Research on Questioning and Discussion

Research illuminating the use of questions in classroom discussion is fragmented and scarce. True discussion (as distinguished from recall-oriented recitation) is rarer still.

To sum up, we do not know much about questioning and discussion. We have a volume of research on questioning—but not in discussion. We have a body of research on discussion—but not in classrooms. What we have is bits and pieces; the rest of the picture is blank.

Most of what we know is either not known from research or is not publicly known. The literature contains few studies but plenty of opinions and free advice in essay articles, methods texts, and manuals. The greater part of knowledge is not contained in the literature at all but is privately held by skilled teachers as intuitive, implicit knowledge-in-action.

In the face of bits and pieces of research, this review will concentrate on the more developed efforts rather than describing each individual study on this or that detail.

Distinctions Between Recitation and Discussion

The first question is one of semantics. What does discussion mean? To which classroom events shall we apply the term?

Picture a teacher and a group of students talking back and forth. This interaction can take two generic forms.

Recitation describes the familiar form, which is characterized by (among other aspects) recurring sequences of teacher question plus student answer, where students "recite" what they already know or are coming to know through the questioning. Recitation is a rubric covering various
activities called review, drill, quiz, guided discovery, inquiry teaching, Socratic method.

Discussion describes group interaction not of this character. Discussion is a rubric, too, covering various activities in which teacher and students "discuss" what they don't know.

This review covers questioning during discussion; the companion review by Meredith Gall (pp. 40-47) covers questioning during recitation.

More specific distinctions have been drawn by scholars. For Gall, recitation is characterized by teacher-student interaction and discussion by student-student interaction; recitation depends on recall of curriculum content while discussion calls for complex thinking processes and attitude change (Gall and Gall, 1976, p. 168). For Stodolsky, discussion involves longer exchanges, exchanges among students as well as between teacher and students, and questions soliciting student opinions and thoughts, not just right answers (Stodolsky, Ferguson, and Wimpelberg, 1981, p. 123). For Dillon (1981a, p. 2), a class was counted as a discussion if the teacher planned to have a discussion, if the students rated it as a discussion, and if students accounted for at least 40 percent of the total talk. For an extensive specification of many other differences between recitation and discussion, see Dillon, 1981c.

Most studies make no distinction at all but call any kind of teacher-student talk discussion. One must therefore look at the thing being studied in order to find out what kind of thing it is. As a result of doing just that, this review excludes many studies on "discussion" that actually turn out to study recitation and so more properly figure in another review (Johnson, 1979; McGee, 1981; Nelson, 1973). One consequence is that few studies on questioning and discussion are left to review.

Concepts of Discussion
What is the nature and what are the kinds of discussion?

This is a theoretical question, and few theories are available to answer it. One articulate and encompassing conception has been worked out by Bridges (1979) in Education, Democracy, and Discussion. Bridges asks, "What are the necessary and sufficient logical conditions for saying that people are engaged in the discussion of something?" His answer follows:

(a) They are putting forward more than one point of view upon a subject;
(b) They are at least disposed to examine and to be responsive to the different points of view put forward; with
(c) The intention of developing their knowledge, understanding and/
"Questions can inhibit discussion and alternatives (for instance, declarative statements or deliberate silence) can encourage it."

or judgment on the matter under discussion (p. 16).

Then he asks what moral dispositions (values, principles of conduct) are presupposed by these logical conditions—that is, what assumptions do participants share by force of committing themselves to group discussion? These are (a) reasonableness; (b) peaceableness and orderliness; (c) truthfulness; (d) freedom—no constraint on offering sincerely held opinion; (e) equality—regard for the opinions and interests of each participant; and (f) respect for persons (pp. 21–24).

Without some adherence to these principles and cultivation of these dispositions, "discussion simply cannot take place" (p. 26). It cannot take place, for example, when students are afraid to speak freely; teachers think student opinions are not worth listening to; participants feel it is improper to express a personal opinion; people constantly interrupt opinions they dislike; or people are not amenable to the influence of reason, evidence, or argument (p. 25).

One further precondition—openness—is necessary for a discussion to be proper or effective. Bridges describes the ways in which a discussion must be open: (a) the matter is open for discussion; (b) the discussants are open-minded; (c) the discussion is open to all arguments; (d) the discussion is open to any person; (e) the time limit is open; (f) the learning outcomes are open, not predictable; (g) the purposes and practices of the discussion are out in the open, not covert; and (h) the discussion is open-ended, not required to come to a single conclusion. Bridges also notes that some otherwise desirable traits—self-chosen moral restraints such as kindliness, consensus, loyalty, and concern for "getting it right"—can be subtle "enemies" of open discussion.

Bridges' conception goes still further, specifying the epistemological conditions of group discussion, the various learning possibilities and teaching processes for discussion, and the educative and social benefits of classroom group discussion. Hence, Bridges gives a comprehensive, clear, and useful conceptual answer to the question, what is the nature of discussion?

What are the kinds of discussion? Gall (in press; Gall and Gall, 1976) lists four types distinguished by instructional objective: subject-matter mastery discussions, issue-oriented ones, moral development discussions, and problem-solving discussions. Hyman (1980) identifies policy discussions, problem-solving ones, explaining, predicting, and debriefing discussions. Dozens of such lists can be found in the literature.

Roby's (1981) scheme of five models of discussion is particularly relevant here, since it comes from a conception of discussion and distinguishes the types according to the questioning involved (among other things). At the extremes of Roby's scheme are two degenerate forms of quasi-discussion—Quiz Show and Bull Session. Discussion in a Quiz Show is text- or teacher-centered, there is a predetermined answer, and the teacher has it. Discussants are to get the answer and get it right. A Bull Session is student-centered, and everyone has a right answer. Discussants vent their opinions and feelings and wrangle over who is right.

Between these two are the problematical and dialectical kinds of discussion, healthy counterparts of the Quiz Show and Bull Session. In problematical discussion, teachers and students pursue a satisfying answer that neither possesses. In dialectical discussion they resolve opposing opinions through inquiry and synthesis of truth elements in each, questioning proffered opinions and then questioning the opinion they themselves proffer. Informational discussion is a preliminary to these two.

For understanding and practicing discussion, Roby (1979) has also worked out "a rhetoric of questions." Discussion moves from the teacher's model of questioning to class reflection on the use and benefits of questions, then to student use of questioning. Ten types of questions are identified; each type is articulated for each of the several terms of discussion, as well as for the five models of discussion.

Quiz Shows, for example, are characterized by Informers and Prompters, and Bull Sessions by Stingers. Problematical discussions are generated by the Puzzler, Informational ones by the Inviter. Dialectical discussion moves from the Controversial Turn (for example, "Jay, do you disagree with Dixie?") to the Devil's Advocate ("Jay, would you now disagree with yourself?"). All participants must learn to use questions adroitly, lest a dialectical discussion move to a Bull Session at the controversial turn, or a problematical discussion turn into a Quiz Show.

How all this works in practice is deftly rendered by Roby's (1984) account of discussions in a college classroom. Thus his conception articulates and interrelates a typology of discussions, a rhetoric of questions, and a practice for using questions during discussion.

The conceptions developed by Roby and Bridges can be artfully used in conjunction. For example, Bridges' three logical conditions for discussion...
can be combined with Roby’s five models, revealing that a Quiz Show fails conditions “a” and “b” (presence and tolerance of variant viewpoints), and that a Bull Session fails “b” and “c” (tolerance of variant viewpoints and intention of discovering truth). Combining the two conceptions in this way would produce three beneficial effects.

We would gain a clearer theoretical understanding of classroom discussion and of questioning and discussion. We could then perceive and distinguish discussions at work in classrooms and do empirical research on their various elements and interrelations as specified in the conceptions. As a result we would know how to inform the classroom practice of questioning and discussion.

**Character of Discussion**

The character of discussion is an empirical question, one of describing the observed characteristics (features, qualities, properties, attributes) of classroom discussion.

How widely is discussion used in classrooms? At what level? In which subjects? In terms of his distinction between recitation and discussion, Gall (in press; Gall and Gall, 1976) reported the impression—he found little research—that discussion is not at all prevalent. Stodolsky observed discussion as she defined it during only 3 percent of all time blocks in 175th grade social studies lessons visited over nine consecutive days (Stodolsky, Ferguson, and Wimpelberg, 1981, p. 124). In the 1,000 classrooms—129 elementary and 887 secondary—observed for *A Study of Schooling*, Goodlad (1984, p. 107) estimated the probability of finding discussion (not defined) as from 4 to 8 percent at the various levels of schooling. These overall figures do not vary appreciably for the individual subject matters observed (see also Sirotnik, 1983).

Glimpses of other characteristics are found in a series of studies of high school discussion classes. These include the different participation rates in social studies and religion discussions (Dillon, 1981b) and the similar participation rates by males and females (1982c); the positive relation between duration of talk and complexity of thought (1983a); the predominance of higher cognitive questions and the half-correspondence between question-answer levels (1982b); the equivalent length of responses to (a) teacher statements as to questions, and to (b) various types of questions (1981a); the positive relation between length of teacher utterance and student response and the negative relation between rate of questions and duration of answers (1981a); and the comparatively greater and better discussion that follows from using alternative, nonquestioning techniques (1984).

Of far greater significance than these bits and pieces is the knowledge we need to get from studies yet to be conducted. A programmatic study I am directing is expected to yield firmer grounds for knowing something about questioning and discussion. It gathers two dozen scholars from various disciplines, each of whom has analyzed from his or her own perspective the same set of classroom discussions, and all of whom are still revising their analyses in the light of one another’s conceptions and findings. The results will be reported in an AERA symposium in Chicago in 1985 and in a subsequent book, both under the project title: "The Multidisciplinary Study of Classroom Questioning and Discussion."

**Conduct of Discussion**

The pedagogical questions are important but difficult to answer. First, how is a classroom discussion conducted? Second, how can teachers learn to conduct effective discussions? Research does not offer many answers to these questions. Teachers manuals offer many answers—though few are based on research. Some useful answers come from sensitive accounts by skilled and experienced teachers. Finally, some effective answers come from teacher training programs that combine what is known from research and practice and teach it to teachers.

Discussions are hard to conduct, and they are hard to learn how to conduct. Contrary to common sense, questioning is a complex skill. What is more, the skills of questioning in reci-
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tation are useless in discussion—another set of complex questioning skills must be used.

Yet the techniques are secondary. What is essential is the teacher's attitudes, dispositions, and commitments to classroom discussion—those, for example, that Bridges (1979) identifies as presuppositions of discussion. In addressing the pedagogical question, therefore, we will emphasize what is involved in using and learning to use questioning and discussion.

**Practice and Training**

*Learning to Discuss* reports the work of Francis' (1982) Discussion Development Group, an inservice training program based on wide experience with practice and grounded in fields such as communication research and group dynamics. The teachers learn to use discussion by experiencing discussion group processes; they personally commit themselves to a year-long working group that operates by the very processes they are to use with students.

The hardest thing for the teachers to learn is discussion leadership style. In the training sessions they again find leadership style the hardest thing to accommodate. They expect the leader to use a "directive, questioning, and didactic" style and find it "disconcerting" to participate in a meeting conducted without such a style. Then, in their classrooms they continually slip back into a didactic teaching style (p. 15).

In addition to describing the process of this work group, *Learning to Discuss* explains the concepts and techniques of discussion—including the way in which questions can inhibit discussion and alternatives can encourage it (pp. 68-69). The report also sets forth a curriculum development model for implementing and assessing discussion in schools and a program for helping students learn how to discuss. It also provides resources and materials for using discussion in classrooms and appendes the reports of the teachers involved. Hence it is a comprehensive and useful source for learning about questioning and discussion.

But Francis (1984) cautions that the written descriptions cannot convey the subtlety of the approach. The teachers, who have now become associates in the project, "are sceptical about sharing information about discussion programmes in written form" (p. 23). They feel that a teacher must participate in a group that experiences discussion processes. Videotapes from the project are available for both the teachers' group and their classroom efforts, and Francis invites interested teachers to "contact us directly so that we can flesh out the comments" (p. 21). [For the address, see the reference to Francis, 1982.]

**Research and Training**

Over the past ten years, a solid body of research on "wait-time" and questioning has shown that a few seconds of pausing by the teacher can have remarkable effects on discussion. As a good example of this kind of research, Swift (1983) and associates have conducted a series of studies based on 600 discussions in middle school science classes, observed over a full semester. In an award-winning study, Swift and Gooding (1983) demonstrated that when teachers wait for 2-3 seconds after asking a question—and again before asking the next one—both the amount and the quality of student discussion increase. More students talk, and students talk more; their talk is more relevant to the topic and more elevated in cognitive level.

Listening to the tapes of the 600 classes, the researchers were bored and appalled by the low quality of discussion. They began a program to train teachers in "strategies for engendering true discussions" (Gooding, Swift, and Swift, 1983; Swift, Swift, and Gooding, 1984).

Ten teachers volunteered. First the investigators carefully listened to the teachers' fears and concerns about changing their way of handling discussion—concern for content coverage, student motivation, discipline problems, and concern over not knowing how to conduct discussions. Then in a workshop at school the investigators showed the teachers, through actual transcripts and practice in wait-time, how their concerns could be satisfied.

They gave to each teacher an ingenious electronic device for monitoring wait-time. The device flashed a red light (wait!) until three seconds of pausing had elapsed, then turned to green (talk!). On Fridays the investigators would come by to collect tape recordings of the classes; they analyzed the tapes over the weekend, and they returned to the school on Mondays to give each teacher "supportive intervention" in a private session over the tape, an analysis that the investigators had taken much care to make encouraging rather than critical.

After one month of this training plus supportive intervention, the teachers tripled the duration of their wait-time while questioning, and the students doubled the amount of their relevant talk while responding or volunteering contributions. As for other concerns, the frequency of disciplinary comments dropped drastically.

**Recommendations and Research**

Like wait-time, "deliberate silence" is one of seven alternatives to questioning suggested by Dillon (1979, 1981c, 1983b) for use during discussion. At
the juncture where a student has ostensibly finished speaking, the teacher may, instead of asking another question, choose to:

1. Make a declarative statement (for example, give an opinion).
2. Make a reflective restatement (give the sense of what the student has said).
3. Describe his or her state of mind ("I'm sorry, I'm not quite getting your point").
4. Invite the student to elaborate ("I'd like to hear more of your views on that").
5. Encourage the student to ask a question.
6. Encourage other students to ask a question.
7. Maintain deliberate, appreciative silence (until the student resumes or another enters into the discussion).

As for questions, I recommend that the discussion leader ask a question only when he or she is perplexed and needs and wants to know the answer. Used together, these few "perplexity questions" and the various alternatives should foster students' cognitive, affective, and expressive processes during discussion.

These alternatives, which have been elaborated from theoretical study of questioning, have scarcely been examined in empirical research. One study of 26 high school discussions (Dillon, 1981a) found that students responded at least as much to statements as to questions, if not more. A case study of ten of these discussions (Dillon, 1984) found that by contrast to questions, the use of the various alternatives together resulted in more and better discussion: more student talk, more students participating, more student-student references, more contributed topics and experience from outside the lesson, more exploration, speculation, and student questions. In a series of related but independent studies with preschool and elementary children, Wood and Wood (1983, 1984) discovered that by contrast to questions, the use of statements and phatics resulted in longer responses and greater pupil initiative in conversation (elaborated answers, volunteered contributions, and questions). Whether any of this means that students learn more has not been asked.

**Manuals**

Several reliable manuals are available for helping teachers learn to conduct discussions or lead groups (Hill, 1977; Miles, 1959; Ruddick, 1979). But, in general, some of the recommendations about questioning in discussion may be less reliable. Then, there are many helpful manuals on questioning (for example, Blosser, 1975; Carin and Sund, 1978). But the recommendations for questioning in discussion may be less reliable. In contrast, only a few manuals are grounded in experiences (practice and/or research) with both questioning and discussion.

In his discussion manual, Hyman (1980)—who also has a manual on questioning (1979)—recommends carefully planning the question for discussion, writing it out to make it clear, precise, short, relevant, and understandable (pp. 30–31). Further, he suggests writing out an ordered set of central questions that must be raised during the discussion, whether by teacher or students (p. 35). He gives examples of these sets for various types of discussion (pp. 45–47). Then he gives guidelines for using the skill of questioning during the discussion itself, such as adopting a tone of seeking information, mixing other skills along with questioning, and pausing after the question to allow time for thought (p. 77).

In my short manual on questioning in recitation and discussion (Dillon, 1983b), I also recommend careful preparation of the question for discussion. "To conceive an educative question requires thought, to formulate it requires labor, and to pose it, tact" (p. 8). A single, well-formulated question is sufficient for an hour's discussion. The rule of thumb during discussion is not to ask questions but to use various alternative techniques. The notion is that alternatives will foster discussion processes, whereas questions will foil discussion by turning it into a recitation (see Dillon, 1978, 1981c, 1984). A variant rule of thumb is to ask questions only when perplexed and genuinely needing to know. One or two perplexed questions in the midst of many alternatives is likely to have a positive effect on discussion.

**Accounts**

One of the most instructive ways to learn how to conduct classroom discussion is to read sensitive accounts by experienced teachers. A few accounts render the feel and fabric of a discussion in such an artful way that the reader can appreciate the sense of the proceedings while at the same time apprehending the valuable lessons that underlie its success.

Masterly accounts conveying both conceptual and experiential senses of discussion are given by Thelen (1972).
of a classroom group investigation, by Schwab (1954) of the affective/intellectual aspects of teacher-student relations during discussion, and by Mills (1964) of the transformation of a learning group. Roby’s (1984) account shows how a rhetoric of questions was used to turn a wrangling controversy over racism into an educative deliberation.

Conclusion
To start with, we need to ask some questions about questioning and discussion. The three generic questions are pedagogical, empirical, and theoretical ones: How does one teach by discussion? What is the character of discussion? What are its nature and kinds? The answers are knowledge in action, observation, and conception. For each of these kinds of questions there are any number of specific questions. Most of the answers are unknown, since most of the questions remain unasked by researchers.

When researchers begin to ask these questions as widely and pointedly as teachers do, then we shall all enjoy a measure of grounded knowledge about questioning and discussion. At that point a future reviewer will have more reason to review and can begin by saying what I could not: We know a good deal about questioning and discussion.

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