



**Experiences and
insights from the U.S.**

REIMAGINING THE CLASSROOM

Part of the project 'Designing a Happier
Student Life For Better Learning: International
experiences and capacity building'

**INNOVATION
CENTRE
DENMARK**

 **Ministry of Higher
Education and Science
Denmark**

DESIGNING A HAPPIER STUDENT LIFE

This case is a part of the project 'Designing a happier student life for better learning,' managed by the Danish Innovation Centres in Silicon Valley and Boston, and the Danish Agency for Higher Education and Science.

About the project

"Designing a happier student life for better learning' is an internationally focused project on how to 'design' a better student life, increase student well-being and thus create optimal conditions for better learning. The project draws on the knowledge and experience of elite US universities working on the well-being agenda and leading experts in the field.

A growing body of evidence shows that student well-being is an essential element of education and overall student success. In a recent national survey of Danish students, 48% reported feeling stressed, and 22-26% felt that they were feeling lonely, which calls for action in both amending bad mental health and strengthening good mental health. Systematically working on improving mental health and building strong and healthy minds has a range of benefits for students personally and their learning, which is why the Danish Agency for Higher Education and Science supports this project.

Via Innovation Centre Denmark in Silicon Valley and Innovation Centre Denmark in Boston, the international perspective and inspiration are integrated into the design of such initiatives by involving key US experts in the field and setting up partnerships for the Danish stakeholders

via:

- Capacity-building
- Knowledge-sharing
- Networks and partnerships

The project targets Danish Higher Education institutions, its students and relevant staff involved in student life and well-being, such as student counselors, faculty, and top management. You can read more about the project (in Danish) here: ufm.dk/designing-a-happier-student-life, where you can also find other cases (in English) and relevant material about the project's activities. If you like to get in touch with the Danish Agency for Higher Education and Science about well-being to discuss the project further, you can mail trivsel@ufm.dk.

REIMAGINING THE CLASSROOM

TAKE-AWAY POINTS

- Design and functionality of physical spaces matter for well-being and learning outcomes. A physical space that allows for movement can reduce student fatigue, improve performance, and promote student collaboration.
- Design strategies can be used in educational spaces to overcome spatial constraints and to foster active learning.
- Supporting technologies have a big impact on today's classrooms and the space for learning.

In 2019, Stanford University initiated the project *Stanford Classrooms Reimagined* to develop a master plan for classrooms and informal learning spaces. The purpose of the project is to inform learning space planning and design for the next decade. Research shows that students today learn differently from earlier generations. They increasingly expect to be actively engaged in the learning process, both in the classroom and throughout campus.

Stanford University's project aims to address this development by focusing on the educational environment, and it has produced several findings and suggestions on how to adapt the surroundings students find themselves in.

Stanford University's efforts to improve the life of students and thereby the quality of education is highly important, and the findings and proposed strategies may serve as an inspiration to Danish higher education institutions that are having similar deliberations. In this case report, we share some of the project's initial findings and other related insights.

THE IMPACT OF PHYSICAL SPACE

With most of our lives spent indoors, the space we occupy has a major role in shaping our behavior. In the *Psychology of Space* section of ArchDaily, an architecture platform gathering key developments within the field, architect Christele Harrouk writes about the importance of design and functionality for well-being. "Lighting, colors, configuration, scale, proportions, acoustics, and materials address the senses of the individual and generate a spectrum of feelings and practices", Harrouk writes.



These findings add to research from the *Journal of Environmental Psychology*, which shows that the mere presence of plants in an office space enhances a person's ability to focus. In short, our surroundings affect how we behave, interact, and feel, which is particularly important to consider in work and study environments, where efficiency and knowledge intake are key.

The design and functionality of the spaces we occupy are important for students who spend the majority of their time inside classrooms, attempting to make the most of their education. Stanford has recognized the importance of physical space and the need to rethink learning environments for better learning outcomes and student well-being.

Innovation Centre Denmark had the pleasure of talking to Richard Webber, Associate Vice Provost & CTO, Learning Technologies and Spaces, and Helen Chu, Senior Director, Learning spaces, who run the Classrooms Reimagined project at Stanford, which was initiated in 2019. By focusing on physical space, the goal is to lift the learning experience to a higher level and to improve the conditions for all students - also the ones we often characterize as well-functioning.

The project has already produced several interesting findings that emphasize the need to rethink classrooms. In one of the studies, they find that 81% of faculty members say they must adapt their teaching to the specific room that is available to them. This indicates, that teaching methods are often determined by the physical space instead of the content.

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**Space can shape
behavior – why not
shape it for the
positive?**
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Helen Chu
Senior Director, Learning Spaces
Stanford University

Even when professors attempt to make their teaching more dynamic and interchangeable - for instance switching from lecture mode to group discussion mode, it is challenging. Only 9% of Stanford's classrooms support such changes, making the quality of group discussions lower than it may have been in a more open and adaptable space. Furthermore, the students surveyed in the study indicate that they want to be taught in classrooms that inspire them. More specifically, they are asking for spaces with air, natural light, and movable furniture – all of which allow them to better engage and connect with fellow students and the instructor.

In their effort to bring space into consideration, Stanford and other universities are constrained by limited space and resources. Therefore, part of the project is focused on how to best utilize limited space. Stanford University has a commitment to small classes (25 or less), which fosters a team feeling - connecting faculty and students. But the most important work, Richard and Helen stated, is creating a sense of belonging for the students.

DESIGNING A SPACE THAT ENCOURAGES INTERACTION

A sense of belonging is a key factor to a fulfilling student life. It is therefore important to think about how people can interact in the space that they are in. A way of facilitating interaction and group work is to make the space adaptable to different activities. The less of a hassle one must go through to set up and arrange for an activity, the more often it will occur in everyday teaching. So, what is the best way to encourage interaction in the classroom?

Helen emphasizes active learning as a driver of interaction. Active learning involves teaching strategies that allow for students to build their own knowledge. More specifically, students are involved in the learning process through activities that include writing, discussing, reflecting, or problem solving – as opposed to just passively listening, according to a definition by [University of Minnesota](#). But active learning needs the right physical conditions to fully reach its potential and improve learning outcomes.

The setup at Stanford University already partly fosters active engagement with smaller classes and close connections between professors and students, but the physical space still has to be taken into consideration and the university is constrained when it comes to space and resources. Therefore, Helen has outlined five design strategies to better facilitate active learning, where the focus is on adapting the classroom or educational environment at hand rather than building new ones.

DESIGN STRATEGIES FOR ACTIVE LEARNING

1. **Use** the space you have
2. **Remove barriers** to active learning
3. Design a more **inclusive** environment
4. Use the space to foster a sense of **belonging**
5. Promote **eye contact** and **community**

You can hear Helen talk about design strategies in a webinar on [Macmillan Learning](#)

These design strategies are also relevant for classes in a space with many students. For example, consider a classic setup like a lecture hall with immovable rows and seats. The first strategy encourages teachers and students to transgress the space they have. A simple example that Helen gives, is to make group work happen by having students stand up and move to aisles and other more spacious areas of the lecture hall, despite the room not exactly encouraging it. Here it also makes sense to make the walls writable by hanging large sticky notes on them for students to check their own and each other's understandings.

In short, if the barriers to active learning cannot be removed or changed physically, there are ways to transgress the limitations and foster active learning. If resources allow, then altering the classic lecture hall by bringing in tables and comfortable chairs also works well and can create a sense of belonging, inclusion and community as both students and professors can easily engage and move around.

NEW SUPPORTING TECHNOLOGIES

Classrooms and the use of technology have been and will continue to develop as electronics have an increased presence in both teaching and studying. This development has been amplified as Stanford University and schools across the world had to adapt to remote learning during the COVID-19 pandemic. Richard and Helen learned that the students need a support system for the technology they are expected to use at school. Generally, it is assumed that younger generations do not need technical support, but this is a risky assumption to make. IT and other technologies are constantly evolving, and even students who have grown up with technology can struggle to figure out systems and platforms like Blackboard, Zoom and Microsoft Teams.

If technology works and is used mindfully, it has a lot of potential.

At Harvard University, the creation of live online classrooms has been underway since 2015. In the summer of 2020, a new improved HBX live classroom was launched. A lot of thought went into the design to promote active learning and mimic the experience of being in a real classroom.

For instance, each of the 96 students is displayed on an individual screen and the screens are all placed next to each other, while a camera follows the professor as he moves around the classroom. They discovered that the ability to see the instructor moving around the classroom, writing on the board and taking questions, improved student experience.

In this way, technology can be used to maintain the integrity of the classroom experience in a situation with remote learning.

ONLINE RESOURCES

In this video, Harvard Business School shows how the HBX live virtual classroom works in practice:

<https://www.youtube.com/watch?v=W8lf9piApe0>

online

EDUCATIONAL SPACES ON THE AGENDA IN THE US

Stanford and Harvard University are not alone in recognizing the importance of a reimagined classroom with active learning and technology at its core. According to an article in the Hechinger report, a recognized nonprofit media outlet that covers measures to improve education in the US, an increasing number of schools are experimenting with classroom design. The idea behind is to accommodate the multitude of ways that students learn as well as different teaching methods.



For instance, a study by Iowa State University examined the use of an active learning space. They found that various audiovisual tools had a positive effect on student engagement. The possibility to walk around the room and make use of tools such as portable whiteboards, Apple TV, LCD panel video projectors, large writing surfaces, and flat-panel monitors opened a space for instructors to check how much the students had understood, but more importantly for students to check their own understanding - both via the technology and interaction.

Moreover, the students at Iowa State University felt that the active learning classroom design “erased the line” between instructors and students. The design encouraged interaction, which meant students felt a closer personal connection to their instructor and fellow students. Ultimately this created a sense of community and enhanced student engagement. The study itself emphasizes that educational institutions are highly aware of the effect well-designed classrooms can have on learning outcomes, while the results emphasize a demand from students that educational spaces are reimagined.

Summing up, the research shows that we should be mindful of how we design the spaces around us as physical spaces matter for well-being and learning outcomes.