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EFFECTIVE USE OF CASE TEACHING IN LARGE UNDERGRADUATE CLASSES

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ABSTRACT

Aim/Purpose	To guide faculty who wish to use the case method in large undergraduate classes
Background	The paper reviews a range of case teaching methods and provides specific guidance on how to use them in various classroom situations
Methodology	Literature review, reflective experience, interviews, and surveys
Contribution	This paper addresses a gap in case teaching research which tends to focus on its use in graduate classes
Findings	Case teaching can be used effectively in large undergraduate classes, but needs to be used in different ways and with different techniques from those commonly recommended for graduate classes.
Recommendations for Practitioners	Be creative and go beyond the Harvard: case method and draw on the broader range of techniques used in active and experiential learning
Impact on Society	Better and more relevant classroom experiences
Future Research	Examine and evaluate field examples of innovative case teaching, especially in hybrid and online environments.

Keywords	case teaching, active learning, experiential learning, large classes

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INTRODUCTION

This essay is a personal reflection on the challenges of case teaching in large undergraduate classes. The lead author is a senior faculty member of a very large business school with more than 20 years of experience in using case teaching at both graduate and undergraduate levels in Europe, North America and Asia. Recently, he held the position of Faculty Teaching Chair, providing pedagogy support to some 200 faculty. The essay draws on literature review, and the personal experience of all three authors, and is supplanted by several surveys and interviews with faculty and students (Moorhouse, 2012).

THE CHALLENGE

Over the last few decades, in most developed countries, there has been a dramatic increase in the number of undergraduate students. For example, the proportion of young people attending university in the UK has grown from about 5% in 1960 to about 35% in 2000 with similar growth being observed in most countries (Mayhew et al., 2004). Further, the proportion of students choosing business as their major has also increased. In the United States, Canada, and the UK, business students make up the largest single discipline of students, some 20-25% of the total. It has been widely reported that, over the same period, the increases in faculty numbers has significantly lagged behind these increases in student enrolment. Further, budget allocation processes in many universities often draw on fees and funding provided for business students to support other more expensive programs. Finally, public universities in most developed countries are dealing with funding pressures as governments struggle with budget allocations, as well as facing increased demands to link funding to some set of performance indicators.

While MBA and other masters-level business classes still tend to be kept small, perhaps reflecting the high fees often paid by the student, the combination of these trends has resulted in steadily increasing class size in many undergraduate business schools.

Meanwhile, it has become increasingly recognised that the traditional lecture format, the "sage on stage," is not an effective delivery method in many subjects, accompanied by a move away from defining courses in terms of content delivered towards the identification of learning outcomes intended for the students after completion of the course and measurement of their achievement against these outcomes. A very frequently considered improvement is a move towards active and experiential learning which is seen as providing a better learning result in many different subjects (Freeman et al., 2014). While many techniques for this type of learning have been identified, one of the most popular used in business schools is that of case teaching. But, there is great uncertainty with many faculty as to whether this technique can be used in large classes.

CASE TEACHING IN BUSINESS SCHOOLS

Harvard Law School Professor Christopher Langdell introduced the case method into university classroom teaching in the 1870s, using accounts of recent court decisions to encourage discussion amongst his students (Osigweh, 1987). In the early 1900s, faculty at the recently established Harvard Graduate School of Business Administration recognized its apparent success (Merseth, 1991) and, soon after, it was adopted as the primary pedagogy for the Harvard Business School. Since that time many other business schools have followed suit. Indeed, one of the most frequently used methods of case teaching in business is described as the "Harvard Case Method (HCM)" and the majority of cases produced by case publishers (e.g. Harvard Business School, the Ivey Business School and The Case Centre) typically follow the standard Harvard case structure.

The case method is described as an "active learning" technique, where students must "do more than just listen" (Bonwell & Eison, 1991), and are expected to read, write, discuss, and especially use higher order thinking such as analysis, synthesis, evaluation, or problem solving. Proponents of active learning believe that these techniques are not only preferred by the students over lecturing (Bonwell & Eison, 1991), but also help to develop the practical skills (listening, reading, writing) that students will need to succeed in their careers (Auster & Wylie, 2006). Well written cases "can lead to changing the way students think, by exposing them to experiences that would otherwise take much longer to understand and assimilate" (Sheehan et al., 2018).

From the literature, there are many benefits claimed for case method, with Osigweh (1987) (1987)providing a good summary (see Figure 1).

1. Cases apply knowledge tools to problem-solving and decision-making circumstances
2. Cases improve students' communication skills
3. Cases require thinking and analytical skills that help students master subject matter
4. Cases help illustrate the theories in a practical context
5. Cases let students experience true-to-life organizational situations
6. Cases allow a student to explore real world situations in a low-risk environment.
7. Cases promote constructive change in the management of an organization
8. Cases are engaging and motivating for students
9. Cases provide reference points that help students recall specific knowledge

Figure 1. Major benefits of the case method. (Osigweh, 1987)

Perhaps the most cited criticism of active learning techniques such as the case method is the instructor's diminished control(Bonwell & Eison, 1991). The case method places responsibility on the students to take a leadership role in their own and their classmates (Harvard Business School, 2019a), with the professor becoming the "guide on the side". While many might view this as a positive, critics argue that it relies on the students acting responsibly to ensure the success of each case session. If students come to class unprepared, or if they choose not to actively participate in the discussion, then the instructor is less able to help the students achieve their learning objectives.

Student participation is critically important to the success of the case method, with the method placing pressure on students to speak in class since participation marks can represent up to 50% of their final grade (Ewing, 1990). According to Ewing (1990), the most common complaint of Harvard students is a difficulty speaking in class, suggesting this may be due to an inability to think on their feet, an aversion to being the center of attention, or a fear of looking foolish in front of classmates. Mauffette-Leenders et al. (2007) suggest this fear of class participation may stem from two major sources: an inadequate level of individual or small group preparation; and cultural, social, or psychological factors causing a reticence to speak out in group settings.

The majority of discussion around the use of cases in business (e.g. the Ivey book series on Case teaching and Learning) have two underlying assumptions, not always stated explicitly. First, they are targeted at Masters (usually MBA) students and second an expectation of relatively small classes (sizes of 20-40 are typically mentioned). This paper addresses these limitations by examining the role of case teaching in large undergraduate classes.

The Effect of Class Size on Student Learning Performance

One of the most divisive topics in the professoriate is the effect of class size on student performance. Many educators are convinced that smaller class sizes are superior to large classes (McKeachie, 1980).

Their belief is that students studying in smaller classes will outperform students of larger classes in standardized tests. However, a review of the research returns inconclusive results.

Class size testing has been performed since the 1920s, when Edmonson and Mulder (1924) compared the performance of two sets of education students. While small class students outperformed their large class peers on an essay and mid-term, large class students performed better in quizzes and the final exam. The results of many other studies throughout the 20th century have been similarly inconclusive.

Among the supporters of small class superiority, Glass and Smith (1979) authored one of the most famous and controversial studies. Their meta-analysis of 725 class size studies involving elementary, secondary, and post-secondary students concluded "all things being equal, more is learned in smaller classes." Their study analysed student achievement scores from the studies. However, the achievement score differentials were only particularly significant when the small classes were very small (i.e., 5 students or less), leading Follman (1994) to question the validity of the results. Each researcher appears to define what constitutes a "large" and a "small" class. The result is that the "large" classes defined in many studies might actually be considered small by many post-secondary educators. In the Glass and Smith study, the definitions of "large" classes ranged as low as 2 students in a class (which was compared to a "small" class of 1 student), and almost 40% of the "large" classes contained fewer than 35 students.

DEFINITION OF A "LARGE CLASS" FOR ACTIVE LEARNING AND CASE TEACHING

The primary purpose of this essay is to identify best practices that instructors can use to tailor case teaching methods to meet the demands of large classes. Thus, it is important to define a "large class". From the literature, the only generally accepted opinion of what constitutes a large class is "it depends". According to the Australian Universities Teaching Committee 'Teaching Large Classes Project' (2003), class size is a matter of perception: a class is "large" if the instructor and students perceive the class to be "large". This perception depends on the interaction of three key factors:

1. the number of students in the class
2. the teaching and learning activities
3. the facilities and physical environment

Thus, the definition of a large class varies according to the expectations placed on the students and the instructor. A lecture-based class with 200 students may not be considered large if the instructor is not required to make meaningful changes from teaching a class of 40. However, an interactive discussion-based class of 200 students may be difficult to manage and likely looks significantly different from a discussion-based class of 40 students.

Therefore, we need to define a large class in the context of case teaching. An important element of the case method is the rich discussion between students with different backgrounds, beliefs, and experience. According to the Harvard Business School (2019b), the proper facilitation of this discussion requires instructors to know each student's personal history and to address them all by name. Erskine et al. (2011)from the Richard Ivey School of Business says it best: "In case discussions a student is not a number. A student is not anonymous. A student cannot be allowed to hide" (p. 29).

For this reason, many case-teaching schools place the upper bounds on class size for case method at 100 students, with Erskine at Ivey suggesting that case teaching is appropriate for classes of 12-100 students, with the preferred size falling between 20 and 60 students, allowing all students to engage in class discussion (Erskine et al., 2011).

As might be expected, there has been significant discussion at Harvard on this issue with ranges of 20-100 students frequently being suggested as appropriate for case teaching (Barnes et al., 1994), and the writings of several Harvard professors suggest that they consider large classes to contain 80+ students. Bruns (Hill et al., 1996) refers to a large class as one with 80-90 students and argues that these classes make it easier for students to hide since they typically participate in discussion only once every two or three classes. Garvin (2007) similarly makes a distinction of classes containing 80-100 students, reporting that a Harvard faculty committee had explored adding small group discussions to these larger classes to encourage students to work together more closely. Doran et al. (2011) used classes of 72 and 84 students to test case teaching strategies in large size classes.

From the Harvard and Ivey literature, we can conclude that a class becomes "large" for case teaching when it reaches perhaps 60 or 80 students and that the upper limit for classical HCM case teaching might be 100 students. Once a class moves towards 100+ students it is assumed that a new case methodology may have to be employed.

The effect of class size on student performance is possibly one of the oldest and most researched issues in the teaching profession. As mentioned earlier, despite the great amount of research on the subject, one cannot conclude that smaller classes with a lower student to faculty ratio will result in higher levels of achievement for students. Further, the bulk of research on the subject has not examined either active learning or the case method. Frequently not discussed in these studies is the effect of the instructor, with an implication that all professors are equally able in their teaching. Very few faculty receive any formal pedagogy education during their doctoral studies, in contrast to school teacher education, where significant effort is focused on this. Even fewer will have received any professional development in the Case Method, except perhaps from their exposure as graduate students in MBA programs or as teaching assistants.

Active learning practitioners have documented many practices designed to overcome large class challenges, which could potentially be exploited for use with case teaching.

For the purpose of distinction, we suggest three class size groupings for case teaching:

- **Normal** case classes with 30-60 students
- **Large** case classes with 60-100 students
- **Very Large** case classes" with 100+ students, perhaps several hundred.

TYPES OF CASES

When business faculty discuss "Cases", they tend to think first about Harvard type cases. However, there are a variety of other approaches to case teaching, and even the HCM has been subject to criticisms including its over-stylized approach and its focus on taking a management perspective, frequently ignoring other social and moral issues that might also be considered (Bridgeman et al., 2016). Thus, we suggest that a variety of case types are relevant to this discussion, with Zimmerman (2002) providing a useful summary. Each of these approaches has strengths and weaknesses and these are reviewed in Figure 2.

Method	Description	Advantages	Disadvantages
"Classical" HCM Model	Analysing published case using individual, small group and whole class discussion	Applies theory to real-world management situations High student participation	Long preparation time Oversimplification of issues Management perspective
"Short case"-mini case	1-2 pages or less likely focusing on a single theory or problem	Short preparation time Demonstrates theories in an efficient manner	Students cannot practice sorting through facts to find relevant issues

Method	Description	Advantages	Disadvantages
Role Playing and Simulation Games	Allows students to experience case situations	High student participation and level of discussion	Difficult to run in a large class Must be strictly managed
Descriptive Case	describe the entire situation including the final decisions	Helps illustrate theory Allow student discussion on the decision taken	Decisions are already made for the students
Mousetrap	Three or more different situations presented in sequence, with each calling for acceptance or denial of the same set of standards	Illustrates ethics/values Demonstrates faulty reasoning	Limited general application
Student Written Cases	students performing research on a real company and then writing the content into a case.	Improves writing and critical thinking	Wide variability of case data May not be consistent with teaching objectives
Non-traditional sources of cases (informal cases)	real-world and fictional situations gathered from newspapers, magazines, memos, novels and films	Can be chosen for specific classroom objectives Topical	Likely lack of good data Possible bias in sources
Real Case	A real-world organization brings a problem to the class to study	Students work on a real and current challenge Exposure to the actual organisation management	Relies on the commitment and capabilities of the organisation and its management Can crate conflict between students and organisation

Figure 2: Advantages and disadvantages of various case types.
(derived from Zimmerman, 2002)

The Challenges with Teaching the Case Method in Large Classes

As with other active learning techniques, student participation is a critical factor in case method learning, especially for class discussion. Class discussions are designed to help students develop core business skills such as communication and persuasion. Additionally, participation in class discussion is one of the best ways to ensure that students perform a thorough individual case preparation (Mauffette-Leenders et al., 2007). If a student feels that they can hide in a large class, they have less incentive to protect themselves from looking foolish due to lack of preparation.

In one of the very few studies expressly concerned with teaching the case method in large size business classes, Booth et al. (2000) interviewed students and faculty to explore how the use of cases was evolving to meet the realities of the growing and increasingly diverse classes in their undergraduate business programs. Students expressed concerns that the large classes hindered their ability to grasp and learn the case material. The comments stem from a belief that large and anonymous class settings allowed students to "hide" and created a reluctance to prepare, to contribute, or to ask questions. Rather than the lively class debates that might be experienced in the typical Harvard method setting, many students reported that the large class setting more often led to fragmented discussions.

Another study on case method teaching in large classes confirmed several of the same large class challenges (Doran et al., 2011). While the authors observed some positive case teaching benefits including strong student engagement, the large class size necessitated strict time constraints and structure, which limited spontaneous peer interaction and large group discussion.

Gleason (1987) is concerned that there is not enough time for all students to participate in a large class, causing challenges for individual assessment, with time constraints often permitting only one group member to speak on behalf of each small group. Instructors may evaluate the performance of the entire group based on the participation of only a few individual members, likely leaving some students frustrated with their marks and questioning the assessment validity.

Lack of individual assessment may impact attendance. It is generally held (e.g., by Carbone, 1999, and Caldwell, 2007) that students are likely to attend class each week if they know or suspect that they will be evaluated. Students who feel their absence will not adversely affect their grades may be less likely to attend.

The large class issues identified from the active learning and case method literature can be distilled into three major teaching challenges:

1. Instructors are unable to provide individual attention and direction.
2. Students are unwilling or unable to participate in class discussion.
3. Instructors face challenges in providing individual assessment and feedback.

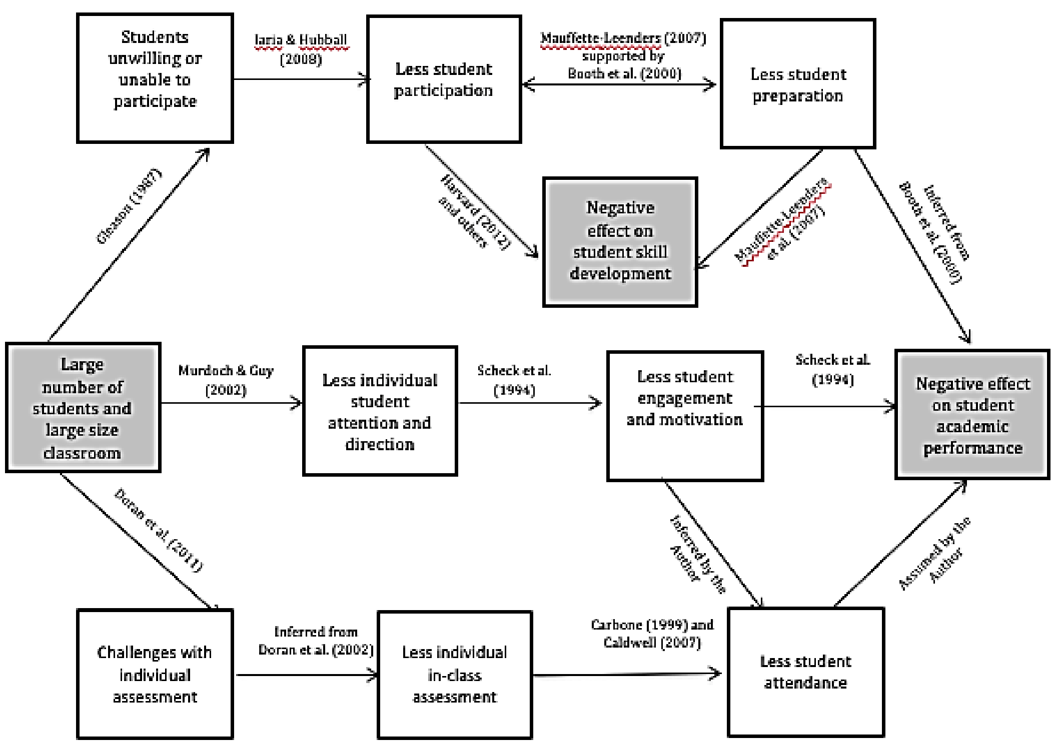

Figure 3: The challenges of active learning and case method teaching in large classes

The potential outcomes of the three major challenges and their effect on student learning are shown in Figure 3. These challenges create a situation that may lead to negative learning outcomes both for student performance and for critical skill development (analysis, problem-solving, decision-making, communication, etc.). Left unchecked, the challenges can lead to diminished student preparation, engagement, and/or attendance in class. Logic suggests that these three situations set up the possibility for lowered student performance, because a basic expectation for learning is that a student attends class, is prepared to learn, and is engaged in what she is learning.

"GOOD" PRACTICES FOR ACTIVE LEARNING AND CASE TEACHING IN LARGE CLASSES

We believe that large classes do not necessarily lead to poor performance, especially if instructors are able to act to overcome the three major challenges identified in the previous section. Despite limited research dedicated to the best practices of the case method in large classrooms, a review of the literature on active learning. discussion of individual practices of business faculty, and our own experiences have helped us identify techniques that can help to overcome large class case teaching challenges.

A summary of these "good" practices is provided below, organized as responses to the three major challenges – 'individual attention and direction', 'student participation', and 'assessment and feedback'. We follow this with some more specific guidance on various elements of large class case teaching.

PRACTICES FOR INDIVIDUAL ATTENTION AND DIRECTION

An instructor's ability to balance *structure* (i.e., context and direction setting) and *consideration* (individual attention and concern) is an important factor for student motivation (Scheck et al., 1994). Context setting is also important for creating an atmosphere that is conducive to active learning. By establishing ground-rules, expectations, and norms, instructors can create a climate where students feel comfortable asking questions and expressing their views (Auster & Wylie, 2006). Klionsky (1999) recommends setting the tone in the first class by letting students know that they are expected to interact and ask questions, and by assigning an activity that requires them to interact with their peers and the professor.

Instructors in large classes are simply not able to provide guidance to each small group interaction, nor can they be expected to interact one-on-one with each student in every class. However, instructors can provide the "illusion" of intimacy, despite the obvious impersonal atmospheres of most large classrooms. To make the classroom feel smaller, Carbone (1999)(1999) recommends reducing the physical distance between the instructor and the students by instructor movement.

Gleason (1987)(1987) suggests that instructors must attempt to learn as many student names as possible and to use them in class, a difficult challenge in a large class. Where names cannot be learned, Gleason suggests making personal comments on student assignments and calling out certain students who performed especially well. Carbone (1999) recommends the use of 'one-minute papers' (which give students, individually or in teams, one minute to write down their key questions or answers to specific problems), and if student names are attached, then the instructor can give personal feedback. Grades can be assigned simply for completing the paper, so the instructor does not have to read each submission. However, by reading a few of the more insightful papers in class, the instructor can give the impression that she has thoroughly reviewed each assignment and is interested in what each student has to say.

PRACTICES FOR STUDENT PARTICIPATION

Proper participation in the case method requires students to thoroughly prepare a case analysis and to engage in discussion during the class. Introducing the concepts of case analysis and discussion to students in junior-level and introductory courses may be difficult because the instructor must keep the attention of the large class and does not have the same opportunity for back and forth questioning to check for the understanding of all students.

For this reason, Brown et al (1987) suggest approaches that the student can easily follow and understand. The instructor begins by teaching the students the basic steps for case analysis. Brown et al. propose a simplified five-step case analysis that includes (1) inventory of key facts, (2) problem statement, (3) analysis of possible causes of the problem, (4) list of possible alternatives, and (5) justification for chosen solution.

A technique known as planned-fading can be used over the course of multiple cases, with the responsibility for analysis gradually shifting from the instructor to the students (Brown et al. 1987). For the first case, the instructor takes responsibility for leading the students through the full analysis, clearly and concisely demonstrating each of the five steps. To encourage participation, the instructor asks students to provide suggestions for each step. For the second case, the instructor leads the first few steps of the analysis, while the students are expected to complete the final steps. For subsequent cases, students complete all of the steps on their own. Brown et al. (1987) believe that this technique ensures that a majority of students in the large class can correctly follow and practice case analysis and provides junior level students with a positive first introduction to case teaching.

Teaching students a proper case analysis process is likely easier than encouraging active participation in large class discussion. This is because the physical characteristics of large classrooms make discussions difficult, and there is not enough time to hear from every student(Gleason, 1987). Instead, active learning practitioners recommend using collaborative learning groups or CLGs (Exeter et al., 2010). Instructors can call on certain groups to provide the class with a summary of their decisions and then use these summaries to encourage class discussion.

Small group activities in large classrooms can take many forms (see Figure 4).

1. *Informal Strategies with Extensions*. Students complete individual pre-work assignments and use them as a basis for small group discussion in class. Groups come to consensus on the issues, and one group member speaks on behalf of their group in class-wide discussion
2. *In-Class Project Work*. More complex and longer-term exercises that students work on together both inside and outside of class s
3. *Jigsaw Strategies*. Each student within the small group is responsible for learning a portion of course material and teaching it to the rest of the group. Cases help illustrate the theories in a practical context
4. *Structured Academic Controversy*. Groups are assigned a perspective on an issue and asked to prepare, present, and defend that point of view
5. *Problem-Based Learning*. Similar activity to case method. Groups are presented with a real-world problem and work collaboratively toward a solution.

Figure 4: Active learning small group activities. (Smith, 1987)

According to McKinney and Graham-Buxton (1993), CLG activities have been shown to increase attendance, reduce the anonymity of large classes, and contribute to student skills development and learning. However, they assert that many students are concerned with ‘free riders' that do not contribute the same level of effort as the rest of their group members.

To deal with free riders, they require students to complete individual CLG assignments first and to hand in the individual assignments with the group assignments. Grades are derived by taking the average of the scores on the individual work and the group work. De Vita (2001) suggests that free riders and other group-related issues are best dealt with through proactive discussion with students, recommending that instructors clarify for students why group work is important and provide tips for success in the group environment. Additionally, instructors should advise students on potential group-related issues, and gain alignment from them on how to deal with them.

Practices for Individual Assessment and Feedback.

Individual assessment in large case classes is difficult, yet the practice of grading class participation is an important pillar of the HCM case method. Removal of this practice may lose some of the power of HCM because students may participate less or perform less preparation for the case discussion.

Brown et al. (1987)(1987) recommend using short multiple-choice exams because of the difficulty with assessing the individual participation of students in a large class. However, to be effective the instructor needs to create case-related questions that can reasonably be solved by the students that performed a thorough case analysis and not by students that skipped or glossed over the analysis.

To ensure that students remain motivated to attend class and to participate fully, we recommend that the practice of in-class grading should be maintained at least in some form. Stork (2003) suggests offering 'bonus' marks for class discussion. Since bonus marks are not a significant part of the final grade, the accuracy of assessment is less important, and the instructor is therefore not required to use the same level of rigor. However, the bonus approach tends to disadvantage those students who are less willing/able to speak up in class. One variation of this technique is to reward groups for special contributions in class discussion, allowing them to determine who speaks on their behalf.

Bentley et al. (2009) suggest a "hot seat" active learning approach. The participation of the class can be scored on the whole rather than individually, with the contributions of each individual impacting the class score. Class members will be motivated to prepare themselves for the discussion since they don't want to let down their peers. This approach is only effective if the instructor randomly calls on students or teams for their contribution (as in the "hot seat" method) because it then forces all students to prepare for the possibility of being called.

Specific Techniques to Facilitate Case Delivery in Large Classes

This section expands on the previous discussion, drawing on literature on large class and case teaching and the authors' own experiences as well as feedback obtained from instructors and students on effective class case activities. In essence, we provide a menu of possible choices that could be fitted together in a variety of ways to suit the particular plus situation. Most assume the constraint that the students, possibly several hundred, are sitting in a large lecture theatre with fixed seating and that students will likely be in case teams for at least part of the course. Cases may be individually assigned or to case teams.

These practices are considered in six categories: Choosing the case type; Structuring the experience; Encouraging student preparation; Encouraging student engagement; Reducing the assessment burden; and Team presentations.

Choosing the Case Type

While most of the case types discussed earlier might be used in a large class environment, some are easier than others to implement. The instructor must consider the purpose of each case (e.g., application of a theory or development of a skill) and the students' knowledge level. Mini-cases are particularly attractive as they simplify pre-class preparation (or allow for first reading of the case to take place in class) and tend to focus on a single issue or problem. Where the instructor decides not to use classroom time for case analysis, the use of simulations in small group activities outside of class can be effective.

Where instructors are using cases throughout the course, they could start with the simplest form of cases (e.g., discussing descriptive cases), then moving on to cases of increasing complexity. The longer Harvard-type case can be used effectively if the case is taught over several sessions, with students being guided through the various stages of analysis and presentation. Finally, although this requires significant organization, students could be exposed to informal case challenges, based on current events or even a real-world situation presented to the class by a guest speaker.

Structuring the Experience

Instructors and students benefit from a clear understanding of the approaches and expectations for the casework.

- **Forming case teams:** Working in teams is an important part of the case method and students should form case teams at the beginning of the course and should sit together at each lecture. This facilitates team discussion in class activities. It also facilitates calling a specific group to respond, rather than individual students.
- **Using a standard and simple case approach:** Introduce students to the case approach in their first class, outlining the key activities and expectations for consistent use throughout the course.
- **Split the class up:** Should scheduling and facilities allow, consider splitting the lecture time into two parts: the first involving the whole class, the second breaking out into sections, perhaps of 30 to 40 students (i.e., 4 to 8 teams), who will engage in team presentations and discussions with one another, with different teams presenting each week and, possibly, other teams providing assessment and feedback. Such sessions might be facilitated by teaching assistants with occasional visits from the instructor.

Encouraging Student Case Preparation

Effective preparation is key to any case analysis, and can be addressed in a variety of ways:

- **Do everything in class:** Rather than requiring pre-class analysis, cases can be read and analysed by the students in class. Mini-cases can be handed out in class, or students can be directed to find the case in their textbook. The instructor gives the students a short period (perhaps 5-10 minutes) to read the case in class, and may also provide some time for the students to discuss the case with their neighbours, perhaps using a version of the "think/pair/share" technique. All students are then able to achieve a sufficient level of preparation to engage in the discussion.
- **Create short pre-work assignments**: Instructors can ask students (in teams or individually) to submit a one-page case analysis, either prior to class through online submission or to hand in at the beginning of class prior to the class discussion. Instructors should provide the students with specific questions to consider during the analysis and make the analysis short enough that it can be graded relatively quickly. The marks assigned to the analysis will encourage the students to complete the preparation work on the assignment. Handing in the pre-work at the beginning of class can also act as an effective attendance record.
- **Assess the pre-work with a multiple-choice test:** When the students arrive for class, they can be given a short multiple-choice test based on the facts provided in the case. The grades for the tests can be considered part of the participation marks for the course, and the tests also provide a measure on the attendance level for each class.

ENCOURAGING STUDENT ENGAGEMENT

Many of the standard techniques for engagement (with the material, with classmates, and with the instructor), are useful here, sometimes with adjustments to address the case element.

- **Create a participatory atmosphere:** Instructors should let students know in the first class that questions and comments are encouraged and expected. Ground rules should be set to create an inclusive atmosphere where students are able to challenge each other respectfully.
- **Make the class feel smaller:** One way to engage students in a large class is to walk around the room and amongst the students, wearing a wireless microphone. This reduces the physical distance between the instructor and the students, moving closer to students when answering their questions and by walking amongst the students during the class. To ensure that students can hear and follow along with one another's comments, microphones can be passed to students/teams who wish to contribute. If teaching assistants are available, they can be present in various parts of the lecture room and can also circulate and encourage interaction.
- **Do a team roll call:** Bring a class list organized by case teams to each lecture. Ask teams to identify themselves, in response to their number by a show-of-hands. Make a point of writing down the number present from the team. This is a quick way to identify teams that may not be working well. Instructors can use this list to call on specific teams to respond to case questions and to make notes on any matters, good or bad, related to that team. By the end of the course, they will have a good picture of the contributions of each team. Teaching assistants may be able to help in this task.
- **Integrate case work with other class activities:** Make sure that classes are made up of a number of activities, ideally no more than 10 to 15 minutes each, moving between lecture, small group work, and feedback.
- **Test the students on the class discussion:** Ask students to prepare one-page assignments in class as part of their group discussion. Students could collect blank forms when they enter the lecture room, with space for several contributions during the class, and would complete the form at various stages during the class, handing it in as group or individual submissions at the end of class.
- **Teach interesting cases**: Students will be more engaged in the case if they have an interest in the particular company or industry that is described by the case. Recent cases tend to be better, and local content also helps students to feel closer to the participants in the case. Instructors should try to avoid cases that will likely have been discussed in many other course situations (for example, Google, Amazon and Facebook).
- **Use small group discussion to start the class discussion:** The instructor can ask representatives from some of the case teams to start the discussion by summarizing their group decisions to the class. This can be repeated at various stages through the class.

REDUCING THE CASE ASSESSMENT BURDEN

- **Evaluate case team submissions.** Peer evaluations within the groups can add an additional measure to the assessment and can help reduce the risk of free riders. Instructors can use a "Group Contract" to establish the student roles (e.g., project leader, scribe, presenter), rules for how the work will be divided between group members, how group conflicts will be managed and team members evaluated.
- **Shorten the length of assignments.** Rather than asking students to prepare a full case analysis, instructors could ask for only the final recommendations with supporting arguments. Students must do a full analysis of the case issues to arrive at a reasonable conclusion, but the instructor need not spend time grading this part of the analysis. Instructors could also assign different parts of the case to different groups. For example, rather than having

each group do a full stakeholder analysis, each group could be assigned a different stakeholder, and be required to analyse the case from this particular stakeholder's point of view.

- **Use multiple-choice tests to assess case learning:** The instructor can develop multiple-choice tests that assess whether the students understand the main issues and most logical solutions for each case, perhaps doing this after case work in class.
- **Give frequent low value marks:** When student teams are asked to bring some completed work to class or hand in a class worksheet at the end of class, marks can be given for this without any detailed review. In essence, this is a form of class participation mark that would build to a significant portion of the final grade or the complete course.
- **Use peer feedback to evaluate the presentations:** To reduce the time required for feedback to the presenting group, the instructor can ask the other case teams to evaluate the presentation based on a set of predetermined criteria. The class can be given participation marks for their written evaluations, and the presenting group will get valuable feedback on their performance.

Using Group Presentations

While it is challenging to have all the teams make case presentations, it is possible to include presentation elements in the large class environment.

- **Keep the length of presentations short (5-10 minutes):** These types of short presentations teach a useful business skill, since industry requires managers to make relatively quick, clear, and concise arguments in meetings.
- **Have multiple team presentations in a single class:** Two or more teams can present the same case -- a valuable way to show different points of view and to encourage debate with the rest of the class.
- **Use the "jigsaw" approach:** Student teams are given one element of the whole case analysis to carry out (for example an industry analysis or competition assessment). Teams are then asked to present their piece to the class, thus assembling the "jigsaw". Teams can then be asked to carry out the next stage of the case process in class. Preparation can be done pre-class or in-class.
- **Use a random draw to select groups for presentations:** The instructor can ask several teams to analyse the same case and to come to class prepared to present their arguments. At the start of the class, the instructor can select one or more of the teams who will be the only team(s) to present that particular case response. Other teams could be given time after the presentation to discuss their major points of agreement or disagreement with the first group's arguments.
- **Have teams prepare video presentations for viewing outside of class:** This is an attractive approach for students, can ease assessment, and students can review the work of others, if permissions are properly structured,

Conclusion

Case-based teaching can be an important element of experiential learning and can be applied successfully in large undergraduate classes. However, instructors need to go beyond the traditional MBA-style case approach and consider more creative and simpler methods that can be adopted in the large class environment. Many of the well-established techniques for active and experiential learning in large classes can be applied or modified for the case situation. Doing so will enhance the student and the instructor experience.

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