Making Real the Promise of Active Learning

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PREFACE

Nearly 25 years ago, McKeachie wrote in the *Handbook of Research on Teaching* (Gage, 1963), "College teaching and lecturing have been so long associated that when one pictures a college professor in a classroom, he almost inevitably pictures him as lecturing." Few would argue with the statement that the vast majority of today's professoriate were primarily lectured to as both undergraduates and as graduate school students. It is not surprising, therefore, that lecturing continues to be our most prevalent mode of instruction.

A host of recent national reports, however, have challenged college and university faculty to develop instructional approaches that transform students from passive listeners to active learners. On first glance, like many of the recommendations provided by "blue ribbon panels," this would seem "easier said than done."

We believe that the incorporation of active learning strategies into the daily routine of classroom instruction can, and should, be done. To help in this pursuit, this handout was designed to accompany a workshop entitled "Making Real the Promise of Active Learning." During the workshop, specific and practical teaching strategies that engaged participants in active learning roles were modeled. These written materials have been designed to summarize the program's content and to identify resources for further study.

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I. In the context of the college classroom, what are the major characteristics associated with active learning?

A. Some of the major characteristics associated with active learning strategies include:

1. Students are involved in more than passive listening
2. Students are engaged in activities (e.g., reading, discussing, writing)
3. There is less emphasis placed on information transmission and greater emphasis placed on developing student skills
4. There is greater emphasis placed on the exploration of attitudes and values
5. Student motivation is increased (especially for adult learners)
6. Students can receive immediate feedback from their instructor
7. Students are involved in higher order thinking (analysis, synthesis, evaluation)

B. In summary, in the context of the college classroom, active learning involves students in doing things and thinking about the things they are doing.

II. Why is active learning important?

A. Student concentration during lectures has been shown to decline after 10-15 minutes;

B. Research comparing lecture versus discussion techniques was recently summarized in the report Teaching and Learning in the Classroom: A Review of the Research Literature that was prepared by the National Center for Research to Improve Postsecondary Teaching and Learning (McKeachie, et. al., 1987). The review concluded that

In those experiments involving measures of retention of Information after the end of a course, measures of problem solving, thinking, attitude change, or motivation for further learning, the results tend to show differences favoring discussion methods over lecture. (p. 70)
C. Numerous researchers and recent national reports have also discussed the use of active learning strategies in the classroom. Consider the following statements:

The sort of teaching we propose requires that we encourage active learning and that we become knowledgeable about the ways in which our students hear, understand, interpret, and integrate ideas.

(AAC Task Group on General Education, 1988)

Students learn by becoming involved... Student involvement refers to the amount of physical and psychological energy that the student devotes to the academic experience.

(Astin, 1985)

Learning is not a spectator sport. Students do not learn much just by sitting in class listening to teachers, memorizing pre-packaged assignments, and spitting out answers. They must talk about what they are learning, write about it, relate it to past experiences, apply it to their daily lives. They must make what they learn part of themselves.

(Chickering and Gamson, 1987)

When students are actively involved in the learning task, they learn more than when they are passive recipients of instruction.

(Cross, 1987)

Students learn what they care about and remember what they understand.

(Erickson, 1984)

Professor Carl Schorske has suggested that the test of a good teacher is "Do you regard 'learning' as a noun or a verb? If as a noun, as a thing to be processed and passed along, then you present your truth's, neatly packaged, to your student's. But if you see 'learning' as a verb - the process is different."

(Quoted in McCleery, 1986)

Learning is not a passive process. Students learn most effectively when they are actively engaged with their work in the classroom and in student life.

(National Association of Student Personnel Administrators, 1987)

Faculty should make greater use of active modes of teaching and require that students take greater responsibility for their learning.

(Study Group on the Conditions of Excellence in American Higher Education, 1984)
D. Recently, 125 students enrolled in four sections of an American History survey course, on the campus of Southeast Missouri State University, were asked to identify the active learning teaching methods they had encountered in each of their classes during the first six weeks of this Spring semester. Among the most interesting findings, these students stated that:

17% had not seen a class discussion lasting 15 minutes or more
39% had not seen visual aids used in class
41% had not done a short, in-class writing activity
48% had not participated in a small group discussion
58% had not made a class presentation
69% had not completed a self-assessment activity
77% had not made a small group presentation

III. What obstacles or barriers prevent faculty from using active learning strategies?

A. Six commonly mentioned obstacles to using active learning strategies include:

1. You cannot cover as much course content in the time available
2. Devising active learning strategies takes too much pre-class preparation
3. Large class sizes prevents implementation of active learning strategies
4. Most instructors think of themselves as being good lecturers
5. There is a lack of materials or equipment needed to support active learning approaches
6. Students resist non-lecture approaches

IV. How can these barriers be overcome?

A. We believe that there are two primary sets of obstacles that prevent faculty from using active learning strategies in the classroom: (1) the six potential obstacles noted above, and (2) the fact that using active learning strategies involves risk

B. With respect to the six commonly reported obstacles, the following should be noted:

1. Admittedly, the use of active learning strategies reduces the amount of available lecture time that can be devoted to content coverage. Faculty who regularly use active learning strategies typically find other ways to ensure that students learn assigned course content (e.g., using reading and writing assignments, through their classroom examinations, etc.)
2. The amount of pre-class preparation time needed to implement active learning strategies will be greater than that needed to "recycle old lectures;" it will not necessarily take any more time than that needed to create thorough and thoughtful new lectures.

3. Large class size may restrict the use of certain active learning strategies (e.g., it is difficult to involve all students in discussion in groups larger than 40) but certainly not all. For example, large classes can be divided into small groups for discussion activities, writing assignments can be read and critiqued by students instead of the instructor, etc.. See Gleason (1987) for several excellent articles on how this can be done.

4. Most instructors see themselves as good lecturers and therefore see no reason to change. Though lecturing is potentially a useful means of transmitting information, teaching does not equal learning; this can be seen clearly in the painful disparity between what we think we have effectively taught, and what students indicate they have learned on the examination papers that we grade.

5. The lack of materials or equipment needed to support active learning can be a barrier to the use of some active learning strategies but certainly not all. For example, asking students to summarize in writing the material they have read or to form pairs to evaluate statements or assertions does not require any equipment.

6. Students resist non-lecturing approaches because active learning alternatives provide a sharp contrast to the very familiar passive listening role to which they have become accustomed. With explicit instruction in how to actively participate and learn in less-traditional modes, students soon come to favor the new approaches.

C. A second set of potentially more difficult obstacles to overcome involves increasing one's willingness to face two types of risks.

1. There are risks that students will not:
   a. participate actively
   b. learn sufficient course content
   c. use higher order thinking skills
   d. enjoy the experience

2. There are risks that you as a faculty member will not:
   a. feel in control of the class
   b. feel self-confident
   c. possess the needed skills
   d. be viewed by others as teaching in an established fashion
D. Though the classroom use of active learning strategies will always involve some level of risk, by carefully selecting only those active learning strategies that are at a personally comfortable risk level, you can maximize your likelihood of success. Examine Figure 1 below which contrasts characteristics of low and high risk active learning strategies.

Figure 1

A Comparison of Low and High Risk Active Learning Strategies

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Low Risk Strategies</th>
<th>High Risk Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class Time Required</td>
<td>relatively short</td>
<td>relatively long</td>
</tr>
<tr>
<td>Degree of Planning and Organization</td>
<td>more structured</td>
<td>less structured</td>
</tr>
<tr>
<td>Subject Matter</td>
<td>relatively concrete</td>
<td>relatively abstract</td>
</tr>
<tr>
<td>Potential for Controversy</td>
<td>less controversial</td>
<td>more controversial</td>
</tr>
<tr>
<td>Students' Prior Knowledge of the Subject Matter</td>
<td>better informed</td>
<td>less informed</td>
</tr>
<tr>
<td>Students' Prior Knowledge of the Teaching Technique</td>
<td>familiar</td>
<td>unfamiliar</td>
</tr>
<tr>
<td>Instructor's Prior Experience With the Teaching Technique</td>
<td>considerable</td>
<td>limited</td>
</tr>
<tr>
<td>Pattern of Interaction</td>
<td>between faculty &amp; students</td>
<td>among students</td>
</tr>
<tr>
<td>Faculty Control</td>
<td>high level of control</td>
<td>low level of control</td>
</tr>
<tr>
<td>Degree of Spontaneity</td>
<td>planned</td>
<td>spur of the moment</td>
</tr>
</tbody>
</table>

E. Because lecture classes have been the prevailing instructional approach seen most often by faculty when they were undergraduate and graduate students, many faculty have had limited personal experience with, and few role models for, active learning alternatives.

F. To help identify the active learning strategies you might be willing to try in future classes, complete the self-assessment that follows as Figure 2:
Figure 2
A SURVEY OF CLASSROOM TEACHING METHODS

DIRECTIONS: There are many different ways faculty make use of class time. We would like you to describe the teaching strategies you have used during a semester in the class you teach most often. First, carefully read the list of teaching strategies and indicate with a check mark (✔) if you used this teaching method the last time you taught this class. Then indicate with a check mark (✔) whether you would be willing to try this teaching method the next time you teach this class.

<table>
<thead>
<tr>
<th>Teaching Strategy</th>
<th>Last Time</th>
<th>Next Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>I lectured with at least 15 minutes of time devoted to class discussion</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I gave an hourly exam</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I gave an &quot;announced&quot; short quiz</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I gave a &quot;surprise&quot; short quiz</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I took the class on a library tour</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I took the class on a field trip</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I assigned a short writing activity without having class discussion afterward</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I had students engage in a brainstorming activity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I had students complete a self-assessment activity (e.g., complete a questionnaire about their beliefs, values, attitudes)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I assigned a short writing activity that was followed by at least 15 minutes of class discussion</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I assigned an in-class reading activity that was followed by a significant class discussion lasting 15 minutes or more</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I led a class discussion about a visual/audio stimulus (e.g., a picture, cartoon, graph, song)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I assigned a laboratory exercise that was done by students</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I assigned a small group discussion or project (e.g., case study work)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I had students complete a problem solving game or simulation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I had students complete a survey instrument</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I assigned a student-centered class discussion (e.g., students developed the questions and lead the discussion that followed)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I assigned individual student presentations (e.g., speeches, reports)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I assigned small group presentations (e.g., debates, panel discussions)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I had students engage in a role playing activity</td>
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<td></td>
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</tbody>
</table>
G. We believe that instructional approaches can be usefully classified in terms of the level of student activity they promote and the level of instructor risk they entail. Figure 3 below classifies previously discussed teaching techniques in terms of these two criteria:

**Figure 3**

**A Classification of Instructional Strategies In Terms of Student Activity Level and Instructor Risk**

<table>
<thead>
<tr>
<th>Students are Active</th>
<th>Students are Passive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low Level of Instructor Risk</td>
<td>High Level of Instructor Risk</td>
</tr>
<tr>
<td>Show a film for the entire class period</td>
<td>Invite a guest lecturer of unknown quality</td>
</tr>
<tr>
<td>Lecture for the entire period</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Small group discussion</th>
<th>Role playing activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surveys or questionnaires</td>
<td>Small group presentations</td>
</tr>
<tr>
<td>Laboratory exercises</td>
<td>Individual student presentations</td>
</tr>
<tr>
<td>Self-assessment activities</td>
<td>Guided Imagery exercise</td>
</tr>
<tr>
<td>Brainstorming activities</td>
<td>Small group discussion</td>
</tr>
<tr>
<td>In-class writing</td>
<td></td>
</tr>
<tr>
<td>Field trips</td>
<td></td>
</tr>
<tr>
<td>Library tours</td>
<td></td>
</tr>
<tr>
<td>Quizzes or examinations</td>
<td></td>
</tr>
<tr>
<td>Lecture with discussion</td>
<td></td>
</tr>
</tbody>
</table>

H. We propose that you can successfully overcome each of the major obstacles or barriers to the use of active learning strategies, and reduce the possibility of failure, by gradually incorporating teaching strategies that increase student activity level and instructor risk into your regular teaching style.

I. Appendices 1-4 identify numerous recently published articles describing how active learning strategies have been successfully used in undergraduate courses in (1) business, (2) the humanities, (3) the sciences, and (4) the social sciences.
References


