The impact of space on educator practice

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Abstract: The purpose of this study was to explore if a new learning environment would have an impact on faculty practice. The study was interpretive in nature, grounded in action research. The context was a Midwest public institution of higher education doing a major renovation of an old classroom building. Seventeen faculty actively participated in this study as well as academic administrators and academic tutors. The results of this study suggest that environment does affect faculty and student behaviors in ways that were both predictable and surprising.

Introduction

In 2006 a college of approximately 18,000 students received a donation of an undisclosed amount to renovate one of its instructional buildings. In lieu of a cosmetic update of all five floors, the college decided to do a major renovation of just one floor. As part of this renovation, the college introduced several progressive architectural concepts (Oblinger, 2006; Joint Information Systems Committee, 2006) intended to support the use of diverse teaching strategies (Chickering & Gamson, 1991; McClenny, April 2003; O'Banion 1997). The assumption was that diverse teaching strategies would result in improved student learning. Given the scope of these changes, the college raised the question of how this new building design might influence faculty teaching and student learning. The specific research question was “What learning environments best support diverse teaching strategies?”

To answer this question, the college created a practice field and invited a wide range of faculty to use these rooms for one year. The purpose of this action-based research was to provide feedback to the college and the architects on what worked best and what didn’t work. Seventeen faculty participated in this study. The research methodology was interpretive in nature, primarily action research.

The results suggested five basic themes: Functionality, Ecological Fit, Symbolism and Expectations, Pedagogical Stretch, and Classroom Comparisons. Functionality suggests that there is a minimal set of criteria needed for diverse teaching practice. Ecological fit honors the important relationship between professor, student, content, and the environment. The symbolism of the space communicates both explicitly and implicitly normative behavior. The research suggests that the environment and the potential of the space caused faculty to stretch beyond their previous or planned teaching strategies. Lastly the systemic effect of teaching in drastically different environments was identified as having an influence on teacher practices. As part of this directed research, larger systems questions were identified around institutional responsibility and culture building as well as the barriers connected to the implementation of a learning environment that best supports diverse teaching strategies.

Overview of Design and Methodology

In the spring of 2007, all faculty were invited to submit a proposal to teach a class in the renovated first floor of the building. Proposals were selected by the Deans and Associate Deans based on a set of predefined criteria intended to promote and exemplify a diverse set of
pedagogical practices. From these applications, 17 faculty were selected to be part of this project. In addition to the faculty, academic leaders and academic tutors also contributed to the study. Academic leaders attended the majority of the monthly meetings. An extended group of college leadership was present at the year-end validation session. During these meetings there was collaborative dialogue and in situ problem solving around specific classroom design and procedural questions. Faculty, leaders, and the chief researcher also engaged in informal dialogue both face-to-face and via email. Lastly, through the use of an online Blackboard discussion board, tutors provided their input on the functionality of this new learning environment.

This study was grounded in action research. Within this framework, the primary goal of was to capture the reflective practitioner cycle of faculty to learn and improve college practices as a form of collaborative inquiry. The faculty were provided a journal for their weekly reflections with directed questions around their chosen teaching strategies, the success of these strategies, and the effect of the environment. Monthly meetings were structured with facilitated dialogue around the functionality of the environment. At the end of each semester, faculty members were asked to provide a written report that summarized their experience. These data were analyzed and then presented to the participants for validation.

Findings

The results of this study suggest that the Learning Environment does affect faculty practice in five distinct ways: Functionality, Ecological Fit, Pedagogical Stretch, Symbolism and Expectation, and Classroom Comparisons. Some of these findings were expected while others were surprising.

Functionality

Functionality of the learning environment addresses the way in which the physical environment supports the implementation of good practices in teaching and learning. In general these spaces met the needs of faculty. Technology was adequate, the size was appropriate, the furniture could be moved, lighting was acceptable, and there were multiple white boards.

That is not to say there were no concerns. There were some limitations on the use of multiple technology devices at the same time. While the furniture could be moved, it was heavy and did not slide. The lights could not be controlled from the front of the room and they were not on dimmers. Ambient noise made it difficult for some people to be heard.

Beyond the physical qualities of the room, faculty shared appreciation for a pilot policy that stated a classroom is to be arranged once. Any faculty member entering a classroom should arrange it the way he or she wants it to be and then leave it that way when class ends. Faculty found this to be an acknowledgement of differing ways of teaching, decreased their time in arranging and rearranging rooms, as well as inviting them to experiment with different configuration.

This category suggests there are minimum learning environment criteria for effective teaching. The opposite is also true and was communicated by all faculty: inadequate learning environments inhibit and frustrate faculty. Analogous to this is Maslow’s Hierarchy of Needs (Maslow, 1968). If the basic needs are not met in a classroom (biological, physiological, and safety), it is difficult or impossible to move up in the hierarchy to higher order levels of functioning (relationships, esteem, aesthetic, and cognitive needs.)
Ecological Fit

Ecological fit speaks to the idea that good teaching requires a fit within the various systems of the learning ecosystem. In a classroom environment, the primary components of the ecosystem are teacher, student, content, and space (physical and ambient). All of this is part of a larger ecosystem of the college which includes policies, department expectations, community needs, etc. Each teacher enters into the learning environment with a personal philosophy of teaching, desired outcomes, experience, teaching skills, etc. Each content area has particular learning activities and outcomes. Each student enters the class with a unique background, expectations, and purpose.

It is obvious that certain content areas require very specific physical spaces. If you are teaching someone to clean teeth, you need a lab with teeth. If you are dissecting a fetal pig, you need a science lab. However, this research suggests that the needs for differing learning environments are more subtle, and extend well beyond the obvious. As shared by one faculty member in this study, "...one set up/teaching environment will not work for everyone. We need a variety of classrooms and a system that accurately matches professors (or disciplines) with classrooms that work for teaching the curriculum."

In writing his or her final report, each professor shared his or her philosophy of teaching, their implicit and explicit outcomes for the class, teaching strategies, and more. While there was some overlap, there was also great diversity. The same diversity is present in the teaching strategies. While group work was a dominant theme in the approach shared by these teachers, most also used lectures. Some required traditional student presentations while another rearranged the room into a “fish bowl”. Some had students work or meet with the professor in the adjacent space outside the room. Some preferred round tables, others small tables that could be moved. Immediate access to laptop computers was also desired by several faculty. This research suggests there is no single configuration for a group of teachers or a discipline.

What was identified around ecological fit is all classrooms are viewed by faculty as a lab. While the content of the class is dominant in defining the lab space, a learning environment designed for diverse teaching strategies must be highly adaptive considering the unpredictable combination of faculty, content, and students. In addition, this systemic relationship must be flexible enough to respond to the amorphous nature of teaching where the professor changes his or her delivery in situ depending on the needs of the student.

Symbolism and Expectations

Symbolism and expectations communicated by the learning environment speaks to both the implicit and explicit meaning communicated to students, faculty, and the community.

Going into this project, many faculty were concerned about the openness of this space. The rooms had glass walls. The rooms were on a major through-way. The space outside the rooms had many spaces for students to sit and congregate. Based on the experience of the faculty, there was concern that the space would create significant distractions that would disrupt the learning environment. This turned out not to be true. In fact, it was the opposite.

While the space outside the classrooms were always occupied by students, they were respectful to the learning environment. The typical configuration of students in this space were individuals and small groups engaged in private activity; typically studying. In this open environment, noise and student activity was much less of a problem than other more closed spaces on campus.
The analysis of this phenomenon is the environment communicated and symbolized to the students that this was a place for learning. The students could see classrooms of students through the glass walls. As faculty extended their classes outside of the room, students in class were mixed with students not in class. The newness and modern design of the space communicated respect for the students. The similarity of the space to other familiar student environments (e.g. Starbucks) communicated a type of expected behavior. The expectation and respect for students and learning in this space transformed the entire floor into a learning environment, not just the classrooms.

**Pedagogical Stretch**

Pedagogical Stretch addresses the way in which the learning environment caused faculty to introduce new, unplanned, creative strategies into their teaching. As identified earlier, each faculty came into this project with a specific intention for their teaching. What happened with many faculty however is the environment itself caused them to discover new and unexpected ways to teach. “The space...I found myself free to become experimental...gave me permission to ‘take off the chains’. ”

In one example, a Business professor found himself relying less on technology. Because of the size and openness of the room, the professor found that more and more class time was spent on modeling, exercises, and discussions. In another example, an English professor was pushed by the space to use the authentic voices of students. In critiquing a reading assignment, historically the students would share their ideas, the professor would take notes, rewrite the notes, and give them back to them in a subsequent class. Because of the size of the room with adequate access to the three whiteboards, the students, working in groups, could write their comments on the white boards around the room. The professor would then take a digital picture of the boards, print this out, and give this back to the students. The students then had their own words and ideas from which to work; unedited and summarized by the teacher. Besides the in-class interactivity, this process created ownership of the learning and gave authority to their voice as literary critics.

Another more general example shared by most of the faculty is the environment increased their movement around the room while teaching. The space between the desk and the overall openness of the room caused faculty to move from behind the lectern, or the front of the room, and move within the spaces of the students. The change in proximity increased the level of intimacy between student and professor, breaking down artificial power disparities and increasing student-faculty relationships. The movement caused students to move their head or listening attentiveness, creating a subtle level of increased engagement. The movement caused faculty to be more engaged simply by the act of moving. In summary, “Overall I feel more energized and hopeful in this room because I know there are so many possibilities and space to move.”

**Classroom Comparisons**

Classroom Comparisons identifies the functional differences between the rooms in this research verses others on campus. Overwhelmingly faculty in this project spoke of how they preferred this environment to their typical teaching environment. The reasons for this preference were framed within the three categories presented earlier in this document. This preference however revealed a downside.
One example is a professor who was teaching two sections of the same class; one in the new space and another elsewhere on campus. For this professor, there was real professional angst regarding the disparity between the rooms. The professor articulated a real problem in what could be done in this new space versus what could not be implemented in other rooms at the college. Given this, the two groups were not receiving the same education. The faculty framed this vast difference as to be “unprofessional,” even “unethical.” In fact, the emotional toll was so great that this person chose to not continue the project.

In addition, faculty also felt the vast difference between the new space and the other classrooms on campus made it difficult for them to even fully realize the potential of the space. If they taught multiple sections of the same course the other classroom became “the lowest denominator.” There was too much work to prepare multiple teaching strategies for the same course and thus they were constrained by the least progressive learning environment.

One of the final perspectives seems to sum up the differences between the two spaces. For one professor, it was communicated that the new space allowed the faculty member to teach as the person believed we need to teach to reach our students; to do the best job possible. The other spaces where this person teaches do the opposite; get in the way of doing the best job possible. In the new space, the learning environment “gets out of the way.” Everywhere else, it’s a “barrier” to good teaching and learning.

**Conclusion**

The research confirmed the concept that physical space does impact educator practice. Given this, the first implication is institutions need to fully embrace the idea that the physical environment does impact faculty practices and student learning. At the most basic level, faculty and students are shaped by the physical environment. If a college wants to implement diverse teaching practices and optimize student learning, the space in which students learn cannot be ignored. Room, and the space around a room, must be considered as more than a place to meet.

This research suggests that beyond the physical, there are also policy decisions that affect space. How rooms are arranged or how computers are made accessible to students in a classroom are two specific examples from this study. Institutions should develop and implement policies that support diverse teaching practices. Too many faculty have been told, “please put the tables back the way they belong” after having group activities in a classroom.

Colleges need to build a faculty work load model that acknowledges the time needed to implement diverse teaching practices. While lecture is still an important part of teaching, the progressive teaching practices utilized by faculty in this study required additional prep time. As the environment allows and advocates for diverse teaching practices, additional time is required to deliver these alternative methodologies. Using technology, changing the room configuration, creating group processes, adding practice field exercises, and more, all take time.

Institutions must include in the learning environments model a common mission and understanding of the value of space outside the classroom. This study documented that the space around the classroom had an impact on students in and outside the class. When designing new space a college needs to consider the entire learning environment, not just classroom space.

Parallel to space, there needs to be a professional development plan that helps faculty understand diverse teaching practices through the lens of learning environments. This study was based on the implementation of diverse teaching practices. The faculty who participated in this study came in with experience and a desire to utilize these practices in this space. While this
study did suggest that the environment pushed these faculty to stretch beyond their original plan, this was a unique group of faculty with a belief and preexisting knowledge in the use of such strategies. The same cannot be assumed of all faculty. While the learning environment might support or even inspire faculty, there still needs to be professional development opportunities such that faculty can learn how to optimize the capabilities of this space clearly connected to the goals of the college. (Bellanca, 2002)

Lastly, institutions can utilize the symbolism of the physical environment for cultural change. A new space and professional development will not go far enough to constitute significant change in faculty practices. The injunctive and descriptive norms for the organization must also change. People’s perspective of what practices are approved by the institution and people’s beliefs about what is actually happening, regardless of what is expected, must align with the practice of utilizing diverse teaching practices for student learning. New and progressive learning environments, and what they communicate about the college’s values and corresponding norms, should be used as a means to change beliefs and behaviors. Only through changing beliefs can we expect a change in practice. (Heimlich, J.E. & Norland, E., 2002). As the college invests in new space, it must be consistent and clear in why it is spending money for these changes, its expectations for faculty practices in these spaces, and the impact on student learning.

References


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