DOCUMENT RESUME

ED 117 769 CS 501 220

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TITLE Instructional Discussion.
PUB DATE 75
NOTE 12p.; Section from instructor's manual of Stewart and D'Angelo's "Together: Communicating Interpersonally"

EDRS PRICE MF-$0.83 HC-$1.67 Plus Postage
DESCRIPTORS Cognitive Processes; *Communication (Thought Transfer); *Discussion (Teaching Technique); Group Discussion; Higher Education; Interaction; *Questioning Techniques; Secondary Education

ABSTRACT

Instructional discussion is a classroom teaching method by which students move through material to a predetermined, new understanding by building on each other's contributions and by utilizing the more experienced learner's (the teacher's) past experiences with the material. This article describes both the characteristics and the planning of instructional discussion, outlines seven levels of questions which can generate productive interaction (memory, translation, interpretation, application, analysis, synthesis, and evaluation), and provides a pattern which may be followed by teachers first attempting to use this strategy. (JM)

teacher--→student$_3$, and so on. One way to avoid this switchboard pattern is to know how to use questioning to generate productive interaction. The following classification, which draws from Norris M. Sanders' Classroom Questions: What Kinds[1], can help develop your expertise as a questioner.

Questions That Raise or Lower the Level of Thinking

Level 1--Memory

This category of thinking is practically self explanatory, but it should be noted that more complex mental processes cannot take place until the facts or information have been remembered. These questions usually ask what, when, where, and who.

Example: "According to our author, what are the principle strengths and weaknesses of nonverbal communication?"

Level II-Translation

Translation is defined as changing information into one's own words or into another form. Many times a teacher will want to check a student's understanding of information that has been given to him. A question that calls for the student to "translate" the given information into his own words or into another form can often accomplish this.

Example: "Now that we have studied the characteristics of human communication, how would you describe the interdependence of communicators?"

"Describe, in your own words, what perception checking means."

Level III--Interpretation

Interpretation is defined as discovering and explaining relationships between facts, generalizations, definitions, values, and skills. At this level of thinking, the student should be able to take sets of information and make comparisons according to similarities or differences. The students should be able to determine what ideas, by implication, might result from certain information.

INSTRUCTIONAL DISCUSSION

Jody Nyquist

Acknowledging the obvious, that all discussion can be instructional, the term "instructional discussion" refers here to a particular type of discussion; it occurs in a classroom setting and is a teaching method by which students move through material to a predetermined new understanding. The teacher, with the help of students, determines the goal of the discussion based on a careful assessment of what material students already understand and the areas which need to be explored. Sometimes the need is to simply acknowledge and comprehend a concept; other times it may be important to move through various levels of learning to the making of informal judgments, interpretations, applications, evaluations, etc.

In this form of interaction, students are encouraged to advance the group thoughtline collectively by building upon each other's contributions and by utilizing the more experienced learner's (the teacher's) past experiences with the material. This kind of discussion presupposes an unequal distribution of knowledge; the teacher has studied the material much longer than the students and has worked through it with previous classes. It also assumes, however, that students will appropriate knowledge for their own use only if a need to know is created and if students feel the material is useful for their own lives. Since students provide the majority of the input in an instructional discussion, reasons for knowing the information and possibilities for application usually become very apparent to them.

Instructional discussion has the following characteristics:

1. It is a teaching method by which students move from point A (beginning point--may have little or no understanding of ideas, concepts, etc.) to point B (new understanding--usually of firmly established concepts) as a result of the activity.

2. It utilizes differing types of questions to stimulate the development of the group thoughtlines which moves forward in a more or less orderly fashion toward a given goal.

3. It draws out and integrates students' relevant, personal experience in order to reach the goal by way of a route that is meaningful to students.

4. It is open to a change in goal if reason for such a change becomes apparent.

5. It requires analysis and integration of given or remembered data and generally requires higher order thinking; it is not a recitation session.

6. It involves the total group; thus the teacher should feel a responsibility to encourage participation.

7. It has a flexible general framework which is constructed in advance by the teacher; the specific route to the goal is determined by student input.

8. It requires an experienced learner (teacher).

9. It elicits student questions as well as answers.

10. It requires carefully prepared questions and alternatives plus a means of integrating responses.

Planning an instructional discussion is somewhat different from planning other classroom activities, because the teacher is interested less in what she or he will say and more in how to create and organize effective questioning which will enable students to reason toward or discover information and insights without being told. In other words, whereas classroom questions are typically used solely to determine what students have learned, questions in an instructional discussion are used to advance thoughtline development and to stimulate discovery learning. In this teaching method, the purpose of asking questions is not to check retention but to move students through the lower levels of thinking to the analysis, synthesis, and evaluation levels.

Care must be taken, however, to avoid setting up the teacher as a switchboard operator or using her or him as the focal point of the discussion. When a teacher comes prepared to ask questions, the tendency is for the interaction to fall into a mechanical pattern of Teacher→student$_1$→teacher→student$_2$→

When a student is unable to respond at this (or any subsequent) level of thinking, it is necessary for the teacher to lower the thinking level by asking a question that calls for, in this case, either translation or memory.

Example: "Does sharing always promote interpersonal trust?"

"In what ways does the perception of persons differ from the perception of objects?"

Level IV--Application

Application thinking involves the solving of problems through identification of issues and selection of appropriate generalizations and skills. The application questions should be designed so that it gives the students practice in the transfer of knowledge. These questions should have the following characteristics.

1. The knowledge asked for should have explanatory or problem solving power.
2. The knowledge should be dealt with in its entirety rather than in parts or segments.
3. The question should contain a minimum of directions since it is based on previously learned material and thus the students should know what to do.

The application question differs from the interpretation question since it requires the student to go beyond just knowing a theory and being able to demostrate its use when asked to do so. When presented with a problem, the student must independently choose pertinent knowledge and then apply an appropriate theory.

Example: "How can spontaneity contribute to both the development and the deterioration of an interpersonal relationship?"

"Use paraphrasing and parasupporting to reach consensus on a solution to this problem."

Level V--Analysis

Analysis is the systematic examination of facts in order to solve problems. It differs from the lower levels of application and interpretation in that the

teacher must know and teach to the students the rules for reaching valid conclusions. The analysis question, in the strictest sense, is a little more difficult to use in the classroom, but teachers should become aware of the reasons for using it:

1. To teach students to reason from the specific to the general (induction).
2. To teach students to reason from generalizations to specific instances (deduction).
3. To teach students to recognize and identify fallacies or common mistakes in reasoning.

The analysis question is usually posed in a way that would approximate the way the problem would be encountered outside of the classroom. The students may be presented with an example of reasoning and instructed to analyze it.

Example: Good interpersonal communication is spontaneous and natural, but classroom analysis of communication is necessarily artificial and somewhat unnatural. Therefore, you can't really teach good interpersonal communication. Is this conclusion valid or invalid?

Level VI--Synthesis

Synthesis is defined as solving a problem that requires original, creative thinking. The synthesis question offers to the student more freedom than is found in any previous level of thinking, since it is not limited to the subject matter or particular processes that are stated or implied in the question. The student finds himself forced with a problem that offers a variety of possibilities from which he may derive many satisfactory answers. In order to arrive at these answers, the student is encouraged to use whatever information or thought processes that he can summon. When synthesis questions are used, it is important that the atmosphere of the classroom be such that the students know that the teacher does not have an answer in mind which the student is expected to duplicate.

Example: "If we become human in relationships with others, what role does solitude play in personal growth?"

Level VII--Evaluation

In evaluation, a student makes an assessment of good or bad, right or wrong, according to his own standards. In order for a question to qualify for this level of thinking, two characteristics must be present:

1. The student must set up appropriate standards.
2. The student must determine whether or not the object or idea in question meets those standards.

Before a student can properly evaluate, he must have preparation which falls primarily in the memory and interpretation levels of thinking but which also includes all other levels. The student must also know something about the nature of values. Unlike information, values cannot always be determined to be true or false; therefore, in evaluation, information and values cannot be treated in the same manner.

Example: "In your own judgment what kinds of communication behavior in others creates barriers or breakdowns in your potential relationships with these individuals?"

Levels of Thinking	Teaching Goals	Student Behavior
1. Memory	To have student know factual material	Recall facts as given
2. Translation	To have students demonstrate understanding of factual material	1. State given information in one's own words. 2. Give definition for terms used in light of student's former experience.
3. Interpretation	To have students show relationships between facts.	1. Determine whether ideas and facts are identical similar, unrelated, different or contradictory (comparisons

Levels of Thinking	Teaching Goals	Student Behavior
		2. Determine ideas which follow from specific evidence (implications). 3. Show relationship of generalization to its supporting evidence. 4. Show relationship of value, skill or definition to an example of its use.
4. Application	To have students solve problems using previous knowledge.	Use previously learned materials or skills in new situations.
5. Analysis	To have students examine facts in order to solve problems.	1. Reason from the specific to the general (inductive thinking). 2. Reason from the general to the specific (deductive thinking).
6. Synthesis	1. To have students examine alternative methods of solving problems. 2. To offer students freedom in selection of solutions.	Bring together all facts to offer many possible solutions to given problems.
7. Evaluation	To have students make an assessment of value according to their own standards.	1. Set up appropriate standards. 2. Determine whether ideas or objects meet the standards as set up.

While there are many ways of planning an instructional discussion, the pattern which follows has been helpful to teachers who are first attempting to use this strategy. The example below is abstracted from sample behaviors and questions to illustrate the progression from lower to higher levels of thinking.

Goal: Through instructional discussion, the students will discover the significance of nonverbal communication in human communication.

Possible Primary and Secondary Questions	Information that must be understood by the students
1. What is the counterpart of verbal communication? 2. How would you describe nonverbal communication? 3. Can you identify major elements of nonverbal communication? a. What is paralinguistics? b. What is body language? c. What is kinesics, proximics?	1. The students will define nonverbal communication and identify its major elements.
1. What are the major characteristics of each of the elements of nonverbal communication? 2. How do they differ from each other? 3. What would happen if any oen of the elements was removed? 4. What would happen if all of the elements of nonverbal were removed from a communication event?	2. The students will differentiate among nonverbal elements and describe how each can be utilized in communication.
1. Why do people need to communicate both verbally and nonverbally? 2. How does nonverbal contribute to the message?	3. The students will analyze nonverbal communication do assess its contribution to the communication act.

Possible Primary and Secondary Questions	Information That Must Be Understood by the Students
3. How does nonverbal influence the reception of a message?	
1. What are the major characteristics of your own nonverbal communication?	4. The students will appraise their own nonverbal communication and evaluate strengths and weaknesses.
Etc.	

The teacher begins with the right hand column to determine, not the salient points of an outline, but the behaviors or segments of knowledge which she or he expects students to have achieved as a result of the instructional discussion. With that determined, the teacher then moves to the left hand column to create questions which will elicit appropriate responses from the students. Primary questions which advance the group thoughtline should be developed, followed by secondary questions which are utilized if the students don't understand or can't answer the primary question.

Many differing types of questions are useful in instructional discussion. Since the more complex mental processes cannot take place until there are facts or information on which to focus, most instructional discussions begin by answering the who, what, when, and where about a particular person, incident, concept, or idea. When those answers are established, hopefully by student contributions, the discussion can move on from such concrete questions to questions of application, analysis, synthesis, and evaluation, which are the questions of how and why.

Probes, or responses to student responses, can also help develop the discussion's thoughtline. After the student has responded in some way to one of her or his questions, the teacher may want to probe the response to generate greater critical awareness. Probing questions like "What do you mean?" or "Can you explain that further?" can encourage the student to clarify his or her response. "What are you assuming here?", "Why do you think that is so?", "Have you oversimpli-

fied this issue--is there more to this?" can help the student justify or rationally support his or her response. If the teacher wants to refocus a student response, he or she might continue with, "What are the implications of this for . . .?", or "Can you take it from there and relate it to . . .?". Responses to student responses can also be prompting, or can be used to draw others into the discussion.

It is important, in short, for the teacher to recognize that questions and probes of all types can be employed to move the class thoughtline along. The teacher must consciously attempt to take student responses and integrate them in order to reach the overall objective for the discussion. She/he must always be open to change, of course, if a better or different goal emerges as a result of the discussion and if it seems worthy of pursuit.

FOOTNOTES

1. Sanders, Norris M., Classroom Questions: What Kinds (New York: Harper and Row, 1966).