

A Learning Studio that Inspires Active Pedagogy

Linda Wanless

Michigan Technological University

For this case study, the author describes the successful collaboration between Michigan Technological University and Herman Miller in the creation of a learning studio within an emerging learning commons. This recently opened learning studio provides faculty and students a place to develop their level of understanding in active teaching and learning. The case study outlines the room design process and the support structure for faculty.

Introduction

Over the last several years, higher education has been encouraging faculty to use pedagogical approaches that focus on engaging our students through active and collaborative learning. The passive methods of lecturing, so commonly used throughout higher education, have not adequately prepared students with the necessary skills being requested by their professions. If the world of working and living relies on collaboration, creativity, definition and framing of problems, dealing with uncertainty, change and distributed cognition—then education needs to prepare students for meaningful and productive lives in such a world (Fischer & Konomi, 2005). It is our hope as educators, moving forward, to guide our learners to be both critical thinkers and problem solvers.

At the same time, we are seeing a significant growth in mobile technology that is impacting how students learn. Students are increasingly utilizing digital and networked technologies to seek, create and share knowledge, with their community, in a self-directed informal learning process (Dabbagh & Kitsantas 2011). Students entering higher education are insisting on the opportunity to use these technologies to learn in their formal educational settings. Such technologies can have a significant impact on increasing the critical thinking and problem solving skills of students. Learning will move more and more outside of the classroom and into the learner's environments, both real and virtual, thus becoming more situated, personal, collaborative and lifelong (Naismith, Sharples, Vavoula, & Lonsdale, 2004).

Based on these two trends, we are seeing formal learning spaces being created to afford active pedagogical approaches a place to flourish. We are also seeing informal

learning spaces where students can collaborate with their peers, utilize technology and be involved in engaging activities that have overflowed from the classroom. The development of formal learning spaces is not without its challenges. Implementation of such spaces can prove costly especially when these spaces are calling for the inclusion and support of state-of-the-art educational technologies to help drive the active learning. Therefore, it is important that these learning spaces are utilized to their full potential. However, the challenging reality is that a good percentage of college faculty across campus today are only at the cusp of gaining an understanding and practice of what is involved in these emerging pedagogical models and the incorporation of technology. A great deal of support including faculty training, development of digital curriculum materials, hardware and software maintenance is necessary to make learning spaces successful (Brown & Lippincott, 2003).

Having an awareness of these constraints, a more feasible approach to implementing large scale formal learning spaces, especially when a university is in its infancy of active learning, may be the creation of a learning studio. A learning studio is a space allowing faculty to be guided in their transition from passive teaching to engaged teaching, as well as, provide a space where students can develop their collaborative skills. The learning studio is not only cognizant of meeting academic needs but it also addresses the physical and psychological needs of students and faculty. The physical and psychological needs are aspects of the room that make it comfortable, safe and an accepting environment to learn and teach in. Herman Miller (2009) notes how learning spaces that are physically and psychologically comfortable promote a sense of well-being, keep minds focused and limit distractions.

This article outlines the development of a learning studio within the context of an emerging learning commons at Michigan Technological University. The case study explicates the collaborative progression undertaken between the Herman Miller Learning Spaces Research Program and the university. It outlines the important aspects to consider in developing a learning studio, the philosophy of providing

Linda Wanless is an Assistant Professor in the Mechanical Engineering Technology Program within the School of Technology at Michigan Technological University

a guided support structure for active pedagogical approaches to evolve at a natural advancement and the experimentation with educational technology that can work seamlessly in the background.

Herman Miller Learning Spaces Research Program

Herman Miller, a well-known manufacturer of educational furnishings, began a collaborative effort in 2007 to assist campuses in the creation of spaces taking into consideration the emerging pedagogies, evolving learning styles and preferences of students, as well as the physical characteristics which drive the design of effective learning spaces. (Herman Miller, 2009). This assistance became known as the Learning Space Research Program (LSRP). The LSRP has allowed campuses across the United States to experience new learning space design concepts before making large scale decisions. Michigan Technological University joined the Learning Space Research Program in the hopes of converting an underutilized 550 sq. foot space, in the recently designed learning commons of the library, into a space that faculty and staff could utilize for practicing and strengthening their level of comfort with emerging pedagogical approaches and educational technologies.

Visioning Session

The process of developing a learning studio began with the formation of a learning space committee comprised of faculty and staff. The development process kicked off with a visioning session on campus lead by one of Herman Miller’s strategic education consultants. The session was structured around the five certainties described in Herman Miller’s article entitled *Outlook for Learning: A New Culture Emerges*. The article outlines five certainties about the future of education based on what Herman Miller has learned and observed over previous years of developing products and creating physical spaces. Understanding these certainties would prove beneficial to creating a learning studio that will fulfill the physical, psychological, academic and technological needs of both the student and instructor. With these certainties in mind, committee members and other members of the campus community, devoted time during the visioning session to understanding the profiles of students and faculty that would need to be supported within this particular learning studio.

The profile developed of the campus student emerged as an academically high-achiever, attracted to nature, technologically-savvy and customarily viewed as introverted (but thrive amongst peers in similar areas of study). The profile that developed of the campus faculty included drawn to natural resources, reserved in ambition to integrate progressive instructional technology and values keeping up to date in discipline and research.

After having developed the student and faculty profile, the visioning session moved into a brainstorming session of sketching out learning space ideas on whiteboards taking into consideration the profiles developed of the faculty and students. One layout idea emphasized the importance of round tables where students could work collaboratively. While another layout sketch centered on comfortable café-style spaces for students. Each layout that was presented stressed the importance of whiteboard space for students to collaborate on their thoughts and ideas and all of the designs shared the need of comfortable and moveable furniture that could quickly and easily augment any pedagogical approach.

After the visioning session was complete, the ideas were formalized into three dimensional drawings. The committee then reviewed the drawings, discussed the pros and cons of the layout options and recommended design revisions. For example, in one proposed layout, the placement of a podium style structure with a central computing system was viewed by the committee as creating a ‘front of the room’ which would offer the opportunity for lecture thus creating a

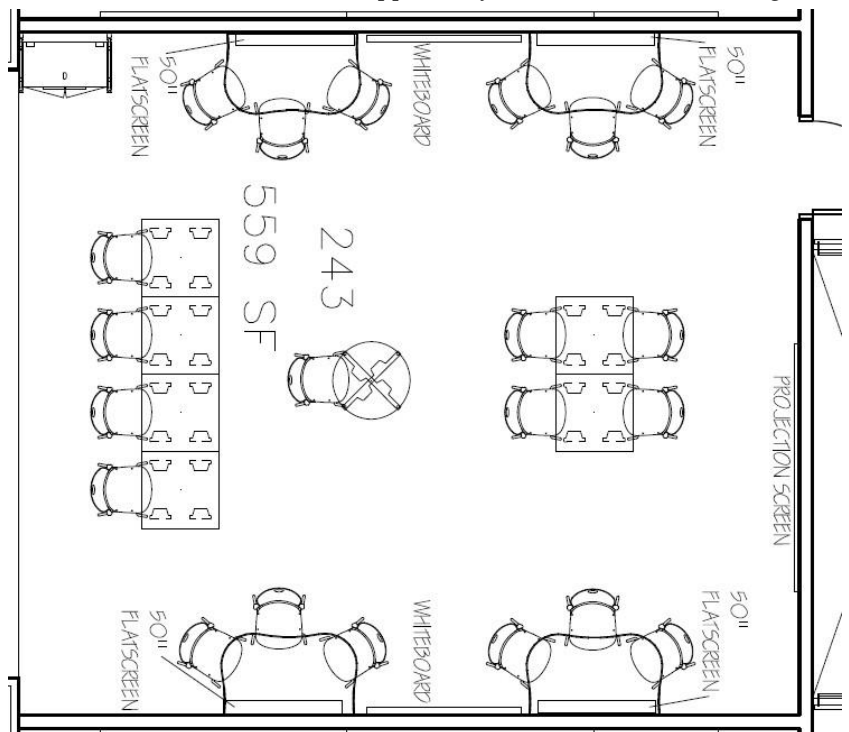


Figure 1: Proposed layout of Learning Studio (created by WorkedSquared).

passive environment. Therefore it was decided that there would be no designated 'front of the room'. After several design revisions, a final layout was decided upon (see Fig. 1).

The proposed learning studio layout was designed based on a 25 x 22 ft. space (550 sq. ft). Industry standards commonly recommend approximately 25-28 square feet per student. Based on these standards, the proposed space was designed for a maximum occupancy of twenty students plus an instructor. Five flatscreens were evenly spaced on three of the four walls. A significant cost savings was incurred by repurposing screens left over from the library's learning commons redesign. Square tables with fold down sides were selected for their adaptability to being placed underneath the flatscreens allowing for group collaboration. Smaller square tables were placed throughout the room and could be easily mated up to other tables. A café height table and chair was made available to place anywhere within the room to serve as a location for the instructor and his/her materials. All furniture selected for the room is lightweight yet durable and equipped with wheels for ease of mobility. Concept whiteboards were proposed for the wall spaces between the flatscreens. A small corner cabinet was included in order to house any educational and media technology of the space.

In conjunction with the final proposed layout, other aspects of the existing room were updated by the university's facilities department. These updates took into consideration the physical and psychological needs of the faculty and students. Diffused lighting, warm wall color and plug-in locations for technology were updates made to the room prior to installation of the furnishings.

Lighting-natural and artificial

An existing benefit of the room was the nature lighting and view to the outside that an existing window, which runs the length of the back wall provided. According to Herman Miller's Learning Studio Research Program findings, learning environments that include outward-facing windows with views to the landscape and nature is one way to meet the physical and psychological basic needs of students and faculty. (Herman Miller, 2009). The artificial fluorescent lighting in the room was changed to a softer artificial lighting that was diffused to create more warm lighting throughout the learning studio.

Wall color

Both the student and faculty profiles, developed in the visioning session, emphasized the draw to natural resources. Earthy tones were therefore selected for both the walls and furniture. The tables in the rooms have a wood tone appearance on the surface and the chairs are a warm green

accented by walls covered in a sunset orange tone. The original space had all white walls.

Support for Faculty

Faculty Orientation

The opening of the learning space officially named Experimental Education Environment (E3) was kicked off with a faculty orientation. The orientation session was an opportunity to not only introduce the space to the campus community but to also begin the first segment of faculty support. During the session, faculty was made aware of the capabilities that the flexible furniture had in supporting various pedagogical approaches. Residing in an environment that supports active learning, faculty attending this session were encouraged to think about their teaching methods and to sketch out (on whiteboards) arrangements of the furniture that could compliment their teaching approach. Several ideas were selected and the room was then arranged based on various proposed ideas. Individuals present could see how quickly and easily the furniture could be arranged and re-arranged based on the learning or teaching taking place. A representative from Herman Miller was present during the orientation to explain the function of the furniture and answer any specific questions. During the second half of the faculty orientation, an educational technologist from the Center for Teaching and Learning demonstrated the capabilities of the technology available in the room and how the technology could link with other devices that either students or the instructor bring into the space. Faculty were encouraged to try using iPads and smartphones during the demonstration to see how quickly and easily they could interact with the central system and share content with other individuals in the studio.

On-going support for faculty using E3

Any faculty or staff member interested in teaching in the space in an upcoming semester, are encouraged to do so. Faculty and staff are scheduled on a first come first serve volunteer basis. The studio should be used by those who are ready to use the space in an active approach—faculty members are not required to teach in the space. Faculty members interested in practicing active teaching methods are supported in one-on-one sessions with an educational technologist or instructional technologist from the university's Center for Teaching and Learning. Supporting documentation is being developed for availability in the learning studio. The documentation will show examples of floor plan layouts that can be quickly set up by the instructor. A short summary of the types of active learning approaches that would complement the layout would also be included.

Educational technology and BYOD

The objective of the learning studio is to provide an engaging and active environment for students versus the traditional passive role of listening to lectures. It was therefore critical that the design of the room did not incorporate an instructor's station with a computer system thus promoting a lecture approach. The central computer and supporting technology was placed inside of a small cabinet located in the corner of the studio. A wireless keyboard and mouse that can be placed anywhere in the room, are used to control the technology.

The learning space committee wanted to be sure to address the need for faculty and students to utilize the devices that they bring into a classroom. These devices, such as iPads and smartphones, are convenient and critical technology that needs to be viewed as educational technology when it enters the classroom. The committee determined there should be the ability by both the faculty and students, who enter the room to seamlessly connect, present and collaborate with their devices. The director of the Center for Teaching and Learning notes how the best technology is relatively invisible, integrated to the point where you, the instructor, don't spend a lot of time on technology (M. Meyer, personal communication, March 7, 2014). The committee proposed that the best design for the room, from a technology standpoint, would be to incorporate a 'bring your own device' (BYOD) model. Media technology services equipped the room with a Creston AirMedia system. The system allows users to send their content from their iPads, tablet or smartphone to the flatscreens mounted on the walls.

Additional interactive educational technologies such as an iclicker system, interactive software and even low-tech teaching tools such as whiteboards have also been made available for use in the learning studio. The best strategy for a starting point, to drive active learning, is low-tech approaches that can be implemented in any type of classroom or learning space. These approaches are easy and comfortable for instructors to start with. Once instructors are comfortable with these low-tech methods, they are more willing to entertain something more involved. (M. Meyer & J. Toorongian, personal communication, March 7, 2014). Faculty members are encouraged to give recommendations on future educational technology needs for the learning studio as their pedagogical approaches change and evolve. Media technology services also utilize the studio to test new technology on a smaller scale with the possibility of duplicating it in other learning spaces on campus.

Research on the space

In an effort to continue to support today's emerging pedagogy with the most effective learning studios, Herman Miller distributes baseline surveys to both faculty and students prior to their utilization of the learning studio. The data gather on the baseline survey revolves around their views of typical campus classrooms. Post survey information is also gathered after faculty and students have utilized the learning studio for the duration of a semester. The survey data is collected over the course of two consecutive semesters after the learning studio is opened. Herman Miller has compiled data in this fashion from some twelve campuses with over 3,000 responses. The data has been compiled into the Learning Space Research Program Longitudinal Study. Some of the key findings from Herman Miller's study include: students noting a 4% increase in comfort level from a traditional classroom to the learning studio, lecture teaching methods decreasing by 3.8% and progressive teaching methods increasing by 2.5% (Miller, study).

As an extension of Herman Miller's research on learning studios, the author has been experimenting with capturing images of how students and faculty arrange the physical features of the studio to accommodate their particular learning or teaching methods. A GoPro camera is mounted in the corner of the room and can be remotely accessed to capture still images of the room at designated times. The image capture research is in its first semester infancy so it is too early to report out any findings.

Conclusion

The creation of a learning studio within the developing learning commons on the university campus has been a successful step forward to instill active learning approaches into all of our campus learning environments not just the learning studio. It takes time for faculty to develop their approach to teaching in the emerging pedagogical methods and seamlessly incorporate the appropriate technology. It also takes time for students to understand their role in an active learning setting and how to continue that learning independently or collaboratively with their peers outside of the classroom. The learning studio is a suitable environment to allow growth in both teaching and learning to take place and to instill a vision of the possibilities for future learning environments that can be duplicated in other areas across campus. This case study documented the development and progression of a learning studio in order to convey to other higher education communities the importance for a small scale learning space to allow teaching and learning to evolve over time with a guided support structure.

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