

Ideas and Sources To Improve Learning

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Ideas on Lecturing From A Variety of Places and People

I. What are some of the advantages of the lecture method of teaching?

- A. The teacher controls the topic, aims, content, organization, sequence, and rate. Emphasis can be placed where the teacher desires.
- B. The lecture can be used to motivate and increase interest, to clarify and explain, to expand and bring in information not available to the students, and to review.
- C. The number of students listening to the lecturer can be in the hundreds.
- D. Students can interrupt for clarification or more detail.
- E. The lecture can be taped, filmed, or printed for future use.
- F. Other media and demonstrations can be easily combined with the lecture.
- G. The lecture can be revised and updated.
- H. The teacher can serve as a model in showing how to deal with issues and problems.
- I. Students are used to the lecture method from high school and other college courses.

II. What are some of the disadvantages of the lecture method?

- A. Some students may already know the content of the lecture while some may not be ready for the lecture.
- B. Lectures are group paced.
- C. It is difficult to maintain student interest and attention for a full hour or longer of lecture.
- D. The communication is mostly one-way communication from the teacher to her students. Often there is little student participation. The students who do participate are few in number and tend to be the same students each class.
- E. Most students have not learned to take good notes.
- F. Lecture information is forgotten quickly, during and after the lecture.
- G. There is no immediate and direct check of whether learning has taken place.
- H. Lectures are not effective when teaching thinking objectives.
- I. The lecture method encourages student dependence on the teacher.
- J. Few teachers have been taught how to lecture effectively.
- K. Students are not very active when only listening.

III. What are some ways to get feedback on your lectures?

- A. Make an audiotape of a lecture and listen to it a week later by yourself. Critique your own lecture. Or request that a video tape be made and review it yourself.
- B. Ask some faculty to help you critique the audiotape or videotape.
- C. Request other faculty to sit in on a couple lectures and give you their reactions.
- D. Pick a specific aspect of lecturing to work on and teach a mini-lesson to some faculty.
- E. Ask for a group of students to evaluate your lectures. Train them in what to look for and discuss with them their reactions.
- F. Each class have a different group of students provide written feedback on the lecture.
- G. Introduce some measure of student learning at the end of lectures to determine if students are learning.
- H. Ask a speech teacher to provide suggestions. Videotape the lecture and have the speech teacher present. Then work together to improve your lecturing.

IV. What are some ideas to consider about lecturing?

- A. Before presenting the lecture

1. What is it that the students need to learn?
2. Decide if the lecture is the best method to use.
3. Assess what the students know to be sure your starting point is appropriate.
4. Specify what the students are to learn and retain.
5. Plan a way to teach what is to be learned.
6. Plan in a measure of the learning.
7. Consider how to help those who miss class or don't learn during class.
8. Keep in mind that retention during the middle third of the lecture is less than at the start or end. Since forgetting starts during the lecture, think of ways to decrease the forgetting.

B. At the **start of the lecture**

1. Clearly identify the start of the lecture. Take charge. Start on time.
2. Get the students' attention.
 - a. Use a thought provoking question, story, or example.
 - b. State a problem.
 - c. Present a contradiction. State a paradox.
 - d. Bring in a personal example.
 - e. Use a current event to get started.
 - f. Highlight something from the homework.
 - g. Show how the topic is relevant to the students.
3. Tie in the current lecture with previous course learning.
4. Provide an overview of the lecture (sometimes called an advance organizer).
5. Explain to the students how they will be able to use what they are hearing.
6. Provide definitions for new terms and examples. (note the "s" on examples)
7. Don't read the lecture.

C. **During the body of the lecture**

1. Carefully organize the lecture.

Create a logical organization; a cause-effect; a time sequence; problem-solution; pro-con; simple to complex.
2. Keep in mind research on memory and learning.
 - a. Build in internal summaries.
 - b. Hold the key points to about 5 minutes each.
 - c. Don't include many details.
 - d. Rather than repeat, reword. Say it in a different way.
3. Keep in mind research on attention.
 - a. Let your enthusiasm for the topic show.
 - b. Use visual aids.
 - c. Use vivid examples.
 - d. Don't rush.
 - e. Develop eye-contact with your students.
4. Pull together information (integrate). Show how things relate. Develop transitions. Keep bringing the class back to the big picture.
5. Be objective to be seen as a credible communicator. Clearly label personal views.
6. Develop ways to increase student activity during the lecture.
 - a. Provide an outline on the board for students to fill in.
 - b. Provide breaks for students to write notes on what they understand.
 - c. Stop lectures for buzz groups, question and answer, or partners.
 - d. Provide problems for solving after presenting the relevant information.

7. Devise methods to determine what the students are learning (active learning). Students can be asked to write individually, in pairs, or in small groups.
 - a. Ask specific questions over the lecture.
 - b. Ask for examples.
 - c. Allow time for students to ask questions.
 - d. Use a student-response system or have students hold up their hands on practice multiple choice questions from a transparency.
 - e. Ask students at the end of class to summarize the central idea and the key points.
 - f. Keep track of nonverbal clues of inattention, confusion, or boredom.
 - g. Have daily quizzes.
 - h. Try a week test over lectures.
 - i. Identify on exams the questions that come from lecture and analyze the results.

D. Ending the lecture

1. Tie together the beginning and the end.
2. Summarize the lecture.
3. Ask a student to summarize the lecture verbally.
4. Ask all to write a summary.
5. Continue to place this lecture in the context of the entire course.
6. Review what was to be learned using study questions and then ask for answers.
7. Provide a preview of the next class.
8. Ask for further student questions.
9. Don't give hints that you are about finished since students will close their books and minds before you are finished.
10. Develop an end of the class routine so it is clear when you dismiss the class.

E. Delivery

1. Can everyone hear?
2. Do you use rate, volume, and pitch to emphasize?
3. Do you speak clearly?
4. Do you use your sense of humor?
5. Are cliches avoided?
6. Do you maintain eye contact?
7. Do you use appropriate gestures?
8. Do you avoid distracting habits?

V. What are some ways to help students to write better notes?

- A. Provide an outline and have students fill in the outline.
- B. Provide study questions before the lecture to structure note taking.
- C. Teach students to take better notes.
 1. Put a detailed set of notes on the board or a handout and then lecture. Discuss with students what was put into the notes and why.
 2. As you give the lecture, have another teacher take notes on a transparency so that students can see the process of taking notes.
 3. Collect student notes and provide feedback.
 4. As the lecturer, at first give specific hints while lecturing of what should be noted. In future lectures fade out the hints. Teach students to pick up subtle hints.
 5. Teach students to take notes (not word for word) on the right side of the notebook. After class request that they rewrite and organize the notes on the left side.

D. Provide complete notes to students.

VI. Consider lecturing no more than 10 minutes before changing to another approach.

Raise questions, assign written work, use pairs, use small groups, use visuals, try a quiz.

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Ideas on Cooperative Learning and the Use of Small Groups

What are some class activities that use cooperative learning?

- A. **Class discussion** with the full class which is led by the instructor.
- B. **Class discussion** with the full class which is led by one or more students.
- C. **Panel Discussion** before the full class.
- D. **Debate Discussion** before the full class.
- E. **Student Centered Discussions**
The instructor sits in the discussion but plays a minor role and encourages the group to take over the leadership functions. The instructor models thinking skills and reinforces students who think.
- F. **Developmental Discussion**
Teacher divides the discussion into four clear categories so that discussion is focused on one step at a time. The steps:
 - a. Formulate the problem (clarify what the problem is)
 - b. Suggest hypotheses
 - c. Obtain relevant data
 - d. Evaluate various solutions (critical thinking).(McKeachie, 1994, *Teaching tips: A guidebook for the beginning college teacher* (ninth ed.). Lexington, MA: D. C. Heath. pp. 33-34)
- G. **The Inner Circle (The Fishbowl Technique)**
With classes up to 30, half of the class moves into a small circle in the middle of the classroom with the rest of the class in a larger circle. The inner group then discusses the topic with the outside group listening. The groups can then be changed so that the outside group has to listen carefully to be able to carry on the discussion. The focus can be on applying thinking skills to whatever topic is being discussed. Or the class can be divided into several groups (4 to 8 students) and groups take turns being in the inner circle. (McKeachie, 1994, p. 45)
- H. **Leaderless Small Group Discussions**
The class is divided into several small discussion groups (4 to 6 students) which are given a task and then allowed to function on their own. The teacher does not belong to any one group. Students can learn to think and later apply what they have learned.

1. Some teachers move around the classroom listening to groups, some drop into groups and participate a little, while other teachers let the groups function on their own.
2. Some instructors answer questions after the group activities but do not monitor the group activities.
3. Some instructors keep the same groups through the entire course, some make changes once or twice, some allow students to change at midsemester, while some use these groups for a topic and then change membership. (McKeachie, 1999, pp. 160-161)

I. **Buzz Groups**

Class is divided into small groups (4 to 8) who are given a short period of time to discuss a problem and come up with one or two ideas to report to the full class. (McKeachie, 1994, pp. 44-45) This type of group is used often with problem solving and creativity. The buzz group can be used with critical thinking skills.

J. **Circle of Knowledge or Roundrobin or Roundtable**

Class is divided into small groups (4 to 6) with one person appointed as the recorder who writes down the answers of the group members. A question with many answers is posed to all groups. The person next to the recorder starts and each person in the group in order gives an answer until time is called. Ordinarily a short time period is used since this approach is best used with reviewing of previous knowledge. (from a handout with no name or date). In Roundtable each student writes their own answers in turn. Roundrobin for older students is called **Sharearound** with answers being given verbally with no recording. (Spencer Kagan, 1987, *Resources For Teachers*, Laguna Niguel, CA: author.)

K. **Brainstorming**

The class is divided into small groups with a recorder. Group members are asked to produce ideas as fast as possible. Evaluation of ideas is not allowed, only the production of ideas. Brainstorming is used for creativity and problem solving.

L. **Case Studies**

The class is divided into small groups with a leader and recorder. A single event, incident, situation, or story is used. Students are given a set of questions to answer which involves both recall of facts and application of thinking skills. The leader keeps the group on track and the recorder writes down the answers.

M. **Group Retellings**

Groups of 2, 3, or more each read a different selection on the same topic. Students then retell what they have read to their group. (Karen Wood, October 1987, Fostering cooperative learning in middle and secondary level classrooms, *Journal of Reading*, 10-18.)

N. **Cooperative Learning - Pairs**

Students work in pairs over specified material. Both read and study the material. Prompts indicate when to talk and summarize. One partner verbally summarizes what was studied while the other partner with the material available corrects errors, clarifies concepts, and helps the partner elaborate. Then on the next material the roles change. (Wood, p. 13; Judith Lambiotte et al., 1987, Manipulating cooperative scripts for teaching and learning. *Journal of Educational Psychology*, 79, 4, 424-430)

O. **Research Grouping**

Groups of 4 or 5 students are assigned a topic which involves research. The group leader helps the group decide who will do what part of the research so that the topic is covered. (Wood, p. 15)

- P. **Cooperative Teaching**
Students work in pairs over specified material. One partner reads one-half of the material while the other partner reads the other one-half. Each partner then teaches her partner (Lambiotte, p. 426)
- Q. **Jigsaw Method**
Groups with five students are set up. Each group member is assigned some unique material to learn and then to teach to his group members. To help in the learning students across the class working on the same sub-section get together to decide what is important and how to teach it. After practice in these "expert" groups the original groups reform and students teach each other. (Wood, p. 17) Tests or assessment follows.
- R. **Jigsaw II.** Rather than having students study one source, several sources are available. (Kagan, p. 188)
- S. **Numbered Heads**
1. Team of four, each given numbers of 1 ,2, 3 ,4.
 2. Questions is asked of the group.
 3. Group works together to answer the question so that all can verbally answer the question.
 4. Teacher calls out a number (two) and each two is asked to give the answer. (Kagan, p. 142)
- T. **Interview**
1. Team of four members.
 2. Question is asked which allows for different responses.
 3. A talks to B while C talks to D.
 4. Then B talks to A while D talks to C.
 5. Each student then reports to the other two what he heard from his partner. (Kagan, p. 175)
- U. **Paraphrase Passport**
Before a speaker can give his own ideas, he must summarize the ideas of the previous speaker. (Kagan, p. 103)
- V. **Think-Pair-Share**
- a. A question is asked of the class.
 - b. Time is given for individual thinking.
 - c. Students are put into pairs to discuss their answers.
 - d. The teacher calls on some pairs to share their thinking with the class. (Kagan, p. 177).
- W. **Partners**
- a. Class is divided into teams of four.
 - b. Partners (two of each team) move to one side of the room.
 - c. Half of each team is given an assignment to master to be able to teach the other half.
 - d. Partners work to learn and can consult with other partners working on the same material.
 - e. Teams go back together with each set of partners teaching the other set.
 - f. Partners quiz and tutor teammates.
 - g. Team reviews (processes) how well they learned and taught and how they might improve the process.
 - h. Teacher gives quiz for individual assessment. (Kagan, p. 185)

X. **Grades and Groups**

There are a variety of ways teachers use grades and discussions.

1. Some do not grade discussion or group outcomes. Grading is done only on individual work.
2. Some teachers grade both individual and group outcomes. The students each take a test and turn in the answers. Then the group takes the same test and one Answer Sheet is turned in. The percentage given varies with many teachers using 50% for individual work and 50% for the group score. Other percentages can be used.
3. Some grade primarily on tests, quizzes, and papers which have been done with the help of others.
4. Some grade on how well the group works together with a group grade. Some grade on how each individual participates.
5. Some teachers handle all of the group grading, some ask each student to rate their participation which is combined with the teacher's grade, while other teachers give a grade, ask the individual to give a grade, and ask group members to grade the participation of each other.
6. Most teachers include in the final grade at least some individual assessment.

Y. **Topics** in Millis and Cottell (1998) *Cooperative Learning for Higher Education Faculty* (quoted)

1. Overview of Cooperative Learning in Higher Education - Chapters 1 and 2
2. Planning and Managing the Cooperative Classroom - Chapters 3 and 4
3. Think-Pair-Share, Roundtable, Value Line, Corners, Three-Step Interview - Chapter 5
4. Problem Solving - Chapter 6
5. Using pairs (Flashcard Tutoring, Scripted Cooperative Dyads, Cooperative Note-Taking Pairs, Think-Aloud Pair Problem Solving, Think-Pair-Square, Peer Editing, Reciprocal Peer Tutoring, Paired Annotations, Team Anthologies, Reciprocal Letter Writing - Chapter 7
6. Reciprocal Teaching (Jigsaw, Within-Team, Jigsaw, Dyadic Essay Confrontations, Guided Reciprocal Peer Questioning, Structured Controversy, Group Investigation) - Chapter 8
7. Specialized Uses of Cooperative-Learning Principles (Instructional Games, Problem-Based Learning, Case Studies, Team Learning) - Chapter 9
8. Using Cooperative Technology to Enhance Learning - Chapter 10
9. Promoting Learning Through Responsible Assessment - Chapter 11
10. Using Teacher-Collected Assessment Data to Strengthen Cooperative Courses - Chapter 12
11. Colleague-Assisted Assessment Procedures - Chapter 13
12. Supporting Faculty's Cooperative Efforts - Chapter 14

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Ideas on Active Learning

Ideas from Chapter 7 "Promoting Active Learning In Psychology Courses" (McGovern, 1993, pp. 183-214)

"Instructors must also help students in all disciplines in higher education to develop skills to adapt to a rapidly changing, inter-dependent world. Individuals are required to think critically and to synthesize large quantities of new information, to be sensitive to diversity, and to develop attitudes and skills that promote lifelong

learning (National Institute of Education [NIE], 1984). However, reports on the quality of education in the United States [4 reports are cited] point out that there is too much information being offered to students and too little attention being paid to the strategies for learning, inquiry, and problem solving. To enhance the quality of education, instructors must broaden their repertoire of pedagogical techniques to include strategies that foster critical thinking and problem-solving skills and that instill a willingness and motivation to continue learning beyond the classroom (AAC, 1985). . .

"To meet these challenges for enhancing the quality of education, advocates for educational reform have included among their recommendations the need for teaching that stimulates active learning. The NIE's 1984 report, *Involvement in Learning: Realizing the Potential of American Higher Education*, promoted active learning as the number one priority in American higher education, noting that it is crucial for the development of higher cognitive abilities. It is possible to integrate active pedagogical methods for teaching, learning, and assessment into all courses...active learning accounts for only a small part of the pedagogy in the typical college course (NIE, 1984). There is no indication that psychology teachers make any greater use of active learning than other instructors, although pedagogical resources exist for the psychology teacher and current psychological theories of learning and cognitive support its use. . . .

"Too often students play a passive role in college courses. Studies using in-class observers report that the lecture occupies as much as 80-95% of class time, regardless of class size (Eble, 1988, Lewis, 1982, Lewis and Woodward, 1984). . . an over reliance on the lecture method tends to foster passivity on the part of students. Using a variety of teaching styles can increase student involvement (NIE, 1984) and can accommodate the diverse learning styles [of] students . . . (Kolb, 1984)."

"Active learning exercises increase the cognitive demands on students. They produce intellectual discrepancies that motivate the development of improve cognitive abilities such as critical thinking (seven sources are cited)...In short, strong evidence supports the value of active learning for students and faculty. That evidence comes from studies investigating active learning methods such as writing to learn, critical thinking, and cooperative or collaborative learning. . . . Writing assignments are a traditional technique for active learning. . . . Group projects, exercises, or discussion groups are excellent opportunities for active learning."

Activities discussed in the above sources

Audio visuals, brainstorming, class discussions, computer usage, cooperative learning, debates, demonstrations, discussions, feedback lecture, field experiences, field trips, games, group activities, jigsaw groups, laboratories, lectures/modified, library assignments, making visual aids, pair learning, question raising, research, role playing, self assessment surveys, simulations, small group discussions, student research, surveys, taking notes, tandem-quizzes, tandem-testing, think-pair-share, undergraduate teaching assistantships, use primary sources, visual aids, visual projects, writing exercises.

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Example of Active Learning : Using the Video The Eye of the Beholder on the Topic of Eyewitnesses

For 32 years I have been teaching two sections of General Psychology each semester. In recent years my classes enroll 25 students with most under age 24. General Psychology at Howard Community College is a

writing intensive course with an emphasis on critical thinking. Class meets for 80 minutes twice a week for 14 weeks with a final exam week. The class period I will describe takes place at the end of the 3rd week of classes.

Before class, students read a one-page study preview and then a four-page article on eyewitnesses. Their written work is to answer five questions about the article which they turn in at the start of class. At the beginning of class I indicate that we will be dealing with the first goal of psychology which is description which involves accurate observation. I ask students to look around and observe their environment. I am wearing a suit and tie, which is rare for me. In leaderless small groups (4 to 5 students) students discuss the main ideas of the article on eyewitnesses. I then ask if there are any questions about the article and usually answer one or two questions.

Before showing the video *The Eye of the Beholder* (1954, black and white), I ask students to turn to the two page video guide in their course handout (about 400 pages) which has 5 learning objectives to answer about the video. I then tell students three times to watch very carefully. The video is about an artist who is viewed by 5 different people who have 5 different reactions. The 10-minute video tells a story about the artist and how he might have killed a woman. I ask students to get into their groups and brainstorm answers to: "How would you describe the artist?" for three minutes. I put on the board all of the different answers from the 5 groups. We then vote as a class on which characteristics we think describe the artist. I place a check by those receiving votes of most of the class.

I next ask questions about who saw what and why they drew their conclusions. I also ask some very specific questions about details which are usually observed by only one or two students. I end by asking if they think he killed the women. Almost all do not think so. I then indicate we need to get some more information, because things may not be as they seem. They suggest we talk to the women and the artist.

I show the second half of the video (about 10 minutes) which is from the viewpoint of the artist. Parts of the video remain the same but key parts are different. During the showing of this section of the video I sit in the back of the room and take off my tie, change my wristwatch to my right arm, and change four other things about my clothing. At the conclusion of the video the women gets up and walks about and says the artist is a square. Again I ask students to brainstorm how they would describe the artist and each group comes up with a second list. I put up the new ideas and we again vote. There are changes and we discuss as a class why there are changes.

I then ask: "Do you think he killed the women?" 100% say "No" because she got up and walked away. I say that I don't see how they can be so sure. During a period of some confusion someone says, "We saw her walk away from the artist's perspective. Maybe he was lying." I support that view and tie in how we can be misled by con artists who create a fake reality.

I then ask them to carefully observe and not say anything but to raise their hand when they know what is different about me from the start of the video. After most have raised their hands I go around until we have all the things that were changed. I then say: "During class a crime was committed in the hallway with a tie that I am going to show you. You have to decide individually if it is the same tie that I was wearing at the beginning of class." About 10% are sure it is the same time, about 10% think it is the same tie, about 50% think it is not the same time, and 30% are sure it is not the same tie. "It is the same tie." Students walk about buzzing. Some will stop and say it was a great class! In summary, students read about eyewitnesses, write several short answers over the article, are asked to observe their classroom, see two excerpts from a video, brainstorm twice, interact twice with the instructor and the whole class, and then are asked to report their own eyewitness: an example of active learning.

Skills Expected of High School Graduates (With Sources)

Here is my synthesis of what expert sources believe should be learned in high school.

When given a written source, the student should be able to demonstrate these reading skills:

- A. Scan
 - 1. Identify the author, title, place published, and date published.
 - 2. Change headings into questions.
 - 3. Distinguish between primary and secondary sources.

- B. Skim (reading once quickly)
 - 1. Identify key terms and their definitions.
 - 2. Identify the central idea.
 - 3. Identify the introduction, main body, and conclusions.
 - 4. Analyze for the key facts and evidence.
 - 5. Analyze for statements of opinions.

- C. Closely read
 - 1. State the central idea and key supporting points in his/her own words.
 - 2. Summarize a key term, example, or small section of the source.
 - 3. State the author's viewpoint.
 - 4. Explain unfamiliar words by using the context or a dictionary.

- D. Use the special features of books
 - 1. Table of Contents.
 - 2. Glossary.
 - 3. Preface.
 - 4. Introduction.
 - 5. Title and Subtitles.
 - 6. Questions.
 - 7. Summaries.
 - 8. Index.
 - 9. Appendix.
 - 10. Bibliography.

The student should be able to competently write.

- A. Essays
 - 1. Organized.
 - 2. Paragraphs developed around topic sentences.
 - 3. Very few errors in mechanics, usage, or spelling (Proofread.)

- B. Short Research Papers
 - 1. Based on primary and secondary sources.
 - 2. Accurate summaries.
 - 3. Sources properly cited, conclusions drawn.
 - 4. Correct form for bibliography (references).

- C. Outlines - (1) Sentence or (2) Topic

The student should be able to listen and verbally express knowledge.

- A. Actively participate in group discussions and class discussions.
- B. Verbally summarize what has been read, heard in a lecture, or heard in a discussion.
- C. Take accurate notes on lectures and discussions.
- D. Ask coherent questions.
- E. Follow verbal directions.

The student should have a solid foundation of learning to learn skills (study skills).

- A. Follow directions.
- B. Use study helps, such as study guides, film guides, practice tests, and learning objectives.
- C. Request help when needed.
- D. Budget time and follow a schedule.
- E. Set personal study goals and follow them.
- F. Find information in a library.
- G. Learn from various media.
- H. Prepare for and pass tests.
- I. Use constructive criticism.
- J. Turn homework in on time.

The student should be able to competently reason.

- A. Problem solve alone or with a group.
- B. Detect propaganda techniques.
- C. Brainstorm.
- D. Evaluate ideas.
- E. Evaluate sources of information.
- F. Compare and contrast.
- G. Reason logically.
- H. Apply knowledge and skills to new situations.
- I. Synthesize information.
- J. Draw reasonable conclusions from various sources.

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