

Engaging Students Actively in Large Lecture Settings

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My friend, Linc Fisch, as creative and wise a person about learning and teaching as I know, once faced the prospect of teaching a college algebra course in a fixed-seating lecture hall of nearly 200 students. Linc resolved to make the course personal and individualized, and to get to know each student by name. He refused to teach from a podium but worked the room with a battery-operated microphone. He asked student spotters to observe and identify for him common difficulties among their classmates. He gave frequent quizzes for students to get feedback on their learning and added a weekly clinic session where students could go to the board and work the problems themselves. All of these were ways of personalizing a large lecture class.

As Linc Fisch's creative efforts suggest, we need not be discouraged by large enrollments in huge auditorium fixed-seat classrooms: We can still use active learning approaches and enhance student learning. This chapter will describe four specific interactive learning and teaching strategies that can be used in large lecture halls: 1) associational brainstorming, 2) evocative visuals and textual passages, 3) debates, and 4) role-playing. The last two strategies, in fact, take advantage of and use the physical features of rows, aisles, and blocks of fixed seats so typical of large lecture halls. Each of the approaches in this chapter is easily integrated with mini-lectures (5–20 minutes). Each is structured to help students practice critical thinking skills of analysis, synthesis, and problem solving, and to develop interpersonal skills such as cooperation, conflict resolution, and empathy. Each strategy involves students in collaborative work and gives students maximum opportunities to talk so that they develop habits of expressing themselves even in large classes. And each strategy engages stu-

dents both emotionally and cognitively, helping them to become more responsible for their own learning and that of others.

Associational Brainstorming

Brainstorming is ideal for beginning a course or a new unit or for introducing a complex, important concept (for example, romanticism, imperialism, modernization, liberalism, evolution, or uncertainty). Invite the students to call out (or put on cards turned into the front to be recorded) everything they associate with the word or concept. Fill the blackboard or, more likely in large halls, a blank overhead transparency or computer projection screen with the suggestions from students. This is a particularly good technique to use on the first day of a course in order to get a sense of the students' prior experience, attitudes, and knowledge about the content of the course. The result is a kind of pre-test, providing the teacher with a profile of the class. Put the title of the course on the board, transparency, or screen (e.g., General Biology) and ask students to say everything they can think of about that title. Free association; anything goes.

The basic rule of brainstorming is to acknowledge and record every student idea without comment, challenge, or judgment, lest we embarrass or otherwise discourage them from talking in class. The teacher can either record student offerings randomly as they are made or arrange them in categories. Make sure to explain a rationale for the groupings, or, preferably, invite students to determine and name the categories. Whichever approach is used (random or clustering), once a transparency or two have been filled, invite students to analyze the list of offerings, suggesting appropriate categories, themes, patterns, and issues. This exercise, early in the course or a new unit, gives students practice in learning how to classify complex bodies of knowledge and to identify possibly key, overarching themes of a course.

In an introductory psychology course, one can imagine such a brainstorming exercise eliciting categories that describe the essential divisions of the discipline. When I split the two words, "American" and "History," brainstorming each one separately in my survey course on the first day, I regularly get from students the major categories of analysis as well as crucial concepts, themes, and a sense of what they think history is. The mini-lecture that follows picks up on and uses their words, phrases, and comments, thus honoring their prior experi-

ence and current attitudes and connecting them more closely to the flow and design of the course.

In brainstorming, pay attention to both cognitive and affective dimensions of learning. After attending a workshop I had led a few years ago, a chemistry professor reported to me that he had used brainstorming on the first day of class, writing "General Chemistry" on the board and inviting words and comments. "Nothing!", he said. "Only silence." He said it again: "Chemistry — what are your thoughts?" Silence. He was ready to kill me. Then he had the intuitive good sense to change the question: "Emotions about Chemistry?" A flood of words, images, and feelings came from the students; he could not, he said, record them fast enough. Had he not let students give voice to these emotions, they were likely to impede learning. Brainstorming is a way of acknowledging students holistically, thus aiding their sense of ownership and motivation.

A brainstorming variation, what I call an interactive lecture, invites students to reflect on the text, novel, laboratory, problem set, artistic stimulation or field trip they had just read or experienced prior to class. Ask them to call out (or record) the concrete visual images that stand out for them from that prior experience. Typically, I would ask them to "close your eyes and visualize a specific scene, or moment that had emotional or intellectual power for you, and that seemed to have enormous importance." For a visual generation, this makes vividly concrete a set of recollections from the book, art object, experiment or problems, and a rich, specific visual backdrop to the discussion, mini-lecture, or small group activity that follows.

As a whole class, or in pairs or small groups where they are sitting, students are invited to analyze the list of visual recollections and identify themes, categories, connections, and patterns. They then note what was missing from the list, or which item they thought was most important. The discussion that followed would then involve appropriate criteria for judgment and value. What makes it most important? That exploration gives students practice in the highest order of thinking: valuing skills.

Evocative Visuals and Textual Passages

Large-lecture settings can be used to help students learn and practice the under-used skill of close reading of texts, written, visual, and quantitative. Using either PowerPoint, traditional slides, or overhead

transparencies, put an emotionally evocative painting or photograph (or a video clip) in front of the class, or a powerful text passage, or even a quantitative chart or graph. In each case, select evocative items that will engage students both emotionally and cognitively, passages, visuals, and charts that are likely to elicit multiple interpretations. This will push students to move beyond dualistic modes of thinking to confront and understand the complexity involved in analyzing important, well-chosen text passages, visual images, and quantitative representations of reality.

It is often necessary and wise for the professor to model how he or she would interpret a written, visual, or quantitative text. Sometimes I work through an example first in a mini-lecture. I prefer, however, first to immerse students in the experience themselves. Put the image or words in front of the class, no matter how large, and ask students to begin by brainstorming their analysis. I ask essentially two questions, in this order: first, "What do you see?" or "What's going on here?" and second, "What does it mean to you?" or "What do you think it means?" Record all suggested responses to the second questions and then discuss them. In this way, students immediately practice the skill of close reading and discover that there are many different ways of interpreting the same bit of knowledge, a discovery less likely when professors do most of the interpreting themselves.

In my history courses, I regularly use transparencies to focus a large class in a fixed-seat, sloped lecture hall to engage my students in the interpretation and analysis of primary sources of various kinds. They get to work with bar graphs, paintings, household inventories, artifacts, census data, ship manifests of the sex, age, occupation and homes of passengers, military muster rolls, maps, video clips, personal letters, diary entries, fictional passages, public documents, treaties, and many other sources. Not all students talk, to be sure, unless I ask them to take five minutes and talk about a source in pairs or trios first before inviting the whole class to comment on the item before them. Invariably, numerous differing interpretations emerge. It is obviously crucial to the use of evocative images and texts that there be a common visual stimulus that the entire class focuses on together. It should also be obvious that I have chosen to use this class time for helping students learn the important skills of doing history rather than covering content.

Students with a dualistic view of knowledge as right or wrong and true or false will need, as William Perry (1970) has suggested, support

for their discomfort with this messy investigation of what is right and true. Acknowledging that discomfort, even as they are challenged to consider the complexity of knowledge and make decisions about which interpretation(s) they think makes the most sense for them, is important to help the students' learning. By providing both support and challenge, and by honoring the students' personal connection with the learning involved, Perry suggests, as do Mary Belenky and others (1986) in *Women's Ways of Knowing*, is how to move students past dualism to higher levels of complex, connected, and constructed forms of knowing.

Debates

Debates in class are a good way to challenge students to move past their dualism. Debates are also a creative way of taking advantage of the central or even multiple aisles in large lecture halls. Imagine, for example, the following debate topics, which would be preceded by the context-setting and motivational stimulus of a mini-lecture, video, or reading: Burke or Paine on the French Revolution? Karl Marx or Adam Smith on the industrial revolution? Evolution or creationism? Should Nora have left or stayed at the end of *The Doll's House*? Interventionism or isolationism (in any number of foreign policy situations)? Pro-life or pro-choice? W. E. B. Du Bois or Booker T. Washington on the best strategy for African-Americans in 1900? Wave or particle? Mars or Venus? Israelis or Palestinians in Jerusalem? Etcetera.

The professor might alert students ahead of time to come to class prepared to sit on the side of the hall marked by signs which represents their choice on a controversial issue, thus literally putting their bodies behind their convictions. Or, they could be asked to argue the side of an issue assigned to the half of the hall where they happen to be sitting on a given day. Although neither one of two opposing sides of an issue contains the whole truth, it is pedagogically energizing and good practice in forming arguments for students to be compelled to choose and defend one side of a dichotomous question. For example, once students have positioned themselves in the hall, the teacher would ask for, say, "five statements on the hawk side of United States involvement in Vietnam, after which we will hear five statements from the dove side." The process can be repeated, with rebuttals, before concluding by asking for two or three volunteers to make final summary arguments on behalf of their side.

Most questions, however, do not divide into halves, and our good students would never settle for forced dichotomous choices. Fortunately, our large lecture halls often have at least two aisles, thus dividing the hall into thirds or larger sections. This permits the possibility of a third position: those who refuse to choose one side or the other, for whatever reason, sit in the middle. Then they are asked to justify their choice. When I have done a Burke-Paine debate with some 200 students, invariably both sides end up not only disagreeing and rebutting each other, but rather, with special vehemence, attacking those sitting in the middle. Thus, students learn how difficult it is to try to resolve hotly contested, emotional issues or to remain neutral during revolutionary times.

A valuable critical thinking, skill-building variation of the debate is to take advantage of the way aisles divide a lecture hall into thirds. There are often three (at least) different ways of solving a problem in mathematics, or of explaining the outcome of an experiment in chemistry, or of interpreting a passage in a women's literature course or the data in microeconomics, or of explaining a natural phenomenon in physics or inter-group interactions in sociology. There may be (at least) three ways of resolving the decision presented by a case study in social work or public administration. Once presented with the interpretive or explanatory problem, have the students in the three sections of the hall talk to each other in pairs or trios and then invite volunteers to describe their particular explanation of the phenomenon, problem, or passage. Assuming that they will present at least three valid explanations, students would again be exposed to—indeed would themselves come up with—multiple ways of arriving at truth and practice the oral expression of their skills.

Role-Playing

Another way of taking advantage of lecture auditoriums divided into three or more sections is to assign the students sitting in the defined sections with a role in order to participate in an interactive lecture. As you set the stage, ask students to focus on and listen for information about particular roles according to the section where they are sitting. Examples include three different characters in a piece of literature or case study, or three different social class or ethnic groups in an anthropology, history, or sociology course, or even three different enzymes in a biochemistry course. At a certain point during the class period, ask

the students to describe and portray the likely behavior of their assigned character, group, or enzyme, or to react in their role to a set of suggested stimuli or provocations.

In the first half of my American history survey course, I connect three sections of our lecture hall to John Adams' observation that the American people were divided into one-third patriots, one-third loyalists, and one-third indifferent during the course of events leading up to the outbreak of the American Revolution. After a mini-lecture providing the context and pattern of action and response among colonists, loyalists, and the British, I present an action by one side and ask the others what they would do or how they would argue in response? Those students' suggested action leads to asking the two other groups what they would then do. And so on. Thus, the lecture proceeds with students playing an active role in it. They listen more carefully because they have a specific purpose and accountable contribution to make.

For those teachers willing to risk losing a little bit of control over their large class in huge auditoriums, there are packaged simulations, games, and role-playing exercises that simulate the messiness of human relations, nature, and history. The packaged ones are not designed for large lecture settings, so I prefer to create my own. Let me explain one, a continuation of the American Revolution, and encourage readers to adapt it to their own context, courses, and learning goals.

After defeating the British, the Americans faced the challenging responsibility of how to rule themselves—and who should rule. I have created a town meeting in Massachusetts (based on the real one) to decide on policy instructions for representatives to a state constitutional convention. As students walk into class, I randomly hand out little slips of paper with well-defined roles for several groups to each student. (In a larger auditorium, TAs could help expedite the process.) The groups include landed patriots, Tory loyalists, lawyers, ministers and other professionals, urban artisans and merchants, freed and enslaved blacks, women (rich and poor), Iroquois, Cherokee, and other eastern Indian groups, and riff-raff (landless, jobless whites who had fought in the revolutionary war and had not been paid or given land as promised). I bring signs for each group and give them 15-20 minutes to meet in their groups to decide on three to five specific recommendations on a list of pertinent issues. I suggest they might want to consider likely allies and opponents and try to form coalitions.

Then we hold the town meeting. I am moderator, and ask groups to report in order of their status in 1779. Certain groups I never call on (blacks, women, Indians, and riff-raff), which creates considerable frustration, for they have dutifully prepared policy recommendations and feel marginalized, as would have been the historical case. More than likely, the riff-raff will act inappropriately, and a certain degree of disorder erupts in the room, requiring a strong gavel by the moderator. In the debriefing that must follow any role-playing exercise, students will realize that such disorder was in fact historically true and was one reason for the move toward a stronger national government embodied in the forming of the U.S. Constitution. Many other historical lessons are also identified in the debriefing, lessons more easily remembered because of the students' emotional involvement in the role-play.

Conclusion

Each of these four teaching-learning approaches is intended to show that large classes in huge, impersonal lecture halls need not be a barrier to the kind of interactive, investigative, intellectually, and emotionally engaged classroom experiences that enhance learning that lasts. Basic to each strategy is the assumption that students learn best when they are able to connect their lives, issues, and prior experiences with the core concepts and learning constructs of the course. As Lee Shulman (1999) has written, "We now understand that. . . to prompt learning, you've got to begin with the process of going from inside out. The first influence on new learning is not what teachers do pedagogically but the learning that's already inside the learner."

The pedagogy of this chapter is based on Shulman's crucial insight about learning. Each strategy seeks to help students make this inside/outside connection. Brainstorming involves ideas and anxieties already inside the heads (and hearts) of students. So also does connecting the outside stimulus of an evocative visual or textual passage with the inside of a student's active response to and interpretation of it. And finally, debates and role-playing both depend on the relationship between the arguments and emotional experiences of the exchange and the cognitive interpretations and meaning-making that follows during debriefing. These methods of engaged, deep learning, usually thought to be possible only in tutorial or small classes can occur even in large lecture settings.

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