



# TRANSITIONS

INHABITING INNOVATIVE LEARNING ENVIRONMENTS

NORTH AMERICA - GRAND RAPIDS, MI 2017



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

An international symposium on learning environments

## **TRANSITIONS 2017 NORTH AMERICA**

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

Thursday September 14th, 2017.  
Steelcase Education Center  
901 44th St SE, Grand Rapids, Michigan USA.

Organised by ILETC, Innovative Learning Environments and Teacher Change.  
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# Schedule - Transitions North America



<b>8:30 - 9:00</b>	<b>REGISTRATIONS OPEN</b>
<b>9:00</b>	<b>CHAIR</b> DR. MARIAN MAHAT - THE UNIVERSITY OF MELBOURNE
<b>9:00 - 9:10</b>	<b>STEELCASE WELCOME</b> STEELCASE EDUCATION
<b>9:10 - 9:20</b>	<b>LEARN/ILETC WELCOME</b> A/PROF. WESLEY IMMS - THE UNIVERSITY OF MELBOURNE
<b>9:20 - 9:30</b>	<b>SETTING THE SCENE: THE NORTH AMERICAN CONTEXT</b> PAMELA LOEFFELMAN - DLR GROUP
<b>9:30 - 10:00</b>	<b>KEYNOTE ADDRESS 1</b> DR. PAM MORAN AND IRA SOCOL ALBEMARLE COUNTY PUBLIC SCHOOLS, USA
<b>10:00 - 11:00</b>	<b>SESSION ONE: INHABITING DESIGN</b>  <b>INTERLOCUTOR</b> DR LENNIE SCOTT-WEBER - INSYNC: EDUCATION RESEARCH + DESIGN.  PRESENTATIONS (8 MINS) <a href="#">Ben Shapiro - Vanderbilt University, USA</a> Exploring the use of interaction geography to advance post-occupancy evaluation. <a href="#">Maria Sanchez - University of Florida, USA</a> From learning commons to learning communities: Examining the role of mixed-use learning zones in millennial education. <a href="#">Stephen Sun - Harvard Graduate School of Design, USA</a> Periodic table of learning.  DISCUSSION (30 MINS)
<b>11:00 - 11:30</b>	<b>MORNING TEA</b>
<b>11:20 - 12:30</b>	<b>SESSION TWO: TEACHER PRACTICES</b>  <b>INTERLOCUTOR</b> PROF. GARY NATRIELLO - COLUMBIA UNIVERSITY, USA  PRESENTATIONS (8 MINS) <a href="#">Robert Dillon - School District of University City, USA</a> Avoiding the learning space gap. <a href="#">Anat Mor-avi - Illinois Institute of Technology, USA</a> Architecture & design for the art of collaboration and creativity. The spirit of 'we' in learning environment. 'We learn'- a space for students and teachers to become.  DISCUSSION (30 MINS)
<b>12:30 - 13:30</b>	<b>LUNCH</b>

**13:30 - 14:00**

**KEYNOTE ADDRESS 2**

DR. JULIE MARSHALL - SALUDA TRAIL MIDDLE SCHOOL, &  
ADJPROF. RICHARD RILEY - COLLEGE OF EDUCATION  
WINTHROP UNIVERSITY, USA

**14:00 - 15:00**

**SESSION THREE: CHANGE AND RISK**

**INTERLOCUTOR**

DR. JULIE MARSHALL - SALUDA TRAIL MIDDLE SCHOOL, &  
ADJPROF. RICHARD RILEY - COLLEGE OF EDUCATION  
WINTHROP UNIVERSITY

**PRESENTATIONS (8 MINS)**

[Taryn Kinney - Columbia University](#)

Aligning vision with actual use of innovative learning environments: Explored through the lens of organizational change.

[Raechel French - The University of Melbourne](#)

School Change: Case studies and how to achieve the “buzz”.

[Julie Kallio - University of Wisconsin](#)

The built pedagogy of personalized learning as designed opportunities for student voice and choice.

**DISCUSSION (30 MINS)**

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**15:00 - 15:30**

**AFTERNOON TEA**

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**15:30 - 16:30**

**SESSION FOUR: MEASURING IMPACT**

**INTERLOCUTOR**

A/PROF. ROBERT TALBERT - GRAND VALLEY STATE UNIVERSITY, USA

**PRESENTATIONS (8 MINS)**

[Matt Moore and Ana Mann - Ball State University, USA](#)

Using interactive learning spaces for global diplomacy: A social justice collaboration between US and international students.

[Jane Zhang - Harvard Graduate School of Design, USA](#)

The creative learning spiral: Designing environments for flaring and focusing.

[Mario Chaisson - Université de Moncton, Canada](#)

Characteristics of learning spaces: favouring the development of computational thinking skills.

**DISCUSSION (30 MINS)**

**16:30 - 17:00**

**CLOSING SPEAKER**

A/PROF. WESLEY IMMS - THE UNIVERSITY OF MELBOURNE

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**17:00 - 18:30**

**COCKTAIL RECEPTION**

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# Keynote address 1



## **DR. PAM MORAN AND IRA SOCOL**

ALBEMARLE COUNTY PUBLIC SCHOOLS - USA



Dr. Pam Moran, has been the superintendent of Albemarle County Public Schools in Virginia since 2006. She was the 2016 Virginia Superintendent of the Year and a top four finalist for the AASA National Superintendent of the Year in 2016. Under her leadership the school system has become a national model of public school innovation and home to some of the most contemporary learning spaces in the United States. The schools have made a commitment to this century's learning model, a belief that we must learn to "search, connect, communicate and make" and thus unleash the lifelong learning potential of young people. And in Albemarle County that means all children, across 25 highly diverse schools, 726 square miles of rural, suburban and urban environments. Educators from Albemarle are well known for their work to infuse Maker work across the curricula. A district initiative to redesign learning spaces has increased opportunities in every school for learners to research, design, build, engineer, and "make to learn" as well as "learn to make" using a variety of old and new technologies accessible in libraries, mechatronics labs, media labs, arts studios, multi-age spaces, maker spaces, and informal learning settings created throughout Albemarle's schools.



Bold plans now underway seek to eliminate traditional age-based grades in elementary schools, and single-teacher, single subject secondary courses, replacing both with truly open, truly flexible spaces that help to nurture the natural curiosity and the natural energy of children and adolescents.

Ira Socol, the Director of Learning Technologies and Innovation for Albemarle County Public Schools is responsible for engineering the re-imagining of the structures within which children learn. His team work on the systems 3-12 one-to-one computer initiative, on changing physical spaces to support contemporary learners and learning, on building problem and passion-based curriculum that crosses content boundaries, and even on how we use time. He has helped to develop Professional Learning support for the schools' "Seven Pathways to Transform Learning" – Choice and Comfort, Instructional Tolerance, Universal Design for Learning/Individualization of Learning, Maker-Infused Curriculum, Project/Problem/Passion-Based Learning, Interactive Technologies, and Connectivity.

Ira has a complex mix of background experiences, including being a Studio Art major at Michigan State University, an architecture student at Pratt Institute, a New York City Police Officer, a computer network specialist, and an Assistive Technology Specialist, before doing doctoral work in education back at Michigan State.

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.

# Session one: Inhabiting design

## Interlocutor



### **DR LENNIE SCOTT-WEBER**

INSYNC: EDUCATION RESEARCH + DESIGN - USA



“Dr. Lennie” is a leading thinker on the evolution of what we know about learning, the learner and the learning place. Passionate about the unanswered solutions that leave students behind in their learning, she has pioneered research strategies addressing how the built environment impacts engagement factors and learner success, and has designed future-focused, evidence-based design applications for 20+ years. Currently, she is the Owner & Principal of INSYNC: Education Research + Design.

Formerly: the founding Director of Education Environments Globally for Steelcase Education; tenured, full-professor and Chair at two design schools [one in Canada & one in USA]; Director of the iLAB Research Center, Radford University; professional interior designer, author, published researcher, national and international speaker. Loves being with family as well as sailing, traveling and staying curious

# Exploring the use of interaction geography to advance post-occupancy evaluation



**BEN SHAPIRO**

VANDERBILT UNIVERSITY - USA

In this paper, I explore how an emerging approach to describing people's interaction over space and time that I call "interaction geography" advances post-occupancy evaluation (POE) in educational settings. To do so, I begin by introducing my use of interaction geography in a study of how 22 visitor groups engage and learn while visiting a nationally renowned museum located in the United States. I focus on how, in this work, interaction geography provides a way to characterize visitor engagement and learning in relation to the physical design of museum exhibits and gallery spaces. For example, I illustrate methods of interaction geography such as Mondrian Transcripts that visually transcribe visitors' movement, conversation and social media activity over space and through time. Likewise, I discuss concepts of interaction geography such as "engagement contours" that provide ways to conceptualize how visitor engagements repeat and accumulate in relation to syntactical qualities of museum exhibits and gallery spaces. Subsequently, I explore how future POE research in educational settings could draw from interaction geography to (a) describe how physical spaces condition not only people's mobility but also people's conversation patterns, (b) evaluate the alignment of physical spaces and pedagogy and (c) interpret how people produce and realize their own interest-driven learning in response to intended design.

**KEYWORDS: INTERACTION GEOGRAPHY, LEARNING SCIENCES, POST-OCCUPANCY EVALUATION, INFORMATION VISUALIZATION**



*Ben Rydal Shapiro is completing his PhD in Learning Sciences at Vanderbilt University. Situated at the intersection of Learning Sciences, Information Visualization and Architecture, his work focuses on developing new types of research approaches and learning environment designs that explicitly consider the relations between space, learning and mobility. Ben previously studied architecture and is committed to collaborations across the fields of education and design. At Vanderbilt he has helped build collaborations with the School of Architecture & Design at the University of Melbourne, Australia and was co-founder of Vanderbilt's Design for America studio, part of a network of student-led studios creating local and social impact through interdisciplinary design. Ben is originally from California and received his B.A. in Architectural Studies from Middlebury College and M.Ed. from Vanderbilt.*

# From learning commons to learning communities: Examining the role of mixed-use learning zones in millennial education



**MARIA SANCHEZ**

UNIVERSITY OF FLORIDA - USA

Academic success hinges on student engagement; however, past research has mostly examined student engagement within the confines of the classroom walls. This study argues that engaging millennial and subsequent generations of students requires looking outside the classroom box. Today, knowledge is ubiquitous. Classrooms that compartmentalize knowledge and maximize students-per-square foot no longer make sense; instead, a learning-per-square foot metric must be employed—where learning transcends the classroom walls and extends into the larger socio-communal fabric of the institution. Many institutions of higher learning are building active learning classrooms to promote student-teacher collaboration. Although these classrooms have been associated with improved educational experiences and outcomes, they frequently do not afford students co-ownership of those spaces for use outside of scheduled class time. Conversely, instructors can be challenged to utilize “student owned” common areas as breakout space during class. In this study, the mixed-use learning zone is examined where the boundaries between common spaces and classrooms are blurred, encouraging informal collision and catalytic interactions among all stakeholders. This research employs a multi-case study approach involving a survey of a national online community portal for millennials, on-site behavior mapping, and narrative inquiry. Together these instruments developed five typologies of space for mixed-space learning zones, informed the range of behaviors for each identified typology, assessed their impact on the learning experience through engaging narratives, and developed evidence-based design guidelines to help educators and designers successfully implement these spaces in practice.

**KEYWORDS: MILLENNIALS, HIGHER EDUCATION, MIXED-USE LEARNING ZONES, LEARNING COMMUNITIES**



*Maria is currently pursuing a Master of Interior Design at the University of Florida and is expected to graduate in May 2018. Maria is a LEED (Leadership in Energy and Environment Design) Green Associate and works as a Graduate Designer at Studio MJG in Gainesville, FL. Studio MJG is an architecture and interior design firm that works on a variety of commercial projects with a focus on higher education environments that includes the University of Florida. Maria received a Bachelor of Design in Interior Design with a Minor in Sustainability and the Built Environment from the University of Florida in May 2016. Maria's research focuses on identifying design characteristics that make higher education learning environments more conducive for the millennial generation. Her research aims to determine if department-specific learning commons are better at fostering sense of community and collaboration, within a college, than a traditional learning commons (e.g. library at the center of campus). Maria believes in combining human behavior research and the built environment to create user-centered design solutions that are not only aesthetically appealing and functional but will improve the quality of life for all stakeholders.*

# Periodic table of learning



## STEPHEN SUN

HARVARD GRADUATE SCHOOL OF DESIGN - USA

The Periodic table of learning (PToL) is a tabular arrangement of architectural spaces, spatial affects, learning modalities, and learner's intelligences. What began as a framework to analyze educational spaces to better understand the relationship between pedagogy and architecture, the PToL became a spatial generative tool for architects and educators alike. This paper will present the research process behind the PToL and the implementation of the process resulting in the schematic design of INDY Tech Charter School in Indianapolis, Indiana, USA.

Schools, metaphorically speaking, have software and hardware components. The software involves the intangible: School's mission statement, Curricula design, Lesson planning, theories of learning, behavioral psychology, etc. The hardware, conversely, involves the tangible: walls, supplies, furniture, décor, colors, etc. The two are seldom designed in tandem due to a lack of spatial literacy from educators and a lack of educational literacy from architects. Architects aren't typically involved in the curricula design or the crafting of the school's mission statement, and educators aren't trained to manifest educational intent into physical solutions.

If the software and hardware aren't aligned in the design of a facility, a headmaster is left with a very expensive investment that hinders student learning rather than amplifying it. Using the Periodic Table of Learning informs spatial design by linking architectural techniques to learning attributes. Educators see, via the table, the direct correlation between their students' learning needs and the respective architectural solutions. Architects, via the table, are psychologically and pedagogically informed in their design process.

It is anticipated that the Periodic Table of Learning will evolve into an interactive BIM/CAD tool that is accessible to educators and designers alike. The Table will introduce a new way of designing where architects and educators are both informed of each other's disciplines. See <http://david-wu.github.io/assets/table/> for an alpha version of the table in action.

**KEYWORDS: ELEMENTS, PERIODIC TABLE, ARCHITECTURE**



*Stephen Sun is an educational designer/real estate developer/teacher and architectural mercenary. Sun started studying architecture at Carnegie Mellon University, and graduated with a B.Arch from the Southern California Institute of Architecture. After designing and rebuilding schools in post-earthquake Haiti in 2010, he began exploring the intersection of design and education at Harvard and completed his Master of Architecture II there. During this time, he was a Teaching Fellow and helped founders design all facets of their school from scheduling, to curriculum, and of course the physical environment. An adjunct professor of architecture at Wentworth Institute of Technology teaching first year foundational design studios, Sun then became a 4<sup>th</sup> grade homeroom teacher at Conservatory Lab Charter School in Boston, to further his understanding of school designs. Sun is also as a member of the Center for Artistry and Scholarship, where he collaborates with developers, city planners, and architects, to design a new model for developing schools. Sun is currently learning SQL and Python to prototype the Periodic Table of Learning.*

# Session two: Teacher practice

## Interlocutor



**GARY NATRIELLO**

COLUMBIA UNIVERSITY - USA



Gary Natriello is the Ruth L. Gottesman Professor of Educational Research and Professor of Sociology and Education in the Department of Human Development at Teachers College. Professor Natriello teaches graduate courses in the social organization of schools and classrooms, the social dimensions of assessment and analytic processes, the sociology of online learning, and research methods. Professor Natriello is the Director of the Teachers College EdLab, a design and development unit devoted to creating new educational possibilities for the information age. Professor Natriello is the executive editor of the Teachers College Record and the Director of the Gottesman Libraries at Teachers College. Professor Natriello's research interests include school organization, evaluation, at-risk youth, and the sociology of online learning. Recent publications include: *Modest Changes, Revolutionary Possibilities: Distance Learning and the Future of Education*; *Imagining, Seeking, Inventing: The Future of Learning and Emerging*

*Discovery Networks*; *Online Assessment and Diverse Learners*; *Networked Learning*; and *The Learning Theater: A Library Space to be Redesigned by Patrons*. Professor Natriello holds an A.B. (English) from Princeton University, an A.M. (Sociology) from Stanford University, and a Ph.D. (Sociology of Education) from Stanford University.

# Avoiding the learning space gap



**ROBERT DILLON**

SCHOOL DISTRICT OF UNIVERSITY CITY - USA

Learning space design in K-12 schools continues to grow as a topic of importance. Educators are looking for ways to construct and retrofit spaces that can maximize the modern learning demands of the school. As this occurs, the desire to lunge forward without purpose by decorating and buying furniture can swamp the need to remain focused on design principles. This review and analysis looks at how focusing on the research of biomimicry and its implementation into spaces can allow for focused implementations and greater learning outcomes for schools. This review and analysis expands on the author's work from *The Space: A Guide for Educators* that bridges the researcher to the implementation gap that has occurred in most schools in the area of space design.

**KEYWORDS: BIOMIMICRY, DESIGN, ENGAGEMENT, JOY, LEARNING**



*Dr. Robert Dillon has served as an educational leader in a number of public schools throughout the Saint Louis area over the last twenty years as a teacher, principal, and director of innovation. Dr. Dillon has a passion to change the educational landscape by building excellent engaging schools for all students. Dr. Dillon serves on the Leadership Team for Connected Learning, a Saint Louis based organization designed to reshape professional development to meet today's needs. Dr. Dillon has had the opportunity to speak throughout the country at local, state, and national conferences as well as share his thoughts and ideas in a variety of publications. He is the author of four books on best practices in learning, *Leading Connected Classrooms Engage, Empower, Energize: Leading Tomorrow's Schools Today*, *Redesigning Learning Space*, and his most recent book on learning space design called *The Space: A Guide for Educators**

# Architecture & design for the art of collaboration and creativity. The spirit of 'we' in learning environment. 'We learn'- a space for students and teachers to become



## ANAT MOR-AVI

ILLINOIS INSTITUTE OF TECHNOLOGY - USA

This project examines the potential of enhancing the spirit of 'WE' for students and particularly for teachers vs. the spirit of 'I' in learning environments. Currently, around the world, educators are transitioning from a culture of lecture-based (one-to-many) to a more facilitation-based method supporting new active learning pedagogies (many-to-one). School is a cultural structure in which a student's success is directly impacted by his/her teachers' own success and well-being. It is critical to redefine the teacher's essence as pedagogy shifts to student-centered learning. A well-designed space can and should make a difference. Thus, 'innovatively designed' spaces supporting critical thinking, making and sharing, in a collaborative manner for the students, need to be supported by 'innovatively designed' spaces for educators as well; since their 'work' life is changing to a 'just-in-time' educational approach.

Today's global workforce is focusing on effectiveness and teamwork. Therefore, it might be necessary to shift the school culture from 'I' to 'WE'. The 'WE' cultural structure may offer environments where students and teachers have their own innovative semi-transparent places, breaking down the visual barriers and promoting visual thinking, learning and working, as in many Innovation labs around the world.

Thus, schools could become a two-main learning HUB model empowering both WE's by promoting collaborative learning atmosphere for students, a collaborative working atmosphere for teachers and a shared space in between.

To boost the 'WE' culture, schools' schedule should accommodate appropriate time during the day in which teachers can work together while students are working independently, and at times, both could meet in the shared space which could support different types of learning activities. Those shared spaces would be designed to support this type of holistic change by enhancing a 'WE LEARN' atmosphere for students and teachers to become - at times separately, at times together.

**KEYWORDS: WE LEARN; WE>ME; EMPOWER THE COLLECTIVE; 2+1 HUB MODEL**



*Anat Mor-Avi is an experienced Architect, Artist and currently a Ph.D. student at the Illinois Institute of Technology, the College of Architecture in Chicago. In the last 20 years, Mor-Avi has focused on designing learning environment facilities in the USA and Israel while empowering the interrelation between the evolving pedagogies and the physical surrounding. Challenged by building with bricks and mortar for dynamic education, Mor-Avi returned last year to investigate the connection between Architecture, Interior Design, and Education. Looking at how architectural and design attributes contribute to students and teachers success while supporting and enhancing Creativity and Collaboration, her research will focus on the spirit of WE among faculty and among students as well as between the two entities, vs. today's spirit of 'I' in learning environments. Mor-Avi ties practice with research and evaluates previous project efficacy by investigating user experience, the final step in designing innovative learning environments for today's dynamic education.*

# Session three: Change and risk

## Interlocutor



### **DR. JULIE MARSHALL**

SALUDA TRAIL MIDDLE SCHOOL, &

ADJ. PROF, RICHARD RILEY COLLEGE OF EDUCATION, WINTHROP UNIVERSITY - USA



Dr. Julie Marshall serves as a 7th Grade Language Arts teacher at Saluda Trail Middle School and an Adjunct Professor in the Richard Riley College of Education at Winthrop University, both located in Rock Hill, SC. She has over 25 years of classroom experience at the elementary/middle school levels in conjunction with 7 years at the university level. Julie has won many awards for exemplary teaching on the state and national level, including National Teacher of Excellence and selection as a Global Teaching Fellow. She helped develop an endorsement for teachers of students from poverty and actively helps to shape policy and practice in her state. Julie is a National Board Certified teacher and evaluator. Currently teaching in a STEAM/P21 exemplar school she is a strong proponent and practitioner of Project Based/Active Learning Environments. She was one of the inaugural recipients of the Steelcase Active Learning Center grant program. Dr. Marshall has provided local, state and national professional development on the use of PBL and Active

Learning in the 21st century classroom.

Julie's research and practice has been devoted to linking motivation and interest to student success. Her action research is helping other teachers re-discover their passion to teach as she challenges them to design/configure learning spaces to better meet the needs of individual learners. Her research data shows the positive impact active learning environments have on student motivation, work completion, and academic achievement.

# Aligning vision with actual use of innovative learning environments: explored through the lens of organizational change



**TARYN KINNEY**

COLUMBIA UNIVERSITY - USA

While most educators would tell you that the world of education is constantly changing, the physical environment in which they are operating has not. In addition, most schools have not made broad scale changes in teaching and learning towards multi-modal learning despite considerable empirical evidence to support. Lewin's Field Theory,  $B=f(P,E)$  suggests that Behavior is a Function of People and their Environments. Within education primarily isolated examples of behavior change can be found paired with modifications of a specialty space in contrast to wide-scale behavior change found in new workplace or medical environments. My research explores Lewin's theory further in order to distinguish, and learn from, the schools that are able to make the change from those that are not by answering the following question:

What steps need to be taken, from an organizational development/Change Leadership perspective, to ensure Innovative Learning Environment's (ILEs) are used as intended?

To answer this question, I focused on a successful school, Glenn High School, with Innovative Learning Environments (ILEs). I utilized the Burke Litwin Organizational Assessment Survey in conjunction with an analysis of their Change Leadership process to explore causal relationships between steps-taken and the achievement of behavior change. I found that the participants were highly-aligned around transformational areas and still have work to do in the transactional aspects of the Organizational Assessment Survey. A clear Change Leadership process was utilized to support intentional culture creation aligned with the original vision. These results suggest that strong and consistent leadership, especially in conjunction with proven Change Leadership process may explain Glenn's success in change. Comparison of the pattern of Assessment Survey data of additional successful schools and unsuccessful schools may allow a better understanding of what steps need to be taken, from an organizational development/Change Leadership perspective, to ensure ILEs are used as intended.

**KEYWORDS: CHANGE LEADERSHIP, ORGANIZATIONAL DESIGN, INNOVATIVE LEARNING ENVIRONMENTS**



*Twenty years ago Taryn decided to study architecture because of the fascinating intersection between perception, sensory stimulation, and the emotions a spatial environment evokes. After successfully designing new environments across building types, she found her passion in educational facility design, specifically, incorporating developmental research and changes in pedagogy into the design. She developed her process to respond to clients' need to explore and define their future approach to learning. After all, if a building is going to last fifty years, it needs to flex to support changes in teaching and learning. Taryn has led a dozen transformational visioning processes, and designed new environments to support this future learning. Taryn realized that her clients needed support not only in environment design, but also in organizational design. In this vein, Taryn recently completed a masters in Organization Psychology with a specialty in Change Leadership from Columbia University's Teachers College, and now provides a holistic service that couples change leadership and organizational design with environment design.*

# School change: Case studies and how to achieve the “buzz”



## **RAECHEL FRENCH**

THE UNIVERSITY OF MELBOURNE - AUSTRALIA

Many schools today understand the need to prepare students for our somewhat unknown future in the modern, global economy and often turn to the built environment as a catalyst for change. They are trading in their identical classroom model for activity-driven, technology-infused spaces allowing for movement and variety in the learning experience. Through this, schools envision a future in which teaching, culture, and space align seamlessly creating a campus filled with an intangible “buzz” of learning and engagement. However, changing space is easier than changing practice. Research and experience show many of these schools fail to supplement the design and construction of new or renovated facilities with initiatives to align teaching practices, organizational structures, and leadership with the intended vision, assuming the new facility itself will spur the desired change. However, this often only results in a misalignment between the pedagogical goals of the building and its subsequent use. This is one of the many realities fuelling the current Innovative Learning Environments and Teacher Change (ILETC) project and the lens through which my personal research occurs. As a Fulbright scholar with the ILETC, I am embarking to answer the question, “What characterizes a successful transition of a school from traditional classrooms to an innovative learning environment in the context of the design and construction process?” I am completing case studies of schools who are in new buildings and have achieved the “buzz” with plans of unpacking their process to inform the design, construction, and transition of future schools. On-going findings will be discussed.

**KEYWORDS: CHANGE IN PRACTICE, TRANSITION PROCESS**



*Raechel earned a B.E.D. in Architecture and a B.S. in Psychology from Texas A&M University and a Masters in Human-Environment Relations, with a focus on Facility Planning and Management, from Cornell University. She has spent the past seven years researching and planning educational spaces throughout the United States and finds that the design process as it is, while engaging and collaborative, often only includes a small subset of its eventual users, resulting in facilities not being used to their full potential. Her goal is to help expand the role of school architects and planners and better align the use of a new facility with its intended vision. She is currently a Fulbright Postgraduate Scholar, completing case studies on the transition schools are taking from traditional to more student-centred learning in multi-modal spaces, as part of the Innovative Learning Environments and Teacher Change project at the University of Melbourne. Raechel sees this research being integrated into a new paradigm in which there is a strategic organizational alignment process running parallel within design work to help schools holistically realize their vision.*

# The built pedagogy of personalized learning as designed opportunities for student voice and choice



**JULIE KALLIO**

UNIVERSITY OF WISCONSIN - USA

The design of the physical spaces are an important - yet often overlooked - component of learning. In prior research on K-12 personalized learning programs (PLPs), our team found that teachers had radically modified their classrooms and buildings, from knocking down walls to adding sofa chairs and lamps (Authors, 2015). The stark contrast from the expected desks in a row, prompted the question: How does the design of physical spaces in PLPs provide opportunities for student voice and choice? In an instrumental case study (Stake, 1995) of four PLPs, I draw out design affordances (Norman, 1994) from patterns of teacher and student use in order to understand the complexity of physical spaces, pedagogy, and student agency. Four meaningful patterns of use emerged: spaces designated by purpose, flexibility in student movement and furniture, regular assembly of a local learning space, and students as co-designers. Each of these affordances aligns with choices students have over their learning process and even points toward potential mechanisms for developing agency and community. Most research on flexible learning environments in personalized learning ignore the physical spaces, but these findings argue for their consideration in any pedagogical model. This challenges educational leaders to see spaces as a built pedagogy and reflect on what their learning spaces communicate to teachers and students about what learning looks like and who is valued. To be sure, physical spaces do not solely determine student learning experience, nor is changing physical spaces a panacea to enact pedagogical change, nor was it my goal to quantify the effect of physical spaces on learning outcomes. What this study illuminates are the ways the physical space is connected with students' voice and choice by design.

**KEYWORDS: STUDENT-CENTERED LEARNING, PARTICIPATORY DESIGN, SENSE OF PLACE, REPURPOSING**



*Julie Kallio is a doctoral student in Educational Leadership and Policy Analysis at the University of Wisconsin – Madison. She is also the research director for the Personalization in Practice – Networked Improvement Community, a IES grant-funded position to bring together teachers to do participatory design work around emerging practices. Her research interests include the design of physical learning spaces, design processes, professional community, organizational theory, social networks. Julie previously taught in outdoor education and independent schools for 9 years, leading technology integration, teaching science, and dorm parenting. She received her M.S. in Science Education from Montana State University and her B.S. in Biology and French from the University of Wisconsin – Madison.*

# Session four: Measuring impact

## Interlocutor



### **A/PROF. ROBERT TALBERT**

GRAND VALLEY STATE UNIVERSITY - USA



Robert Talbert is an Associate Professor in the Mathematics Department at Grand Valley State University in Allendale, Michigan. He holds a B.S. degree in Mathematics from Tennessee Technological University, and M.S. and Ph.D. degrees in Mathematics from Vanderbilt University.

Prof. Talbert is a proponent and thought leader on active learning in higher education, particularly in the STEM disciplines. He is a frequent speaker and workshop facilitator on flipped learning, having authored several research papers on this subject and given talks and workshops across the US and in Canada, France, Jamaica, Spain, and the United Kingdom. He is the author of *Flipped Learning: A Guide for Higher Education Faculty* (2017) and is a Flipped Learning Research Fellow through the Flipped Learning Global Initiative.

Prof. Talbert is currently on sabbatical from Grand Valley State University through August 2018, serving as a scholar-in-residence with Steelcase. In this position, he is consulting with Steelcase Education and the Workspace Futures group on active learning issues and conducting research studies on flipped learning.

Robert, his wife, three children and a variety of animals live in Allendale, Michigan where he enjoys cooking, bicycling, reading, and the beaches of Lake Michigan.

# Using interactive learning spaces for global diplomacy: A social justice collaboration between US and international students



**MATT MOORE AND ANA MANN**

BALL STATE UNIVERSITY - USA

Faculty members from the Department of Social Work and the Intensive English Institute collaborated on projects aimed at international diplomacy and social justice. The collaboration included a mix of social work students enrolled in social welfare policy courses and international students enrolled in English courses for nonnative speakers. Students involved in this three-semester collaboration focused on topics such as human trafficking, poverty, and immigration. Students had to explore these topics using international perspectives and identify global strategies for addressing these social injustices. A secondary objective of this collaboration was to help international students integrate into US-based higher education and to help social work students engage individuals from a variety of diverse backgrounds.

This collaboration took place in an Interactive Learning Space at Ball State University. Faculty members used learning methodologies such as inquiry, team, and problem-based learning to engage students in the educational process. The collaboration was made possible because of the learner engagement tools available in the Interactive Learning Spaces (e.g., portable whiteboards, various projection sources, polling tools, and movable furniture). This furniture allowed students to take ownership of their space and supported the transformation of the classroom into an inclusive legislative body.

This presentation will outline the lessons learned from faculty members and students who participated in this international collaboration. This includes a review of student learning outcomes, student feedback about the collaboration, and a review of the role space played in enhancing student success. The presenters will review both quantitative and qualitative data to support the use of Interactive Learning Spaces to improve student outcomes, faculty growth, and discovery of new pedagogical approaches.

**KEYWORDS: COMMUNITY-CENTERED EDUCATION, PEDAGOGY, LEARNING SPACE DESIGN.**

*Ana is an ESL instructor in the Intensive English Institute (IEI) at Ball State University. Ms. Mann earned her BA from the Philosophic Faculty in Sarajevo, Bosnia and Herzegovina, and her MA from Ball State University, and has been working with international students, both through community classes and in college, for the last 13 years. The main focus of her research is how to enhance critical thinking of second language learners and use those skills in academic reading, writing, and speaking. Ana is a member of the Interactive Learning Space Initiative at Ball State University, along with Dr. Matt Moore. Dr. Moore is an Assistant Professor in the Department of Social*

*Work at Ball State University. He earned his BA from Hanover College and his MSW and PhD from Indiana University. Dr. Moore is currently the co-founder of the National Alliance of Social Workers in Sports and focuses on the integration of social work in sports and athlete well-being. He is currently working on a Sport Social Work Certificate Program and writing the first ever Social Work in Sports textbook (January 2018). Dr. Moore also teaches macro social work courses covering policy, research, and non-profit development and was the recipient of the 2017 Excellence in Teaching Award at Ball State University.*



# The creative learning spiral: Designing environments for flaring and focusing



**JANE ZHANG**

HARVARD GRADUATE SCHOOL OF DESIGN - USA

In the context of a rapidly evolving knowledge economy, creativity has become one of the most highly regarded qualities of a 21st century graduate, across age levels. Creativity appears as an attribute in Mehta and Fine's (2015) definition of deeper learning, and in the widely used rubric of the four C's for 21st century learning (EdLeader 21). Research on the theory and practice of creative learning is young, especially in relation to learning environments. This paper proposes a framework for designing learning spaces that foster creativity. Culminating the work of both head and hands, creative learning can be defined as the rigorous process of creating a high-quality product. Creative learning involves a continuous spiral of activity that maps onto a two-by-two matrix, with flare versus focus on one axis, and engagement with objects versus people on the other. This paper will summarize findings from design research conducted at Harvard's Graduate School of Design and Innovation Lab, as well as observations and design work with thirty K-12 schools across the United States. Preliminary findings will be presented on the validity of such a model as a rubric for designing and assessing learning environments for creativity.

**KEYWORDS: CREATIVITY, ETHNOGRAPHY, SPACE, DESIGN, INNOVATION**



*Jane Zhang is a design researcher, entrepreneur, and lifelong learner. She is the CEO and co-founder of room2learn, the first online platform for designing learning spaces. Jane works with a team of educators, designers, and researchers to study the impact of space on learning, particularly for creativity and 21st century skills. As a former educator, Jane has worked with youth in a variety of environments, from media classrooms to music studios to outdoor camps. Prior to designing learning spaces, she worked as a journalist, urban planner, and in the clean technology sector. Jane holds a Master of Design Studies from the Harvard Graduate School of Design and a B.A. & Sc. in Sustainability and English Literature from McGill University.*

# Characteristics of learning spaces favouring the development of computational thinking skills



**MARIO CHAISSON**

UNIVERSITÉ DE MONCTON - CANADA

Since the 1980's, our industries have embraced digital technologies to improve practices and increase efficiencies. Consequently, physical spaces have been redesigned nurturing communication and collaboration giving birth to a new set competencies (Webster, 2015). Amongst them, computational thinking (CT) skill seems to be one of the most competencies needed in all domains of the industry (Wing, 2006/08; Bundy, 2010; Barr & Stephenson, 200; Grover & Pea, 2013). While its definition is still not clear, the school system seems to struggle to design a process favoring its development. With that being said, could the classroom (learning spaces) hinder the CT development? We are at the very beginning of trying to understand the complexity of the relationship between the learning space and the development of computational thinking skills of students.

**KEYWORDS: LEARNING SPACES, COMPUTATIONAL THINKING, LEARNING PROCESS**



*Mario Chiasson is a leader in the application and use of Information and Communication Technology (ICT) in education. In his role and responsibility at Anglophone East School District in Moncton, New-Brunswick, Canada include providing an administrative and pedagogical vision for technological advancements in learning. Over the years, Mario has assisted schools, districts and ministries to understand the impact of ICT in the education system to engage students in their learning performances. In 2004, Mario completed a Master's Degree in ICT in schools administration and conducted two major research projects on mobile learning; "My e-Backpack", and "Bring Your Own Devices" (BYOD) at school. Mario also a Microsoft Innovative Educator, a Cisco IT Essential Teacher, an Apple Teacher as well as an Apple Distinguished Educator (ADE). He has been a part of many provincial projects including a 1-to-1 laptop project, provincial and district collaborative platform (Portals), as well as international collaborative projects. Mario is enrolled in a Ph. D program at the Université de Moncton in research that focuses on learning spaces and the development of computational thinking skills.*

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# Notes



# Notes



