very traditional paradigm for teaching and learning.

The design-oriented research methodology adopted for the reading nook project, in common with my doctoral thesis, adapts a triangular model proposed by Fallman (2008) comprising theoretical, imaginative and real-world driven modalities of research. Fallman’s research framework also demands the development of a design artefact as an element of the research project, in this case, a fully-realised prototype of a reading nook.

KEYWORDS: ALTERNATIVE CLASSROOM SPACE, DESIGN PROTOTYPE, READING



Emma is a doctoral candidate in the Faculty of Education at the University of Cambridge, hoping to submit her thesis for examination by the end of 2017. After having worked for several years for BBC Radio, Emma was a class teacher and reading specialist in primary education and helped to set up a national programme for bringing authors into schools. She also writes children's fiction and co-curates a blog - architectureandeducation.org with Adam Wood. Her thesis takes a phenomenological approach to reading spaces and using a design research framework from Fallman (2008), she has co-designed freestanding reading nooks for two London primary schools. In 2014 she won the London School of Economics Research Festival prize for the best short film: Child vs Book. Emma's research interests include reading and the body; the design of alternative spaces in schools; the relationship between pedagogy and space; and liminal and quiet spaces in primary education.

Teacher collaboration and physical space, how teachers divide and share open learning spaces through their practices



MIE GULDBAEK BROENS

LOOP.bz, DENMARK

For my thesis I conducted a qualitative research of teacher collaboration and physical space. My methods consisted of observational studies, semi-structured interviews and thematic analysis. I found that the teachers' collaboration was supported by their movements in the room and their engagement in developing and executing joint learning activities. I also found that flexible environments became an obstacle for teacher collaboration. The teachers unintentionally reorganised the furniture so spaces became duplicates, instead of diversely furnished, unique areas throughout the space providing different possibilities.

The analysis contributes new knowledge to the field of educational research, where, until now the close connection between teacher collaboration and teachers' movements in the learning space has not been articulated. Teachers who move around in a space together and amongst each other are more likely to collaborate. However, there is no value associated with teachers' movement or transport between learning spaces. Furthermore, the analysis showed that the teachers' positions in the (joint) learning space are significant catalysts for the students' use of the space. The students move and reside in close proximity to their main teacher.

Beyond the scope of my thesis, my research into open learning spaces focuses on collaboration and in which capacity the physical spaces enable or hinder this. This has led me to investigate how to optimise the acoustics in order to accommodate multiple speakers, whether in smaller rooms with six to eight special needs students and multiple permanent teachers or large classrooms with 60 students and two teachers changing according to subject. I also observe and analyse how teachers and students behave when working in an open space where the acoustic treatment was a priority during the design and construction of the building. For instance, how their behaviour influence one another and how they consider each other when planning their activities.

KEYWORDS: TEACHER COLLABORATION, MOBILITY, OPEN LEARNING LANDSCAPE, MULTIPLE SPEAKERS



Mie Guldbæk Broens is educated as a teacher and MA (Ed) in Educational Anthropology. The past 7 years she has been studying physical spaces and social behaviour, mainly in educational environments. She has done in depth research on teachers' collaboration and the relationship with the physical space. This has led her to do studies on acoustic environments with a focus on 21st century learning. She studies schools on a more general level by visiting schools all over the world looking at their spaces and pedagogical approaches.

Innovative Learning Environments - Are they inclusive? Why evaluating the speaking and listening potential of the space matters



LEANNE ROSE-MUNRO

THE UNIVERSITY OF MELBOURNE, AUSTRALIA

The innovative learning environment is a speaking and listening space, a platform for student and teacher collaboration, creativity, complex problem solving and communication. While an increasing body of research is exploring how teachers and students use such spaces, a gap exists in research that defines how these environments include a broad range of inhabitants, in particular a postulated 7–10% of students with suboptimal hearing abilities (Tomlin, 2014; Wake & Poulakis, 2004).

Through an emergent interdisciplinary approach research on an open-plan innovative learning environment explored 3 students with hearing difficulties perceptions of inclusion, aiming to uncover instances of opportunity for equitable participation in speaking, listening and learning situations. Whilst data collection methods privilege student voice, other corroborating evidence such as acoustic measures determine the building's capacity to control noise. Photographs were gathered in an effort to enhance validity and support a multi-lens approach to understanding the setting. Interviews with teachers and students and focus group discussions, broadened insights into the daily occurrences in the space. Through interrogation of the interplay between design affordances, technology, spatial attributes and pedagogy, instances were found that enabled opportunity for inclusion of students with hearing difficulties.

The mixed methods approach led to the discovery of the value of 'nooks' (sensory reduction zones within the learning environment) and 'the trusted other' (a person the case study students identified as a good peer who could aid their learning). Coupled with access to technology tools for listening and learning, the students reported feelings of inclusion in communicative experiences. Noisy spaces with high reverberation times precluded the case study students from accessing clear speech. However, it was found that when student agency was given, self-advocacy and self-regulation mechanisms were exhibited by students i.e. the students explored their environment, finding spaces, places and multimodal platforms that supported their learning.

KEYWORDS: INCLUSION, CLASSROOM ACOUSTICS, HEARING



Leanne is an educator, researcher and passionate about innovative learning spaces that offer enhanced opportunity for participation. Her research skills are evaluating innovative learning environments and the design affordances that enable inclusion in learning opportunities. After working in Education for 18 years, and becoming a member of the Melbourne University LEARN team, she started Learning Space Consultancy. Leanne's research interests are underpinned by Success Case Methodology (Brinkerhoff 2005) which accounts for performance management systems and the role that learning plays in it to achieve results. This has led to theory building regarding policy and governance and the impact on the individual. In 2012, Leanne was a major contributor towards the Government Draft Standards Committee for the Department of Education and Early Childhood Development in Victoria that formulated hearing accessibility standards for learning spaces.

Norwegian teachers' thinking about classroom design



SIV MARIT STAVEM
NORCONSULT AS, NORWAY

There is a national curriculum in Norway, but still the ownership of the primary schools is decentralised to the local governments. We assume there is a connection between classroom design and teaching methods. With support from relevant research, we suppose that classroom furnishing gives information about which teaching methods are being used. Recent research also shows that teachers in Norway lack competence for using the physical learning environment. Barrett (2016) found that Norwegian classrooms seem to be furnished in the same way with desks and chairs in rows independent of students' age, subject, classroom design etc. We thus find reasons for asking: What role does the physical environment including furnishing and design of the classroom play for teaching? Which possibilities and limitations do teachers see in the use of the learning spaces? To get knowledge about this, interviews with 8 teachers at 4 primary schools are undertaken in June 2017. The study aims at giving a broad picture of teachers' reasoning and thinking about design and furnishing of the Norwegian classroom.

KEYWORDS: CLASSROOM FURNITURE AND FACILITIES, TEACHERS' THINKING



Working as a school planner for Norconsult AS for the last eight years, Siv Stavem is involved in designing new schools and redesigning old schools in Norway. She is also project manager for The National Advisory Service for Physical Learning Environment for the Norwegian Directorate of Education and Training, and Norwegian representative in the OECD expert group for Learning Environment Evaluation Program (LEEP). She is at the moment a visiting scholar at Oslo University, working on a Ph.D. on physical learning environment. With a background from education, she is concerned about the teachers' and the students' perspective in designing the classroom, the culture for teaching and learning and the competence for physical learning environment.

Session 2: Teacher practices

Interlocutor



ALASTAIR BLYTH

UNIVERSITY OF WESTMINSTER, UNITED KINGDOM



Alastair Blyth is a Senior Lecturer at the University of Westminster in the Department of Architecture and joined the University in 2016 from the Organisation of Economic Co-operation and Development (OECD) where he was a policy analyst in the Directorate for Education and Skills focusing on learning environments. He remains a consultant to the OECD. At Westminster he is continuing his research into the impact and effectiveness of learning environments.

At the OECD, he led projects including the Learning Environments Evaluation Programme, a school level survey on how the physical learning environment supports teaching and learning; country policy reviews in Portugal and Mexico on the effectiveness of school building modernisation and renovation programmes to meet the needs of education; and project on “Higher Education Spaces and Places: for learning, innovation and knowledge exchange”. The OECD survey on learning environments resulted in the OECD Centre for Effective Learning Environment’s publication “Designing for Education: Compendium of exemplary Educational Facilities 2011” drawing examples from 28 countries across the world. In 2007-2010 he led the OECD report on “Capital Funding in Educational Facilities: The role of public-private partnerships”.

He co-authored “Managing the Brief for Better Design”, Routledge, 2nd Ed (2010).

Hack the school. A creative toolkit to transform school spaces



¹SILVIA SASOT IBANEZ & ²ESTHER BELVIS

¹UNIVERSITAT RAMON LLULL, ²UNIVERSITAT AUTÒNOMA DE BARCELONA, SPAIN

“Hack the School” project works as an open challenge that offers school communities and architects a guided experience to support the transformation of their learning spaces. The aim is to foster change through a comprehensive and co-creative approach facilitating the transition from traditional uses of space to innovative ones always having the concept of wellbeing as primary agency. A conceptual framework based on 7 principles - welcome, belonging, communication, cooperation, diversity, movement and transduction - and an applied creative toolkit equip the process and provide a unique and novel perspective to the topic of innovative learning environments. Thus, the project channels the emerging needs regarding educational spaces challenging the current regulations that the public administration applies in Spain and initiates a dialogical collaboration between the field of education and architecture. The challenge, opened to all schools and funded through the Jaume Bofill Foundation, received over 170 proposals only in the Catalan context where 30 schools were selected and are now becoming effective “hackers”. As designers of the process and the toolkit we consider that our contribution based on real examples might bring inspiring insights to this particular field of research.

KEYWORDS: SPACES, WELLBEING, COMMUNITY, CO-CREATION, PROCESS



Silvia Sasot (Architect) and Esther Belvis (Artist-Pedagogue) work on together designing creative processes with the aim to transform educational spaces and foster wellbeing among the communities. They have worked in different educational initiatives both creative and research based with an inherently practical focus. As designers of the Creative Toolkit Hack the School they have had the chance to create and test both a theoretical framework and a set of tools to foster the transformation of school environments.

Where is the white space?



STEVE HALL

STAFFORDSHIRE UNIVERSITY, UNITED KINGDOM

How often do teachers limit their pupils' learning by over-planning teaching sessions or over-filling the curriculum? The concept of white space for learning is an approach that deliberately builds space into learning activities for learners to think, imagine and shape their own ideas and their own learning.

As a teacher, headteacher, university lecturer and learning practitioner, I have been exploring different ways of empowering students to take greater responsibility for their own learning by developing a transitional model from dependent to independent to interdependent learning. The pedagogy I developed for pupils within my own school and now for university students, uses an adapted version of David Hargreaves' (2005) model for personalising learning to maximise the use of physical learning spaces for collaborative learning.

My own current research and thinking, which resonated closely with that of a colleague from Tampere University in Finland, focuses on the conditions that are necessary to make learning more self-organised and self-directed; a pedagogy that is relevant to the conference theme of Transitions. The paper we have written explores the transition from dependent to independent to interdependent learner in which there is a 'less is more' approach to teaching and learning. The model is similar to that of Samaroo, Cooper and Green's (2013) concept of Pedandragogy: A way forward to self-engaged learning.

We believe this can be accelerated through the introduction of white space for learning, a condition that considers the significance of physical, mental and emotional space to maximise the effectiveness of learning. The workshop at which we introduced the concept was first presented at the Learning Teacher Network Conference in Tallinn, Estonia in September 2016. It considered white space perspectives and was designed to initiate a dialogue amongst conference delegates by asking the question....where is the white space?

KEYWORDS: LEARNING BY DESIGN, LEADERSHIP FOR LEARNING, SELF-ORGANISED LEARNING, METACOGNITION, SELF-EFFICACY



Steve is a Senior Fellow of the Higher Education Academy and Senior Lecturer in Education at Staffordshire University where he leads the BA (Hons) Education award and the MSc Transformation in the Workplace programme in association with Tearfund, Ethiopia, developing capacity for sustainable development through self-help groups. Previously, Steve co-founded Summit Education Ltd, a consultancy focusing on personalising learning and the International Dimension in Education, having earlier been headteacher at Cooper Perry Primary School, Stafford until July 2008. The school was refurbished and extended as a pilot PFI project, based on his own design brief, becoming a model for the design for collaborative learning, through its innovative approaches to ICT, personalising learning and distributed leadership.

Pedarchitecture: Which learning environments for the personalisation of teaching and learning? An educational architecture for the schools of the future



MARIAGRAZIA MARCARINI
UNVIERSITY OF BERGAMO, ITALY

This presentation is part of my PhD study and investigates the possibility to overcome traditional spatial rigidity in order to create flexible environments by proposing “new ways of doing school”. It aims at answering how teachers have adapted their teaching to changing learning environments, what impact new educational spaces have on both teachers and students, how to organize students with different criteria rather than exclusively considering age and how learning environments can be redesigned in old schools with limited investments.

The research was tested on a “Case Study”. Data were collected through field observations, individual and group interviews and materials reviews. The research studied three schools: in Denmark, the Hellerup Folkeskole in Gentofte and the Ørestad Gymnasium in Copenhagen and the Enrico Fermi Highschool in Mantua, Italy. Hellerup is based on a total open-space concept and Ørestad has an insufficient number of classrooms to accommodate all students.

This organization enhances teachers collaboration as they can share educational materials, support themselves to learning new teaching methods. There is “positive contamination” allowing learning personalisation in addition to team teaching. A “Bridge-Culture” concept was developed, offering a wider vision including structural and organizational details. As a result, students have improved learning skills, felt more responsibility and study in different ways.

The same results have been reached at Fermi by adapting old learning environments to new teaching requirements. The school started introducing new technology, TEAL (Technology Enable Active Learning) classrooms and then disciplinary classrooms are allocated to teachers whereby students change classroom to changing disciplines. Students love it because they can have “psychological decompression”, increased socialization and mind openness. In these schools “architecture feeds pedagogy” and some key concepts guide new learning design: readability, “semantic-topical”, flexibility, invisible pedagogy, affordance.

“Pedarchitecture” seems the right word to highlight the link between pedagogy and architecture of learning spaces.

KEYWORDS: PEDARCHITECTURE, TEAM TEACHING, BRIDGE-CULTURE, THIRD TEACHER, LEARNING SPACES DESIGN



Mariagrazia Marcarini, PhD in Human Capital Formation and Labour Relations, is currently a Teaching Assistant of Special Education at University of Bergamo and Educator in Secondary School CIA (Centro di Istruzione per l'Adulto e l'Adolescente - Adult and Teenage Education Center) at Polo Alessandro Manzoni of Council of Milan. She is responsible for the Strategic Area “School Architecture” of the ADi (Associazione Docenti e Dirigenti scolastici italiani-Italian Teachers and Headteachers Association). Mariagrazia has over twenty five years’ experience in Special Education as an educator and teacher of maths for students with disabilities and as a coordinator of Vocational Training Courses for Salesman and assistant cook for students with disabilities of Council of Milan. Currently, she collaborates with a team of architects to redesign learning environments for helping teachers to change their learning practices involving design students, teachers and parents. In addition to this, currently her research explores Post-Occupancy Evaluation in school buildings.

Session 3: Change and risk

Interlocutor



KNUD NORDENTOFT

LEARNING CONSULTANT AND FORMER HEAD TEACHER, HELLERUP SCHOOL, DENMARK



Knud Nordentoft has extensive experience as a teacher and a Head teacher in a Danish public school from 1977 to 2017. Being a head teacher since 1986, and also a period as Head of Educational Development, Knud has always focused on how to make better learning for the children – better learning tomorrow than today. His experience as Head of Hellerup School showed him the importance of learning of children, as well as the importance of good and flexible environments and spaces around the learning. He now works as an independent Learning Consultant focusing on school development, leadership & organizational development, school building and learning environments.

International comparative study of innovative physical learning spaces



JOHN AUGERI

PARIS ILE-DE-FRANCE DIGITAL UNIVERSITY, FRANCE, KYOTO UNIVERSITY, JAPAN

An international comparative study of innovative physical learning spaces (including the active learning classrooms, learning centers, learning commons) launched in October 2016 is currently conducted through a collaboration between Paris Ile-de-France Digital University and Kyoto University. It also involves connections with more than 40 higher education institutions on four continents, including international workgroups such as EDUCAUSE Learning Spaces Constituent Group. This project seeks to study the innovative physical learning spaces phenomenon and its impact on the universities campuses transformation in a cross cultural approach, and through different angles. Practically speaking, 10 criteria have been defined, seeking to study the learning spaces reality and objectives, integration in the campus strategy and/or in a national policy, design in terms of layout and embedded technology, design and evaluation tools, and outcomes on teaching & learning practices. It also intends to set the learning spaces in a global higher education system and its evolutions towards the New Generation Learning Environments, and to integrate the societal moves affecting the students practices, such as the BYOD trend.

This paper will present the first results of this study, proposing a comparative view on several of the 10 criteria from the North American, European, Asian and Australian learning spaces perspectives. Listing the major similarities and specificities of each territories, it will highlight best practices and potential synergies.

KEYWORDS: STRATEGIES, DESIGN OUTCOMES, INTERNATIONAL COMPARISON



John Augeri is Co-Founder and Deputy Director of the Paris Digital University consortium (France). His core topics are Learning Spaces and Faculty & Student Development. John is acting as adviser and expert at the French Ministry of Higher Education and Research, and as guest senior lecturer in 40 universities in Europe, USA and Japan. He's also involved in Educause, responsible for the French delegation attending the annual conference, and as active member of Educause's Learning Spaces constituent group. John recently spent 8 months at Kyoto University (Japan) as invited researcher to run an international comparative study of learning spaces.

Creating a space for creative learning: the importance of engaging management and teachers in the design process



BODIL BOJER

THE ROYAL DANISH ACADEMY OF FINE ARTS, DENMARK

Space shapes us but is also shaped by the way we interact with and act within the space. The relational dependence between the physical space, pedagogics and organisation is widely overlooked when designing innovative learning environments (ILEs) as a new spatial design in itself is expected to change the way we teach and learn. Simply changing the space is not enough (Imms & Byers, 2017) and the intentions of the space can only be fully realised if the inhabitants of the schools completely understand and support the pedagogical principles informing the provision of these spaces (Burke, 2016).

This paper puts forward a thesis that in order for an ILE to work intendedly, three things must be aligned: creative teaching (the teacher), space (the designer) and organisation (management). Therefore, when designing new ILEs all three parties should be engaged in the design process in order to ensure a common goal: creating the best frame for creative learning. The triad of relations was the starting point for the design of a new ILE at a Danish municipal school in collaboration with the design agency Rune Fjord Studio. In an attempt to involve the parties in the design process a design process model was developed and used as a mediator. The design process, the design process model and intermediary findings from the case, including some of the obstacles encountered, will be presented. Finally, the paper argues, that in order to ensure a successful ILE the design process is to end with a delivery phase where the intentions of the space are presented and activated in collaboration with the users.

KEYWORDS: CREATIVE TEACHING AND LEARNING, INNOVATIVE LEARNING ENVIRONMENT, LEARNING SPACE DESIGN, RESEARCH THROUGH DESIGN, DESIGN PROCESS MODEL



Bodil Bøjer is an industrial PhD candidate, based in the Design Agency Rune Fjord Studio in Copenhagen and enrolled at The Royal Danish Academy of Fine Arts, Schools of Architecture, Design and Conservation. Her research examines the relationship between learning space design and creative learning processes by using a research design approach in several case studies. The aim is to create new knowledge about the potential use of physical space as a tool to support creative teaching and learning and to develop prototypes of furniture stimulating creative learning. Bodil has a MA in Art History, Aesthetics and Culture and 10 years of practical experience working with spatial design in learning environments and private businesses. She is also the co-author of the book "Læringsrum" (Learning Spaces) that aims to inspire teachers and pedagogues to use the physical learning environment as an active tool in their teachings.

Towards modelling the relationship of the psychosocial learning environment and the physical learning environment



SIEBREN BAARS

EINDHOVEN UNIVERSITY OF TECHNOLOGY, NETHERLANDS

To meet the changing demands of society, many schools are adapting their curriculum and shifting their pedagogy from a teacher-centered approach towards a learner-centered approach. This requires attention towards the alignment of all curriculum components, including the psychosocial learning environment (PSLE) and the physical learning environment (PLE). A growing body of literature describes the consequences of this transition for the PLE. However, a commonly accepted framework describing the relationship between the PSLE and the PLE is lacking.

This study reviews the literature relevant to understanding this relationship, including the literature describing the transition of the PSLE, the literature arguing the consequences of this transition for the PLE, and the literature reporting on empirical research on the relationship between the PSLE and the PLE. From this review, key aspects are distilled and gaps in the literature are identified.

Following the literature, three transition phases of the PSLE are distinguished, including the intended, the implemented, and the attained PSLE, as well as the phases for the transition of the PLE. While much literature is focused on the first and the last phase, only a few publications are focused on the phase of the implemented PSLE and how this can be related to the PLE. Research on the implemented PSLE mostly focuses on the relation between learning outcomes and single technical aspects of the PLE, and rarely on the relation between the pedagogical practice and a broader set of aspects of the PLE, including functional and aesthetic aspects.

The paper concludes with a summary of identified key aspects, including identity, safety, distinctiveness, openness, flexibility, variety, and interconnectedness. Processed in a theoretical framework distinguishing the three transition phases, these aspects define a conceptualisation of the relationship between the PSLE and the PLE, enabling systemic and critical empirical research on this relationship.

KEYWORDS: CONCEPTUAL FRAMEWORK, PSYCHOSOCIAL LEARNING ENVIRONMENT, PHYSICAL LEARNING ENVIRONMENT



Siebren Baars is lecturer at the department of the Built Environment at the NHL University of Applied Sciences, architect, PhD candidate at the Faculty of Built Environment of the Eindhoven University of Technology (TU/e), member of the research group of Living Cities- AUDE – TU/e, member of the research group Open Innovation - NHL, and member of the group of national experts of the committee on effective learning environments of the OECD . Working as an architect at various offices, he designed and conducted many school building projects. In addition, he supervised and conducted many practice research projects into the physical learning environment as a board member of the research group of the BNA (Association of Dutch Architects). Seven years ago, Siebren returned to the University as lecturer, researcher, and supervisor of graduates' projects.

Session 4: Measuring impact

Interlocutor



PETER BARRETT

EMERITUS PROFESSOR IN EDUCATION - UNIVERSITY OF SALFORD, UNITED KINGDOM



Professor Barrett is past President of the UN-established International Council for Research and Innovation in Building and Construction (CIB). He is Emeritus Professor of Management in Property and Construction at Salford University in the UK and Honorary Research Fellow in the Department of Education at Oxford University.

Peter has for many years been a member of the High Level Group of the UK Construction Technology Platform and has been closely involved in its European equivalent. He is an international advisor to the OECD and the US-based Academy of Neuroscience for Architecture and American Institute of Architects. He has produced over one hundred and seventy single volume publications, refereed papers and reports, and has made over one hundred and ten presentations in around sixteen countries.

Professor Barrett has undertaken a wide range of research. He is currently focusing on the theme of Senses, Brain and Spaces with a particular interest in the area of primary school design and achieving optimal learning spaces. The findings of this work have, for the first time, isolated a significant influence of “Clever Classrooms” on variations in pupils’ learning. This has directly influenced, for example, the US Green Building Council and the Norwegian Education Directorate.

Peter now carries out strategic consultancy on optimising the impact of school buildings on learning, most recently for the World Bank in Romania and the Girls’ Day School Trust in the UK.

Insight/Inside learning - a participatory app for analysing the effectiveness of school environments



KAROLINA SZYNALSKA

UNIVERSITY OF CAMBRIDGE, UNITED KINGDOM

Our current knowledge of school building design in relation to its effects on learning is not well developed. This is due to the complex nature of the environments, lack of consensus about criteria for their pedagogical assessment, and attendant methodological challenges. Post-occupancy evaluations typically fail to assess whether the school estate can support a particular institution's pedagogy and they do not consider the views of their key constituency, i.e. students. Whilst there appears to be a strong link between effective engagement with users and the success of environmental change in having an impact on behaviour, well-being, and attainment, facilitating collective decision making is often prohibitively expensive.

This paper will introduce a bespoke tablet application designed to explore the relationship between the students' engagement in learning and the spatial affordances in three recently completed state funded urban secondary schools in England. The contrasting case studies represent different approaches to pedagogically informed architecture and project-based collaborative learning; one inspired by historic and contemporary Danish primary school design trends, one with a unique teaching system similar to a university, and a "traditional" one.

The research tool employs the Experience Sampling Method. It collects photographs of the participants' surroundings and information about their school related experience in situ – by sampling the participants' thoughts, feelings or behaviours as they occur and in the environment within which they occur. It combines a focus on lived experience with an attempt to use the tools of empirical investigation. The procedure gathers both quantitative and qualitative data that allows (1) the assessment of the compatibility between the buildings and the pedagogies they host, (2) examining how particular spatial organisations might be congruent to collaborative and cooperative learning, and possibly (3) inspiring future design interventions.

KEYWORDS: EXPERIENCE SAMPLING METHOD; PARTICIPATORY APP; COLLABORATIVE LEARNING



A PhD candidate at the Faculty of Education at the University of Cambridge, Karolina is interested in the impact the built environment has on its inhabitants. Her collaborative doctoral research study is funded by the Arts and Humanities Research Council. She is currently on sabbatical from her role as both a practicing architect and a senior lecturer at the University of Lincoln. Previously she completed an MA in Architectural History at UCL (2010, commended as outstanding), worked as a lecturer and an undergraduate course leader at the Hull School of Architecture, and as a guest editor with the internet portal e-Architect. As a practitioner she worked for Stem Architects on several building for the University of Lincoln Brayford Pool campus including The Great Central Warehouse Library (2004) and the Engine Shed (2005). She was the project architect for the National Centre for Food Manufacturing in Holbeach (2008).

Design with knowledge – Light in learning environments



IMKE WIES VAN MIL

THE ROYAL DANISH ACADEMY OF FINE ARTS, DENMARK

Over the years a significant body of evidence has been accumulated that demonstrates our (built) physical environment impacts our well-being and ability to act. This has been found particularly true for educational environments. A range of environmental parameters has been identified that, individually or in combination, impact our ability to academically perform. Light, or the lighting conditions in these spaces, is one of such influential parameters. For anyone designing or using educational facilities it is relevant to understand how lighting conditions may influence student and teacher's learning-related activities in these spaces. With the right knowledge, we are able to create and experience the most supportive environmental learning conditions.

With my research, I look to contribute to further refine our understanding of how artificial lighting in educational spaces influences students and teachers' ability to perform academically, and their satisfaction level with their designed environment. The ambition of my project is to reveal if, and how, artificial light distribution in the contemporary, Danish classroom influences primary students' learning-relevant behaviours, specifically their ability to concentrate, as well as the teacher and students' general satisfaction with their environment.

In order to study such potential relationship, I have conducted a field experiment in four relatively comparable classrooms in a contemporary "folkeskole" (public primary school) in Denmark. Here I have assessed the impact of a low- versus high-contrast artificial light distribution condition. In my presentation at Transitions, I intent to share my initial findings, and how these possibly require a new perspective on the design of artificial lighting in, as well as the lighting regulations for, educational facilities.

KEYWORDS: ARTIFICIAL LIGHTING, ATMOSPHERE, CONCENTRATION, ENVIRONMENTAL SATISFACTION



Imke Wies Van Mil is an industrial PhD candidate and architectural lighting designer at Henning Larsen Architects, Copenhagen (DK). In her research position, she collaborates with the Royal Danish Academy of Fine Arts, Schools of Architecture Design and Conservation, where her focus is to improve learning environments through knowledge-based artificial lighting design. She is particularly interested to discover how artificial light distribution may improve primary pupil's ability to concentrate when they are emerged in a lively and diverse classroom settings. Prior to her current positions, Imke worked as an architectural lighting designer for Ove Arup in Amsterdam and London, and received master degrees in both Product Design (2005) and Lighting Design (2009).

Better learning and communication in the classroom. An early report from an ongoing study of the effects of a teacher training program in students' and teachers' mutual every day sound environment



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It is well known that noise is a challenge for classroom communication. The last decade's paradigm shift toward more active learning increase the levels of activity noise. However, the design and acoustics in classrooms are not keeping up. The classroom noise affects both students and teachers. Previous studies show that students are distracted by noise, especially irrelevant speech, affecting their performance in the classroom. Teachers' vocal health is affected by constant talking in noise, leading to recurring periods of hoarseness. The effects of noise and a deviant voice quality on children depends heavily on the child's cognitive capacity, language and hearing skills. Teachers are poorly prepared for the increasing demands the environment puts on voice and communication. There is only scarce research on how teachers communicate and interact non-verbally with their students in the learning environments.

The purpose of this study is to explore the effects of an intervention program for primary school teachers and to study the effects in relation to the teachers' different sound environments. The program has an action-reflection-learning approach and targets training of voice, non-verbal communication and strategies for enhanced language acquisition. Teachers ($n=25$) and students ($n=315$) from seven schools will have participated in the program by spring 2017. Tests are performed pre/post intervention and at follow up for teachers. Students answer questionnaires to provide feedback on the effects of the program. Experience show that there are several crucial factors to consider for teachers to assimilate new aspects of classroom communication: ensuring information has been understood by both teachers and principals to make space for teachers to fully engage in the process; promoting knowledge and opportunities to put theory into practice; and to give feedback and support reflection e.g. video recordings.

This study takes on a holistic approach regarding both teachers and students in their learning environments.

KEYWORDS: CLASSROOM COMMUNICATION, INTERVENTION, SOUND ENVIRONMENT



Suvi Karjalainen is a PhD student at the Department of Clinical Sciences, Logopedics, Phoniatics and Audiology at Lund University, Sweden. Her PhD project, 'Better communication and learning in the classroom - a study on the effects of a teacher in-service training in pupils' every day sound environments', focuses on the effects of an intervention on both teachers, their pupils and to see if the effects differ due to variations in the classrooms' acoustics. Prior to her doctoral studies she had been working clinically for ten years as a registered Speech and Language therapist with children with language impairments and patients with voice disorders. For eight years she combined clinical work with a part-time position as a lecturer at the teacher education program at Umea University, where she mainly held lectures about voice and speech.

A framework of key factors for learning environment evaluation



GRAEME OLIVER

THE UNIVERSITY OF MELBOURNE, AUSTRALIA

This paper reports on doctoral research undertaken in conjunction with the Evaluating 21st Century Learning Environments (E21LE) ARC project to develop a framework to facilitate the evaluation of innovative education practices in innovative learning environments. The development of the framework is based on the premise that better judgements about evaluation tools and techniques will be made if people are able to tailor evaluative approaches to meet situation specific purposes and needs.

The research used a methodology of expert elicitation to identify the factors that respondents across the fields of architecture and education identified as most significant to include in the proposed framework. The expert elicitation approach has a pragmatic orientation that gathers feedback from people recognised as leading researchers and practitioners in the relevant fields.

The feedback shows that there is strong agreement between architects and educators in what they identify as the most significant factors. There was also strong agreement in identifying those factors that are seen as not significant for including in the framework.

The factors included in the framework are used to develop a situational profile of significant issues appropriate to particular innovative education projects in innovative learning environments. The profile helps refine the focus on an identified set of factors in what is commonly seen as an extremely complex field. The profile can then be aligned with the evaluation needs and purposes matrix developed by the E21LE project to help identify the most useful evaluation approach to be used.

KEYWORDS: SITUATIONAL PROFILE, EXPERT ELICITATION, EVALUATION, INNOVATIVE EDUCATION PRACTICES, INNOVATIVE LEARNING ENVIRONMENTS



*Graeme Oliver is a private education researcher and consultant. He is currently completing his doctoral studies at the Melbourne Graduate School of Education with a focus on the evaluation of 21st century learning environments. Graeme has extensive experience in education leadership at school, state, national and international levels. He was a leader at the world recognised innovation project of the Australian Science and Mathematics School, South Australia (www.asms.sa.edu.au) for ten years. The ASMS is extensively cited as a centre of excellence in innovation in the OECD report *Innovative Learning Environments*. Graeme has experience in education policy development and implementation at state and national level, especially as a Board member of the South Australian Certificate of Education and as a Board member of the South Australian Secondary Principals Association and Vice-President of the Association.*

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