Influence of Active Learning Spaces on Teaching & Learning

Students’ Perceived Impact of Learning Spaces on Principles of Good Practice

Active learning is a teaching and learning pedagogy based on student engagement and reflection. Purdue University dedicates resources to design and renovate classroom spaces to accommodate and promote active learning experiences. Through mixed-method data collection, the purpose of this study was to determine how the features and characteristics of active learning spaces influence student learning. This briefing summarizes select findings related to Chickering and Gamson’s Principles of Good Practice in Undergraduate Education. Specifically:

From the students’ perspective, how do active learning and traditional learning spaces affect principles of good practice?

Overview of the Principles of Good Practice

Often cited in the past 30 years, Chickering and Gamson’s “Seven principles of good practice in undergraduate education” identify research-based strategies for improving undergraduate education. These principles are:

1. Encourage contacts between students and family.
2. Develop reciprocity and cooperation among students.
3. Use active learning techniques.
4. Give prompt feedback.
5. Emphasize time on task.
6. Communicate high expectations.
7. Respect diverse talents and ways of learning.

These principles are based on research of college student development and teaching; however, as explained by Mayhew (2016), instructors’ need opportunities to develop skills to facilitate active learning. Additionally, skills are needed to effectively use the features of a learning space and engage students in active learning experiences.

Bonwell and Eison (1991) suggest, “strategies promoting active learning be defined as instructional activities involving students doing things and thinking about what they are doing” (p. iii). It seems plausible an active learning space possesses the potential to better align with the principles of good practice than a space designed for traditional lecturing. Furthermore, the “effects multiply” when principles of good practice are combined.

Comparison of Active and Traditional Learning Experiences

Students were asked to identify the extent to which they agreed with statements representing each principle of good practice, for a specific course taught in an active learning space. They similarly responded to the same statements for courses facilitated primarily as a traditional lecture. Error! Reference source not found. shows a descriptive summary of students’ responses, by learning experience, and a comparison of the learning experiences. Many other non-measurable differences between courses and learning spaces could affect students’ perceptions of their learning experiences; however, it is quite interesting to see students’ rated their active learning experiences significantly higher than their traditional lecture experiences for six of the seven principles. Effect sizes vary, yet suggest students’ may perceive active learning spaces to better align with the recommended practices in undergraduate coursework.

It is potentially reasonable to anticipate all seven principles apply to any learning experience, regardless of course, instructor, or space characteristics; however, by course design, principles can be emphasized differently. For example, traditional learning experiences may occur in large lecture halls not designed to facilitate contact or cooperation with other students, which were the two principles for which the differences between active and traditional learning experiences were the largest of the seven principles.

Table 1. Students’ Perceptions of the Taxonomy, by Type of Learning Experience

<table>
<thead>
<tr>
<th>Survey Item Representing the Principle</th>
<th>Descriptives by Learning Experience</th>
<th>Comparison of Experiences</th>
<th>Percent Difference (AL-Trad)</th>
<th>p</th>
<th>Effect Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>I understand the concepts of my course(s)</td>
<td>AL 77.7% 296 3.9 4.0</td>
<td>5.5% ** .195 (small)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Trad 72.2% 270 3.8 4.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I am encouraged to have contact with my instructor</td>
<td>AL 73.2% 299 3.9 4.0</td>
<td>13.8% *** .303 (medium)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Trad 59.4% 271 3.6 4.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I am encouraged to have contact with other student</td>
<td>AL 82.6% 298 4.2 4.0</td>
<td>30.3% *** .545 (large)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Trad 52.2% 272 3.4 4.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I am encouraged to cooperate with other students</td>
<td>AL 85.9% 297 4.2 4.0</td>
<td>30.1% *** .540 (large)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Trad 55.7% 271 3.5 4.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I receive prompt feedback</td>
<td>AL 64.8% 298 3.8 4.0</td>
<td>14.6% *** .287 (small)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Trad 50.2% 271 3.4 4.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time is well-spent on related tasks</td>
<td>AL 64.1% 298 3.7 4.0</td>
<td>2.0% .059</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Trad 62.1% 272 3.7 4.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diverse ways of learning are respected</td>
<td>AL 72.2% 299 3.9 4.0</td>
<td>16.5% *** .321 (medium)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Trad 55.7% 271 3.5 4.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Scale: Strongly disagree (1), Disagree (2), Neutral (3), Agree (4), Strongly agree (5).

Significance Levels: * indicates p<.05; ** indicates p<.01; *** indicates p<.001.

1 Sources:


Students’ Perceived Impact of Learning Spaces on Principles of Good Practice

Conclusions
It should be noted that this single use of statements to represent each principle is exploratory only; there are other published research studies exploring factors contributing to good practice, and varying applications of the principles to student development and instructors’ professional development.5

At Purdue University, these principles are adapted:

- During the IMPACT program faculty learning community.
- Within the Gallup-Purdue Index.
- Within select items of the "Student Experience in the Research University" survey. For example, this survey includes "academic engagement" items such as:
  - "Worked on class projects or studied with classmates outside of class” and
  - “Talked with instructor outside of class about course concepts.”

We recommend a deeper analysis, using cases of specific rooms and/or courses at Purdue.

Individual instructors might consider:

- How are these in-class activities and course assessments enabling or inhibiting these rates of students’ perceived good practice?
- How do I help students adapt their academic success strategies to fit the characteristics of a specific course? For example:
  - How do students determine which concepts they do and do not understand?
  - How do I make myself available to students outside of class?
  - How do I engage with students in-class?
  - How do I enable students to effectively engage with each other, both in and out of class?
  - How do students receive feedback: from me? From peer students? Via self-assessment? How timely are each of these?
  - How do I make the most of in-class time, and help students develop effective use of time outside of class?
  - How do I empower students to respect differences between them? How do I respect these differences between diverse students and me?

Moreover, other key stakeholders at Purdue might can:

- For continuous improvement of teaching, what improvements should we make to classroom facilities or features within learning spaces?
- What can (or should) we do to improve professional development for faculty, to empower instructors to facilitate good practices in undergraduate education?

What support exists outside of class to supplement good practices in-class, for students who have real or perceived need for support?

5 For example, consider:
- Project DEEP: http://nsse.indiana.edu/html/projectDEEP.cfm
6 For more information about IMPACT, see:
- https://www.purdue.edu/impact/
7 For more information, see:
- http://www.purdue.edu/newsroom/gallup/
8 For more information about SERU at Purdue, see: https://www.purdue.edu/oirae/seru.html