

Discussion in Postsecondary Classrooms: A Review of the Literature

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Abstract

Spoken language is, arguably, the primary means by which teachers teach and students learn. Much of the literature on language in classrooms has focused on discussion that is seen as both a method of instruction and a curricular outcome. While much of the research on discussion has focused on K-12 classrooms, there is also a body of research examining the efficacy of discussion in postsecondary settings. This article provides a review of this literature in order to consider the effect of discussion on student learning in college and university classrooms, the prevalence of discussion in postsecondary settings, and the quality of discussion in these settings. In general, the results of research on the efficacy of discussion in postsecondary settings are mixed. More seriously, researchers have not been explicit about the meaning of discussion and much of what is called discussion in this body of research is merely recitation with minimal levels of student participation. Although the research on discussion in college and university classrooms is inconclusive, some implications can be drawn from this review of the research including the need for future researchers to clearly define what they mean by “discussion.”

Keywords

higher education, education, social sciences, teaching, general education, language, curriculum

Student and teacher talk plays a crucial role in teaching and learning in classroom settings. Spoken language is the central medium by which teachers teach (Cazden, 2001) and, arguably, the primary means by which students learn as “speech makes available to reflection the processes by which [students] relate new knowledge to old” (Barnes, 1974, as cited in Cazden, 2001, p. 2). “From Socrates to Dewey to Habermas, educative dialogue has represented a forum for learners to develop understanding by listening, reflecting, proposing, and incorporating alternative views” (Michaels, O’Connor, & Resnick, 2008, p. 284). Language is also an important part of what students learn as they master the linguistic conventions of various disciplines like history, science, and social studies as well as the formal, academic language that marks students’ identities as educated persons (Schleppegrell, 2004).

Much of the literature on language in classrooms focuses on discussion that is seen “as much a method of instruction as . . . a curriculum outcome. As a method [discussion] provides an approach for teaching content, while as an outcome or goal of instruction it emphasizes that students become competent discussants” (Larson, 1997, p. 207). Mercer and Howe (2012) conclude that “when teachers actively engage students in reflective discussions of what they are studying, this helps them learn, develops their understanding and prepares them well for independent learning” (p. 14). Brookfield and Preskill (2005) argue that discussion transforms students into “cocreators of knowledge” (p. 22). In the context of dialogue, “the group constructs and discloses deeper meaning,

enriching understanding for all participants” (Eeds & Wells, 1991, p. 134). In addition, discussion may lead to more interest in “interdisciplinary and connected learning” (Cox & Richlin, 1993, p. 3). In general, advocates for discussion have argued that discussion will motivate students to learn, engage students in higher level thinking, increase class morale, give feedback to teachers, and develop more positive student attitudes toward instruction (Barnes & Ellner, 1983; Crone, 2001).

A significant body of research has accumulated on how discussion methods are used in K-12 classrooms and how discussion supports learning in a range of school subjects (Michaels et al., 2008). There is, for example, a body of evidence indicating that “academically rigorous discussions” (Michaels et al., 2008) positively affect academic performance in language arts (Beck, McKeowan, Hamilton, & Kucan, 1997; Goldenberg, 1993; Lee, 2001), mathematics (Chapin, O’Connor, & Anderson, 2003; Lampert & Ball, 1998), high school physics (Minstrell, 1989), and elementary (Warren & Rosebery, 1996) and middle school science (Sohmer, 2000). Despite the promise of classroom discussions, teacher talk dominates in elementary and secondary classrooms (Cazden, 2001), and discussion as a form of

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classroom interaction may be rare (McCann, Johannessen, Kahn, & Flanagan, 2006).

In addition to research on talk in K-12 settings, there is a large and growing literature promoting the benefits of discussion in postsecondary classrooms. Rocca (2010), for example, observes that discussion may promote learning in postsecondary classrooms by actively involving students in the college learning experience. Hardman and Mroz (1999) conclude that discussion gives students a means to draw on the knowledge and experience that they bring to their courses giving them more responsibility for and control over their learning. In general, many postsecondary educators view discussion as an alternative to lecture that is seen as encouraging passive acceptance of factual information rather than deep engagement with ideas (Steen, Bader, & Kubrin, 1999; Windschitl, 1999).

The purpose of this article is to review the published research on the effects of discussion in college and university classrooms with particular attention to research examining the quality and quantity of discussion in postsecondary settings and its effect on student learning.

I begin by describing the process by which I identified studies for inclusion in this review.

Method

To locate relevant reports of research on discussion in college and university classrooms, I did multiple searches of the *Education Resources Information Center* (ERIC) database using the following Descriptors:

- Discussion (teaching technique) and Higher Education
- Discussion (teaching technique) and Postsecondary Education

This search strategy identified articles in peer-reviewed journals that examined discussion in 2-year colleges and undergraduate and graduate settings including law and medical schools. I augmented this ERIC search with a comprehensive search of the tables of contents of major higher education journals including the *Journal on Excellence in College Teaching*, *College Teaching*, *Innovative Higher Education*, and the *Journal of Higher Education*. I also located relevant articles and book chapters by scanning the reference sections of each article I identified. From this pool of articles, I selected for review only journal articles and book chapters that reported research on discussion in postsecondary settings. I excluded from this review research studies of online discussions. In all, I located 50 articles and book chapters reporting research on discussion in postsecondary settings (2-year and 4-year colleges, graduate classes, medical and law school) including three previously conducted reviews, two focusing more generally on research on college teaching (Birney & McKeachie, 1955; McKeachie, 1990), and one focusing on participation in college and university classrooms (Rocca, 2010).

Findings

After multiple readings of summaries of each of the 50 articles included in this review, I identified the following themes around which this review is organized:

- The effect of discussion on student learning
- The effect of discussion on student participation and engagement
- The quality of discussions in college classrooms

I discuss each of these themes in turn below.

The Effect of Discussion on Student Learning

I located 31 research studies that examined, directly or indirectly, the effect of discussion on student learning. The first group of studies reviewed below employed various means to assess directly the effects of discussion on student learning including the effect of discussion on student writing. A second group of studies assessed student learning indirectly through the use of students' perceptions of the effect of discussions on their learning.

Effect of discussion on measures of student achievement. The most potent argument for discussion in postsecondary classrooms is its potential for boosting student achievement (Rocca, 2010) by engaging students in higher levels of learning (Wade, 1994). Indeed, there is some evidence supporting the claim that discussion positively affects student learning in college classrooms. Harton, Richardson, Barreras, Rockloff, and Latane (2002), for example, examined the impact of an approach to discussion called "Focused Interactive Learning" (FIL) on student achievement in five undergraduate psychology classes. While in class students responded in writing to sets of multiple-choice and opinion questions and then discussed their answers for 1 to 2 min with other students. Occasionally, this was followed by whole-class discussions. These discussions were undertaken for every other chapter in the psychology textbook and, overall, students performed better on end-of-chapter test items they had discussed than on chapters they had not discussed.

de Grave, Schmidt, and Boshuizen (2001) also reported a positive effect for discussion on student achievement. Forty-eight first-year medical students were assigned to either an experimental group that participated in a problem-based discussion of blood pressure regulation prior to reading a chapter on this topic or to a control group that participated in a discussion of a problem of vision before reading the chapter on blood pressure regulation. Students in the blood pressure regulation group recalled 25% more information from the text than control group students who had not discussed blood pressure regulation.

Other researchers have found similar effects for discussion. Christianson and Fisher (1999) reported that students enrolled in a discussion/laboratory biology class, compared

to students enrolled in large lecture/laboratory classes, developed a deeper understanding of osmosis and diffusion. Similarly, Lyon and Lagowski (2008) found that students in a general chemistry class who volunteered to participate in small discussion groups outperformed students who did not participate in these groups on course examinations and final grades. Birney and McKeachie (1955) reported that students taught by discussion generally achieved superior performance on measures of thinking, retention after the final exam, motivation, and attitude change.

Positive effects for discussion go beyond exam scores and course grades. Josten (1996), for instance, examined the effect of discussion on the reading comprehension of 80 “developmental readers” in a 2-year college setting. One week before the final exam, some sections of the course used traditional highlighting and recitation to address a text and the other sections used an inquiry-based, decision-making process as a guide for student-led discussions of the same reading. At the end of these sessions, students were asked to write everything they could remember about the topic of the reading/discussion and respond to eight prompted recall questions requiring various levels of thinking. Josten concluded that, although the combined scores for the discussion and control groups were not significantly different, the sections of those instructors Josten deemed to have adequately prepared to lead the discussions performed significantly better than the control group. This finding suggests that not just any sort of discussion will be effective, an issue addressed in greater detail below.

Levin (1995) reported that discussion was a “crucial variable” in in-service teachers’ ability to learn from case studies. Experimental and control conditions each consisted of 12 teachers subdivided into two groups of six teachers. All groups read and wrote about a case and then read and wrote about the same case a second time several weeks later. Between these two events, the experimental group participated in a discussion of the case study. The second time they wrote about the cases, teachers in the discussion group, compared to the teachers in the control group, elaborated on their original thinking, displaying changes in their understanding of the case study. Levin concluded that teachers in the control group failed to present any new ideas or insights after their second reading of the case.

In a related study of pre-service teachers, Copeland and Decker (1996) reported that students who discussed video cases in groups of three were somewhat more effective adopting, transforming, or creating new ways of making meaning of the vignettes they worked with over one third of the time. However, since there was no control group, it is not clear if other approaches to reviewing case studies would have been equally effective. Bolt (1998) also reported an improvement in physical education students’ “general propensity to identify problems and propose solutions” (p. 96) when they participated in case study discussions.

Discussion has also been found to positively affect student writing. Hewett (2000) compared the influence of in-class and online discussions on students’ revision of their writing. Hewett collected data from two sections of the same course, one a “traditional oral classroom” and the other a “networked computer classroom.” Discussion in both environments focused primarily on students’ writing although the discussion in each setting had different characteristics. Oral talk, for instance, was more focused on abstract, global idea development, whereas discussion in the online environment focused more on concrete writing issues and management. Despite these differences, students in both environments used ideas generated during discussions to revise their writing. No evidence was offered about the effectiveness of these revisions, however.

While the studies reviewed above support the efficacy of discussion in postsecondary classrooms, other researchers have found discussion to be no more effective—and sometimes less effective—than other pedagogical approaches. Liefeld and Herrmann (2002), for example, compared two sections of a consumer studies course. Both sections did the same readings and both sections participated in class presentations and lectures, but one section spent 1 hr per week in discussions of class readings. The other section did not participate in discussions but instead took and retook quizzes based on course readings to the point of mastery. The researchers created a 60-item test based on course readings for pre- and post-tests. Students in both groups performed at significantly higher levels on the post-test; however, the mean score of the mastery-testing group was significantly higher on the post-test than the mean score of the seminar-discussion group.

Garside (1996) found that discussion was no more effective at promoting student learning than lecture in six sections of an undergraduate interpersonal relations course. Half of the sections were assigned to a lecture condition and half to a discussion condition in which small groups of students responded to questions provided by the instructor through discussion. The intervention was limited to a single class meeting. Based on a test of course content, including questions deemed to require high and low levels of critical thinking, the lecture condition produced significant learning from pre-test to post-test with regard to the total score, lower-level items, and higher-level items. Discussion produced more learning from pre-test to post-test only with regard to higher-level items. Although both the discussion and lecture conditions produced gains in student learning from the pre-test to post-test, there were no significant differences in the post-test scores of the two groups.

Stone (1997) also reported that discussion was no more or less effective than lecture for acquiring information presented during a museum tour. Six intact college art education classes were assigned randomly to one of the three conditions: a lecture condition, an inquiry/discussion tour, and a

control group. In both treatment conditions, students were given factual information, but in the discussion groups, students were encouraged to ask questions and make comments to which the guides responded to with remarks and/or queries. The dependent measures included a multiple choice pre-test and two post-tests, one given immediately after the tour and another 3 weeks later. Based on comparisons of the pre- and post-test conditions, Stone concluded that students in both intervention groups did significantly better than the control group in the post-test condition, but neither group did well on retention as measured by the second post-test.

Bobby et al. (2012) compared the performance of students who were asked to reformulate multiple-choice questions in a biochemistry module individually and in small discussion groups. Although students' gains from the individual task and the small-group discussions were substantial, there was no advantage for either the individual or small-group discussion conditions, and this was true for various categories of students (low achievers, medium achievers, high achievers).

Two widely cited studies from the 1950s, Eglash (1954) and Guetzkow, Kelly, and McKeachie (1954), also reported no advantage for discussion over other pedagogical approaches. Eglash (1954), for example, examined two sections of a course taught by the same instructor, one organized around small and large discussion group, the other taught through lecture. No differences were found in the achievement of the two groups. Guetzkow et al. (1954) compared the effect of three instructional approaches: drill-recitation, group discussion, and study tutorial. All students experienced a common lecture, used the same textbook, and were given the identical assignments. Teaching methods differed only in weekly supplemental sections. There were no significant differences between the groups in terms of educational achievement.

The research on the efficacy of discussion in postsecondary settings is decidedly mixed. However, the research reviewed above focuses mainly on student performance on traditional quizzes and exams and, in this context, discussion may be no more or less effective than other pedagogical approaches. Proponents of discussion argue that discussion has the potential to engage students in higher levels of thinking and critical reflection (e.g., Auster & MacRone, 1994; Crabtree, Royeen, & Mu, 2001; Wade, 1994) as well as providing fertile ground for collaborative meaning making (Eeds & Wells, 1991; Townsend & Pace, 2005). The traditional assessments utilized in the studies reviewed above may not be sensitive to these outcomes accounting for the mixed results.

A few studies do suggest that discussion is an effective means for stimulating higher forms of student learning. Haroutunian-Gordon and Tartakoff (1996) routinely engaged students enrolled in a course on problem solving in mathematics and music in an approach called "interpretive discussion" in which discussion focused on evidentiary-based

claims in response to open-ended questions. Haroutunian-Gordon and Tartakoff's qualitative analysis of discussion transcripts shows students engaged in high-level mathematical thinking. No claim is made that discussion was the cause of this high-level thinking; the authors argue, however, that interpretive discussion provided the context within which this kind of thinking occurred.

Lehman and Scharer (1996) found that discussion affected the quality of pre-service and in-service teachers' interpretations of texts (as opposed to simple recall of textual information). Students were asked to read a piece of young adult fiction and record their responses to the text in writing as they read. They were then asked to participate in whole-class discussions of the text. Following the discussion, both pre-service and in-service teachers' ($n = 129$) text-based responses to the text were judged by the researchers to be "more analytical, inferential, and evaluative in relation to the literary textual elements" (p. 31).

Self, Baldwin, and Olivarez (1993) used a test of moral reasoning (arguably a form of higher-level thinking) to assess the effectiveness of a film-discussion course for medical students designed to develop "more humanistic, compassionate, and caring physicians" (p. 383). The researchers reported significant differences in posttest scores between a group that took the course for two semesters and a control group that did not take the course but not between a group of students that took the course for only one semester and the control group. Unfortunately, because of the design of the study, the only conclusion that can be drawn is that a course that included films and discussion taken for two semesters was better at improving medical students' performance on a test of moral reasoning than taking no course at all.

Like research on the efficacy of discussion in general, research on the efficacy of discussion as a means of promoting higher levels of thinking is mixed. Thyer, Jackson-White, Sutphen, and Carrillo (1992) examined student performance in two graduate classes in social work. One class responded in writing to study questions based on the following week's readings and then presented their answers in class. The other class was taught through a structured teaching method called "learning through discussion" (p. 239) where each student was responsible for presenting a summary of readings to the class as a means of stimulating discussion. Based on student performance on an "essay-type" test, the authors reported that students in the study question group made significantly higher gains on their scores for the critical analysis assignment compared to the structured discussion group. Also, as summarized above, Garside (1996) found discussion no more (or less) effective than lecture in improving student performance on test items deemed to require higher levels of thinking.

Student perceptions of classroom discussion in college classrooms. A number of researchers have used student perceptions as an indirect measure of the efficacy of discussion in

postsecondary classrooms. Windschitl (1999), for example, persuaded two science instructors to include brief, small-group discussions in their classes around questions that did not have “single discrete answers that could be recalled or generated quickly . . . but rather the questions would encourage elaborated higher-order thinking” (p. 23). Discussions average approximately 5 min. At the end of the semester, students were asked to respond to several statements (e.g., “the small group discussion questions helped my understanding of the lecture material” [p. 25]) using a 5-point Likert-type scale. Students indicated that, while they felt that the discussions supported their learning, 5 min was insufficient for meaningful discussion.

Wade (1994) used interviews and a questionnaire to explore undergraduate education majors’ beliefs and attitudes toward class discussion. Students indicated that they learned from discussions but, again, many students believed that not all professors provided sufficient time for in-depth discussions. Other researchers also report favorable response to discussions. Based on a 10-item survey and focus group interviews, Randall (2009) reported that students in a course on adolescence believed that literature circle discussions increased their understanding of literature, in part by allowing them to hear the perspectives of other students. Brazeau, Hughes, and Prokai (1999) found that students in a first-year pharmacy course generally liked small-group, case-based discussions and believed that these discussions supported learning although they felt that 50 min was insufficient to achieve all the goals the instructor had set out for the discussions. Crabtree et al. (2001) reported that students in an occupational therapy course indicated that an approach called “learning through discussion” led them to think critically about issues raised in the course. Crabtree et al. noted, however, that at least one of the students in the course was highly critical of the “learning through discussion” process. Jensen and Owen (2010), drawing on a data set that included students enrolled in introductory economics courses from 34 universities, concluded that, overall, students preferred classes with less lecture and more discussion and that classes with more discussion were, from the students’ perspective, more likely to encourage them to take economics coursework in the future. Other researchers have also reported that students indicated that in-class discussions made their courses more interesting (Josten, 1996) and enhanced their learning (Finkel, 1999; Hamann, Pollock, & Wilson, 2012).

There is also some evidence, based on student perceptions, that discussions may have a positive effect on students’ oral and written communication skills. Based on an end-of-course survey of second-term MBA students, Dallimore, Hertenstein, and Platt (2008) concluded that the students felt that participation in discussions improved their oral and written communication skills while enhancing their learning overall and generally increasing their confidence.

Based on focus group interviews with 43 sophomores and juniors Roehling, Vander Kooi, Dykema, Quisenberry, and

Vandlen (2011) identified three main reasons that students valued discussions. From the students’ perspective, discussions made learning more active, resulting in deeper understanding and promoting perspective taking. Not all students have been entirely positive about discussion, however. Eglash (1954), for example, found that students in a lecture-only section of a course—compared to students in a discussion section—had more favorable attitudes toward the course. Although there were no differences in achievement between the two sections, Eglash reported unfavorable comments from students in the discussion section including the assertion that the reliance on discussion amounted to an abdication of instructor responsibility. Harton et al. (2002) reported that, while students were relatively positive about a “focused interactive learning” approach to discussion, they felt that this approach had more of an effect on interpersonal relations than their learning despite the evidence presented above that students performed better on end-of-chapter test items they had discussed than on chapters they had not discussed. Faw (1949) also found that, while students indicated a preference for “student-centered” discussions, two thirds of students who participated in these discussions expressed reservations about the intellectual rigor of this approach despite the finding that these students outperformed students assigned to non-discussion groups on course examinations.

Summary and discussion. Overall, the research on the efficacy of discussion in college classrooms is mixed. Students generally perceive discussions as beneficial to their learning. The only two studies reviewed here that reported negative perceptions of discussions in postsecondary settings were conducted over 50 years ago, at a time when students may have had very different sensibilities about discussion. There is also a body of research reviewed here indicating a positive impact of discussion on academic achievement. However, a number of studies also found no advantage for discussion compared to other pedagogical approaches. Some studies do show that discussion positively affects higher levels of thinking and problem solving, but, again, the findings are contradictory. Still, the majority of studies (65%) examining the effects of discussion on measures of student learning reported positive effects. These proportions generally hold for studies of small- and large-group discussions (see Table 1 for a summary of studies summarized in this section).

The research on discussion in postsecondary settings is further complicated by methodological problems that plague many of the studies reviewed here. Small sample sizes, unmatched comparison groups, measures of student learning that lack any proven validity or reliability, lack of control groups, and potential researcher biases undermine the claims that are made about the effect of discussion on student achievement. Most serious of all, with the exception of a few studies, researchers have been virtually silent on what they mean by “discussion” (see Table 1) making it difficult to make any sort of generalized claims about

Table 1. Summary of Studies Examining Effect of Discussion on Student Learning.

Study	Direct/indirect measures	Whole/small group	Discussion defined	Evidence of discussion	Positive effect for discussion?
Bobby et al. (2012)	Direct	Small	No	None	No
Bolt (1998)	Direct	Whole ($n = 12$)	No	None	Improved ability to deal with problems
Brazeau, Hughes, and Prokai (1999)	Indirect	Small	No	Some elements	Supported learning
Christianson and Fisher (1999)	Direct	Both (small group did better)	No	None	Deeper understanding
Copeland and Decker (1996)	Direct	Small	No	None	Better at creating new meanings
Crabtree et al. (2001)	Indirect	Whole ($n=9$)	Some description	None	Led students to think more critically
Dallimore, Hertenstein, and Platt (2008)	Indirect	Uncertain	No	None	Enhanced learning and oral and written communication
de Grave, Schmidt, and Boshuizen (2001)	Direct	Whole	No	None	Improved achievement
Eglash (1954)	Direct/indirect	Both	No	None	No
Faw (1949)	Indirect	No	No	Yes	No
Finkel (1999)	Indirect	Small	No	Some elements	Enhanced student learning
Garside (1996)	Direct	Small	Yes	None	No
Guetzkow, Kelly, and McKeachie (1954)	Direct	Whole	No	None	No
Hamann, Pollock, and Wilson (2012)	Indirect	Both	No	None	Enhanced learning
Harton, Richardson, Barreras, Rockloff, and Latane (2002)	Direct/indirect	Small	No	None	Improved achievement
Haroutunian-Gordon and Tartakoff (1996)	Direct	Whole ($n=12$)	Yes	Yes	Yes
Hewett (2000)	Direct	Whole	No	Yes	Improves student writing
Jensen and Owen (2010)	Indirect	Uncertain	No	None	Students prefer classes with discussion
Josten (1996)	Direct/indirect	Whole	No	Some elements	Better on higher level questions; course more interesting
Lehman and Scharer (1996)	Direct	Whole	Yes	Yes	Positive response to texts
Levin (1995)	Direct	Small	No	None	Affected responses to case studies
Lyon and Lagowski (2008)	Direct	Small	No	None	Improved achievement
Liefeld and Herrmann (2002)	Direct	Whole	No	None	No
Birney and McKeachie(1955)	Direct	Whole	No	None	Improved achievement
Randall (2009)	Indirect	Small	No	None	Increased understanding of literature
Roehling, Vander Kooi, Dykema, Quisenberry, and Vandlen (2011)	Indirect	Uncertain	No	None	Students valued discussion
Self, Baldwin, and Olivarez (1993)	Direct	Whole	No	None	Improvement on test of moral reasoning
Stone (1997)	Direct	Whole	No	None	No
Thyer, Jackson-White, Sutphen, and Carrillo (1992)	Direct	Whole	No	None	No
Wade (1994)	Indirect	Uncertain	Some description	None	Learned from discussion
Windschitl (1999)	Indirect	Small	Some guidelines	None	Supported their learning

discussion and student achievement. The use of various terms for discussion (e.g., “reflective discussion,” “educative dialogue,” etc.) without defining these terms further complicates the meaning of discussion in the studies

reviewed here. In general, it is difficult to make definitive claims about the effects of discussion on student achievement because researchers have generally not been clear about what they mean by *discussion*.

The Effect of Discussion on Student Participation and Engagement

Based on her review of the literature on participation in postsecondary classrooms, Rocca (2010) concluded that higher levels of student participation lead to improved learning outcomes, increased student motivation, and engagement in “higher levels of thinking, including interpretation, analysis, and synthesis” (p. 188).

Rocca argues that discussion is a powerful means for increasing student participation and engagement and, ultimately, student learning; yet, only two of studies reviewed in this section directly considered whether discussion led to increased student participation. Francisco, Nicoll, and Trautmann (1998) examined the effect of four different teaching methods—cooperative learning, discussion, concept mapping, and lecture—in a chemistry course with 94 students. Each type of teaching was integrated with lectures over the course of the semester. Students perceived higher levels of participation during the discussion format. The researchers offered no objective measure of “participation,” however. Hardman and Mroz (1999) worked with four college instructors to implement “recitation-breaking” strategies designed to facilitate interactive discussions. These teachers were able to create “space in the [classroom] discourse for the students to elaborate on their ideas” (p. 290) that, the researchers concluded, led to higher levels of student participation.

Despite the arguments favoring discussion in postsecondary classes, the available research indicates that discussion in postsecondary classrooms is fairly rare and, when faculty do provide opportunities for discussion, relatively few students tend to participate. For example, based on surveys of economics faculty in 1995, 2001, and 2005, Watts and Becker (2008) reported that, as of 2005, on average, 83% of class time in economics courses was spent on lecture. Watts and Becker note, however, a slight movement over the years toward what they referred to as “instructor-student” discussions. Discussions among students (“Student-student” discussion) were much rarer. Similarly, Nunn (1996), based on observations of 20 upper-level social science courses, reported that, on average, less than 1 min of class time was devoted to any form of student talk, although there was considerable variation across classes with 15 classes spending between 1% and 9% of instructional time on student talk and two classes spending between 20% and 23% of instructional time on student talk. It is unclear how much of this talk qualified as discussion. Benzing and Christ (1997), in a survey of over 200 economics professors across the United States, found that 14% of faculty indicated using class discussion “all the time,” 24% “very often,” 24% “often,” 33% “sometimes,” and 5% “never.” Most of the respondents indicated that they had begun incorporating more discussion into their classrooms over the previous 5 years although, again, the meaning of discussion is not clear. Jensen and Owen (2010),

based on their analysis of data from economics classes at 34 universities, observed that postsecondary educators have been generally reluctant to abandon lecture in favor of more discussion. Opportunities to participate in class discussions may differ across disciplines, however. Based on a linguistic analysis of interactions in 196 classes in 130 university courses, Csomay (2005) concluded that students in Education courses were most likely to be given opportunities to participate in discussions in their classes while Engineering students were least likely to have opportunities for discussion.

Even when given the opportunity, many students still do not participate in classroom discussions. Rocca (2010) cites an abundance of research indicating that relatively few students participate regularly in their courses even when offered the opportunity, and many students do not participate at all. Students may be more willing to participate in smaller classes than large ones, however. This finding is supported by Nunn (1996) who, based on observations, field notes, and observational checklists in 20 upper-level undergraduate courses, determined that only about one quarter of students participated in discussions. There was a wide range of participation across the classes ranging from a class in which there was “no participation” to four classes in which participation in discussion ranged from 40% to 63% of the students. A survey of students in these same classes indicated that approximately half of the students reported that they participated in class discussions infrequently or never. Foster (1981), on the other hand, found high levels of participation among third-year medical students in small, “clinical discussion groups.” Over the course of 62 small-group sessions, all but 4 of 119 students participated in small-group discussion suggesting that high-achieving medical students are willing to participate in class discussions.

A number of researchers have attempted to identify factors that account for students’ reluctance to participate in class discussions. Based on a survey and focus group interviews of 400 second-year social work students, Hyde and Ruth (2002) concluded that shyness and lack of preparation were the main reasons students chose not to participate in class discussions. Other research suggests that race and gender may also affect student participation in class discussions. Kaufmann (2010), for example, found that whole class discussions in an ethnic studies course tended to be dominated by White females while working-class students of color were likely to feel silenced. In her review, Rocca (2010) found that females were less likely to engage in any form of class participation—including discussion—than males. Based on a survey of students for 51 courses at a private, Midwestern university, Fassinger (1995) reported that males saw themselves as more confident and more involved in class discussions while females saw themselves as more prepared for class, more interested in the subject matter, and more interested in peers’ comments and questions than males. Wade’s (1994) study of education majors’ attitudes toward discussion indicated that three fourths of the men surveyed thought that their ideas

“always” or “often” made an important contribution to discussion, but less than half the women indicated similar confidence in the quality of their contributions.

In addition to race and gender, researchers have identified other factors that potentially influence students’ participation in discussions, some of which suggest strategies for increasing student participation including praising students (Nunn, 1996); the quality of instructors’ questions (Auster & MacRone, 1994; Foster, 1981; Murray, 1997; Nunn, 1996) with open-ended or divergent questions being particularly powerful (Murray, 1997; Nunn, 1996; Reynolds & Nunn, 1998); student ability (Foster, 1981); willingness of instructors to self-disclose (Goldstein & Benassi, 1994); instructors who ask for elaboration of student questions/answers, acceptance of student answers, using students’ names, correcting wrong answers, and class size (Fischer & Grant, 1983; McKeachie, 1990; Nunn, 1996); instructors with more “open” (vs. authoritarian) styles (Townsend & Pace, 2005); grading students’ participation (Auster & MacRone, 1994; Nunn, 1996); student preparedness (Hyde & Ruth, 2002); instructors’ use of humor (Reynolds & Nunn, 1998); interesting topics and a general climate of respect (Fassinger, 1995; Wade, 1994); and explicit efforts to improve students’ confidence (Rocca, 2010). Instructors’ skill at facilitating discussion has been found to affect both student participation and the overall quality of discussion (Garside, 1996; Nunn, 1996).

Researchers have reported that students are more likely to participate in small-group rather than whole-class discussions. Kaufmann (2010), in an ethnographic study of discussion in an ethnic studies course, reported that students who were relatively quiet during whole-group discussions were among the dominant voices in small-group discussions. Other researchers reported higher levels of engagement and participation in small groups among students in a first-year physics course (Hamann et al., 2012) and an upper-level political science course (Mayo, Sharma, & Muller, 2009).

Small-group discussions have also been found to encourage higher levels of participation among working-class students of color (Kaufmann, 2010), Black men (Pollock, Hamann, & Wilson, 2011), and ethnic and linguistic minorities (Lee, 2001) who feel silenced during whole-class discussions. Lee, for example, found that six Korean-speaking graduate students who rarely spoke during whole-class discussions actively participated in small-group discussions. The main reason the Korean students cited for their silence in large-group discussions was the belief that their language was inadequate for these fast-moving discussions. Lee concluded that differences in sociocultural values and educational practices, individual differences, and the classroom context also affected these students’ participation in discussions.

Summary and discussion. Rocca (2010) observed that student engagement is a crucial factor in student learning and that

increased participation in class activities, including discussions, will lead to higher levels of student engagement and learning. Participation rates in postsecondary classrooms are generally low, however, with some groups (e.g., males, White females) even less likely to participate than others (e.g., female students of color). According to a limited number of studies, small groups as well as certain instructor behaviors seem to foster increased student participation, but it is not clear whether higher levels of participation necessarily result in heightened student engagement. Moreover, none of the research summarized in this section considered the quality of student participation or the degree to which participation actually facilitates student learning. The definition of student participation may be “somewhat elusive” as Auster and MacRone (1994, p. 289) observe, but it is fairly certain that not all forms of student participation correlate with higher levels of engagement and, ultimately, learning. The level of student learning will necessarily be a function of the activities in which students are engaged. Engaging in discussions that require only low-level thinking, for example, will not lead to higher-level learning. Moreover, students can be silent and still be engaged in learning (Schultz, 2009). Ultimately, because of the failure of researchers to provide any definition of “participation” and its relation to student engagement and learning, these studies provide little insight into the potential of discussions to enhance learning in postsecondary settings. And, like the research literature on discussion generally, researchers focused on the relationship between discussion and participation have been relatively silent on the meaning of discussion, an issue that is discussed in greater detail in the following section.

The Quality of Discussion in College Classrooms

Thirty years ago, in a study of classroom discourse in 40 classes at four universities, Fischer and Grant (1983) observed that most of the discourse in these classes, including during periods described as “discussion,” occurred at the lowest cognitive levels, focusing on the transmission of knowledge and facts. Similarly, in a study of discussion in a third-year medical course, Foster (1981) found that nearly 75% of student talk during discussions was at the lowest cognitive level while only 2% was at the highest cognitive levels. More recently, in separate studies, Wedman, Smith, and Jared (1994) and Hardman and Mroz (1999) concluded that much of what is taken for discussion in postsecondary classrooms is nothing more than recitation. As Benzing and Christ (1997) observed, it may be that “instructors believe that lecture punctuated by instructor or student questions is a participatory technique” (p. 185).

Dillon (1994) cautions that the mere presence of student talk, no matter how frequent, does not automatically signal that a discussion is taking place. According to Dillon, discussion is not just any sort of verbal interaction among participants but a “unique form of group interaction, where people

Characteristics	Recitation	Discussion
Predominant speaker	Teacher (T) 2/3rds or more	Students (S) ½ or more
Predictable sequence	Teacher-student	Mix
Typical exchange	Initiation-Evaluation-Response (I-R-E)	A mix of statements/ questions by mix of Ss and T
Overall pace	Many, brief fast exchanges (but could be slower)	Fewer, longer slower exchanges (could NOT be faster)
The question	Not the Question itself as asked but students showing knowledge of answer	The question as asked, and students gaining or using knowledge about the matter in question
The answer	Predetermined right or wrong; same right answer for all	Indeterminate, determinable, determined but not predetermined; could be different answers for different students
The evaluation	Right/wrong; by T only	Agree/disagree; by Ss and T also by Ss of T

Figure 1. Noticeable characteristics of talk in recitation and discussion.

Source. Adapted from Dillon (1994, p. 17).

join together in addressing some question of common concern, something they need to understand, appreciate or decide” (Dillon, 1994, p. 5). Discussion is different from conversation and other forms of group talk by its “concern with the development of knowledge, understanding, or judgment among those taking part” (Brookfield & Preskill, 2005, p. 17). In his widely cited text on discussion, Dillon argues that discussion focuses on open-ended questions for which there is more than one possible answer, a point emphasized by Haroutunian-Gordon (1991). Furthermore, in discussion, “the talk concentrates upon one topic which is maintained, extended or developed” (p. 13). Instructors facilitate these interactions but do not dominate them nor do they insist upon “correct” answers that, from Dillon’s perspective, are anathema to true discussion. Dillon (1994) offers the following chart (Figure 1, which has been adapted here) to distinguish discussion as he defines it from recitation, a form of student participation that is often (mis)taken for discussion.

Among the studies in this review that examined, directly or indirectly, the effect of discussion on student learning, it is difficult to ascertain how many are actually *discussions* as defined by Dillon. It may be, however, as Hardman and Mroz (1999) suggest, that what counts for discussion in many (perhaps most) of postsecondary classrooms is merely recitation as in the case of Guetzkow et al. (1954) who described *discussion* as a place “where students feel free to expose their misconceptions so they can be corrected” (p. 196). Studies employing *discussions* restricted to very brief exchanges (e.g., Harton et al., 2002; Windschitl, 1999) that limit students’ opportunities to extend or develop topics also fail to meet Dillon’s criteria for discussion. Other studies offered evidence that at least some elements of discussion were present (see Table 1 for a summary of research studies examining the effectiveness of discussion). In both Brazeau et al. (1999) and Finkel (1999), for example, discussions began with questions for which there were more than one possible answer. Four of the studies reviewed here include transcripts that suggest the rich, engaging discussions advocated by Dillon

(1994). However, with the exception of these studies, few of the studies included here offered the detail needed to ascertain what researchers counted as discussion. Of the 31 studies examining the efficacy of discussion in postsecondary classrooms, six studies provided at least some information on the researchers’ sense of the meaning of discussion. Only 7 of the 31 studies offered any actual evidence that discussions included some of the elements discussed by Dillon. The nature of *discussion* in studies of class participation is even less clear. Only 3 of the 22 studies offered any sense for what counted as discussion (Garside, 1996; Hamann et al., 2012; Wade, 1994), and only 1 of these 3 studies provided evidence that the classroom interactions they described contained elements of discussions as defined by Dillon (Kaufmann, 2010).

Summary and discussion. Dillon (1994) argues that not all verbal interactions that occur among students and teachers are discussions. Dillon does, however, offer a set of criteria that, for him, distinguish discussions from other forms of classroom interactions (e.g., recitation). Michaels et al. (2008) go further and argue that, even when discussions occur, not all forms of discussion lead to deep, engaged learning. High-quality academically productive discussions, they argue, are well planned, carefully orchestrated interactions that necessarily lead to collaborative meaning making. Because researchers mostly fail to define what they mean by *discussion* and there is generally an absence of excerpts of classroom discourse in studies of the effect of discussion on student learning, it is, with the exception of a few studies, difficult to ascertain the quality of discussions—or even whether discussions occurred at all—in the research studies summarized here. It is noteworthy that five of the six studies that provided some guidelines for what counts as discussion and six of the seven studies that provided evidence that the interactions they described included at least some elements of discussion (as indicated by Dillon) reported positive effects for discussion on student learning (see Table 2). All four of the studies that examined both the effects of

Table 2. Summary of Results of Studies Investigating the Effect of Discussions on Student Learning.

Studies using direct measures (<i>n</i> = 20)	Studies using indirect measures (<i>n</i> = 14)
Effective-13	Effective-12
Ineffective-7	Ineffective-2
Studies using small groups (10)	Studies using whole class format (14)
Effective-8	Effective-9
Ineffective-2	Ineffective-5
Studies using small and large groups (3)	
Effective-2	
Ineffective-1	
Studies offering at least some definition of discussion (6)	
Effective-5	
Ineffective-1	
Studies indicating “discussions” included some elements of discussion (Dillon, 1994) (7)	
(Direct = 4; Indirect = 3)	
Effective-7	
Ineffective-0	

discussion on student learning *and* included at least some elements of discussion produced positive effects for discussion.

Discussion

The studies identified for this review examined the power of discussion to affect student learning as well as various factors that influence student participation in class discussions. Researchers have examined small- and large-group discussions in a range of academic disciplines in public and private universities in various locales. But because of the failure of most researchers to be clear about the meaning of discussion, no strong claims about the efficacy of discussion emerge from this literature review. In general, research on the efficacy of discussion in postsecondary settings is inconclusive because researchers are unclear about the definition of discussion that informs their research and rarely provide sufficient data to independently evaluate (using Dillon’s criteria, for example) whether the verbal interactions in studies of discussion in postsecondary classrooms actually qualify as “discussion.” Studies that included evidence that interactions among students and instructors contained some of the elements of discussion as defined by Dillon (1994) were more likely to produce positive effects for discussions (see Table 2). However, given the small number of studies that met this criterion, this observation is suggestive at best.

For now, the strongest support for including discussions in postsecondary classroom comes from those few studies of discussion in postsecondary classrooms that are explicit about the meaning of discussion and, indirectly, from research in K-12 settings. For example, based on their review of the literature on discussion in K-12 classrooms, Mercer and Howe (2012) conclude that “there is now comprehensive evidence to support [the] view that talk amongst teachers and students, if of the right quality, can be a powerful motor for

the development of reasoning and the improvement of academic performance” (p. 13). The degree to which research on discussion in K-12 settings can be generalized to college and university settings is uncertain, however. Rocca (2010) argues that, because of the age of the students and issues of academic freedom, the nature of discussions in postsecondary classrooms may be qualitatively different from discussions in K-12 classrooms. Still, there is reason to hope that discussions that are “of the right quality” will positively affect student learning in both K-12 and postsecondary settings.

There is also clear theoretical support for class discussion in postsecondary classrooms. From the perspective of socio-cultural theories of learning, human knowledge is fundamentally social in nature. Mercer and Howe (2012) observe that “the relationship between social activity and individual thinking is vital . . . Knowledge is not just an individual possession but also the creation and shared property of members of communities” (p. 12). In this context, conceptual change is a key learning outcome (Morton, 2012), and, for this to occur, students need to be active participants in their learning by engaging in goal-directed conversations with others as a means of “co-construct[ing] their knowledge through collaboration with their peers on meaningful activities” (Morrone, Harkness, D’Ambrosio, & Caulfield, 2004, p. 20). Discussion provides a potentially productive space for students and their teachers to “co-construct their knowledge” through dialogic interaction (Morton, 2012).

Research in K-12 settings, undergirded by sociocultural learning theories that emphasize the social construction of knowledge (Gee, 2011), supports the use of discussion in postsecondary classrooms. What is missing, however, are studies of discussion in college and university classrooms that provide empirical evidence that students are actually engaging in discussion and use outcome measures—measures of conceptual change, for example—that are sensitive

to the (social) learning goals of discussion as Dillon (1994), among others, conceptualizes it. Many of the studies summarized above focus on outcome measures more sensitive to transmission approaches to instruction like lecture.

Despite the shortcomings of the research literature on discussion in postsecondary settings, there are several implications that emerge from this review.

First, the effective use of discussion in postsecondary settings demands that faculty learn how to orchestrate discussions effectively which requires that they have a clear idea of what productive discussions look like to begin with (Garside, 1996; Hardman & Mroz, 1999; Nunn, 1996). Hardman and Mroz (1999) found that, with support, postsecondary teachers could learn “recitation-breaking” strategies that lead to interactions that take on the characteristics of genuine discussions as described by Dillon (1994). But, even where discussions occur, not all discussions are equally productive. Effective discussions involve more than just student talk. Academically productive discussions begin with clear goals and carefully planned questions for which there is more than one possible answer (Haroutunian-Gordon, 1991; Michaels et al., 2008). Productive discussions also require skillful management by instructors as students work together to resolve some question, problem, or issue (Michaels et al., 2008). This requires deliberate effort to learn to plan for and orchestrate discussions. Facilitating effective discussions is a skill that must be learned.

Second, given the evidence that students have had few opportunities to participate in authentic discussions even in K-12 settings (Mercer & Howe, 2012), there is no reason to expect that all or even most students will come to class knowing how to participate in productive discussions. Just as faculty will need to learn how to conduct discussions, students will need support to learn how to participate in this specific academic language practice (Gee, 2011). Therefore, instructors must offer students explicit guidance on the purposes of discussions and how to participate effectively in them. There is also reason to believe that students may need to be persuaded of the pedagogical value of discussion given the finding that at least some students see discussions as ineffective, or worse, as an abdication of responsibility by faculty to “teach” (e.g., Crabtree et al., 2001; Eglash, 1954).

Probably the strongest claim that can be made on the basis of this review is that researchers examining the efficacy of discussion in postsecondary classrooms need to be clearer about the meaning of discussion in their research and whether what emerges in the classrooms they study really is discussion as opposed to other forms of classroom talk (e.g., recitation). Dillon (1994) provides a useful framework for this purpose.

Finally, there is no research or theoretical framework indicating that discussion should completely replace other pedagogical approaches (including lecture) in postsecondary settings. The K-12 research indicates that for some pedagogical goals—conceptual change, for example—discussion

may be a powerful teaching tool in the hands of skilled teachers. Lecture, on the other hand, may be superior to discussion for the immediate recall of factual information (McKeachie, 1990). Instructors need to balance discussion with authoritative talk according to their pedagogical goals (Mercer & Howe, 2012). An overreliance on discussion may limit students’ access to the expert knowledge needed for their development as scholars. On the other hand, the overuse of lecture and recitation in postsecondary classrooms restricts students’ opportunities to engage in the critical thinking and problem solving that characterizes the highest levels of scholarly achievement. As Brookfield and Preskill observe,

Discussion . . . teaches us dispositions and practices, provides us with the opportunity to serve and connect with others, and tests our ability to confront the most difficult of problems and think them through collaboratively. (p. 20)

Research on discussion that addresses the shortcomings of the extant body of research on discussion in postsecondary settings will help to clarify the benefits of discussion for postsecondary students and help to determine the appropriate balance between discussion and lecture. In the meantime, there is sufficient support from sociocultural theory, research in K-12 settings, and limited research in postsecondary classrooms for college and university faculty willing to include discussion in their teaching.

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