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Impacts of Intentional Planning for Active Learning Environments

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Impacts of Intentional Planning for Active Learning Environments

Susan Hillman, University of New England | Michelle Carpenter, Herman Miller, Inc.

Abstract, #2305

High levels of student engagement have been shown to be associated with such educational practices and conditions as purposeful student-faculty contact, active and collaborative learning, and institutional environments perceived by students to be inclusive and affirming with clearly communicated expectations for high levels of performance (Astin, 1993; Johnson, Johnson, & Smith, 1991; McKeachie, Pintrich, Lin, & Smith, 1986; Pascarella & Terenzini, 2005; Sorcinelli, 1991). While many universities are creating “active learning classrooms” (ALC) to facilitate these high levels of student engagement, little research beyond space utilization and student satisfaction with new or reconfigured classrooms has been conducted (Painter et al., 2013; Temple, 2008). Thus, this multi-method study investigated the effects of ALCs on student success, engagement, and faculty’s teaching strategies in both undergraduate (Site #1) and graduate (Site #2) classes.

Student surveys found significant differences between baseline and post surveys for three of the four areas at Site #1 and significant differences in all four areas at Site #2. The one area in which significant differences were not found at Site #1 was “Higher Level Thinking and Perspectives” and there were many factors including the demographics of an undergraduate population that could have been at play.

Faculty interviews indicated that the classroom design had an influence on changing their pedagogy. Classroom observations served to substantiate these reports by verifying the wide variety of strategies used in the room and the flexibility and fluidity of space use.

Methods

During the summer of 2016, two classroom spaces were renovated to accommodate a maximum capacity of 32 students. Rather than a uniform set of tablet-arm chairs, or only classroom observations of students and faculty within the active learning classrooms.

The total number of students for Site #1 was 223 (151 or 67% responded to the baseline, 94 or 42% responded to the post-survey) and involved primarily undergraduate students majoring in dental hygiene also taught in this classroom.

The total number of students for Site #2 was 114 (90 or 79% responded to the baseline, 56 or 49% responded to the post-survey). These students were primarily graduate students in the Westbrook College of Health Professions.

Data collection included a baseline survey with students exploring their experience within a typical or "traditional" classroom, a post-survey with students examining their experience after 10-weeks of being taught in the new classrooms, faculty interviews, and classroom observations of students and faculty within the active learning classrooms.

Results

<table>
<thead>
<tr>
<th>Site #1</th>
<th>This classroom is by far my favorite on-campus. It is a wonderful atmosphere that makes learning fun and easy.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning Engagement &amp; Productivity</td>
<td>3.5</td>
</tr>
<tr>
<td>Peer Engagement</td>
<td>4.1</td>
</tr>
<tr>
<td>Higher Level Thinking &amp; Perspectives</td>
<td>4.0</td>
</tr>
<tr>
<td>Space Functionality</td>
<td>3.6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Site #2</th>
<th>I really enjoy the setup of this classroom. It is very comfortable and offers a variety of seating which is nice so that I don’t always have to sit in the same type of chair.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning Engagement &amp; Productivity</td>
<td>3.5</td>
</tr>
<tr>
<td>Peer Engagement</td>
<td>4.3</td>
</tr>
<tr>
<td>Higher Level Thinking &amp; Perspectives</td>
<td>3.9</td>
</tr>
<tr>
<td>Space Functionality</td>
<td>3.6</td>
</tr>
</tbody>
</table>

Conclusions

The results show evidence that classroom design impacts student engagement and success. Three areas showed significant differences regardless of undergraduate or graduate status, urban or rural college setting. Namely “Learning Engagement and Productivity,” “Peer Engagement,” and “Peer Engagement” all showed significant results. With Site #2, which included primarily graduate students, the fourth area measured, “Higher Level Thinking and Perspectives,” also showed significant differences from the baseline data to the post-survey data.

The faculty interviews show that regardless of site, these classrooms impacted how they incorporated more dynamic, active learning strategies that emphasized higher level thinking skills within their courses. Site #1 faculty who taught primarily undergraduates spoke about the advantages of the technology including whiteboards, multiple points, and the document camera. Graduate faculty teaching in the health science areas focused on the comfort of the classroom.

“I’ve taught classes in Marcil 303 ranging from an 8-student research seminar to a 25-student mixed lecture/discussion section, and the room has handled everything we threw at it. It’s easy to move from two to four small student groups to centralized discussion using the document camera and multi-projector setup. What has been especially useful to me is the accessibility of every part of the room. Even the most hesitant student is comfortable using their own whiteboard space and table discussion area to work with their peers.”

CRAIG TENNENHOUSE, ASSOCIATE PROFESSOR, APPLIED MATHEMATICS

“This room format allows for student involvement that would never happen in a traditional setting as seen in this recent photo. My students were practicing an oral education lesson for a kindergarten classroom and as they began, the other students, unimportant, moved to the floor to make it more "realistic" and interacted in a way I’ve never seen happen before. It is simple things like this that add to the overall learning experience in a classroom.”

COURTNEY VANNAL, ASS. CLINICAL PROFESSOR, DENTAL HYGIENE

The classroom observations substantiate this in reporting the vast use of small group work and the fluid nature of the classroom set-up moving from whole group to small group work to role-playing, etc.

Limitations

- Generalizability limited to other universities with similar demographics.
- Instrument development relied on exploratory factor analysis.
- ANOVAs were based on unpaired data.

References

COURTNEY VANNAL, ASS. CLINICAL PROFESSOR, DENTAL HYGIENE

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