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Using Small Group Assignments in Teaching Research Ethics

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Description

An essay that includes advice and some model exercises that use small group assignments to teach research ethics.

Body

When it comes to ethics, everyone has an opinion. Getting students to express their opinions, however, can be quite a challenge. Many students have never discussed ethics in a college class and may approach the enterprise with a certain apprehension:

- What if this really turns out to be a test of my moral character?
- If I give the wrong answer, will I be ridiculed?
- The professor says there's no right answer, but how often have I heard that?

Perhaps worse, many students view argument, especially moral argument, as dangerous and pointless. In hierarchical settings, including the classroom, many students are accustomed to authority figures who simply tell them what is right and what is wrong. In less hierarchical settings, such as gatherings of their friends, some

students find that discussing controversial topics leads only to fighting or hard feelings. Besides, many students claim, when it comes to morality, everyone's opinion is as good as everyone else's, so there's no point in talking about it.

It's important to teach students that there are valid criteria for discerning good arguments from bad ones and better arguments from worse ones. It's also important to challenge the kind of knee-jerk, defensive relativism that leads students to assert that all moral stances are equivalent. These challenges are not the focus of this paper, however. In this essay I approach a much easier problem: Getting students to speak up.

Students can be initially intimidated by subject matter, setting, or both. Many students are reluctant to speak up in front of a large class on any topic. One effective strategy for breaking the ice is dividing the class into small groups. Once students have enjoyed success expressing their opinions in the safer, less formal small groups, they often feel more comfortable about speaking up in front of the entire class.

Basic considerations

When using small groups, make sure the assignment is clear by specifying its goal, ground rules, and the amount of time to be spent on it. I generally suggest that each group should assign members to three roles: chair, recorder, and reporter. The **chair** is responsible for keeping the discussion on topic, making sure no one dominates, and making sure everyone has a chance to speak up. The **recorder** is responsible for taking notes. The **reporter** is responsible for sharing the group's decision or thoughts with the whole class. It's generally best for the roles of recorder and reporter to be held by the same person, and for the roles of chair and recorder to be held by different people.

All three roles are essential, and holding any one of them can be a good learning experience. The chair helps to make sure the discussion is fruitful, and the recorder and reporter make it clear that the discussion is important to the class – it isn't just a break for the teacher. Be sure to set aside time, probably at least one-third of the exercise, for the whole class to explore what the small groups have discussed.

Since small groups are intended to encourage everyone to speak up, the proper number of members per group is an important consideration, though not a ticklish

one. One isn't a group, so two is the lowest number, and more than five (seven? nine?) is too high to be considered small. I won't suggest an absolute upper limit because I don't think there is one; sensitivity to whether groups are accomplishing what you want is the best safeguard against making the groups too large.

In general, in smaller groups, rapport can be established more quickly, groups can be formed and disbanded quickly, and the odds are greater that everyone will speak up. On the other hand, in larger groups, more ideas can be generated, more sophisticated reasoning can be exhibited, and more complex tasks can be assigned.

Small groups can be used on a strictly ad hoc basis, forming and disbanding for specific tasks, or they can be constituted for longer periods, meeting on a more-or-less regular basis over a few weeks or the entire semester. In general, groups that will work together for a long period of time are more effective when they are heterogeneous. Five students working together who are all painfully shy, or who all strive to dominate every meeting, will have a difficult time. When the members of a group bring different interests, personalities, and work styles to a group, the best each student has to offer can emerge. (A survey that I devised to help me assign students to groups can be found at the end of this essay.)

Some of the techniques listed below tend to appeal to students with a competitive streak; others are more appealing to students who prefer cooperative work; some could appeal to either group. It is important to use a mixture of kinds of assignments; otherwise, you may inadvertently wind up assessing students more on their personality than their ability (by rewarding competitive students, for example).

Small group assignments

Paired discussions. This is a quick ice breaker. Simply write a question on the board and ask students to turn to the person next to them and discuss it for five minutes. The question might ask them to summarize the class so far, come up with an illustrative example, draw a connection between material being covered in class and the wide world, express an opinion on a theory recently explicated, etc.

This very quick exercise can easily be put into the middle of a lecture to add some variety and re-focus students' attention. If you want to ensure that students stay on task, you can ask each team to hand in a short summary of their discussion, or report back to the whole class orally.

Write and pass. Another very quick exercise, this one for groups of three. The teacher poses a question; Student 1 answers it; Student 2 supports Student 1's answer; and Student 3 challenges it. This is useful for calling attention to both sides of a complex issue.

3 Write, pair, and harvest. The teacher poses a question for the class and gives a minute or two for students to write their answers or responses; the students are told that the answers will not be collected. Next, students pair up to share their responses for two or three minutes. Finally the instructor harvests the results of the exercise by leading the class in a discussion of the issue.

In writing their answers, students have a chance to collect their thoughts and begin to form a response. In discussing them, they have a non-threatening setting to test the water – perhaps to be affirmed, perhaps to be challenged. It is a very quick exercise that can have a dramatic impact on the quality of class discussion. I learned about the “write, pair, and harvest” exercise from Karen M. T. Muskavitch, who in turn learned it from Craig Nelson. Karen described it to me in an e-mail message and added this comment: “It makes entry into the conversation comfortable for the introvert but doesn't slow things down so much that those extrovert students who have their hands in the air instantly are annoyed. It also appears that students after this process no longer feel that it is unfair to randomly call on someone. I've seen it used successfully in a large lecture (200-300 students) and use it routinely myself in the first session with a new group of students – particularly undergraduates.

Truth statements. Ask each group to generate three statements that they know to be true about the current topic. Students are often surprised to learn what they assume to be true is not recognized as the truth by everyone. This can be a particularly useful way to introduce a new topic and can easily be done with ad hoc groups of two or three students each.

Structured controversy. Assign each group a specific position on a specific controversial issue. For example, group A might be asked to argue for the proposition, “All scientists have a responsibility to undertake only research that promises a direct benefit to society.” Group B might be asked to argue against that proposition. Students are given time to develop an argument, perhaps including time out of class for research, and then they report back. Alternately, you can allow students to self-select into groups to tackle the pro and con sides of the question.

Fishbowl. One way to have a free-flowing discussion in a large class is by putting a few students in the fishbowl. The students move to the front or the center of the room and, with the teacher facilitating, discuss some specific issue. The students in the fishbowl become a small class in the midst of a large one. The rest of the class watches and listens.

One challenge that you may face when using a fishbowl (if you are lucky) is that some of the students not in the fishbowl may not be able to restrain themselves from joining in on the conversation. To deal with this, it is a good idea to leave two of the seats in the fishbowl empty; anyone in the larger audience who wants to speak up has to join the fishbowl first. It's important to leave some time for whole-class discussion after the end of the fishbowl exercise. Typically you will find that once the pump is primed by the fishbowl, getting most of the other members of the class to participate in discussion isn't difficult.

Ongoing discussion and reporting. This technique is good for building camaraderie in your class. Students are assigned to groups that will meet regularly through the semester, perhaps as often as every other class period, for a substantial period of time – at least fifteen minutes. In relatively small classes (20-30 students), it is often possible simply to have the groups meet in the classroom; for larger classes, it can be better to have groups meet in a different location. Groups discuss readings, lectures, films, or what have you, and group members take turns writing a summary of the discussion. Summaries are either distributed to the entire class or each group reports.

Guided reciprocal peer questioning. In this two-step process, students first generate questions based on material recently covered (in lectures, readings, discussions, or films) and then pose their questions to each other. Questions can be generated by individuals or groups. It is helpful to provide students with a list of generic “stem questions,” such as:

- What is the main idea of . . . ?
- What is a new example of . . . ?
- What is the difference between . . . and . . . ?
- What are the strengths and weaknesses of . . . ?

Students discuss possible answers to the questions in small groups, and each group shares both questions and answers with the whole class.

Fractured exam. Give each group one or two questions of the sort that might appear on an exam. Each group gets at least one question unique to that group. Students work together to answer the question(s), then they share their answers with the entire class.

Forced debate. Identify a controversial issue and post signs reading “Pro” and “Con” (or whatever words work for your issue) on opposite sides of the classroom. Ask students to stand under the sign that represents their view. It is important to have the students actually move, really taking a stand on an issue. (If the class is quite large, you might then break each group into smaller groups.)

Once the students have made their choices, move the signs. The students who were “pro” are now “con,” and vice versa. Give students time to develop the best argument they can for their assigned position; then stage a debate. This is an excellent way to get students to see both sides of an issue.

Role playing. Using a case, whether historical or fictional, generated by the professor or the students or derived from some other source, assign roles to students and ask them to act out the scenario. Afterwards, discuss the case as a class. .

Alternately, assign each role to a small group and have the groups discuss that character’s point of view and likely actions. Then act out the scenario using one member of each group. Using this option should increase the confidence of the students and improve the quality of the performance.

Three-step interview. This is a good getting-to-know-you exercise, but it can also be used very effectively to kick off discussion of a film or other material. Students pair off. In the first step, Student A interviews Student B and Student C interviews Student D about the material. In the second step, Student B interviews Student C and Student D interviews student A. In the third step, Students A, B, C, and D discuss the interviews (see table).

<i>Three-step interview</i>	
Step	Interviewer => interviewee

1	A => B C=>D
2	B => C D => A
3	All four students discuss the interviews

Sources

Bender, Ellen, et al. 1994. Quick Hits: Successful Strategies by Award Winning Teachers. Bloomington: Indiana University Press.

Middendorf, Joan, and Alan Kalish. 1994. "The 'Change-up' in Lectures." Indiana University: Teaching Resources Center

Wright, Delivee L. 1994. "Using Learning Groups in Your Classroom: A Few How-To's." Teaching at UNL Newsletter 15(4).

Appendix

I devised this survey to help me assign students to small groups. (The class I used it in included an electronic conference, which is why I included questions on using computers.) My hope was to be able to create heterogeneous groups. Instructions for scoring the results can be found at the end.

This is not intended to be used as a psychological profile; it's just a rough-and-ready way to organize groups.

Instructions to students: Choose the phrase in each pair that most closely describes your attitude:

1.1	I like using computers.
1.2	I dislike using computers.

2.1	I speak up in almost all of my classes.
2.2	I almost never speak up in class.
3.1	I prefer working in groups.
3.2	I prefer working alone.
4.1	I enjoy giving oral presentations.
4.2	I dislike talking in front of a group.
5.1	I prefer classes in which I am expected to analyze and interpret.
5.2	I prefer classes in which I am expected to master a body of knowledge.
6.1	I prefer classes that emphasize discussion.
6.2	I prefer classes that emphasize lecture.
7.1	I am comfortable using email.
7.2	I dislike using email.
8.1	When working in a group, I like to set the priorities and the pace.
8.2	When working in a group, I like to do the work assigned to me.
9.1	Being with other people energizes me.
9.2	Being with other people is draining for me.
10.1	I prefer expressing myself out loud.
10.2	I prefer expressing myself in writing.
11.1	College is primarily for learning skills, like critical thinking and writing.
11.2	College is primarily learning information and facts.
12.1	I prefer classes in which I am expected to take an active part.
12.2	I prefer classes in which I can just listen and take notes.

This survey is intended to identify the following six characteristics or preferences:

- 1.1 and 7.1 likes or dislikes computers
- 2.1 and 8.1 prefers to participate or observe
- 3.1 and 9.1 relatively extroverted or introverted
- 4.1 and 10.1 prefers to express self in speaking or writing
- 5.1 and 11.1 emphasizes analysis and skills or knowledge and facts
- 6.1 and 12.1 prefers discussion or lecture

For each first answer marked (e.g., 1.1, 2.1), score 1; for each second answer marked, score 0. A score of 2 for a given pair of questions (such as 1 and 7) indicates an inclination toward the first characteristic; a score of 1 indicates no strong preference; and a score of 0 indicates a preference for the second characteristic.

For example:

Feel free to use or adapt this survey to your needs.

Notes

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