

ABSTRACT

In recent years, many schools are being built or rebuilt aiming to support new pedagogies that will foster the development of 21st century skills. These pedagogical visions are often materialized in new typologies of learning environments with a more open, flexible and activity-based interior design. The layout of these new spaces demands new teaching and learning strategies in order to become supportive tools for practice, which is often assumed to occur automatically following the alteration of the spatial design. However, as both research and practice reveal, changing a space does not necessarily change practice, which is why many schools end up with a discrepancy between the spatial design and their pedagogical practices. So how can we assure a better alignment between the design of a learning space and the practices in the space?

This PhD thesis addresses the challenges of designing new learning spaces where the spatial design and pedagogical practices align. The point of departure for the thesis is the assumption that the relationship between learning space design and pedagogical practice is a constant and dynamic interplay, where each part affects the other. This understanding builds on current learning space research with a relationalist perspective and is inspired by Actor Network Theory (ANT).

The particular contribution of this thesis to the research field is that it explores and discusses the interplay between learning space design and pedagogical practice with a specific focus on the design process. The main focal point is the significance and potential of using participatory design processes and methods to inform the relationship between space and practice—both before, during and after the design and implementation of a new learning space. Hence, the thesis contributes to current research as well as current practice in the designing of learning environments for children and youths in primary and secondary schools, while insights also relate to other learning environments in e.g. libraries and universities.

The potential of participatory design processes and tools in aligning learning space design and pedagogical practices is explored in three practice-based design experiments. The methodological approach in these experiments builds on constructive design research and employs a programmatic approach to design research in which design experiments are the core of the project. Thus, the empirical research has been conducted as three design experiments in two Danish schools, where design processes and design methods have been explored in a participatory context with school management, teachers and students.

Overall, the design experiments examine three designerly ways to influence the interplay between learning space design and pedagogical practice, focusing respectively on the design process, the design tools and the design (prototypes). The findings from the design experiments indicate that the level and extent of stakeholder involvement in the design processes of new learning spaces influence the following alignment of space and practice. However, they also indicate that participatory processes are complicated and difficult to conduct due to many factors such as the participants' professional and cultural backgrounds as well as limitations in building budgets and time schedules. This was found to pose a challenge to the alignment of space and practice in this research project. In response to this, I

suggest the concept of ‘participatory activation’ as a yet unexplored part of a design process, which implies that creators and users of learning spaces collaboratively activate and match space with practice. This process of activation is proposed to succeed the implementation of new or re-built learning spaces.

Furthermore, the thesis explores co-design tools and techniques as a means to unlock learning spaces during ‘participatory activation’ by supporting the development of teacher environmental awareness and competence and through this help the teachers take control of the physical surroundings and actively work with the alignment of space and practice. The conclusion is that the alignment of space and practice is a dynamic and ongoing collaborative process that needs to be considered and revised iteratively before, during and also after the implementation of a new learning space design. In this process co-design, as a participatory design approach, was found to be a key to unlocking the space-practice relationship.

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