Influence of Active Learning Spaces on Teaching & Learning

Students' Perceptions of Active Learning, and Preferred Ways to Learn

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 students’ perceptions of active learning and their preferred ways to learn. Specifically:

From the students’ perspective, what is active learning? What are their preferred ways to learn?

Whereas most briefings from this study report results, this briefing briefly identifies a basic conceptual framework for the survey data collected from student participants, and results in fundamental perceptions of students.

What do Students Think Active Learning is?"

Bonwell and Eison\(^1\) (1991) suggest, “strategies promoting active learning be defined as instructional activities involving students doing things and thinking about what they are doing” (p. iii). In our survey for student participants enrolled in a course occupying a targeted active learning space, we similarly proposed:

"[Your] classroom is an active learning space, which means [it] is designed for active learning. By definition ‘active learning’ consists of learning methods based on greater engagement in activities designed to develop knowledge or skills. Briefly, what does this definition mean to you as a student at Purdue University?"

Survey participants’ responses to this open-ended survey item resulted in the following emerging themes:

- Engagement while learning.
- Interacting with peer students.
- Interacting two-way with the instructor.
- Developing competencies or knowledge.
- Applying knowledge.
- Flexibility within the learning space.
- “Different” or “new” learning strategies (relative to prior experiences or traditional lecture-style classrooms).
- Questioning (e.g., the value of course content, quality of peer students, facilitation methods, etc).

For example, one student’s detailed response covered multiple prospective themes:

“In my [course], active learning means getting involved. It is a very hands on learning process, allowing me to both fail and succeed within the safe walls of my classroom. Following up with whatever obstacle that was placed in my way, has allowed [sic] me to review and obtain the information needed. I am doing very well in this class and I believe it is because of this setup.”

This survey item existed to give students a framework for use of the phrase “active learning” within the survey, and to help the research team understand students’ perspectives in response to other items. By itself, these themes show a variety of students’ perceptions of active learning. Borrowed and Eison believed educators do not have a common definition for active learning, and the variety of students’ responses suggest students also do not share a single interpretation of active learning. Since active learning strategies are quite broad, the variability within active learning creates the variations we see in students’ perceptions of active learning across courses, instructors, learning spaces, etc. Moreover, we might see contrasting perspectives about active learning within the same course between students due to human differences or preferred ways to learn.

Students’ Preferred Ways to Learn

Literature contains a variety of definitions for “learning styles” or “learning preferences.” Definitions may complement or contrast each other, and labels for ways to learn as a “preference” or “style” are not used consistently. Pashler, McDaniel, Rohrer, and Bjork\(^2\) concluded “at present, there is no adequate evidence base to justify incorporating learning styles assessments into general educational practice” (p. 105).

Rationale for this conclusion includes:

- Learners do not possess a single “style.”
- Learners may have preferred ways to learn, but are capable of learning in ways outside their preferences.

Nonetheless, students were asked to rate their preferred ways to learn, based on the following four modalities:\(^3\):

- VISUAL: a preference to see new information
- AURAL: a preference to hear new information
- READING/Writing: a preference to obtain new information through reading or writing
- KINESTHETIC: a preference to obtain new information through experience

Table 1 shows the distribution of students’ responses for each modality based on level of preference. These modalities do not represent learning styles, nor should we presume students’ level of preference equates to their level of ability to learn from strategies targeting a modality.

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Rather, these modalities suggest to instructors creating visual, aural, reading/writing, and kinesthetic learning experiences for students.

Based on the theory supporting these modalities, the wording of the survey item acknowledges students may prefer to learn in more than one way—i.e., that students may be multi-modal. 97.2% of survey respondents had a moderate or high preferences for two or modalities. A distribution of students, by count of preferred modalities, appears in Figure 1.

Understanding students’ preferred ways to learn aids grouping other survey items by these preferences, but does not assert differences between preferences. Each student’s level of preference does not imply which facilitation strategy(ies) are most effective for this individual student. These rates suggest students’ level of adaptability to any facilitation method used in-class, based on the extent to which method aligns with one of their preferred ways to learn.

Conclusions

The high rate of students who have at least a moderate preference for visual learning experiences strongly justifies integrating visual learning experiences into the course facilitation methods.

Many inventories exist to categorize learning preferences or styles (ex: Flemings’ VARK, Gardner’s Multiple Intelligences⁴, Kolb’s Stages of Learning⁵, etc). Instructors may use these cautiously, as students do not fit solely within “one style.” Moreover, modifying course facilitation strategies to fit the majority of students will always overlook the preferences of the minority. Instructors may benefit students by:

- Varying the facilitation strategies used within a course for each topic or concept.
- Helping students understand what strategies to use to be successful in the course.
- Recognizing one instructor cannot accommodate every student, and helping students to see how they need to adapt their learning strategies to the course pedagogy developed by the instructor.
- Promoting alternative ways to learn the course content (ex: tutoring, study groups, etc).

We presume any knowledge that instructors gain about teaching and learning develops their active learning strategies and aids understanding of ways people learn. Additional knowledge gains may also broaden instructors’ perspectives of successful ways to engage a wider array of students. For these reasons, recommendations for this section focus on ways for instructors’ to gain knowledge, including:

- Promoting IMPACT, TLT, or other on-campus workshops, and other professional development experiences based on prospective intended outcomes targeting active learning.
- Creating communities of practice, or instructor-to-instructor mentoring partnerships, based on the types of active learning spaces.
- Studying literature about teaching and learning.

Self-study may work for those with a targeted inquiry, yet group study of literature may motivate instructors through sharing of knowledge gained. We recommend common or guided reading experiences.

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