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Let's discuss: Teaching students about discussions

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Abstract: Research consistently demonstrates the benefits of employing classroom discussions; however, there has been less attention given to teaching students about discussions. The current research compared 2 advanced social psychology courses: 1 without (control) and 1 with (experimental) a week devoted to learning about and discussing discussions. Several different indicators showed marked improvements for the experimental group as compared to the control group. The differences between the two classes were particularly noticeable at the beginning of the semester. Even though the control group was able to eventually obtain similar scores, the differences at the beginning of the semester suggest that students in the experimental group benefitted early from the experimental condition. Additionally, measures provided directly by the students demonstrated higher ratings of self-assessment and course evaluations for students enrolled in the experimental class.

Keywords: classroom discussion; discussion; engaged classroom; classroom dynamics; social psychology; engagement

I. Introduction.

Creating a classroom where students are not only engaged in the learning process, but also careful consumers of information, is an important task for an upper-division college instructor. More engaged students tend to have greater academic achievement, with active student involvement in classes generally increasing learning (Voelkl, 1995). A common method for engaging students is through small-group class discussions. But, do students appreciate how to lead, or participate in, discussions? Do they appreciate the importance of discussions?

Most agree that discussions are an important pedagogical tool that foster student engagement and provide a forum for deeper understanding of complex concepts, yet discussions and teaching how to lead discussions are elusive and difficult tasks (Parker & Hess, 2001). Active student-centered learning—like what occurs in small group discussions—leads to better retention of course material as compared to passive learning that is more content-centered (Yoder & Hochevar, 2005). Yoder and Hochevar (2005) added a number of teaching techniques and classroom activities to compare student exam scores as a measure of learning across a series of three semesters. Students' performance was better when they learned the material with active (e.g., discussions, simulations, completion of scales) rather than passive (e.g. lectures, reading, videos with no follow-up discussions) techniques. Casteel and Bridges (2007) noted improved student course ratings and higher general performance with student-led discussion based courses as compared to non-discussion based courses.

Specifically, students have a preference for and better course performance with student-led discussions as compared to instructor-led discussions (Phillips & Powers, 1979). Student-led discussions are seen as particularly helpful because instructor-led discussions can often fall into

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more of a lecture-style mode, but student-led discussions foster greater student-to-student interactions (Phillips & Powers, 1979) especially for students who indicate at least a moderate amount of participation (White, 1978). In particular, student-led discussions seem to increase active learning even more than instructor-based discussions. Giordano and Hammer (1999) found that when instructors interacted in student group discussions, students overly relied on the instructor's input rather than fellow students' ideas.

Despite attention to the benefits of small discussions, undergraduate students are reluctant to actively engage and have limited experience with leading discussions (Brookfield & Preskill, 1999). To address this, Giordano and Hammer (1999) encourage the use of collaborative learning groups and provide a number of helpful tips from their experiences of using such student groups, but similar to Meyers (1997) these suggestions generally involve the formation of groups, the type of task completed within the group setting, and evaluating student performance in the groups. As Casteel and Bridges (2007) note, seminar-based undergraduate classes that employ student-led discussions are heralded, yet very little is known about how to make them work well.

We could find no research that taught students the importance of discussions and the way to lead and participate in discussions as a way to improve their discussion abilities and overall class performance. Therefore, we sought to determine whether student learning and class performance would improve by focusing on "discussing discussions." In addition to simply explaining how to lead discussions, we devoted class time to discussing the purposes and importance of small group discussions. We compared outcomes for those students who received this extra information to those who did not. Based on the positive learning effects that Yoder and Hochevar (2005) found when active rather than passive learning was employed. We expected that learning about and "discussing discussions" would contribute to increased student learning and other student assessments of the course because student learning increases when students are actively involved in the process of learning (Yoder & Hochevar, 2005).

II. Method.

A. Participants.

The participants were 76 undergraduates (63% female) from the University of Nebraska-Lincoln from two different advanced social psychology classes (Fall = 34 and Spring = 42 students). All of the students were either juniors (39%) or seniors (61%), with 64% planning to pursue some form of postgraduate education. There were no statistically significant difference between semesters on either year in school or future postgraduate plans. The authors obtained human participant approval from the authors' university institutional review board prior to conducting this research.

B. Materials and Measures.

The materials for the course involved four main items that will be described in detail below. The first three were used for both the control and the experimental group and the last was used only with the experimental group.

Course text book. We used the *Taking Sides in Social Psychology* (Nier, 2010) reader, Third Edition. This book presents 18 chapters on major topics within social psychology. Each

chapter starts with a question (e.g., "Is Deception of Human Participants Ethical?") and includes a "Yes" and a "No" side to the question that are reprinted articles from well-known scholars in the field.

Personality type questionnaire. At the beginning of both semesters, each student answered three questions related to their personality type associated to discussion participation (see Appendix A). Based on their responses to those questions, we assigned the students to heterogeneous discussion groups of approximately 10 students each (see White, 1978).

Course assessments. We used five different course assessments that measured knowledge acquisition and opinions of the course. Four of these were the typical class assessments: two exams, one term paper, discussion scores, and anonymous course evaluations. The fifth was a self-assessment to evaluate student learning of discussions and class material.

Exams. The exams were a combination of multiple choice and essay questions. The same grading rubrics were used in both semesters to grade the essay question answers. These rubrics focused on the students demonstrating a deep understanding of the two sides of an issue by providing original examples, positions, and observations. Both exams had a maximum score of 100 points.

Term paper. The term papers required the students to write about a relevant topic of their choosing. Similar to the format of the course textbook, we instructed the students to find two empirical articles from academic journals that address the same issue, but come to different conclusions. The paper instructions asked the students to describe the research and explain why the conclusions were different. The same teaching assistant graded the term papers for both the control and experimental semesters and used the same grading rubric both semesters. The rubric focused on students' abilities to compare and contrast the research differences and develop a new research question that could potentially resolve the differences. The maximum possible score on the term paper was a 50.

Discussion scores. The discussion scores were derived from the instructor's score (6 points maximum) plus an average of two peer reviewers within the discussion leaders' group (5 points maximum). The rubrics for these two sets of scores focused on the discussion leader's ability to lead a good discussion, discuss two sides of an issue, and integrate different knowledge together. All small group discussions took place at the same time with the instructor and teaching assistant rotating around the classroom listening to the discussions. The maximum possible score was an 11.

Course evaluations. Anonymous course evaluations were conducted at the end of both courses using the standard course evaluations used at the authors' university. We selected and compared those questions most related to the objectives of the current research. See Appendix B for question wording. For example, we did not include questions those related to whether the instructor was available for office hours and responded to emails quickly. In addition, because the evaluations are anonymous, we cannot combine the answers to these questions with the other variables.

Self-assessment. The self-assessment asked students twelve-questions at the end of the both semesters to evaluate the students' knowledge related to discussions and other class concepts. See Appendix C for a list of the questions. The instructor told the students this self-assessment was not meant to be duplicative of the students' grades in the class, but rather an honest assessment of their understanding of the course material. An overall self-assessment average score was calculated for both the experimental and control classes.

Discussion materials. The experimental group also read three articles about discussions, which are listed in the current reference list (Cashin & McKnight, 1986; Frederick, 1981; Nunn, 1996). We chose these articles because they were relatively easy for undergraduate students to understand and they each provided information about the importance of discussions and suggestions for leading them. Similar to the other weeks in the semester, students also completed a homework assignment about the readings. For the discussion week, the questions asked were: Based on the readings, why are discussions a positive aspect of a college class? Based on the readings and your own experiences, what kind of barriers interfere with good discussions in classes and make classes more of a "spectator sport"? Based on the readings, how will you be able to overcome those barriers when you are leading discussions this semester?

C. Design.

We employed a two group comparison design with one class offered in the fall semester (control class) and one class offered in the spring semester (experimental class) of the same academic year. The same instructor and graduate teaching assistant taught both classes. Although students self-selected which semester they enrolled and were not randomly assigned to either the fall or spring semester, there are no apparent differences between students who traditionally take this course in either the fall or spring semesters.

D. Procedure.

Most students typically have had an introduction to social psychology course before enrolling in advanced social psychology. As an advanced course, one of the objectives is to convey information about social psychology and to assist students in becoming engaged consumers of the material. As such, the class is organized around the concept that all the answers are not known and that reasonable people can and do disagree on major topics within the field. The class met two days per week for 75 minutes each day. The first day of each week was devoted to a general lecture that provided background information for the chapter's specific topic area. For example, when we covered the chapter addressing whether it is acceptable to use deception in research, the instructor presented a lecture about research methods generally and ended with the specific topic of deception. The lecture included definitional information about deception, but the instructor did not describe the readings from the *Taking Sides* book and did not provide a personal opinion about the appropriateness of deception. Before the second class that week, the students were responsible for reading the assigned chapter and answering a homework assignment that focused on critical thinking about the topic area in the readings. The class would start with a short video clip on the topic of the week or current event related to the topic. Students then gathered into their small groups for discussion.

Each week there were two discussion leaders for each group and every student was a group discussion leader twice during the semester. Within their group, the discussion leaders were responsible for presenting recent research on the weekly topic, directing the discussion, and generally leading the group in developing their views on the topic. Both semesters followed the procedures described above and covered the same topics. We implemented one difference for the spring (experimental) from the fall (control) semester. For the experimental semester, we included a week at the beginning of the semester that addressed discussions and the students then discussed the role of discussions. Because of scheduling differences during the fall semester, we

were able to include this extra week in the spring without changing or removing any of the other material presented.

The experimental manipulation of focusing on discussions, which was only included in the spring semester, was introduced and discussed similar to the other class topics. On the first class of the week, the instructor presented a lecture about the notion of discussions and why discussions are used in academic settings. Prior to class on the second class of the week, the students read three academic articles about discussions. For the discussion lesson, we did not designate any specific students as the discussion leaders, but rather, the students all practiced asking questions of their fellow group members and leading parts of the discussion. As a result, the students in the experimental semester spent a full week considering discussions and discussing discussions.

III. Results.

On average, students enrolled in the two semesters did not rate themselves statistically different on any of the three personality type questions we used to assign group membership, which suggests that students in both semesters had similar initial inclinations toward (or against) discussion activities. See Table 1 for means and comparisons between the control and experimental groups.

Because we expected students in the experimental group to be more engaged in the class, we compared our experimental and control classes on variables meant to measure student learning and other related outcomes. The results for each are described below.

Exam and Paper Grades. Students in both semesters took two exams that each contained multiple choice and essay questions about the lecture and discussion day materials. Using a repeated measures general linear model (GLM), there was a significant within-subjects main effect of exam, $F(1, 73) = 30.07$, $p < .01$, $\eta^2 = .29$ and interaction between semester and exam $F(1, 73) = 15.10$, $p<.01$, $\eta^2 = .17$. Students did significantly better on the first exam in the experimental class ($M = 85.22$, $SD = 10.12$) as compared to the control class ($M = 77.65$, $SD = 12.73$), but both classes performed similarly on the second exam (Experimental: $M = 87.00$, $SD = 7.97$; Control: $M = 88.18$, $SD = 6.65$). Although the experimental class did not have significantly different exam scores between the first and second exam, students in the control class did significantly better on their second exam as compared to their first. There was no main effect of semester, $F(1,73) = 2.77$, $p = .10$, $\eta^2 = .04$.

After removing an extreme outlier score for the term paper (grade = 5/50; student had a personal issue that interfered with completing the paper), the students in the experimental class had significantly higher average term paper grades ($M = 36.78$, $SD = 4.64$) than did those students in the control class ($M = 34.19$, $SD = 5.24$), $t(73) = -2.27$, $p = .03$, $\eta^2 = .06$.

Discussion Scores. As mentioned above, two peer reviewers and the instructor completed discussion scores, which combined to form the discussion score. Each student received two such discussion scores—one for the first time they led a discussion and one for the second time they led a discussion in the semester. Using a repeated measures GLM, there was a significant within-subjects main effect of discussion, $F(1, 74) = 63.75$, $p <.01$, $\eta^2 = .46$, but no significant interaction between semester and discussion, $F(1, 74) = 1.98$, $p = .16$, $\eta^2 = .03$. Students in both semesters did significantly better on the second discussion (Experimental: $M = 10.92$, $SD = 0.97$; Control: $M = 10.87$, $SD = 0.97$) as compared to the first discussion

(Experimental: $M = 10.08$, $SD = 0.67$; Control: $M = 9.67$, $SD = 0.91$). There was no main effect of semester, $F\ (1, 74) = 2.20$, $p = .14$, $\eta^2 = .03$.

Course Evaluations. Students completed anonymous course evaluations, as part of the normal course process. Mean ratings were significantly higher for the experimental class compared to the control class for all of the selected questions. See Tables 1 and 2 for descriptive statistics and mean comparisons for these questions. As is common with course evaluations, not all students completed these resulting in fewer responses for these measures as compared to others.

Self-Assessments. Using the average scores for the 12 self-assessment questions, students in the experimental class had a higher average self-assessment score ($M = 3.78$, $SD = 0.49$) than did the control class ($M = 3.33$, $SD = 0.76$), $t\ (66) = -2.91$, $p < .01$, $\eta^2 = .11$. Most likely because the self-assessment was not part of the students' grade, we had more missing values for this measure than others.

Table 1. ***Descriptive Information for Fall (Control Group) and Spring (Experimental Group) Semesters.***

	Fall		Spring			95% CI		
	M	*SD*	*M*	*SD*	*t(df)*	*LL*	*UL*	Cohen's *d*
Everyone knows what I think about issues.	1.84	.88	2.11	.85	-1.27 (66)	-.69	.15	.31
I have very strong views on most topics.	2.38	.94	2.57	.93	-0.85 (66)	-.65	.26	.20
I love active classes that are not just lecture.	2.56	1.05	2.86	.99	-1.21 (66)	-.79	.19	.29

Note. All p >.05, 0-4 scale.

IV. Discussion.

The current study suggests that teaching about and discussing discussions may be one way for students to become more engaged and have better course outcomes. Although student-led discussions are often described as being useful pedagogical tools, there is much less known about how to make them work well (Castel & Bridges, 2007). Students in the current research performed better on some course activities early in the semester, and liked the course more when they were given the opportunity to learn and discuss discussions as compared to those students who were not provided with this opportunity. As noted by Voelkl (1995), student learning is generally increased when a class incorporates active student involvement. In the current research we incorporated active student learning by not only having students discuss course topics, but by also explaining to the students why the discussions were important and allowing the students to "discuss discussions." We believe this extra active learning component contributed to the better

student outcomes and assessments in the experimental class. Although other researchers have also seen increased performance when discussions are used in their classes (e.g., Yoder & Hochevar, 2005), we sought to further increase performance and student assessments by using an active learning technique (i.e., discussions) to teach about discussions.

Table 2. ***Selected Course Evaluations Questions for Fall (Control Class) and Spring (Experimental Class) Semesters.***

	Fall		Spring				95% CI		
	M	*SD*	*M*	*SD*	*t(df)*	*p*	*LL*	*UL*	Cohen's *d*
Course led to active thinking	5.87	1.18	6.68	1.19	-2.67 (59)	<.01	-1.42	-0.20	-0.68
In-class exercises encouraged thinking and application	5.67	1.42	6.58	1.28	-2.63 (59)	<.01	-1.60	-0.22	-0.67
Compared to other courses, how good was this course?	4.60	2.57	6.38	0.44	-3.68 (57)	<.01	-2.75	-0.81	-0.97

Note. 1 -7 scale; CI = confidence interval; *LL* = lower limit; *UL* =upper limit.

Interestingly, there seemed to be somewhat of a pattern of the experimental group performing better than the control group at the beginning of the semester, but then leveling off and performing similarly by the end of the semester (e.g., exam 2 grades and discussions). This pattern may suggest that students in the experimental group were able to more easily and earlier understand the benefits of discussions, which led to greater engagement in the course at the beginning. Ceiling effects for the experimental group may be another possible explanation as the experimental group started off quite strong.

Although the experimental group's self-assessments were statistically higher than the control group's self-assessment, the experimental group on average still rated themselves within the intermediate level of knowledge. Students may have been more critical in their self-assessments in the experimental semester because they were more aware of the importance of discussions than the students in the control semester. Employing difference scores from pre- versus post-assessments could have aided in determining whether this "extra-critical" explanation is viable. Unfortunately, we did not collect such pre-assessment data from the current samples.

Clearly, the instructor was not blind to the research question and therefore some experimenter bias may have been introduced. We feel that we addressed this with the use of multiple dependent measures, some of which were variables out of the instructor's control (e.g., self-assessments). In addition, the graduate student teaching assistant did much of the grading in the course. And, although she was aware that there was a research study being conducted, she was not aware of the specific research questions or which components of the class would be used to examine possible class differences.

Some additional questions do remain from this research. First, would a younger, less experienced sample have the same effect? The current sample was all junior and senior level college students. It is possible that these more advanced students were more amendable to learning about discussions, whereas younger college students may not be or may not be able to implement yet this kind of engaged learning process. Second, did the class sizes have an effect on our dependent measures? Specifically, the fall semester (control) had eight fewer students than the spring semester (experimental). Although we did our best to keep the small group sizes as close to the same size, there were fewer students in the control class. It is possible that the number of students enrolled in the class affected our dependent variables in ways we cannot assess.

Although it is tempting as a college professor to have students participate in certain activities in our classes because "we said so," the current study suggests that it might be useful to engage students in the reasons why we do discussions. Of course, the first step may be knowing why we teach our classes the way we do and what purpose each activity is meant to serve (Bernstein, Burnett, Goodburn, & Savory, 2006) before we can explain our reasons to our students.

Appendices

Appendix A. Personality Type Questionnaire

Please rate the following statements using the scale below.

0	1	2	3	4
Not at all like me				Completely like me

1. Everyone knows what I think about issues.
2. I have very strong views on most topics.
3. I love active classes that are not just lecture.

Appendix B. Questions from Anonymous Course Evaluations

Please use the following scale to rate the statements that appear below.

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree

1. The course led you to engage in active thinking about the subject or its application.
2. The in-class exercises encouraged you to think about and apply the class material to real-world issues.
3. Compared to other courses you've taken at this level, how good was this course?

Note: These are a selection of the questions that are used each semester by the department in which they authors teach.

Appendix C. Self-Assessment Questionnaire

Students answered these twelve questions using the following scale:

1	2	3	4	5
Little or no	Beginning	Intermediate	Advanced	Expert

1. Rate your ability for reading and understanding a social psychology journal article.
2. Rate your ability for writing a critique of a journal article.
3. Rate your ability for leading a class discussion.
4. Rate your ability for writing exam questions.
5. Rate your ability at critiquing or assessing a discussion led by another person.
6. Rate your ability for finding empirical social psychology articles.
7. Rate your ability for comparing two viewpoints on social psychological issues.
8. Rate your ability for recognizing social psychological issues in everyday life.
9. Rate your general knowledge of social psychology.
10. Rate your ability for recognizing two viewpoints on social psychological issues.
11. Rate your ability to critically think about social psychology topics.
12. Rate your overall understanding of research in social psychology.

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