

Research Plan

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Research tutor

Aart Oxenaar

Design & theory tutors

Paul Kuitenbrouwer

Henk Bultstra

Stefano Corbo

Sien van Dam

Gosia Gołębek

Sang Lee

Elena Englmann (5853095)

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**Hybrid learning spaces in the vertical campus as an opportunity to
enhance social creativity within higher education**

Part 1: Introduction

1.1 General introduction

Within the Public Building graduation studio 2023/24 „The Vertical Campus“ (AR3AP100) and the course Research Plan (AR3A010) the following paper describes the research topic my individual design project aims to address and how I plan to approach it. My first investigations and explorations within the framework of the studio’s research-by-design approach directed my focus to the topic of hybrid learning spaces. Since the foundation of the Public Building graduation studio revolves around the thematic pillars of hybridity and lifelong learning, I see this thesis studio as an opportunity to pursue my research about hybrid learning spaces and their role in today’s higher education. While there has been a great shift in pedagogical and technological approaches towards more hybrid learning concepts during recent years, it is also time to open up architectural spaces to a broader notion of public – multi-cultural, diverse, and intergenerational – and develop new perspectives on how these spaces can supply answers to a changing and more and more diverse set of values and needs of today’s learners.

1.2 Problem, hypothesis, and personal motivation

The problem, which will be investigated through this research, was identified using the concept of “Design Thinking”. This process focuses first on identifying potential stakeholders taking a high interest in the development of the design project, and in a second step, tries to investigate the pain and gain points of these stakeholders by conducting interviews and surveys. Together with my group, we identified “students” as one crucial stakeholder group who takes a high interest in the project but at the same time faces a low influence on the project’s outcome. While conducting several interviews with students in the Central Innovation District of The Hague, I identified the lack of stimulation and creativity as one reoccurring gain point. One interview in particular, held with Bianca L. (25, 1st year Master student at Leiden University, campus The Hague, studying Diplomacy and International Relations) on the 26th of September 2023, has caught my attention. Bianca complained about how collaborative work and interaction with fellow students were not possible and how the campus would not inspire not motivate her while pursuing her study course:

“If you want to work as a group you have to book a space, which is very inconvenient since it requires lots of organization and planning beforehand. Spontaneous group work or get-togethers are not possible. [...] The campus building does not offer much stimulation and is a super stressful place for me. I have no possibility to get in touch with students from other degrees, the building just kills my creativity, it’s a rather hostile campus.”[...]“I miss spaces for relaxation and more free spaces, like spaces that are not meant for studying but you can do whatever you want in them. I would love to have spaces where we as students can share life skills, like our hobbies with others.”

In relation to one of the studio's main design topics - the design of hybrid learning spaces - Bianca's statement made me wonder how the concept of hybrid learning spaces within the vertical campus could foster and enhance the creative process of users. Not only the requirements and wishes of the increasingly heterogeneous and multicultural student body have changed but also the challenges of an unknown future, which requires skills such as communication, collaboration, critical thinking and creativity (Ninnemann et al. 2020, p.27-28).

During the last years, the ongoing globalization as well as the development of highly advanced communication and information technologies have changed the nature of working and learning. Especially since the experiences from the COVID-19 pandemic, there has been lots of progress in the development and application of pedagogical and technological hybrid learning methods, such as new teaching methods shifting from a teacher-student to a student-student and more autonomous, active learning working approach as well as a great number of digital and virtual learning tools, like online platforms, social networks, online courses, etc. However, the spatial adaption to these changes in the built environment is lagging behind and research in this area has only started (Gil et al., 2022, p.2-3). These recent developments as well as the findings of the conducted interviews have led me to explore how different hybrid learning spaces in the spatial frame of the vertical campus can foster and enhance creativity within higher education.

My personal motivation for this particular research topic arises from the amount of time I have spent in educational spaces and my personal dissatisfaction with the quality and variety of spaces that I encountered in the course of my personal education. During almost eighteen years of learning and studying, I have never attended any educational institution that offered me a various set of learning spaces, in which I could retreat and collect my thoughts in silence as well as connect with others and gain additional knowledge and perspectives through the interaction with fellow students or even strangers. On the contrary, the higher I moved upwards in my pursuit of education – from elementary school to high school, to university – the more restricted I was in the appropriation of spaces. While in elementary school, pupils were allowed to decide on the spatial arrangement and decoration of their assigned classroom, my later years of high school consisted of moving from one white room to the next. Most learning spaces I encountered in higher education also consisted of a set of fixed chairs and tables in rather neglected and unesthetic rooms. Despite offering various learning spaces, the Architecture Faculty in Delft also remains an isolated learning environment due to its geographical distance from the city and other faculties. In conclusion, I see a high potential in hybrid learning concepts and how their variety of spaces can enhance the creative journey of lifelong learners.

1.3 Research questions

After having identified the general topic, I collected a set of research questions to investigate which fields of research might be relevant to my study of hybrid learning spaces. After having collected a variety of questions I ordered them into the following three categories:

Creativity

- What is creativity and are there different types of creativity?
- How does creativity emerge? What role does our physical environment play in the creative process?
- What kind of spatial environments foster creativity?
- Is the creative process related to the individual or are there concepts of collaborative creativity?

Design of Hybrid Learning Spaces

- What are hybrid learning spaces? Are there different types of hybrid learning environments? By which parameters are they classified?
- What is the current state of knowledge on hybrid learning spaces? What kind of research has already been done?
- What features do hybrid learning spaces need to provide to promote the learners' creativity?

Needs and requirements of today's learners

- How can different hybrid learning spaces offer different sets of learning environments for different sorts of learners?
- What sorts of learners are attending higher education? What are their needs and requirements?
- How much flexibility and adaptability are needed in hybrid learning spaces?
- How much free space do learners need? Do they prefer fixed, pre-defined spatial layouts or are they more inspired by free, undefined spatial organizations?
- How do learners move through different sets of spaces? How can the juxtaposition of different hybrid learning spaces be aligned with their daily routines and needs?

Part 2: Research framework

2.1 Research Framework

I would like to base my research on two theoretical frameworks, which I consider important for my investigation of hybrid learning spaces and their influence on creativity. The first one addresses the concept of "Social Creativity" and was mainly developed by Alfonso Montuori. Montuori and Donnelly (2013) describe how the rise of network information technology has led to a shift in our understanding of creativity. While the modern concept of creativity was based on the "individual genius" (p.1) who works isolated and in opposition to the rest of society, creativity today is understood as a networked process that is embedded in collaborative relationships, interactions and the exchange with the surrounding environment. They explain that the "creative process involves both divergence and convergence, idea-generation and idea-selection" (p.9).

The second framework relates to hybrid learning spaces and demands that an interdisciplinary approach combining pedagogy, technology and space is needed (PST framework) for the coherent design of hybrid learning spaces (Gil et al. 2022, p.3). This approach was further developed by Manicaracina (2022, p.83) who proposes the addition of the user perspective at the centre of the PST framework. Manicaracina's focus on the users has steered my attention towards looking at hybrid learning spaces not just as separate entities, but to examine the interplay of different hybrid learning spaces - in the case of this research convergent and divergent hybrid learning spaces - by taking a closer look at users and their movement through a variety of these spaces. The methodology and methods for my research will be based on these two frameworks and further explained in the next paragraph.

2.2 Methodology & Methods

Based on my findings in the existing literature, I want to investigate hybrid learning spaces through the lens of social creativity, which means I will analyse hybrid learning spaces by looking at their divergent and convergent spatial properties. In this case, spatial properties refer to tangible and intangible elements (furniture, sound, colour, etc.), spatial layout (size, complexity, accessibility) and type of space (relaxation, study, sports, etc.).

Furthermore, my research aims to investigate the user perspective of the PST framework, which means how users behave and move through different divergent and convergent hybrid learning spaces and what distribution and layout of these spaces within the vertical campus can help enhance the emergence of individual and collaborative creativity.

Methods

1. **Identifying case studies** based on selection criteria like location, type of institution, building design, success and impact, expert opinions, innovation, user diversity, accessibility and feasibility

Expected outcome: Set of selected case studies

2. **Analysing case studies** by looking for divergent and convergent use and behaviour in selected learning spaces (probably based on pictures/photographs) and defining a set of characteristics for divergent and convergent learning spaces regarding tangible (furniture, plants, view) and intangible (sound, colour, light, smell) elements, spatial layout (size, complexity, accessibility, visibility) and space type (relaxing, working, studying, sportive, etc.)

Expected outcome: Set of properties/design rules for convergent and divergent learning spaces

3. **Analysing user movement** through user surveys or user diaries and mapping the movement of users through convergent and divergent learning spaces while focusing on how they use the spaces, how much time they spent in them and how the space influenced their ideas, projects and creative workflows. The aim of this method is to quantify the interplay of convergent and divergent spaces based on parameters like integration (how well is the space

connected?), depth (where in the building is the space located? More central or peripheral?) and distribution (how much space is convergent, how much is divergent?)

Expected outcome: Set of principles/design rules for the superposition and stacking of divergent and convergent learning spaces throughout the section of the vertical campus

2.3. Contribution to the field of architecture

This research will contribute to the field of architecture by not looking at hybrid learning spaces separately but by acknowledging that the combination of different types of hybrid learning spaces contributes to the creative process of lifelong learners. The results of this research are meant to help practitioners understand how different spaces work together as a holistic entity. By taking into consideration the movement of users and by investigating their needs and routines this research also contributes to a more participatory approach of learning spaces. Instead of supplying a space and looking at how learners use it, the research aims to understand the user and their needs before designing.

Part 3: Preliminary Conclusions

3.1 Expectations and initial conclusions

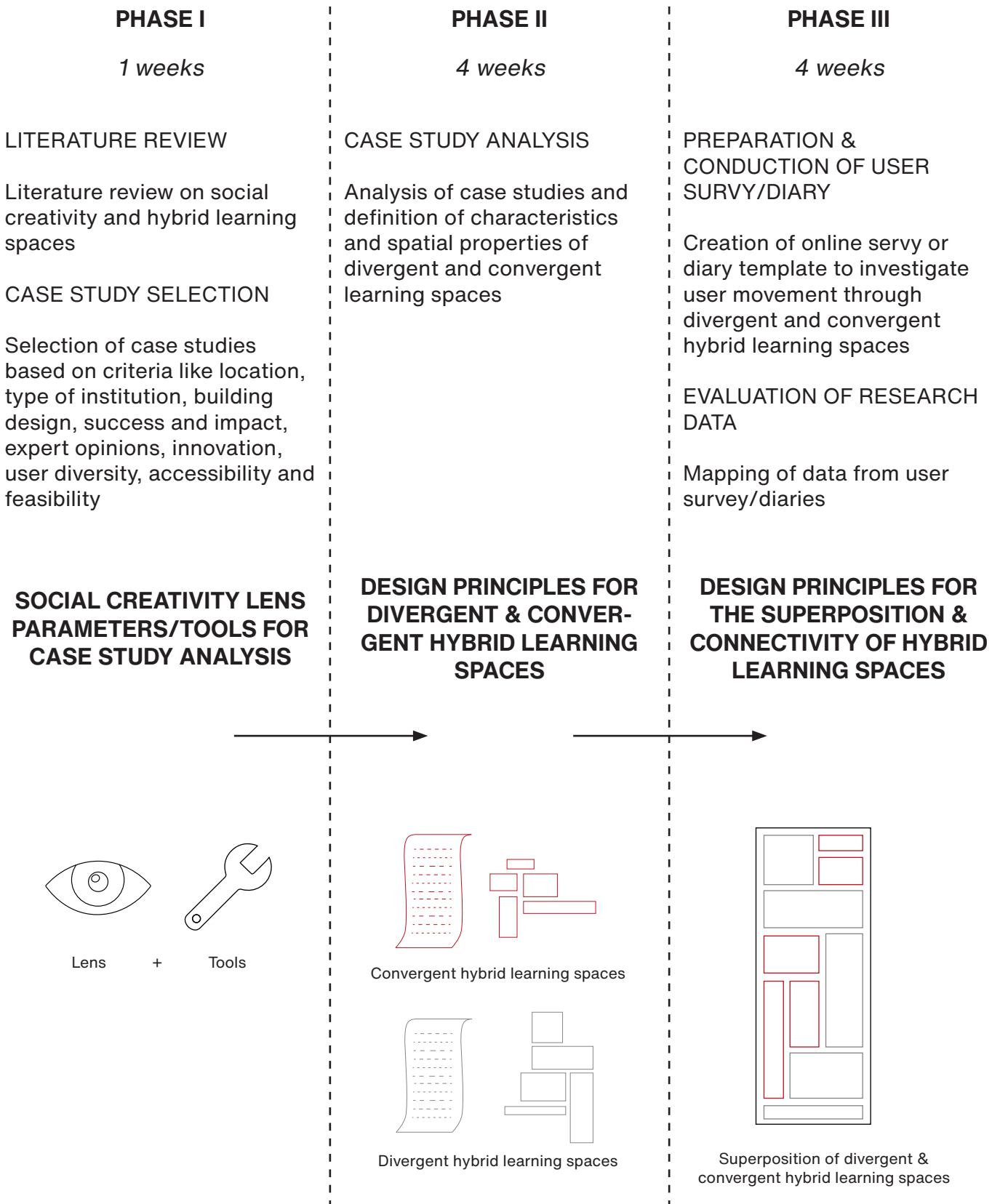
I expect the findings of my research to show that the superposition of divergent and convergent learning spaces will highly be influenced by the distance between these spaces. Therefore, I do not expect that the vertical campus will for example only have divergent hybrid learning spaces at its bottom and only convergent learning spaces at its top. The distribution of learning spaces within the campus building will be more complex than a simple split into two areas. I am curious to find out about the amount of time and importance that users assign to different spaces and how this will influence the distribution of divergent versus convergent learning spaces throughout the section of the vertical campus. Furthermore, I expect that divergent spaces will have a higher demand for flexible layouts and furniture than convergent spaces, which will probably allow for a more fixed and long-term spatial layout. Currently, I assume that the ratio of divergent and convergent learning spaces will be rather balanced but I am curious to find out whether this assumption will turn out to be right or wrong.

3.2 Relevance of research

In relation to the findings of my group work and the analysis of our site in The Hague, I expect that my research on hybrid learning spaces can also contribute to how knowledge can be better shared among and made accessible to the general public. As presented during the Pin Up on the 12th of October, we have found that in our site in The Hague, there exists a significant amount of knowledge, for example in the buildings of the municipality or in the large amount of educational institutions present on site, but this knowledge is not accessible to the general public. For this reason, I see hybrid learning spaces as an opportunity to share knowledge and

make it accessible to different stakeholders and therefore support the lifelong learning process of a diverse set of users.

3.3 Research diagram



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