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"Sage on the Stage" or "Guide on the Side": Theories, Perceptions, and Misconceptions of Active Student Learning in Higher Education

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“Sage on the Stage” or “Guide on the Side”: Theories, Perception, and Misconceptions of Active Student Learning in Higher Education

Barbara Morgan PhD
Brigham Young University
What is active student learning?
Any instructional method that engages students in the learning process in the classroom.
Perceived Fallacies

• Classroom
• Professor Affect
• Implementation
Perceived Fallacies (Classroom)

• Increased student involvement, leads to the swapping of ignorance.
• Only one correct way or methodology.
• Confusing the means with the end. (Instruction vs. learning and student involvement.)
• Active student learning only works for a certain type of student.
• Inability to get through all of the material necessary for the class.
Does Active Learning Work?

After reviewing 2,600 books, book chapters, monographs, journal articles, technical reports, conference papers, etc., Terenzini and Pascarella conclude:

“Active Learning produces greater gains in academic content and skills; it clearly supports efforts to employ various forms of ‘collaborative learning.’”

Terenzini and Pascarella, Living with Myths, Undergrad. Ed. In America, Change, 1994
Increased student involvement, leads to the swapping of ignorance.

What works?

- Define what is being studied
  - Collaborative learning (working in small groups)
  - Cooperative Learning (Cooperation instead of competition)
  - Problem-based Learning
    - Students in small teams has a positive effect on academic achievement
    - Self-directed learning has a slight negative effect on academic achievement
Increased student involvement, leads to the swapping of ignorance.

- Determine the outcome
  - Bloome’s taxonomy
  - Relevant skills
  - Attitude of student
  - Retention

- Difficult to measure
  - Higher level learning outcomes
  - What is significant?
Does Active Learning Work?

Michael Prince, Dept. of Chemical Engineering Bucknell University examined the evidence for the effectiveness of active learning for engineering professors and found that “There is broad but uneven support for the core elements of active, collaborative, cooperative, and problem-based learning. . . . Although the results vary in strength, this study has found support for all forms of active learning examined.”

Meta-Analysis of College Studies

Johnson, Johnson and Smith, *Cooperative Learning Returns to College*, Change, 1998

Found over 305 studies that compare the relative efficacy of cooperative, competitive and individualistic learning on individual achievement in college and adult settings and found:
Active Learning vs. Straight Lecture

• Students will remember more content if brief activities are introduced to the lecture.
• Student engagement is one of the most important indicators of success in college.

Johnson, Johnson and Smith, Cooperative Learning Returns to College, Change, 1998
Collaborative vs. Individualistic

• Improved Academic Achievement
• Improved Quality of Interpersonal interactions
• Improved self-esteem
• Improved perceptions of greater social support
• Student retention
• Student attitude toward the subject

Johnson, Johnson and Smith, Cooperative Learning Returns to College, Change, 1998
Problem Based Learning

- Improved student attitudes
- Improved student study habits
- Retain information longer
- Perhaps develop enhanced critical thinking and problem-solving skills, especially if coupled with training in these skills.

Most difficult to analyze because of the variety of methodology incorporated and lacks a dominant foundational principle.

Johnson, Johnson and Smith, Cooperative Learning Returns to College, Change, 1998
Perceived Fallacies (Classroom)

• Increased student involvement, leads to the swapping of ignorance.
• Only one correct way or methodology.
• Getting students to participate is the ultimate goal. (i.e. Game based learning)
• Active student learning only works for a certain type of student.
• Inability to get through all of the material necessary for the class.
“Successful college teaching demands that the teacher have available a number of techniques to use at the proper time and in the proper situation to maximize learning.”

Welty, Discussion method teaching: How to make it work. Change 41-49, 1989
Only One Correct Way

### Types of Peer Learning

<table>
<thead>
<tr>
<th><strong>Peer Interaction</strong></th>
<th>Student</th>
<th>Peer Facilitator</th>
<th>Instructor</th>
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<tbody>
<tr>
<td>Immersion and Formative Assessment:</td>
<td>✔️</td>
<td>❌</td>
<td>❌</td>
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<tr>
<td>Discussion groups/boards, study groups, peer comparison</td>
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<tr>
<th><strong>Peer Response</strong></th>
<th>Student</th>
<th>Peer Facilitator</th>
<th>Instructor</th>
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<tbody>
<tr>
<td>Deepening and Integrating Conceptual Learning:</td>
<td>✔️</td>
<td>❌</td>
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<tr>
<td>Socratic questioning, paired teaching, case studies, concept tests</td>
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<tr>
<th><strong>Peer Collaboration</strong></th>
<th>Student</th>
<th>Peer Facilitator</th>
<th>Instructor</th>
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<tbody>
<tr>
<td>Joint Problem Solving and Concept Application</td>
<td>✔️</td>
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<tr>
<td>Group assignments/quizzes, team projects, structured activities</td>
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<tr>
<th><strong>Peer Feedback</strong></th>
<th>Student</th>
<th>Peer Facilitator</th>
<th>Instructor</th>
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<tbody>
<tr>
<td>Expanded Evaluation through Peer Review</td>
<td>✔️</td>
<td>❌</td>
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<tr>
<td>Calibrated Peer Review, rubric-based evaluation</td>
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<tr>
<th><strong>Peer Facilitated Instruction</strong></th>
<th>Student</th>
<th>Peer Facilitator</th>
<th>Instructor</th>
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<tbody>
<tr>
<td>Rotated or Dedicated Student-led Instruction</td>
<td>✔️</td>
<td>❌</td>
<td>❌</td>
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<tr>
<td>Student-directed lesson development</td>
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</table>

BYU-Idaho, “Peer Learning” 2008
Perceived Fallacies (Classroom)

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• Inability to get through all of the material necessary for the class.
Confusing Means and End

Instruction Paradigm  Learning Paradigm

Barr and Tagg, From Teaching to Learning, Change 1995
Perceived Fallacies (Professor Affect)

• Student involvement reduces the role of the faculty or professor in the classroom.

• A new model implies that the “old” way was wrong.

• Teacher ratings will go down because of the learning model or this type of teaching.

• I’ve been doing it all along. I’ve got it down! I’ve arrived.
Perceived Fallacies (Implementation)

• The model or emphasis is proprietary only to the university, division, company, etc.

• This is a short term program, a pendulum shift of sort.

• This is merely a top down approach.

• Any professor/teacher can do this if they just change their approach.
Ely’s Implementation Conditions

1. Dissatisfaction with the status quo
2. Knowledge and skills exist
3. Resources are available
4. Time is available
5. Rewards or incentives exist
6. Participation expected/encouraged
7. Commitment by those involved
8. Leadership is evident
9. Trust/human relations

If one is always looking for unusual circumstances and dramatic events, he cannot appreciate how difficult it is to make the ordinary happen. People now appear to think that implementation should be easy; they are, therefore, upset when expected events do not occur or turn out badly. We could consider our effort a success if more people began with the understanding that implementation, under the best of circumstances, is exceedingly difficult. They would, therefore, be pleasantly surprised when a few good things really happened.

Pressman and Wildavsky, Implementation (1978), (p. xxi)
Implementation defined

Implementation is the process of putting into practice an idea, program, or set of activities new to the people attempting or expected to change.

Fullan (1982), pg. 54
Everett Rodger’ Diffusion of Innovation

• Rodger’s (1995) research focuses on the adoption process, describing who adopts innovations, when, and what is adopted. Rogers’ summary of the diffusion of innovations research resulted in a set of principles or generalizations to describe this process. The elements in his diffusion process theory are the innovation itself, the communication channels available and used, time, and social system.
According to Rogers, “Innovations that are perceived. . . as having greater relative advantage, compatibility, trialability, observability, and less complexity will be adopted more rapidly. . . “ (p. 16). At its most basic form the process involves, an innovation, an individual or other unit of adoption that has knowledge of, or has experienced using, the innovation, another individual or other unit that does not yet have knowledge of, or experience with, the innovation, and a communication channel connecting the two units. These communication channels can be mass media channels or interpersonal channels. Time is involved in the innovation decision process with five main steps including; knowledge, persuasion, decision, implementation, and confirmation. Rogers defines a social system as a set of interrelated units that are engaged in joint problem solving to accomplish a goal. Rogers places implementation as one step in the adoption process and recognizes that reinvention, or having the adopter change the innovation, is a common phenomenon.
Recommendations/Suggestions
So What?