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Track 08: Design learning environments

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Section 08

Design Learning Environments: Exploring the Role of Physical, Virtual, and Hybrid Spaces for Design Education

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Teaching and learning approaches in design and art education can have different characteristics, ranging from traditional ex-cathedra teaching to project-based learning, sometimes even with external clients. Lecturing, self-study, teamwork, practical modelmaking, and remote teaching take turns, which is typical for the design field but can also be seen in other disciplines and K-12 education. The educational practices that arise from these different approaches often have a relation to the spaces and places in which learning takes place. The question arises how the spatial settings of the learning institutions can be designed in order to better facilitate learning.

Compared to other aspects of educational research, such as pedagogy in general, curriculum and syllabus design, educational psychology, and learning theory, the role of the learning space is relatively under-researched. With this track we aimed to explore two different perspectives on the topic: First, to understand the role of the space (physical, virtual, hybrid) in design and art education, and secondly, to investigate how learning spaces can or should be designed to facilitate learning in general. We provided some questions of interest as a starting point:

- How can the design of the physical space facilitate creativity and the design process in general?
- What hybrid or virtual counterparts of physical space can be identified for design learning, and what are related challenges and opportunities?
- What are new trends in learning space design in K-12 education (Kindergarten and Elementary Schools)?
- How does the learning space need to change after Covid-19?

We included 14 research papers and two workshop proposals for the conference program and proceedings that represent a broad range of different perspectives on the topic.

Contributions to Track

Three papers focus on the context of K-12 education: In their paper "Unlocking wellbeing-affordances in elementary schools initiated by a "natural experiment" caused by Covid-19", *Ruth Stevens, Ann Petermans and Jan Vanrie* explore design strategies to design wellbeing related affordances in the post-Covid 19 classroom. *Anne Taylor* presents a collection of case studies of "Architecture for Education" with the aim to inspire designers for creating better learning spaces. Another case study from the K-12 context is presented by *Ge Fu* with the paper "Senseed: A Multisensory Learning Environment for Urban Pre-Schoolers in China".

Several papers introduced new tools and theoretical frameworks for the higher education context: In "A Game Implementation Approach for Design Education Within the Content of Architectural Design Studios" *Duhan Ölmez and Fehmi Doğan* introduce a new video-game-based tool to facilitate architectural design processes. *F. Zeynep Ata and Fehmi Dogan* introduce a conceptual framework for the "Architectural Design Studio as an 'Extended Problem Space'". Finally, this theory-focused session will be concluded by *Yuan Liu, Dina Riccò and Daniela Anna Calabito* who present a framework for an immersive virtual environment to teach basic design. Several submissions presented theoretical contributions with a strong focus on virtual aspects. *Meng Yue Ding, Yi Ke Hu, Zhi Hao Kang and Yi Jia Feng* ask "Teaching with Virtual Simulation: Is It Helpful?". *Ruth M. Neubauer and Christoph H. Wecht* discuss the "Materiality of Space and Time in the Virtual Design Studio". And in their

paper "Designing Criteria for Developing Educational Multimedia Games" *Chaitanya Solanki and Deepak John Mathew* present a review of theories and guidelines for multimedia learning environments.

The question of how virtual learning spaces were able to replace physical environments during the COVID-19 pandemic was addressed by three contributions: *Andreas Ken Lanig* proposes "the intellectual diet in pastoral spaces of activity in digital design education". *Alessandro Campanella, Eliana Ferrulli and Silvia Barbero* discuss the advantages of multimodal online learning environments and suggest the need for "Rethinking experiential learning in Design education". Finally, *Adela Glyn-Davies and Clive Hilton* propose "Utilising Collaborative Online International Learning (COIL) as a Pedagogical Framework for Design Thinking Projects".

The last session of research papers in this track focuses on hybrid learning spaces. *Shunhua Luo, Jingrui Yang and Chunhong Fan* explore the potentials of "Hybrid Spaces Teaching for Chinese Traditional Costume Craft". In "Critique Assemblages in Response to Emergency Hybrid Studio Pedagogy" *Christopher Wolford, Yue Zhao, Shantanu Kashyap and Colin M. Gray* report on hybrid critique approaches in the design studio and how these might foster critical reflection.

To complement this cutting-edge research on creative learning environments, two workshops have been invited to deliver hands-on experiences on the topic. "The leftovers of Participation" is run by *Andrea Wilkinson and Steven Lenaers* and will center primarily upon the experience of the participants within different environments. And finally, *Gloria Gomez and Rodney Tamblyn* will conduct an interactive workshop where "Students and Teachers become Co-designers of Learning". In this workshop participants will have the chance to experience a virtual personal learning environment.

In summary, the selected papers and workshops are presenting varied perspectives into the realm of physical, virtual, and hybrid design learning spaces, targeting both, higher education and K-12 education. The insights to be expected from these presentations promise a glimpse into the spatial aspect of design pedagogy, which is subject to significant disruptions following the COVID-19 pandemic.

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Nicole Lotz is Senior Lecturer in Design at The Open University in the UK. Nicole is interested in design processes, collaboration and engagement across boundaries and at the margins. Her work seeks to offer opportunities for disadvantaged communities to engage and persevere through social and communal creative learning, even in challenging situations.

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