

A Comparison of Some Alternative Teaching Modes

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The Lecture

Description

The primary purpose of this mode of instruction is the delivery of information. In it the instructor speaks for a specified period of time, while the students record what is said in their notes for later reference. The participation by students is generally minimal and consists mostly of asking clarifying questions or answering brief factual questions. Lectures can also be used to give broad overviews of content or to inspire students to pursue the material in more depth.

Cognitive Level

The levels of student learning in the lecture are primarily the lower cognitive levels of knowledge and comprehension. In other words students expect to learn the information being presented so that they can repeat it at some later date. Alternatively the instructor may use the lecture to provide an analytical overview of the content either to facilitate learning of the details or to model the analysis process for the students. The lecture itself does not teach the students to analyze; it merely illustrates the process. How much the students learn from the model will depend both on the clarity with which the instructor highlights the process and on the sophistication level of the listeners.

Advantages

1. The lecture can be used in any size class and is often the only option in large classes.
2. A well-presented lecture can be motivating to the students and inspire them to pursue a topic on their own.
3. A lecturer can be a model of the functioning professional against which students can assess their own behavior.
4. The lecture is often the only way of presenting current material which is not available in print.
5. The instructor has total control over what occurs in class.

Disadvantages

1. The lecture is a teacher-centered, teacher-paced method which does not allow for differences in student learning styles or rates.
2. Because student participation is minimal, lecturing promotes passivity in students.
3. Learning from lectures depends on the students' abilities to take notes.

4. Because the lecture is teacher-centered, it tends to promote one-way communication and the notion that truth resides in the instructor.

Most Effective Common Use

Lectures are probably most useful for giving a general introduction to a topic area, which is then followed by more active individual work.

Suggestions for Maximizing Effectiveness

Remember first of all that, aside from its motivational and attitudinal aspects, the lecture depends on the ability of the students to take notes. Therefore, anything the lecturer can do to improve the quality of the notes will improve lecturing effectiveness. Most of the following suggestions are made with that in mind.

1. Provide an outline of the main points of the lecture to help students follow the development. Do this verbally and visually on the board or in a handout.
2. Include no more than four or five main points in a 50 minute period. That allows a minimum of 10-12 minutes to discuss each topic.
3. Begin the class with a brief review of the previous lecture when lectures are sequential or with a question or example which will interest the audience and relate the content to their own needs and experiences.
4. Clearly differentiate major points from elaborations and explanations. Do this verbally (the next point is...), vocally (changes in voice pitch, tone, stance) and/or visually (write on board, put up new overhead).
5. Use visuals to direct attention, but keep them simple if students are expected to copy them.
6. Write unfamiliar terms, names or important references on the board, a transparency or in a handout.
7. Use concrete examples or analogies to illustrate general concepts whenever possible.
8. Ask questions to check student understanding. Incorporate opportunities for student involvement as often as possible.
9. Summarize the main points at the end.
10. Be enthusiastic and interested in the material because enthusiasm is contagious and so is the lack of it.

Demonstration/Performance

Description

The purpose of this method is to illustrate a general principle with a concrete example or to provide a model of a skill which students then practice. The instructor generally begins with a description of what is to be shown along with a list of main points on which the students should focus their attention. This is followed by the demonstration proper, accompanied by a running narrative describing what is happening. If the demonstration is to teach a skill, there then follows a period in which the students are given an opportunity to perform the procedure just demonstrated while the instructor circulates and offers suggestions and feedback.

Cognitive Level

The demonstration alone is aimed at comprehension or application of a general principle to a specific instance. A demonstration/performance method is designed to teach a skill, such as a psychomotor skill or a procedure.

Advantages

1. Active student participation is a key to skill learning, and demonstration maximizes the efficiency of that participation by providing a good model.
2. Student interest is usually very high both because they are actively involved and because they are dealing with something concrete which they can experience first hand.
3. The demonstration is often the only way of conveying the complex operations required in some skilled tasks.

Disadvantages

1. The procedure does not work well in large groups unless the details are large enough to be seen by all. (Demonstrations can, however, be videotaped and shown on monitors located around a large lecture hall.)
2. Setting up demonstrations is very time consuming.
3. Demonstrations don't always go as planned.
4. If the students will be practicing the skills, the set up time and equipment costs are large.

Most Effective Common Use

Demonstrations are most useful to either highlight a principle for clarification or make it memorable or as a preliminary to student practice in a skill area.

Suggestions for Maximizing Effectiveness

1. Keep demonstrations simple and straightforward.
2. Precede the demonstration with a description of what the students should look for.
3. Do everything in your power to guarantee that the demonstration works the first time.
4. If the students will be practicing the skill later, use the same equipment they will be using.
5. Be sure everyone can see clearly.

6. Provide a step-by-step description of your actions (verbally and/or in a handout).
7. After the demonstration, review the major steps and ask a few key questions to check understanding.
8. During the student practice time, be available, circulate and answer questions as well as making suggestions.

Discussion

Description

The discussion class is intended to be a free give and take between instructor and students and among students on the current topic of concern in the course. It is characterized by probing questions from the instructor designed to elicit student interpretations, opinions, and questions.

Cognitive Level

The discussion technique is often a hodge-podge of cognitive levels. When instructor questions are close-ended, factual questions, the discussion is at a low cognitive level and would more accurately be described as a content review. In this case most of the learning has occurred before the class and is simply rehearsed in class. If the instructor formulates higher level questions, the discussion can provide the opportunity for learning analysis and evaluation skills. Finally, the discussion is a common method for allowing exploration of attitudes.

Advantages

1. In a discussion class the students are actively involved in processing information and ideas.
2. Since student-initiated questions are more common in discussion classes, their needs and interests are dealt with more readily and spontaneously than in other methods.
3. Because students play a more active role in discussion, student diversity of backgrounds can be exploited in the generation of ideas, approaches and examples.
4. Students receive practice in formulating questions and communicating their ideas.
5. Discussion can be used to examine student attitudes.

Disadvantages

1. The discussion method is the least effective method for conveying factual information.
2. Discussion can be very time consuming and unfocused unless the instructor makes an effort to direct the flow.
3. Because an instructor often has difficulty in getting the students involved at first, the temptation to slip into a review session or mini-lecture is great.
4. Class size must be restricted.

Most Effective Common Use

Discussion serves best when the students have a background in the content of the discussion. This might be through their coursework or because the discussion focuses

on some common experience or problem. It is used when the instructor wants the students to practice analysis and evaluation or to examine opinions.

Suggestions for Maximizing Effectiveness

1. Be clear what the objectives of holding the discussion are and how it fits into the overall course.
2. If possible, rearrange the seating to allow students to face one another and not make the instructor the focus of the group.
3. If students need to prepare beforehand, provide them with appropriate materials and thought questions to guide their preparation.
4. Ask open ended questions such as "why" or questions which have no one right answer.
5. Avoid the temptation to answer your own questions if the students don't respond immediately. Give them time to think.
6. Encourage students to speak by the way you respond when they do. Listen carefully and respond thoughtfully with praise and/or respect for their attempts.
7. When the discussion strays or is being diverted, acts as a process consultant who describes what is happening and brings the group back to the central issue.
8. At the conclusion of major topics or the end of the session, summarize what has gone on to bring the group to closure.

Case Study

Description

In this method a situation drawn from real life is followed step-by-step to illustrate a general principle or problem solving strategy. For unsophisticated students, the case borders on a lecture in which the instructor leads the students through the steps of the procedure, giving the general principle and having the students identify the specific instance in the case materials they have at hand. For advanced students, the students themselves are expected to study the case materials and generate the illustrated principles and questions from the specifics. Class time is spent analyzing case materials through a series of instructor questions. At the end of the case, the instructor or a student summarizes.

Cognitive Level

Although some factual learning occurs, mostly in the form of general principles, the case method is primarily aimed at the application of general principles to specific instances or at the analysis and evaluation of the situation.

Advantages

1. The students' level of involvement is much greater than in a lecture, and therefore, they are actively applying their learning.

2. Case study provides for a higher level of cognitive learning than a plain lecture. It is not guaranteed to occur, but the opportunity is there.
3. Because the cases are drawn from real situations, they tend to be more interesting and often easier to follow.
4. Because the cases are from real life, the learning that occurs is generalized more readily to other real life situations.
5. Even though students are actively involved in the class, the instructor can still maintain a high degree of control over class flow through the questions asked.

Disadvantages

1. Case preparation is time consuming for the instructor. Materials must be selected and reproduced; descriptions must be written; a class timeflow with appropriate questions must be charted. A summary should be written both for student use and for future reference of the instructor.
2. Students need time to scan the materials or, in more complicated instances, outline main points and critical information. This can be done in class with simpler cases or outside of class for more complex ones.
3. Students need a base of information about the process or problem area to get the most out of case studies. This base can be quite elementary for simple cases or it can require much more information for complex cases.
4. There is a tendency to overcomplicate cases drawn from real life by incorporating too much detail. The tolerance level for detail will depend on the students' background in the subject.
5. Case study lends itself best to smaller classes.

Most Effective Common Use

Case studies are most useful when students are learning a process of information analysis or question asking. They are particularly beneficial if the students can go through several cases sequentially, during which the instructor begins by directing the process and gradually shifts to allowing the students to direct the process.

Suggestions for Maximizing Effectiveness

1. Since case studies are usually illustrating a process, make clear to the students what that process is and follow it closely in the case analysis, emphasizing each step.
2. Select sample cases which will draw on the students' backgrounds or interests so that the real life consequences are clear.
3. Be clear in your own course design what the objectives for using a case are so that those can be emphasized properly.
4. Don't make the cases too complex, even if this requires incorporating certain limiting assumptions.
5. If more than one case will be used, move from simple to more complex cases as the students become more adept at analysis.

6. When directing the class with questions, avoid the temptation to answer your own questions if the students don't respond immediately.
7. Be well versed in the case details and alternatives yourself before attempting to conduct a class discussion.

Simulation

Description

This method engages the student in applying a process to a particular setting, not to learn the details of the setting but as a means for experiencing and practicing the process independently. Although the instructor sets up the problem, it is the students who decide how to tackle the problem with little or not direction from the instructor except when directly asked for specific assistance. The aim is to closely approximate what would happen in real life.

Cognitive Level

Simulations are designed to give students practice in applying decision-making strategies to specific situations. Some simulations are designed assuming a certain knowledge base of the participants and are intended to expose the participants to experiences in such a way that they are led to ask questions and participate in an inquiry process. The cognitive levels of these two alternatives are different, but the aim of process learning is the same.

Advantages

1. The learner is active in directing his or her own inquiry.
2. Because they are based on real situations which a learner encounters and because the learners direct their own inquiry, simulations tend to generate more interest in students.
3. Simulations concentrate on learning the process of problem solving more readily than other techniques.
4. Because they simulate real life situations, learning is more readily generalized from the classroom to the real world.
5. Simulations can be very effective in developing students' attitudes, especially self-confidence and a questioning approach.

Disadvantages

1. Simulations are time-consuming to design and execute.
2. The instructor does not have much control over which way a class period goes once the simulation begins.
3. There is often no one "right" way for a simulation to proceed so the instructor must be prepared to handle a variety of circumstances.
4. Unless adequately briefed beforehand and debriefed after the simulation, students can have difficulty understanding the objectives of a simulation.

Most Effective Common Use

Simulations are best used to either introduce students to a new experience so that they will ask questions or to give them practice applying principles learned by some other method.

Suggestions for Maximizing Effectiveness

1. Make the objectives of the simulation clear first to yourself and then to the students and tie them in to the general course goals.
2. During the course of the simulation, avoid being too directive unless information or assistance is clearly requested. The learning experience should be the students'.
3. It often helps to have students work in pairs on the same component of the simulation. Not only will they feel more confident, but they can learn from each other.
4. When the simulation is finished, spend time summarizing the students' experiences especially relating the specifics of the simulation to the general principles of the course and highlighting the main points.

Pairs or Small Group Work

Description

These methods are generally used as part of a larger course rather than as the only teaching method. In these situations students work in pairs or small groups on problems of application and analysis. The instructor prepares a description of the task beforehand and in class divides the large group into smaller work groups of 2 to 7 students. These students work together to complete the task as assigned. The instructor then reconvenes the large group and has the groups compare their solutions.

Cognitive Level

All kinds of material can be included in this type of instruction. For the most part, however, problems solving, the application of principles, the analysis of ideas and the exploration of attitudes are the most common and efficient uses of these methods.

Advantages

1. Students are actively engaged with the material.
2. By working together, students learn from one another and become less dependent on the instructor.
3. Students can learn from the mistakes and successes of their colleagues.
4. Peer group pressure helps motivate students to prepare for class.
5. Group work more closely approximates the type of collaborative work needed in the real world.
6. Group solutions are often far superior to individual solutions.
7. The instructor can spend more time with those students or groups who need attention.

Disadvantages

1. Group work is time consuming and difficult to evaluate.
2. The physical setting of most classrooms works against group work.
3. The instructor must be willing to give up control of the class.
4. Some groups need more supervision than others.
5. Group activities need to be planned and explained carefully.
6. The instructor must be prepared to cope with the unexpected.

Most Effective Common Use

Group work is most effective when there is a clear cut task or problem to be solved because that makes it easier for the instructor to explain what the group is doing and for the group to monitor its own progress. It can be used as an adjunct to any of the other methods. It can also stand alone, but requires much more preparation and sophistication of the learners.

Suggestions for Maximizing Effectiveness

1. Prepare very clear task directions in writing to be distributed and guide group work without the need for extensive instructor intervention.
2. Allow the groups to function without your interference. They are to learn from one another and will not accept that responsibility if you exercise control too tightly.
3. Have a sampling of the groups report back to the large group and use their reports to find commonalities and differences. These should then serve as the basis for further discussion.
4. At the end of the session, summarize the group work and highlight main points to be learned from the activity. Tie the summary and main points as much as possible to the groups' own work.

Individual Instruction

(Including audio-tutorial, worksheets, self-study guides, Personalized System of Instruction or PSI, computer-assisted instruction, etc.)

Description

In individualized instruction, the instructor breaks the material down into sequenced units and produces study materials which lead the student through the learning process step by step, requiring active responses from the student and providing immediate feedback on the correctness of the response. Some systems are called "branching" systems. In these systems the student's course through the material will depend partly on his or her responses. Incorrect responses will cause him or her to "branch" off into a subset of materials to correct the learning. The most visible aspect of individualized instruction is that the student learns the ma-

terial independently at his or her own pace at the time most fitted to his or her schedule and needs.

Cognitive Level

Individualized instruction is especially useful in learning basic facts and procedures where student responses to questions can be anticipated and programmed appropriately. Although higher level cognitive learning can be done through individualized programs, the production of such programs would be complex and many aspects of such higher levels could not be duplicated in an individualized setting.

Advantages

1. Learning occurs at the rate and time most suitable for the individual student, allowing the instructor to take into account student diversity.
2. Because learning can be done at a time when the student needs the information, the motivation level is generally much greater.
3. Active responding by the student is an inherent part of all properly designed individualized instruction.
4. Immediate feedback on the outcome of learning is built into all individualized learning systems.
5. Student success with this type of learning encourages self-reliance in other areas of learning.

Disadvantages

1. Individualized packets are time-consuming to prepare, although once completed they can service any number of students.
2. Because the program is set up beforehand, it can tend toward inflexibility unless branching is included. Even with branching, however, not all responses can be anticipated.
3. Student progress through these systems can hit snags or slow down drastically so that occasional external monitoring is required.
4. If the number of students working through a system at the same time is large, the management of individual students can be cumbersome.

Most Effective Common Use

Individualized instruction is most useful when an instructor is faced with students whose backgrounds and time schedules are widely varying, yet who all need to reach the same level of competency in an area or on a task.

Suggestions for Maximizing Effectiveness

1. Be clear in breaking the material to be learned into manageable subcomponents and in specifying what is to be learned in behavioral terms at each step.
2. Incorporate constant overt responses required from the student and provide feedback and branching to direct the student's learning.
3. Before implementing any program on a large scale, test it on a sample group similar to the intended audience and revise it where necessary.

4. Monitor student progress through the system so that trouble spots can be identified and revised for future users.
 5. Make the materials as visually and cognitively satisfying in and of themselves as possible to increase the student's self-motivation to work on them.
 6. Make the student's access to the materials as easy as possible so nothing will prevent their use since this must be self-initiated.
 7. Always provide an external resource person to whom the student can appeal for help.
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