

The First Day of Class— The Most Important

How motivated, empowered, and confident are students when they walk into a science course with 250 (or more) other students? Often students' expectations are limited to taking notes on lectures, reading assigned text chapters, and struggling through exams in a subject that is often perceived by them as more challenging than many of their other courses. Students readily assume the role of passive participant because they are not called upon to do anything else. In an active, learner-centered classroom, a shift occurs from the instructor, as the primary deliverer of information and controller of grades, towards students, as active participants in the learning process. Maryellen Weimer (2002) eloquently describes how theories of education and social change (Freire 1993) inspired her to give students in her courses some control over those learning processes that directly affected them. Within a short period of time, she saw a change in students' motivation, confidence, and enthusiasm for learning. If scientific teaching is a pathway to move us toward learner-centered instruction and the reallocation of power—from teacher as sole authority in the classroom to a balance of power with students—we must begin by building the classroom community.

Students Arrive—What Happens?

As students enter the large lecture hall they pick up one blank file folder and one Mr. Sketch™ “smelly marker” (non-toxic and fun to smell), which are in boxes on tables with “please take one” signs. As soon as class starts, I welcome students and make certain they are in the right course, and then say to them, “Although this is a large course, I am going to learn all of your names and you will have the opportunity to learn each others' names. In this class, our names are impor-

tant.” Few faculty challenge the value of calling students by name, yet in large classes the majority of students remain anonymous, as it is difficult for an instructor to remember names they do not use regularly. Some faculty use photographs of their students to help them recall the names. Another effective method that decreases anonymity, increases personal interactions, and engages students immediately is the use of folders to associate students' names with faces.

Next, I give the following list of instructions in rapid succession to immediately engage students and get them thinking about themselves:

1. In the middle of the folder, print in large letters with the marker, your first name (or whatever you would like to be called in this course).
2. Next, in the upper right hand corner, write down where you were born. If you don't remember where you were born, write the coolest place on Earth you would like to have been born.
3. In the upper left hand corner, write your major or what you hope to study at this university.
4. Now think positive thoughts about yourself; in the bottom left hand corner, write down an adjective your very best friend would use to describe you.
5. Continue to think positive thoughts about yourself; in the bottom right hand corner, write an adjective your parents would use to describe you.

At this point, I ask everyone in the class to hold up their folder so I can see their names, and I walk around pronouncing some, particularly the phonetically challenging ones. Then, I ask who thinks they were born farthest from East Lansing, MI; a little geography and acknowledgement of diversity is the intention here. The class begins to take on the personality of the students—it is all about them.

Forming Cooperative Groups

In a large class, I let students form groups randomly. I ask them to form groups of four (three or five works, but I prefer four) and move around to situate themselves so they can talk with each other. Students introduce themselves and exchange information about each other—including emails and phone numbers. The sounds of active learning erupt. As the groups form, I walk around and learn more about the students from their folders and just by listening. Once the groups are established, I ask students to create a name for their group, and each individual writes the group name on the folder tab. Students are engaged in this process.

Folder Use and Management of Class

At the end of class, each group puts their folders in a separate hanging file in plastic file boxes. My undergraduate teaching assistant makes labels with each group's name and organizes the groups in the boxes alphabetically. I put the boxes on two-wheel carts and take them to class each time, as I teach in a building 15 minutes away from my office. Students pick up their folders before class begins.

After the first day of class, I do look at students' perceptions of how their best friend and parents would describe them. This is based on a thoughtful strategy developed by Robin Wright (Wright and Boggs 2002), in which she goes into much more detail about forming groups based on Myers-Briggs personality traits. As new individuals join the course, I assign them to groups, and the members help the new person fill out the folder. Groups are finally stabilized by the end of the official course-add period.

In class, students raise folders rather than hands to be called upon. If the classroom is structured with tables in fairly steep tiers rather than fixed seats with the movable writing arms, students can hang their folders over the edge so the names are visible to both the instructor and them. One key to learning names is using them without fail to call on students. I also use the folders to pass back exams and homework. Once

students complete the initial introduction to one another, we turn to their next set of responsibilities in the community.

Student Expectations for the Community

On the first day, I also ask students to provide their expectations for our social code of conduct in the large classroom. How we function together in this environment is important to everyone's learning. First everyone thinks about their expectations individually, and then I call on students by name to give their list of desired behaviors, and record them on the overhead or visualizer. Without fail, students address issues concerning cell phones, side conversations, changes in the syllabus, starting and ending class on time, respecting each other, and more. During the following class meeting, all of the expectations are projected from the notes and students use their clickers (personal response systems) to accept or reject their course code of conduct. The reaction is striking when they see solidarity in their vote to accept—and the balance of power in terms of social conduct begins to emerge.

Student Expectations for their Group

Now in class we turn to the value of working as a member of a cooperative group (Johnson et al. 1978; Johnson et al. 1998; Springer et al. 1999). I explicitly address how working as a member of a cooperative group is an effective and efficient method of learning science or any subject. Interacting with other people is a natural way for humans to learn, but each person must construct her/his own knowledge in the process. I encourage students to work and study together both in and out of class meetings. The written materials they produce as homework assignments, in-class activities, and projects are outcomes of these interactions, and a means of assessing their personal understanding. Then I ask groups to discuss and develop a document of expectations for their group in terms of individual accountability and group responsibility; and think about how the group will function effectively. In addition, what are the consequences

if an individual does not meet the expectations of the group in terms of quantity and quality of work? One person records the document for the group on carbonless paper (i.e., 8.5" × 11" pads purchased for the course from local bookstores). Once the group members agree with the document, all members sign it. One copy is turned in and the carbon copy remains with the group. I read these documents (or a subsample) and each is recorded as present and filed. During the semester, if issues develop within groups regarding quality and quantity of work, we refer to this document before action is taken. The major problem that arises is nonparticipation by a group member, and the agreed upon consequences by the group are implemented if they so choose.

Student Learning Goals

I ask students to reflect on their personal learning goals for the course: What do they expect to learn and be able to do upon successful completion? They write these on their carbonless paper and turn in a copy. Before the next class, I quickly summarize the learning goals and plot a histogram that shows the relative numbers of students supporting each goal. Again, I post these on the course website and refer to them at the beginning of the next class. I compare the course goals on the syllabus to the goals students articulated for the course, and together we discuss our shared expectations for the course in a whole-class discussion. If appropriate, I modify the course goals on the syllabus, further demonstrating the shared balance of power and responsibility of the students.

Do all of this on day one? Perhaps you run out of time and must continue the following day. Whatever the case, the investment in building a learner-centered community on day one will result in a foundation for the remainder of the course.

Academic Integrity and Responsible Conduct

Fully integrated with students' expectations for the community and their groups is honesty about their intellectual work. In the website homework for the first day, students must read the academic integrity and responsible conduct section of the course webpage. During the next class meeting, groups address the scenario in Panel 1, which is projected from the notes.

I call on several groups to report and I record their comments on the overhead. This often leads to a lively discussion that results in the instructor clearly articulating the standards for the class.

PANEL 1 Scenario: Academic Integrity and Responsible Conduct

The homework assignment is an individual assignment, but groups are encouraged to discuss the assignment. After discussion, each individual writes an interpretation of data about increasing carbon dioxide in the atmosphere. Your group is composed of four people, and three of you meet to discuss the assignment. Each of you writes it up individually after the discussion. One hour before class, the fourth person in the group shows up and does not have the assignment. This person asks for your work so she/he can use it to do her/his individual assignment. Cooperative groups are guided by the following standards: individual accountability and group responsibility. In this case,

1. What are the responsibilities and consequences for the individual who was asked for the assignment?
2. What are the responsibilities and consequences for the individual who requested the assignment from a group member?
3. Discuss in your groups.
4. Select one person to report out to the class.