

TEACHING LARGE CLASSES EFFECTIVELY

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BOOKLET

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Teaching Large Classes Effectively

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Teaching Large Classes Effectively



It may appear at first that teaching is teaching no matter what size the class is. One could argue that if an instructor can successfully convey information, describe equations or processes, and otherwise cover content to a class of five students they should also be able to do so to a class of 10, 20, 30, 100, or even 1000 or more students. Although effective teaching techniques often carry over well between large and small classes, large classes present challenges that necessitate additional attention. Whereas information can be given to any number of students in similar ways, students may not be able to learn the material to the same extent in different sized classes (and the empirical data on this point is ambiguous). Large classes tend to be impersonal, create many management issues, and severely limit the types of pedagogical activities that are possible both in terms of using activities for students to engage the material (i.e., group discussion) and testing (i.e., large classes tend to necessitate using multiple-choice tests). There are benefits to large classes although they tend to be more for the university and faculty. Universities can serve more students with just one instructor, and teaching one large class rather than many smaller classes saves faculty time and the university money. Teaching a large lecture class calls for specific strategies and techniques and can be seen in the fact that in addition to general teaching tips books (Davis, 2009; Svinicki & McKeachie, 2011), there are also books that completely focus on teaching large classes (Heppner, 2007; Staley & Porter, 2002). In this booklet I shall first provide a brief overview of the challenges of teaching large classes and then focus on specific components or elements such as engaging students and assessment.

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Before The Start of Classes

There are many important pedagogical decisions that you have to make before teaching a class, and when you are teaching a large class, these decisions become even more important. You have to finalize your learning outcomes and clearly articulate what you want your students to get out of the class. You then have to design your course to ensure your students achieve the learning goals you set them. This step involves picking the textbook or reading materials for the class, designing when you will cover which topics, what type of testing you will use, and how often you will test. Once you make these larger decisions you can then decide how you will structure each class and what techniques you will use. How will you get students to participate? How will you make your lectures engaging and memorable? Although these are questions an instructor must always ask, it is even more important to consider these questions before the start of a large class as changes during a course are difficult to make.

In a small class, a change can easily be communicated to the entire class. In a large class such ease of communication may not always be the case. Students may not hear you make a change (either because they are not in class or because they were not paying attention, both easier to do in a larger class). In a small class, it is easier for students to be engaged and pay attention, often because you are much closer to them and they are not lost in a crowd or anonymous as students in large classes tend to be. The sheer workload associated with managing the grading and communications with a large class makes it difficult to do a lot of thinking about pedagogy once a class is in session. The instructor of a large class should give the class a lot of thought in the months leading up to the first day, which is not to say that changes cannot and should not be made in a large class. The issue is that changes are just hard to make and communicate. Some general considerations to be made before the first day of class include:

- Decide what content to include: In a large class students will vary greatly in their motivation, ability, and intelligence. If you plan on covering too much content you will not have time to go into depth or explain concepts to the extent you would have if you covered less. As a result, some students may not clearly understand the material you are teaching them. It is more difficult for students in large classes to tell an instructor to slow down or that they did not understand a concept. Studies of large chemistry and biology classes have shown that focusing on fewer concepts and going into more depth in class actually motivates students to learn more and there is no loss in coverage (Nelson, 1999).
- Organize the topics in a meaningful sequence: You do not have to stick to the

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order of material that is presented in a textbook. Sometimes rearranging the order of material may make the material more accessible to students and any such aids are even more important when you are teaching a large number of students.

- Become comfortable with the material: Even students in large classes can ask questions (and getting students in large classes to participate is a worthwhile goal). Not knowing the answer or lacking confidence may make students have a hard time focusing on the material you are attempting to present. Sometimes this result can end up taking time and you will have to rearrange your lecture right on the spot, something that is nerve-wracking to do in front of a large class. The better you know your material, the less likely such situations are to cause you frustration.
- Decide whether you will allow students to record your class: Sometimes students in large classes may skip class and then get a copy of your recorded lectures later. On the other hand, some students who find it hard to focus in large classes may benefit from being able to play back your lecture while you study. Develop and use a policy on what you are comfortable with. Both options (allowing or not allowing it) have been found to benefit students and have minimal influence on attendance.
- Consider the abilities and interests of your students: In a large class you cannot aim the material too high or too low as you will lose students. You need to have a good feel for your students' aptitudes. If you are not sure what they can manage, plan on an early assessment and also conduct formative assessments (measures of your teaching and the course early in the semester aimed at helping your students learn how to learn).
- Prepare a detailed syllabus/curriculum for students: It is important to make your policies, learning goals, and expectations extremely clear. Will you have an attendance policy? How will you take attendance? What is your grading scale? How many exams will you have and how many questions will there be? How will students contact you? In large classes the answer to the last question is particularly important. Because students may not speak up during class, it is critical for them to be able to reach you if they have questions on the course.
- Visit the classroom you will be teaching in before class first begins: You will reduce your own stress and increase your comfort level by knowing the classroom you will teach in. If you will be using technology, make sure you

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know how things work. It is embarrassing and hurts your credibility if you fumble with the technology on the first day of class. Knowing the layout of the classroom can make your first day more comfortable.

The First Day of Class

Early social psychological research showed that first impressions are often lasting impressions. Evaluations made after viewing a silent 5-second clip of a teaching assistant on the first day of class predicted how that assistant would be rated at the end of the semester (Ambady & Rosenthal, 1993). The first day of class is extremely important. Map out how you will use every minute. Students in a large class are often expecting to be able to sit back and not have to participate. If students have not taken a class from you before or do not know anything about you, they are going to be curious to see what your style is and to get a feel for what the class will be like. It is likely that students will decide how much effort to give the class based on the first day impressions and how excited they are by the material. Many students do not expect the class to be engaging because of its size. You can set the stage for a good learning experience by having a strong first day. Some key suggestions are:

- Establish classroom protocols for etiquette: Classroom incivilities such as talking, coming late, leaving early, text-messaging in class, and eating, can all be disruptive and distracting to you and to other students. Take time on the first day to clearly let the students know what is acceptable and allowed and what is not.
- Make sure you use the entire class period and use it well: Some instructors only give out the syllabus on the first day and then release the class. They then lose out on exciting the students about the material. Plan your first session with the class well:
 - Do not hand out the syllabus at the start: Instead start with some of the most exciting examples of what the course will cover. Leave the last 15 or so minutes of class to go over the syllabus and answer questions.
 - Have as many varieties of demonstrations as you can: Make the first day exciting. Show a great video clip or two (but make sure that the clips are not too long).
 - Get as many students to participate as possible: Get students moving. Have them raise their hands or stand in response to questions. Make sure you ask different students different questions to get engagement.

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- Make a check list: There are many things to remember to do on a first day. In a large class, the sheer number of students can tax one's ability to focus and concentrate. This is especially pronounced on a first day. Make a checklist of all the things you want to achieve/say on the first day and go over it before class (and perhaps keep it handy during class too).

Make Learning Personal

One of the biggest problems with large classes, especially those have over 60 students, is that students feel that the instructor does not really care about them as individuals. Whereas the size of a class may make it impossible for an instructor to give each student attention, there are still a variety of ways that even a large class can be given the feel of a small class. Many of the strategies that follow can be used on the first day of class and should be followed through with on later days.

- Try to learn as many names as possible: Perhaps the single most powerful way to make a class more personal is to learn students' names. This effort does not need an especially strong memory. Some simple tricks include:
 - Take photographs of the students on the first day with them holding cards with their names on it (that they have written/created in class). Use these pictures to memorize a few names before every class. It is well worth your time to spend up to a few hours memorizing names during the first week of school as students greatly appreciate you knowing their names and will work harder in class because of it.
 - Have students sit in the same spots and complete seating charts that identify their names so you can call on individuals in specific spots by name throughout the academic term.
- Divide students up into smaller groups: Try to form the students into smaller groups at least once a week. They will get to know more of their classmates and have a chance to talk in a more comfortable environment (i.e., to a small group of 2-3 peers versus out loud in front of an entire large class).
- Send out an e-mail to all your students before the first day of class telling them a little about you and the class so you can begin to shape their first impressions of you and the class.
- After each exam, but especially after the first one, e-mail each student

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who fails and try and find out why they failed (e.g., did they not study, not understand). Also e-mail the top 5 scorers in class (more if you can). This effort on your part shows students that you do care about their successes and failures and they are not just numbers on your course roster.

- Arrive at class early and stay after class so students have an opportunity to talk to you face to face. When you do arrive early, show you are open to questions by setting up your teaching materials quickly and then walking around and talking to students.
- Use technology to connect students with each other and with you:
 - Use course management software to have students participate in discussion groups or respond to questions about the class. If you have teaching assistants (TAs), assign each TA to a small group of students from the large class and have the TA be responsible to build group cohesion (e.g., hold review sessions or discussion groups on class material):
 - Perhaps form an electronic group for your class online where class members can share videos or news stories they find that relate to material discussed in class or covered in the course. The more opportunities students have to communicate with each other outside of class relative to the course's subject matter, the better engagement.

Designing Engaging Lectures

Engaging your students is important in any sized class but is of particular important in a large class. You want the students to value class time, to look forward to coming to class, and to benefit from being in the classroom. Larger classes make it difficult, though not impossible, to conduct many active learning activities so a lot depends on the instructor delivering a good lecture. Some suggestions for how to use active learning activities in large classes include:

- Vary the types of classroom presentations you make:
 - Do not always talk straight through a class session. Build in question and answer sessions. Use a variety of student engagement exercises (Barkley, 2010) to break a lecture up into components.
 - Modulate the speed and sound level at which you speak, which helps students not habituate to you voice.

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- Use hands gestures. Hand gestures animate the presentation and catches students' attention.
- Capitalize on the strengths of lecturing: You can cover material in a controlled, organized fashion.
- Recognize the limitations of lecturing: It is difficult to engage students who often sit back and copy down whatever you are saying without deeply processing the information or really thinking about it. Stop after particular important lecture points and ensure students' understand what you just covered.
- Do not lecture the whole class period:
 - Make sure you intersperse your lecture with visual examples and try and make sure you have students working with the material every class (e.g., a group exercise, a quiz) even if it involves questions that a student answers with their partner.
 - Make sure each lecture has at least one exciting demonstration or example: Visual examples or a vivid story are some of the most memorable classroom events for students and can serve to solidify their understanding of a concept.
- Prepare your lecture for the ear and not the eye: Make sure you do not put too much information on your slides/overheads. Most students will copy down material as fast as they can and then tune out what is being said. Keep your slides brief and build on topics verbally. Students should be able to listen to what you are saying and then write down the main points. Emerging research also suggests that slides with images and excessive animations distract students from the text material printed on the slide (Levasseur & Sawyer, 2006).
- Structure each lecture well: It is easy for a student to be distracted when in a large class. Start each lecture with a clear outline or what you want to achieve and where you will be going, summarize briefly what was covered in the preceding class, and end with a brief summary of what was covered with a short word of what is next.
- Always move around the classroom. The closer you can get to students the more attention students will pay to you. Walk up and down the aisles. Students are more likely to answer questions if you are standing right next to them. When instructors stay at the front of a class or worse, stand behind a podium the entire class period, students sitting in the back of the class feel detached from the learning experience.

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Increasing Active Learning

Although you can engage a large class with a well-structured powerful lecture, you should not let the class size deter you from providing your students with opportunities for active learning. Students need to have a chance to engage with the content of the class in the class and work with it. Some suggestions include:

- Plan an active learning exercise on the very first day of class. This effort sets the tone for the class and alerts student to the fact that they cannot just sit back and not participate.
- Use learning dyads: Give students an assignment to complete for the next class that involves doing a reading and then preparing questions on the reading. In the next class they pair up with another student and have their question answered and answer their partner's questions.
- Use peer instruction: Faculty in physics and chemistry have modified how they teach large introductory courses by having students form groups and teach each other (referred to as peer instruction). In large classes, you can divide the class into small groups and have groups teach other sections of the material for the class while the instructor moderates the process and answers difficult questions that arise.
- Form working groups every other class and give the group problems where the group has to apply their knowledge from the course to solving the problem.
- Use debates where two groups of students each take on different sides of an issue and then come up to the front of the class and debate a topic.
- Have the entire class brainstorm answers to a question you pose. The class should be challenged to generate as many solutions as possible (Davis, 2009). Provide guidelines:
 - Quantity is the goal.
 - No one can criticize any suggestions.
 - Random ideas are welcome.
 - Surprise your class by stopping your lecture 30 minutes early and then use the time for informal discussion.

Using Media Effectively

In a large classroom, a stunning, engaging slideshow and many visuals can grab the students' attention and help them stay more focused. There are many other ways that technology can be used in a large class. Some ideas include:

- Pay attention to your slideshow creation: Make sure that you do not have too much information on your slides and that you have designed the slides to be visually stunning. For example use a black font on a yellow background and make sure your font size is not smaller than 24 point.
- Do not overuse images or videos: Slides filled with images can sometimes distract students from the material they are supposed to be understanding. By the same token squeezing too many videos into a class is not advisable.
- Consider using classroom response systems (CRS; "clickers"). A clicker is a device that allows students to respond to questions posed by the instructor. The instructor can then measure student understanding and have the information needed to decide whether to move on to new topics or if more discussion or explanation is needed.
- Use course management software: Most universities now have access to course management software that can be used to pose discussion questions, form virtual student groups, and post additional audio-visual examples.
- Set up each media clip well: Make sure that you precede each media clip with an explanation of what the student will see and perhaps what they should be looking for. If you will be showing a longer media clip it is helpful to give the students questions that can be answered by watching the video. After the video check the extent to which the students got the questions correct.

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Assessment in Large Classes

Large numbers of students make it difficult to use essay or even short answer exams. Large class instructors commonly use multiple-choice exams (often 3-4) to assess learning. Whereas this is not problematic in that there are ways to write good multiple-choice questions getting at many levels of learning (Davis, 2009; Svinicki & McKeachie, 2011), it is still preferable to try and use different assessment techniques. Some examples include:

- Group testing: have small groups of students or pairs complete a single test. In this testing format, students discuss answers with each other and share their knowledge and learning. Do not use this strategy for the final exam.
- Use peer grading: Assign a short paper to a large class and then have students critique the each others' papers using a rubric that you provide.
- Use short in-class writing assignments in which you can easily skim the content for accuracy and assign a point value. Even a few opportunities to write and express understanding provide students with a valuable learning opportunity over the multiple choice exam.

Note that in larger classes there is an increased likelihood that students will cheat. Instructors should take special precautions to minimize cheating, including creating different versions of exams so that students sitting right next to each other are not tempted to cheat from their partners. Some instructors have students bring in student identification to ensure that only enrolled students are taking the exam.

Summary

Teaching a large class involves many of the same skills needed as teaching smaller classes but there are many more variables to keep in mind as discussed above. In conclusion, there are some key ideas one should keep in mind (Heppner, 2007):

- Large courses cannot be ad-libbed or made up as one goes along.
- It is important to be consistent (stick to what your syllabus says or what you said in class early in the semester).
- Have all your policies in writing and give them to the students as part of the syllabus.
- Do not overly focus on the poor students (and ignore the ones who want to learn).
- Ensure that you give yourself enough time to prepare to teach a large class
- Reflect on how each class was and jot down changes that you can make the next time you teach the same topic.

Teaching large courses can be a time consuming, exhausting enterprise. It is important for the instructor to seriously consider the many ways the large class is different from smaller classes before the start of class and then to plan accordingly. Like any form of teaching, teaching large classes takes effort, mindfulness, and will get better with practice and reflection.

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- This classic article in social psychology showed that human beings need very little time to make a judgment of another and these quick judgments are resistant to change. This article presents two studies of this phenomenon using college graduate teaching fellows and high school teachers.
- Barkley, E. F. (2010). *Student engagement techniques: A handbook for college faculty*. San Francisco, CA: Jossey-Bass.
- This handbook provides a number of different activities geared to increasing active learning in the classroom. Exercises can be used in classes from a variety of disciplines and vary in length from a few minutes to up to twenty or more.
- Davis, B. G. (2009). *Tools for teaching*. San Francisco, CA: Jossey-Bass.
- This book is a large compendium of tips for teaching covering all major aspects of teaching in short concise chapters. The suggestions are supported by empirical research wherever possible. There is a section on teaching large classes covering topics such as delivering a lecture, explaining clearly, and personalizing the large course.
- Golding, J. (2001). Teaching the large lecture course. In D. Royse (Ed.) *Teaching tips for college and university instructors: A practical guide* (pp. 95-120). Boston, MA: Allyn & Bacon.
- This chapter is part of an edited book on teaching covers all the main topics relating to teaching large classes. The author has a particularly strong section on how testing in a large class presents different challenges and provides some key tips.
- Heppner, F. (2007). *Teaching the large college class: A guidebook for instructors with multitudes*. San Francisco, CA: Jossey-Bass.

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- An easy to read book that walks you through the main parts of teaching a large class. Written by a biologist with many years experience teaching classes up to 1000 students, this book especially focuses on the teacher as actor, and also pays special attention to the effective use of media.
- Levasseur, D. G., & Sawyer, J. K. (2006). Pedagogy meets PowerPoint: A research review of the effects of computer generated slides in the classroom. *Review of Communication*, 6, 101-123.
- Presentation software such as Keynote and PowerPoint provide many different ways to animate a slideshow and add graphics. Many instructors fill their presentations with many vivid pictures. This article shows that such extras may distract from learning and direct attention away from text material.
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- This book is a general book on teaching but has many components and chapters that can be specifically applied to the large class. Particularly relevant are chapters on using discussion and understanding classroom dynamics.
- Nelson, C. E. (1999), On the persistence of unicorns: The tradeoff between content and critical thinking revisited. In B. A. Pescosolido, & R. Aminzade (Eds.) *The Social Worlds of Higher Education: Handbook for Teaching in a New Century* (pp.168-184). Newbury Park, CA: Pine Forge Press.
- Craig Nelson is a biologist who revamped his introduction to biology class to ensure his students learned more. He paid close attention to the cognitive development levels of his students and included more active engagement in his large classes.
- Staley, C. A., & Porter, M. E. (Eds.). (2002). *Engaging large classes: Strategies and techniques for college faculty*. San Francisco, CA: Anker (Jossey-Bass).
- This edited book features contributions from faculty from a range of disciplines including law, health sciences, business, management, history, and more. Part one 12 chapters covering the main components of teaching a large class such as promoting civility, teaching for inclusion, team learning, and managing teaching assistants. Part two has 17 chapters each providing

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examples from specific disciplines ranging from agriculture to mathematics and engineering.

- Svinicki, M. D., & McKeachie, W. J. (2011). *McKeachie's Teaching tips: Strategies, research, and theory for college and university teachers* (13th ed.). San Francisco, CA: Wadsworth Cengage Learning.
- This most recent edition of the classic teaching tips book has been significantly revised and presents new research on many aspects of teaching and in particular has an explicit chapter on motivation and learning.

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