

Philosophy of Education

Throughout my college experience, I've been exposed to an almost entirely lecture-based system of teaching. I always assumed that this would be the method that I would adopt if I ever ended up in a teaching situation. That has changed since I started teaching. Perhaps it is a bit slanted, but this philosophy is based largely on the idea of teaching a lab section. My own experience has been that I don't do particularly well as the lecturing "sage on the stage." Instead I prefer to create a more open, informal, "go with the flow" sort of environment in which the teacher and the students can interact causally and collaboratively. It is now my belief that this type of interaction is the closest that an institution can get to one-on-one instruction, which theory holds is the optimal condition for human learning.

Modes of Delivery. As I mentioned, the lecture approach is both ineffective and difficult for me. Nonetheless, lectures are useful in small doses to quickly transfer large amounts of information. I find it useful to open a class session with a very brief lecture, simply to lay the groundwork for the rest of the time. This brief introduction should be basic, and take up only about 10-15% of the total teaching time. From there, the class should progress into some sort of other activity (i.e. a game, simulation, discussion, lab experiment, etc). These non-lecture activities will take up the vast majority of the class, in more or less equal portions. In a non-lab class, the activity should change from day to day or week to week, simply to "mix it up" and keep the course fresh and non-repetitive. Also, the nature of these group activities can be coordinated with the type of material that the class is intended to cover. For example, discussions and case studies seem to fit well with ethics, failure analyses, and other "what if?" types of subjects, whereas simulations and games would probably work well for economics, manufacturing, or similar numbers- or input/output-intensive topics. The reason for spending this extreme amount of time on non-lecture activities is to try to keep the students interested and engaged, and to keep them mentally stimulated. Creating this type of environment has been proven to increase student learning and retention in most cases.

Assessment of Student Learning. I no longer feel that rigid grading and testing is an effective way to gauge student learning. For a class such as the lab that I teach, lab reports can still be used for evaluation, but the emphasis in grading should be changed. Emphasis should be placed on the student's understanding of the basic concepts that the lab explores, and not the student's ability to simply follow directions and put together charts and graphs and run calculations that they may not necessarily understand. This isn't to say that complex details aren't important, but the ability to recognize what they are for (and when and how to look them up and use them) in the future is what is truly important. In more traditional non-lab courses, this type of learning can be assessed via open-book or perhaps take-home exams with a few small in-class, open-note quizzes in between. The exams of course would carry the most weight in the class, and these small quizzes should be used more as practice situations, graded on the basis of participation and fundamental understanding. Homework assignments would be equally useful as practice situations, and they could also be graded on the basis of participation in order to take some of the pressure off and leave the students less concerned about grades. Final

grading doesn't necessarily have to be a rigid calculation of point totals and averages, nor does it have to follow a certain distribution. If every student in the class seems to have mastered the concepts that the class aims to teach, then I have very little problem with assigning grades so that the class average seems overly high. That's not to say that I condone grade inflation, either; I expect that a reasonable distribution can still be reached naturally by using these somewhat subjective methods.

Areas of student responsibility. The student should not be required to simply sit in class and absorb information. That method seldom works well anyway. It is still the students' responsibility to ensure that they understand the course material, and they should be able to fulfill this responsibility by simply paying attention and participating in class activities. If additional help is needed, the student must seek out additional help, either from the instructor or fellow students. Of course the student's grade will directly reflect how well they've carried out their responsibilities.

Areas of instructor's responsibility. The instructor must serve as a facilitator and guide to student learning, but also cannot be the sole source of it. As I mentioned earlier, the teacher should begin each class or subject with a brief explanation of background material. From this point on, the teacher should become a facilitator and reference source, but try to leave most of the class activity in the hands of the students. Of course the instructor should try to keep things on task and always be open to questions and problems, but shouldn't fall into a pattern of simply explaining things to students whenever a small problem or question comes up. With a little "struggle" involved, the learning is more likely to be truly memorable, and the students may come to feel a better sense of involvement in learning (at least partly) on their own and amongst themselves.

Conduct. In order to create the necessary open, relaxed, informal atmosphere, certain standards of conduct absolutely must be enforced. Cases of harassment, intimidation, and other forms of hostility must be dealt with quickly to avoid damaging the entire class. An initial reaction to these forms of personal hostility should be to inform the student that their actions aren't helpful, and to hopefully resolve the situation peacefully at that point. It's possible that these cases are simple misunderstandings if they are isolated incidents. Repeat offenses should be dealt with much more harshly, possibly up to forced withdrawal from the class or university-level disciplinary measures. Cheating also cannot be tolerated. Perhaps an initial warning is prudent, but repeat offenses should be referred to the proper university disciplinary channels.

Attendance. In a class with little lecturing, a great deal of the learning experience is lost if a student misses class. While it may be possible to obtain notes for a missed section, much of the learning cannot be duplicated. This means that students will (hopefully) feel compelled to come to class. If a student skips a class, it is likely that that will be reflected in their learning assessments and final grade. I generally wouldn't require attendance or take roll, but I would highly recommend it, and take note of students who miss frequently. They would receive little mercy on borderline grades and the like.

Late or missing work. I feel that punctuality of work is important, but can also be difficult at times. A good general policy is to give an assignment, then after the students have had time to work on it, discuss what would be a proper due date. That due date, set by a mutual agreement, would become the rule, with later submissions being taken for reduced credit (-10% per day late or something similar). On lower-level assignments (i.e. less important than take-home exams and major projects), a teacher can be liberal with due date extensions, especially when classes and other commitments particularly burden a student.

Learning Differences. It is well known that students tend to learn by different means and often prefer to do so, so it is important not to continuously teach by a single method. If possible, a teacher should strive to present the most important material in a number of mediums: in the mini-lectures for aural learners, in text for visual learners, and through a variety of activities to cover any others. This is a highly subjective issue, so the teacher should also keep a close watch for students who just aren't "getting it," and perhaps meet with those students to discuss ways that would help them learn more effectively.

Motivation. Here we have quite possibly the most difficult subject to prepare for. It takes different approaches to motivate the widely varied group of today's students. Again, a mix of methods is helpful. Of course, students can be motivated by the desire for good grades alone, but that will only make them work hard enough to get the grade they want and no more. One path to motivation is to hold the students' interest by continuously answering the question "why are we learning this?" by going through real-world topics and examples in the various class activities. Another way to interest students is to ensure that the class activities are fun and engaging. Ideally, the class would be something that students like to go to, and not just another burden. This is the area where the truly engaging classes are separated from those that just go through the motions.

Overall, my idea of the ideal classroom is one that doesn't quite feel like a classroom. Open discussions and activities being led by an approachable teacher (who facilitates but doesn't dominate) seem to be a format that works well in my experience. It is about as close as we can come to the one-on-one attention that seems to work best for human learning, and it's what I try to use in my teaching whenever possible.