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ABSTRACT

This study surveys the use of questions in the classroom over a fifty-year period. It reveals that the main trend has been the development of techniques to describe questions used by teachers. The present state of research knowledge deals with the incidence of teachers' questions, the relative frequencies with which various types of questions are asked, and taxonomies describing questions which teachers ask. Suggested contributions which can be made by researchers interested in improving the quality of classroom teaching include development of taxonomies based on the types of questions which should be asked; identification of desired changes in student behavior; determination of whether new questioning strategies have the impact on student behavior which is claimed for them; implementation of effective teacher-training programs in the strategy and use of questioning techniques; and the fostering of inservice training programs in questioning skills. (See related document CS 000 186.) (Several pages may be light.) (Author/TO)

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THE USE OF QUESTIONS IN TEACHING

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It is a truism for educators that questions play an important role in teaching. Aschner (1961), for example, called the teacher "a professional question maker" and claimed that the asking of questions is "one of the basic ways by which the teacher stimulates student thinking and learning." Also, asking questions is one of the 10 major dimensions for studying teachers' behavior in the widely used System for Interaction Analysis (Flanders, 1970).

Certainly teachers ask many questions during an average school day. A half-century ago, Stevens (1912) estimated that four-fifths of school time was occupied with question-and-answer recitations. Stevens found that a sample of high-school teachers asked a mean number of 395 questions per day. High frequencies of question use by teachers were also found in recent investigations: 10 primary-grade teachers asked an average of 348 questions each during a school day (Floyd, 1960); 12 elementary-school teachers asked an average of 180 questions each in a science lesson (Moyer, 1965); and 14 fifth-grade teachers asked an average of 64 questions each in a 30-minute social studies lesson (Schreiber, 1967). Furthermore, students are exposed to many questions in their textbooks and on examinations.

Granting the importance of questions in teaching, researchers still do not know much about them. What educational objectives can questions help students to achieve? What are the criteria of an effective question and how can effective questions be identified? How can teacher's question-framing skills be improved? Until researchers find answers to questions such as these, hopes for a viable behavioral technology of teaching will remain unrealized. The purpose of this paper is to define the present state of research knowledge in this area and to suggest some contributions which can be made by researchers who are interested in improving the quality of classroom teaching. Although textbook and examination questions undoubtedly make a contribution to the learning process, I will limit my review for the most part to studies of spoken questions which occur during regular classroom teaching, particularly classroom discussions.

[1]The author wishes to thank Dr. Walter R. Borg for his helpful suggestions and criticism during the writing of this paper.

The Classification of Questions by Type

Many researchers have attempted to describe the types of question asked by teachers. To quantify their descriptions, some have found it helpful to develop sets of categories into which teachers' questions can be classified. At least 11 classification systems have been proposed in recent years (Adams, 1964; Aschner, 1961; Bloom, 1956; Carner, 1963; Clements, 1964; Gallagher, 1965; Guszak, 1967; Moyer, 1965; Pate & Bremer, 1967; Sanders, 1966; Schreiber, 1967).

Several systems, such as Bloom's, Gallagher's, and Carner's, consist of a limited number of general categories which can be used to classify questions irrespective of context. This feature enables the researcher to investigate issues such as the different types of question emphasized in various school curricula (Pfeiffer & Davis, 1965) or in traditional or new curricula (Sloan & Pate, 1966). However, these systems are of limited utility if the researcher is interested in more detailed descriptions of questions asked in a specific context.

For detailed descriptions a classification system developed for a specific curriculum is preferable. One such system (Clements, 1964) was designed to classify the questions asked by art teachers as they talked with students about their artwork. For example, the "suggestion-order" category includes questions such as: "Why don't you make the hands larger?"; "Why not put some red over here?"; "Why don't you use freer lines?" This type of question, which occurs frequently in art classes, is not adequately described by any of the categories in the more general systems.

Guszak's Reading-Comprehension Question-Response Inventory is a specific classification system designed for the analysis of question that teachers ask elementary school reading groups. The specificity of the categories is typified by the "recognition question" category, which includes questions requiring students to locate information from the reading context (e.g., "Find what Little Red Ridinghood says to the wolf.") In Schreiber's system for classifying social science questions, there are also a number of fairly curriculum-specific categories, such as Use of Globes (e.g., "Will you find Greenland on the globe?") and Stating of Moral Judgments (e.g., "Do you think it is right to have censorship of the news?").

Most of the question-classification systems are composed almost entirely of categories based on the type of cognitive process required to answer the question. For example, in Bloom's *Taxonomy*, the question "What is your opinion of our present stance on the Vietnam War?" is classified an Evaluation question because it requires evaluative thinking, whereas "What assumptions does the author make in critizing New Deal politics?" is classified an Analysis question because it required that students engage in analytic thinking. The categories of representative question-classification

Table 1
Representative Question-Classification Systems

Author	Classification				
	Recall	Analytic thinking	Creative thinking	Evaluative thinking	Other
Adams (1964)	Memory	Ratiocinative (logical reasoning)	—	Evaluative	Associative, clarifying, neutral
Aschner (1961)	Remembering	Reasoning	Creative thinking	Evaluating	—
Bloom (1956)[a]	Knowledge	Analysis	Synthesis	Evaluation	Comprehension, application
Carner (1963)	Concrete	Abstract	Creative	—	—
Clements (1964)	Past experience, process recall	—	Planning	Product judgment	Present experience, rule, opening, identification, suggestion, order, acceptance
Guszak (1967)	Recognition, recall	Explanation	Conjecture	Evaluation	Translation
Pate & Bremer (1967)	Simple recall of one item, recall-choice of multiple items	Principle involved, concept analysis	Divergence	—	Determination of skills abilities (demonstrate), skills demonstration(verbal), example-singular, examples-multiple
Schreiber (1967)	Recall of facts, arranging facts in sequential order	Making comparisons, identifying supporting facts, drawing conclusions	Speculating on outcomes	Identifying main part & important parts, stating moral judgment, stating judgment based on personal experience, evaluating quality of source material, evaluating adequacy of data	Describing situations, defining & clarifying information, using globes, using maps, uncovering information & raising questions for study

[a]In the complete system, each category is divided into sub-categories.

systems are shown in Table 1. I have organized the categories to show similarities between the systems. It appears that Bloom's *Taxonomy* best represents the commonalities that exist among the systems.

A weakness of the cognitive-process approach to question classification is that these processes are inferential constructs. Therefore, they cannot be observed directly. Bloom (1956) acknowledged this difficulty in his statement that it is not always possible to know whether a student answered a particular question by using a high-level cognitive process, such as analysis or synthesis, or by using the relatively low-level process of knowledge recall. The question, "What are some similarities between the Greek and American forms of democracy?" probably stimulates critical thinking in some students. However, this question may only elicit rote recall if students answer by recalling similarities they have read in a textbook.

To deal with this problem, the researcher can control the lesson material on which the teacher bases his questions. For example, he might have a sample of teachers give the same reading assignment to their students. Preferably the assignment would be on a subject new to the students. The teachers would then ask discussion questions on this assignment and the questions could be classified as recall or higher-cognitive depending on whether the answer was given directly in the assignment. Furthermore, if the researcher is studying differences between teachers in question-asking skill or is studying improvement in this skill as a result of a training program, the use of a constant lesson topic makes it possible to attribute variance in question-asking to the teachers rather than to differences in the lessons. With two exceptions (Gall, Dunning, Galassi & Banks, 1970; Hunkins, 1966, 1967), the studies reviewed here did not make use of this important control technique.

It seems evident that existing taxonomies classify questions which cover only a few important educational objectives. These are the types of questions which teachers ask to test students' recall of information and to develop their critical thinking processes. Yet there are several other worthwhile question types which are treated scantily, if at all, in existing taxonomies: (*a*) questions which cue students to improve on an intially weak response to a question ("Can you tell me a little more?"; "What do you mean by that?"); (*b*) questions which create a discussion atmosphere ("Billy, do you agree with Sue's position?"); (*c*) questions which stimulate students' sense of curiosity and inquiry ("What would you like to know about this manuscript?"; "How would you propose to find an answer to this question?"); and (*d*) questions which guide students' learning of a problem-solving, behavioral or affective skill ("What do you think we do next to solve this problem?"; "Mark, what is your response to these drawings?").

Another limitation of existing classification systems is that they were designed primarily to investigate the types of question which teachers act-

ually use in the classroom, not the types of question which teachers should use. Researchers have shown relatively little interest in identifying effective types of questions. There have been only a scattering of opinion articles, and these have emphasized the formal characteristics of a "good" question, e.g., clarity of phrasing, rather than the educational purposes which good questions serve.

Much of what has been learned about the merits and pitfalls of descriptive systems should provide guidance for identifying effective question types. For example, it would seem preferable to identify questions which are effective for a specific curriculum and classroom setting rather than to search for general question types. Research might be done to identify effective question types in mathematics tutoring, introducing concepts in the science curriculum, discussing controversial issues, role playing in social studies, etc. These specific question types, as compared to the categories of a general classification system such as Bloom's *Taxonomy*, would have two advantages: they would provide a more precise and possibly clearer description of what constitutes effective questioning in a particular teaching situation; and they would be more useful than general question types in training teachers to improve their classroom instruction.

Prior to defining effective types of question, the researcher needs to identify valued educational objectives in a specific setting. Once objectives are identified, the task of constructing questions which enable the student to reach each objective can be started. It would help in this task if groups of expert teachers and curriculum developers composed questions for each objective and then selected the most effective questions. In this type of research, effective question types would be defined in terms of whether or not they enabled the student to achieve desired educational objectives.

Another task for the researcher is to consider whether there are effective question sequences. Should teachers start a discussion by asking recall questions to test students' knowledge of facts and then ask higher-cognitive questions that require manipulation of these facts? This was the approach taken by Taba (1964, 1966), who attempted to identify questioning strategies that stimulate students to reflect on curriculum materials on an increasingly abstract level. In Shaver's model of Socratic teaching (1964), another type of question sequence was proposed: the teacher asks the student for a statement of his position on an issue, then asks appropriate follow-up questions to probe the student's stated position.

Further research on teachers' "follow-up" questions is needed. Consider a typical situation which occurs in classroom discussions. The teacher asks a question such as, "What do you think can be done to solve the problem of air pollution?"; this would be classified as a higher-cognitive question in most question-classification systems. A student answers, "Make sure all cars and trucks have smog control devices." Did the student really

have to think to answer this question? He may have considered the problem in depth and decided that smog control is the best solution. However, it is more likely that the student is repeating a solution he has heard or read about. To really test the student's ability to think about the problem and to stimulate the development of his thinking processes, the teacher should probably ask follow-up questions such as, "How would that solve the problem?"; "Isn't that being done already?"; "Is that a better solution than converting to electric or steam-powered cars?" We know very little about teachers' use of such questions in discussions. In fact, most question-classification systems do not take them into account since the systems are not concerned with question sequence. However, I suggest the hypothesis that follow-up questioning of the student's initial response has substantial impact on student learning in classroom teaching situations.

Studies of Teachers' Questioning Practices

Educators generally agree that teachers should emphasize the development of students' skill in critical thinking rather than in learning and recalling facts (Aschner, 1961; Carner, 1963; Hunkins, 1966). Yet research spanning more than a half-century indicates that teachers' questions have emphasized facts

Probably the first serious study of this issue was done by Stevens (1912). She found that, for a sample of high-school classes varying in grade level and subject area, two-thirds of the teachers' questions required direct recall of textbook information. Two decades later, Haynes (1935) found that 77% of teachers' questions in sixth-grade history classes called for factual answers; only 17% were judged to require students to think. In Corey's study (1940), three judges classified all questions asked by teachers in a one-week period in a laboratory high school. The judges classified 71% of the questions as factual and 29% as those which required a thoughtful answer.

Studies conducted in the last several years indicated that teachers' questioning practices are essentially unchanged. Floyd (1960) classified the questions of a sample of 40 "best" teachers in elementary classrooms. Specific facts were called for in 42% of the questions. I summed Floyd's percentages of questions in categories which appear to have required thoughtful responses from students; these accounted for about 20% of the questions asked. In two other studies conducted at the elementary-school level (Guszak, 1967; Schreiber, 1967), similar percentages of fact and thought questions were asked. At the high-school level, Gallagher (1965) and Davis and Tinsley (1967) classified the questions asked by teachers of gifted students and by student teachers. More than half of the questions asked by both groups were judged to test students' recall of facts.

The findings in studies on teachers' questioning practices are fairly consistent (though in some instances there are methodological flaws such as failure to report inter-rater reliability in classification of questions and lack of clarity in the definition of question categories). It is reasonable to conclude that in a half-century there has been no essential change in the types of question which teachers emphasize in the classroom. About 60% of teachers' questions require students to recall facts; about 20% require students to think; and the remaining 20% are procedural.

Why has the primary objective of American education, as revealed by an analysis of teachers' questions, been the learning and recall of facts? One explanation is that although higher-cognitive objectives are valued in American education, teachers need to ask many fact questions to bring out the data which students require to answer thought questions. Even though this explanation has merit, it can be argued that instruction in facts is best accomplished by techniques (such as programmed instruction) that do not require teacher intervention. The teacher's time is better spent in developing students' thinking and communication skills during discussions after the students have demonstrated an acceptable level of knowledge on a written test.

Another explanation of the research findings is that although educators have for a long time advocated the pursuit of objectives such as critical thinking and problem solving, only recently were these objectives incorporated systematically into new curricula. The relationship between curriculum change and teachers' questioning practices is illustrated in a recent study comparing teachers in the School Mathematics Study Group (SMSG) with teachers in a traditional mathematics program (Sloan & Pate, 1966). The researchers hypothesized that the two groups would differ in their patterns of questioning since the SMSG program emphasizes the objectives of inquiry and discovery. They found that, compared to the traditional math teachers, the "new math" teachers asked significantly fewer recall questions and significantly more comprehension and analysis questions.

Sloan and Pate's study suggested the interesting hypothesis that teachers' use of fact and higher-cognitive questions is dependent on the type of curriculum materials available to them. This hypothesis could be easily tested by asking teachers to lead discussions based on different lesson topics assigned to students: for example, a poem, a traditional textbook chapter, a newspaper editorial, a film. On the basis of my own preliminary research findings, I hypothesize that teachers ask more higher-cognitive questions about primary sources, e.g., poems and newspaper editorials, than about secondary sources (most school textbooks).

Still another reason why teachers have emphasized fact questions over a half-century, as indicated in research findings, is the lack of effective

teacher training programs. In their study of questions in mathematics teaching, Sloan and Pate (1966, p. 166) observed:

> Although the School Mathematics Study Group teachers' use of questions evidenced their awareness of the processes of inquiry and discovery, these processes had not been fully implemented, as shown by the fact that these teachers used so few synthesis and opinion questions that the pupils were denied the opportunity to develop inferences from available evidence.

Therefore, Sloan and Pate advocated training teachers in effective questioning practices so the objectives of the "new math" can be realized. The issue of teacher training in questioning skills is discussed later in this paper.

Effect of Teachers' Questions on Student Behavior

Teachers' questions are of little value unless they have an impact on student behavior. Yet very few researchers have explored the relationship between teachers' questions and student outcomes.

The most important work in this area to date is the research by Hunkins (1967, 1968). The purpose of his research was to determine whether the variable of question type bears any relationship to student achievement. Two experimental groups of sixth-grade students worked daily for a month on sets of questions which were keyed to a social studies text. In one group the questions stressed knowledge; in the other, analysis and evaluation questions were stressed. Question types were defined in terms of Bloom's *Taxonomy*. Hunkins found that the analysis-evaluation group earned a significantly higher score on a specially constructed post-training test than did students who answered questions that stressed knowledge. The performance of the two groups was also compared on the six parts of the test which corresponded to the six main types of question in Bloom's *Taxonomy*: the analysis-evaluation group of students did not differ from the comparison group in achievement on subtests containing knowledge, comprehension, analysis, and synthesis questions; they scored significantly higher on the subtests containing application and evaluation questions.

Before the implications of these findings are considered, some possible limitations of Hunkin's research design should be noted. First, whereas the daily sets of questions required students to write out their answers, the students responded to multiple-choice questions on the post-training test. Therefore, one may question whether the achievement test provided an adequate comparison of the effectiveness of the two experimental conditions. Second it seems a distortion of Bloom's Taxonomy to put the question types into a multiple-choice format since some types, such as evaluation questions, do not really have a "correct" answer. In other words, practice in answering

certain types of questions may affect the quality of students' responses rather than their correctness. Third, students monitored their own responses using answer sheets provided with the daily sets of questions. Teacher monitoring of at least some of the students' responses might have enhanced the differences found between the experimental conditions.

In view of these methodological limitations, the Hunkins' findings should be viewed as only suggestive. It seems to be a reasonable hypothesis for further investigation, however, that if a group of students is exposed to certain types of question and if their responses are monitored to improve their quality (rather than correctness), then they will be able to answer similar types of question better than a group of students who have not had this exposure.

In testing this hypothesis, the researcher is confronted with the problem of defining qualitative differences in student responses. This is one of the important unsolved problems in the study of teachers' questioning practices. Although much is known about higher-cognitive questions and their classification, little is known about what constitutes good answers to these questions. It seems reasonable to state, though, that responses to fact questions can be evaluated by the simple criterion of correctness, but responses to higher-cognitive questions require several criteria to measure their quality. On the basis of exploratory work on the problem I suggest these criteria as possibilities: (*a*) complexity of the response; (*b*) use of data to justify or defend the response; (*c*) plausibility of the response; (*d*) originality of the response; (*e*) clarity of the phrasing; and (*f*) the extent to which the response is directed at the question actually asked. It would seem reasonable to expect at least a moderate correlation between length of the response and its quality, particularly as judged by criteria (*a*) and (*b*). Dealing with a related problem, Corey and Fahey (1940) obtained a correlation of +.50 between judges' ratings of the "mental complexity" of student questions and number of words in the question.

Students' Questions

Some educators contend that our attention should be focused on questions asked by students rather than on teachers' questions (Carner, 1963; Wellington & Wellington, 1962). Certainly, it seems a worthwhile educational objective to increase the frequency and quality of students' questions in the context of classroom interaction. However, research findings consistently show that students have only a very limited opportunity to raise questions.

Houston (1938) observed 11 junior-high-school classes and found that an average of less than one question per class period was student-initiated. Corey (1940) recorded all talk in six junior-high and high-school classrooms for a period of one week. The ratio of student questions to total

questions varied considerably between classes: in two English classes, students accounted for 1% of the questions asked; seventh-grade and ninth-grade science students asked 17% and 11% of the questions respectively. At the primary grade level, Floyd (1960) found that student questions were 3.75%, 5.14%, and 3.64% of the total number of questions asked during a taped class session for samples of first- second- and third-grade classrooms respectively. A low incidence of student questions was also reported for high-school English classes (Johns, 1968) and for social studies classes at the elementary-school (Dodl, 1966) and senior-high-school levels (Bellack, Kliebard, Hyman & Smith, Jr., 1966).

In investigating student questions in the classroom, researchers need to undertake several important tasks. First, although it would be of interest to investigate the types of question students ask (see Gatto, 1928), the more important task is to identify the types of question which students should be encouraged to ask. For example, when introducing a new topic for study, teachers should probably ask students what they want to know about it. Finley (1921) found that elementary-school students had an average of about five questions each to ask when presented with an unfamiliar animal in class. Another classroom situation in which student questions should probably be elicited occurs when a teacher has explained a new subject. Students should be queried about possible lack of understanding. In fact, one might offer the hypothesis that students encouraged to ask questions in this type of situation will learn more than a group of students deprived of this opportunity.

Another key area for educational innovation is the training of students in question-asking skills. For example, what types of question should students ask themselves when they read a poem, a social studies textbook, or a science lesson? It seems that the shaping of student questioning skills has been a neglected feature of classroom learning. There has been increasing attention given to this problem since inquiry and discovery methods of teaching became prominent, but as Cronbach (1966) and others pointed out, research and training in these methods remain limited by the failure to adequately operationalize the concept. Perhaps the approach of focusing on specific questioning skills in various classroom situations, as I did above, would provide the clarity needed to operationalize the inquiry method.

Programs to Change Teachers' Questioning Behavior

I have shown that the importance of questioning skills in teaching has been recognized by educators for more than a half-century. Yet relatively few programs have been implemented for the specific purpose of improving teachers' questioning practices. This does not mean that the need for such programs has been ignored. More than 30 years ago, Houston

(1938) developed an inservice education program for the purpose of changing teachers' questioning practices. Among the techniques Houston used to effect behavioral change were group conferences, stenographic reports of each teacher's lessons, self-analysis, and supervisory evaluation. Examination of quantitative data yielded by pre- and post-training evaluations of 11 teachers indicated that most of the teachers were able to effect substantial changes in specific aspects of their questioning behavior. As a group the teachers increased the percentage of questions relevant to the purpose of the lesson from 41.6% to 67.6%, the percentage of student participation from 40.4% to 56.1%, and the percentage of questions requiring students to manipulate facts from 10% to 18%. There was also a reduction in a number of bothersome teaching habits such as repetition of one's questions (from 4.8 occurrences to none), repetition of students' answers (from 5.5 to .6 occurrences), answering of one's own questions (from 3.5 to .3 occurrences), and interruption of student responses (from 10.3 to 1.5 occurrences).

Recently a program was developed at the Far West Laboratory for Educational Research and Development (Borg, Kelley, Langer & Gall, 1970) to help teachers achieve similar changes in their questioning behavior. Called a minicourse, it is a self-contained, inservice training package requiring about 15 hours to complete. The minicourse relies on techniques such as modeling, self-feedback, and microteaching (Allen & Ryan, 1969) to effect behavioral change. In a field test with 48 elementary-school teachers, the minicourse produced many highly significant changes in teachers' questioning behavior, as determined by comparisons of pre- and post-course videotapes of 20-minute classroom discussions: increase in frequency of redirection questions (questions designed to have a number of students respond to one student's original question) from 26.7 to 40.9; increase in percentage of thought questions from 37.3% to 52.0%; and increase in frequency of probing questions (questions which require students to improve or elaborate on their original response) from 8.3 to 13.9. As in Houston's program (1938), there was also a reduction in frequency of poor questioning habits: repetition of one's questions (from 13.7 to 4.7 occurrences); repetition of students' answers (from 30.7 to 4.4 occurrences); and answering of one's own questions (from 4.6 to .7 occurrences). The Far West Laboratory now supports the development of about 20 additional minicourses to deal with other types of classroom teaching such as tutoring, role-playing, lecturing, and the inquiry method. Many of these courses include training in questioning skills that are appropriate to the particular teaching-learning context.

Other programs for improving teachers' questioning practices have been developed, though these have generally had more limited objectives than the programs of Houston (1938) and Borg (1970). Shaver and Oliver (1964) trained teachers in the use of questioning methods appropriate to

discussion of controversial issues in the social studies. Suchman (1958) identified inquiry skills for science classes; training teachers in their use resulted in a significant increase in the number of questions asked by students. In social studies, Taba (1966) and her co-workers (1964) developed a system of teacher training centered around questioning strategies. These questioning strategies were viewed as techniques which teachers could use to develop their students' abilities in forming concepts, explaining cause-and-effect relationships, and exploring implications.

Discussion

This survey of research on questions over a fifty-year period reveals that the main trend has been the development of techniques to describe questions used by teachers in classroom practice. There is now considerable data regarding the incidence of teachers' questions and the relative frequencies with which various types of questions are asked. I expect that researchers will now turn their attention more toward the improvement of teachers' questioning practices.

Efforts to improve existing practices will probably move in several directions. First, whereas in the past researchers have developed taxonomies to describe questions which teachers ask, they need now to develop taxonomies based on types of question which teachers *should* ask. This means that increasing attention must be paid to the definition of desirable educational objectives and to the identification of questions and question sequences which will enable students to achieve these objectives. It was pointed out above that there are certain advantages to developing systems of question types which are curriculum- and situation-specific. The chief advantage is that teacher training in questioning methods is likely to be facilitated if specific rather than general types of question are learned.

It is important that teachers' questions should not be viewed as an end in themselves. They are a means to an end—producing desired changes in student behavior. Therefore, researchers should give high priority to the tasks of identifying what these desired changes are and of determining whether new questioning strategies have the impact on student behavior which is claimed for them. Hunkins's investigation (1967, 1968), discussed above, may serve as the prototype for future research in this area. In line with the concern with student behavior, researchers should develop more programs directed at the shaping of student skills in questioning.

I would like to stress again the need for effective teacher training programs to implement desired questioning strategies in the classrooms. Sloan and Pate (1966), for example, called for strong inservice training programs in the questioning skills necessary for teaching the "new mathematics" (SMSG) curriculum. If these programs are to succeed, they need

to incorporate two important features. First, teacher training should involve not only study of questioning strategies, but also guided practice in their use. As the findings of Borg and his colleagues (1970) seem in indicate, microteaching is an effective technique for providing this practice. Second, teachers cannot be expected to learn the inquiry method or any new pedagogy if it is presented to them in vague, general, undefined terms; they can be expected to learn new methods if the methods are presented, at least in part, as sets of specific types of questions asked in specific classroom situations.

In the last analysis, the value of focusing on teachers' questions is that they are the basic unit underlying most methods of classroom teaching. If this is true, then their continued study deserves the strong support of researchers.

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