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Large Size Class Teaching Strategies: Book Review

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Abstract: Large size classes are most often taught by an instructor lecturing to a sizeable group of students such as in business and IT schools, creating a situation that can be inefficient and unrewarding for both students and instructors. Common strategies that used to teach and overcome the difficulties inherent in teaching large size classes and create effective learning environments are reviewed. These methods include using both simple and organizational strategies and a variety of new technologies to enhance the learning environment. Note that this is a book review for Hanover research strategies for teaching large undergraduate classes.

Keywords: Large size teaching, Learning strategies, Organizational strategies.

1. INTRODUCTION

Effective management of large classes is a popular topic among faculty in higher education. Carbone (1998) and Stanley & Porter (2002) have produced books focused on the large class environment, offering strategies for course design, student engagement, active learning, and assessment. Aagard et. al. (2010) explained the major problem as with large sizes classes as

- **Large place.** Large lectures take place in a big room, and interaction doesn't feel like personal communication because the instructor is so far away.
- **Isolation.** Large lectures are full of people, mostly strangers, creating a sense for students that what they say and do doesn't matter, leading them to care less about seemingly small distractions (such as discuss with friend, using mobile or reading a newspaper), and creating an inhibition about participating in front of a large audience.
- **Group size.** The big number of students makes discussion during a regular lecture that includes everyone impossible.
- **Sage on the stage.** The instructor appears impersonal, remote, and inaccessible, and the communication gap between the students and the instructor feels (and may be) very real.
- **Theatre setting.** A seating arrangement that feels more like a theatre than a class induces student passivity.

In classes with large numbers of student it is important to encourage student-faculty interaction to create an environment where instructors are accessible and students feel comfortable contacting them. To achieve these goals instructors use a variety of organizational and teaching methods. Recently, more and more institutions have been adopting various new technologies to further improve the teaching of large undergraduate classes; see, Marland (2007).

Recent research on the relationship between class size and student performance has identified conflicting results (Toth & Montagna, 2002). The results of some studies show no significant relationship between class size and student performance (Hancock, 1996; Kennedy & Siegfried, 1997), while other studies favour small class environments (Gibbs, Lucas, & Simonite, 1996; Borden & Burton, 1999; Arias & Walker, 2004). Results vary based on the criteria used to gauge student performance, as well as the class size measure itself. When traditional achievement tests are used, small classes provide no advantage over large classes (Kennedy &Siegfried, 1997). However, if additional performance criteria are used (e.g., long-term retention, problem-solving skills), it appears that small classes hold an advantage (Gibbs et al., 1996; Arias& Walker, 2004), for more details; see, Carpenter (2006).

In this review article first part explains the non-technological organizational and teaching strategies that instructors can use to best teach large lecture classes. Outlined are common methods and guidelines for creating a productive and organized classroom

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environment, promoting student-faculty interaction, and encouraging active learning.
Second part outlines new technologies that universities can adopt to help facilitate better learning environments in large undergraduate classes. These new technologies generally fall into two categories: those that enhance the in-class experience and those that create electronic tools and forums for students and faculty to use outside of class.

2. NON-TECHNOLOGICAL ORGANIZATIONAL

Large size classes have been a standard feature of many universities especially in developing countries. Accordingly, instructors have developed a number of common strategies to best organize and teach these classes. These strategies are often designed to make class periods productive and efficient, encourage student-faculty interaction, or create an active-learning environment; see, Davis (1993).
The University of California-Berkeley provides a number of guidelines for instructors on how large classes should be organized

- Decide what content to cover and set broad goals well in advance. Make sure to make estimates for how long it will take to cover material and then increase estimates by 50 percent to allow for students to ask questions.
- Organize the topics in a sequence that makes sense both to the instructor and the students.
- Describe how the course is organized in the syllabus.
- Prepare different types of lectures to suit the content and keep the students interested. For example, one day conduct a simple expository lecture that describes a topic with hierarchical minor and major points and the next day provide a case study lecture that examines one case study to examine specific topics.
- Create a clear syllabus with both the course structure and the expectations of the students.
- Meet with teaching assistants before the class starts to discuss the course structure and the expectations placed on them.

Another key area in the organization of large undergraduate classes is strategically planning assessments. Obviously in large classes it can be difficult to grade so many assignments, so it is necessary to spend time developing means of assessment that are feasible for a large group of students. It could be doing this by using a combination of easy-to-grade multiple choice assignments to assess basic knowledge and more labour intensive projects like essays to assess higher learning goals. Ideally, these assessments could be spread evenly over the course of a semester to avoid an overload of assignments to grade at the end; see, Allen (2005).

In addition to clear and comprehensive course organization, encouraging student-faculty interaction is another simple, but important, strategy for teaching large classes. According to the University of Maryland Centre for Teaching Excellence, "in any class, but especially in large classes, it is important to establish an atmosphere which conveys the instructors' interest in and accessibility to students and which encourages students to participate."

In order to create this atmosphere where students are comfortable with instructors and are encouraged to participate, instructors can use any number of simple means to connect with the students. The George Washington University's Center (2001) for Innovative Teaching and Learning suggests some basic ways to facilitate student-faculty interactions:

- Spend some time at the end of class talking to students. Maybe even end class a few minutes early so there is enough time for students to come and ask individual questions.
- Make an effort to call students by their names. Because it can be difficult to remember the names of everybody in a large, have students place placards with their names on their desks.
- Walk around during class to make the students feel more connected.
- Frequently remind students that they are always more than welcome to come to office hours.

These methods serve the purpose of turning large classes into social learning environments. In fact, some research indicates that it might be very important to effectively engage large classes because, according to the University of Queensland's Teaching Large Classes guide, "Students will be more motivated if the environment is inclusive and respectful of their background knowledge, needs, interests and aspirations."

Perhaps the most difficult aspect of teaching large lecture classes is creating ways for students to actively connect with the course material. This is especially difficult because, as studies have shown, the longer a lecture is the less material a student will retain; see, MacDonald and Teed (2010).

One more strategy for making large classes more productive and effective is to create opportunities for students to meet in smaller groups outside of the lecture hall, preferably led by teaching assistant. Discussion sections and labs are well-established institutions of large lecture classes and, when they are possible, help complement the lectures. The University of Washington's Center for Instructional Development and

Research provides some suggestions on how to best run sections and labs; see, University of Washington (2003).

- Communicate to students how section or lab meetings relate to the course as a whole: Since sections and lab meetings are usually attached to larger courses, students are better prepared to learn when the links between these parts of course are clearly defined.
- Communicate to students what they can expect in your specific section or lab meetings: Sections and labs vary in purpose from one course to another, so it will help students to know what your intended purposes are. Otherwise they may base expectations for your course on experiences in other courses.
- Help students develop strategies for successful learning in your discipline and in your courses: In many courses, students are exposed not only to new information, but also to new ways of learning and thinking about that information.
- Help students become monitors of their own learning: In many courses, part of what students are learning is to assess their own level of understanding or the quality of their work.

According to this outline, sections and labs are best run when instructors clearly communicate with students about the purpose of such meetings, both in terms of how they relate to the course as a whole and the expectations placed on the students.

These meetings are also more effective when they are specifically designed to help students develop and engage with the learning methods that will help them succeed in the course, forcing them to become active learners.

Some institutions have recently adopted other means of creating a smaller environment within large classes. The Freshman Interest Group (FIG) is a program that has been adopted by a number of large U.S. universities. Through an FIG program a group of around 25 students will take two to three large lecture classes together, usually connected through an FIG seminar taught by staff member. Some universities also incorporate peer mentors and living arrangements into their FIG programs. According to the University of Oregon:

A Freshman Interest Group (FIG) is a group of twenty-five first-year students who take two general-education courses together in the fall term. These are regular university courses that satisfy graduation requirements and are also open to non-FIG participants at all class levels. The FIG group within these larger classes is linked together through College Connections, a credit course typically taught by one of the faculty teaching the two larger classes. Assisting in the course is advanced undergraduates who have demonstrated success in the courses in the FIG. These student mentors serve as teaching assistants to the faculty and arrange out-of-class activities that help new students become better acquainted with each other, the faculty, and campus resources; see; Missouri (2010).

Large lecture classes provide a number of unique challenges to instructors. However, there are a number of simple ways to teach these classes in such a way that they remain learning environments that engage students and allow them to practice active learning. This goal can be achieved through good organizational practices, fostering student-faculty interactions, interactive lectures, in-class assessments, and creating smaller out-of-class groups.

Therefore it can mention general strategies given in Davis (1993) as

- Become comfortable with the material: In an introductory survey course you may be covering topics outside your specialty area. Read up on those topics and try to anticipate questions that beginning students might ask. Review the course materials, assignments, and reading lists of colleagues who have taught the course before. Consider sitting in on courses taught by colleagues who are especially effective teachers of large classes to see what ideas and techniques work well, or ask them about their experiences teaching the course.
- Don't plan to lecture for a full period: The average student's attention span is between ten and twenty minutes (Penner, 1984). After that, students have difficulty concentrating on the speaker. For each lecture, plan to change the pace every fifteen minutes or so to relieve the monotony and recapture students' interest. For example: ask students to solve a problem at their seats or in groups of two or three, give a demonstration, use an audiovisual aid, or tell a story or anecdote. Be clear about what can reasonably be accomplished by lecturing: Research shows that lecturing is as effective as other instructional methods, such as discussion, in transmitting information but less effective in promoting independent thought or developing students' thinking skills (Bligh, 1971). In addition to presenting facts, try to share complex intellectual analyses, synthesize several ideas, clarify controversial issues, or compare and contrast different points of view.
- Estimate your own time carefully**:** Teaching a large lecture class takes a great deal of time and energy. Set up weekly work schedules for

yourself so that you are prepared for the onslaught of midterms and finals. Find ways to scale back other obligations, if you can, so that you have time to deal with the complexities of teaching such courses.

3. TECHNOLOGICAL ORGANIZATIONAL

A number of new technologies have recently been adopted to turn large lecture classes into effective learning environments. These technologies are mainly directed at improving lectures, creating out-of-class electronic forums, and developing in-class electronic tools. These functions are designed to promote active learning in high enrolment classes.

A. Electronic Presentation Aids

Instructors can use various types of technology to help them more effectively give traditional lectures to large classes. In a large class setting, students often have trouble learning all the material covered.

PowerPoint presentations are one of the most well-established ways that instructors use technology to make lectures more interesting. With PowerPoint, instructors can complement their lectures with images and the text of key concepts that students should record. Instructors can avoid the danger of relying too heavily on PowerPoint presentation to give a lecture by making sure to incorporate a variety of different visual tools. If used intermittently, videos, overheads, and computer images can all help to break up a monotonous lecture and keep students' attention; see, Jeffrey (2009)

B. In-Class Audience Response Systems

The most common technology now used in large classes is an audience response system. Audience response systems include any number of hand-held devices that allow students to respond and interact with the instructors. One of the most common types of these devices is the "clicker," a small device that looks like a remote control manufactured by a number of companies, including instruction, iClicker, and Turning Technologies. Clickers generally include a ten-digit numeric keypad and some additional keys (e.g. "yes" and "no" buttons), allowing students to enter in a variety of simple responses to questions. Clickers have been used in a wide variety of subjects ranging from mathematic and biology to philosophy and psychology. Though creative instructors can incorporate clickers in to their classrooms in any number of ways, the Ohio State University's Learning Technology site suggests some common uses:

1. Facilitate Class Discussion - Facilitate discussion by polling students' opinions and discussing the reasons for their opinions.
2. Guide Lectures - Collect immediate feedback about students' understanding of lecture topics so confusion can be addressed quickly.
3. Encourage Peer Instruction - Allow students to share, discuss, and change their opinions before answering a question.
4. Collect Data and Perform Formative Assessment - Collect data on course topics or learning preferences throughout the cycle of a course.
5. Offer Quizzes and Exams - Decrease grading time by using clickers to collect student answers to quizzes and exams.
6. Take Attendance - Record attendance in large lecture courses.

In many situations, clickers allow students to contribute more freely than they could in a normal class discussion. This is especially true in large classes where, even if they are willing to, there simply is not enough time for all students to contribute; see, Steinberg (2010).

C. Using Electronic Resources Out of Class

Large lecture classes often do not provide students with much time to discuss and engage with the material, either in or out of the class. In order to combat this problem, universities have begun to adopt a number of new technologies that allow students to engage with course material in electronic forums. These forums include both social networking sites like Twitter, Facebook, and Wetpaint and sites that have been specifically designed for education, like Blackboard and Hotseat. All of these sites share the same similar goal of creating a place where students and faculty can have discussions and share information outside of the lecture hall. The creators of Hotseat, one such electronic forum, divide a classroom into two channels: the official channel consisting of interactions between the instructor and students during a lecture, and a "backchannel" that consists of side discussions that students have about the material. Hotseat was designed to, "Create a backchannel for the course and have the instructor check in with it or use it explicitly during class." Hotseat is just one of the sites that instructors use to create an informal backchannel where students and instructors can engage with course material.

Detailed below are some of the specific ways that Facebook, Twitter, Hotseat, Wetpaint, and Blackboard allow professors to create online forums for large classes.

1. Facilitate student-faculty communication: All of these sites allow students to communicate directly with faculty.
2. Facilitate classmate connections: Students can get to know each other in an informal environment and discuss course material.

3. Facilitate online discussion: These sites can all be used to have real-time online discussions on discussion board.
4. Share information: Links to pertinent sites can be shared through these forums.

Instructors can also post class information such as due dates and test information. This is especially true of Blackboard, which allows students to take tests and quizzes online, and Wetpaint, which is wiki-based and allows students and faculty to freely post and edit information; see, Brown (2009).

D. Managing and Sharing Information Online

There are numerous ways to post information online, including many of the tools previously discussed. Blackboard, in addition to its function as an online discussion board, is one online resource that is specifically designed for the posting and management of classroom materials. Blackboard offers the following features in course information management:

- Webspace for course materials: Blackboard allows instructors to post documents and multimedia resources.
- Tests and Quizzes: Tests and Quizzes can be taken by students directly on Blackboard.
- Digital submissions: Students can submit assignments to Blackboard.
- Grade management: instructors can calculate and manage student grads through Blackboard.

In this way, Blackboard provides instructors with a powerful tool for organizing all of the information necessary for a large class. Additionally, by allowing students to access course information, submit assignments online, and take tests and quizzes it helps students in a large class, where communication with the instructor can be difficult, to better manage their workloads.

Beyond Blackboard, there are a variety of other ways for instructors to share information with students through the Internet. Many instructors are now posting entire lectures, either as videos or as podcasts, online. Though this strategy could discourage students from attending class, some instructors believe the benefits of having lectures always available to students outweigh the dangers. Students will be more likely to actually absorb lectures if they are given the chance to approach them at their own pace, which the useof podcasts allow. Podcasts and posting videos of lectures online are easy ways for instructors to give students constant access to course information; see, Church (2010) and Cornell (2010).

CONCLUSION

Teaching large classes can be a challenging task for instructors and administration. By using a number of organizational and teaching strategies, instructors can ensure that they provide an effective and engaging learning environment to their students. A variety of new technologies are further helping instructors to deal with these classes in ways that make them far more than just monotonous lectures.

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