
TEACHING TIPS & TOOLS

Teaching and Learning in the Large Classroom: A Mixed-Methods Approach for Undergraduate Health Management Education

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INTRODUCTION

For several decades, many involved in U.S. higher education—researchers, educational psychologists, professors, students, and administrators—have highlighted the challenges the large lecture class format presents for teaching undergraduates (Hamilton, 2012). Instructors report that the large lecture, while still the most common pedagogy in high-enrollment survey courses, often results in lower student participation and lack of student accountability, which in turn can lead to less engagement. Students in large lectures report feeling disconnected from the course material, the instructor, and classmates (Cooper & Robinson, 2000). This disengagement may contribute to students' difficulty focusing in class and lack of clarity about course concepts, prompting them to lose interest in course topics, and eventually skip class and perform poorly on exams. Additionally, students often find it more challenging to learn, process, and think critically about information presented during a typical lecture (Lineman, 2018).

Critics of the kind of passive learning that takes place in a lecture class contend that such limited cognitive engagement leads to bored students who discover that the path to a good grade merely requires memorizing and regurgitating information. However, this is information “they barely understand, struggle to apply, and cannot analyze or critique” (Bloom, 1956, p. 23). With only a tenuous grasp of its importance, they may undervalue their learning,

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discouraging retention. Research shows that there is less than 10% retention after three days for most students (Bligh, 2000). Of course, not all students test well in the large lecture format, as some research indicates that undergraduate students in classes with traditional stand-and-deliver lectures are 1.5 times more likely to fail than students in classes that use more stimulating active learning methods (Bajak, 2014).

While a large lecture survey course was probably never ideal from a pedagogical perspective, it has served an essential role in universities. The large lecture has been a cost-effective way to offer surveys of disciplines, such as healthcare administration/healthcare management, by introducing students to the scope of the field and preparing them for more advanced courses. On a practical level, university administrators see the large lecture as an excellent way to survive the combination of increased enrollment and decreased funding (Yazedjian & Kolkhorst, 2007).

The methodologies that appear to work most successfully involve active learning, which can be beneficial for both students and teachers in terms of their engagement and development. In the classroom, active learning can include meaningful learning activities that require higher-order thinking and the development of skills over the mere transfer of information, which can result in improved student (1) engagement, (2) retention of material, (3) consolidation of understanding, and (4) motivation (Winestone & Millard, 2012).

Research has supported the impact of active learning by showing that the degree of retention and retrieval of knowledge is facilitated by active-learning exercises, such as discussion, practice, and/or application, as by working through case studies (Davis 1993). Additional research suggests that, through increased motivation and engagement, students become better able to use their higher-order cognitive abilities and subsequently realize higher levels of achievement (Burrowes 2003; Railsback 2002). This increased engagement is related to greater retention, greater understanding, and the development of thinking and application skills for students (Huber & Kuncel, 2016).

Regardless of classroom size, active-learning strategies transform the student from a passive recipient to an active participant in the transmission of information. Furthermore, the incorporation of active learning in the classroom creates a more equitable power dynamic, whereby the student gains more control over the transmission of information and becomes more likely to take personal responsibility in the learning process (Yazedjian & Kolkhorst, 2007).

With all its faults, the large lecture class is here to stay. However, the format must be changed to include elements of active learning. As a result, universities throughout the country are experimenting with ways to adjust large lecture class dynamics and procedures to provide students with opportunities

for optimal learning and growth (Lynch & Pappas, 2017). The “new” large lecture uses several different modalities for engaging students in big classes. Many involve small-group activities that could enhance comprehension of course material, reduce anonymity associated with large lecture classes, and promote student accountability.

This article describes a pilot project using a large lecture/small class mixed-methods strategy in a healthcare administration survey course at a mid-sized (20,000+) university in the Southwestern United States. The course, HLTH 3355: Introduction to the U.S. Healthcare System, provides students with a comprehensive survey of the components, organization, and management of the U.S. healthcare system. It includes the historical perspectives, structure, operations, economic indicators, and current/future directions of the U.S. healthcare delivery system. HLTH 3355 is a required course for public health, healthcare administration, and bilingual healthcare studies majors and is a popular elective.

METHODS

Previously, HLTH 3355 was taught as either a lecture with Blackboard support or entirely online via Blackboard. In the fall of 2018, a mixed-methods teaching strategy was developed. This method was employed for fall 2018 (115 students) and spring 2019 (84 students) semesters. Once a week, all students enrolled in the course attended a large group lecture. In the lecture class meeting, the content material was taught via PowerPoint. After the lecture, the PowerPoints were uploaded to Blackboard. Using the Blackboard groups feature, students were assigned randomly to a small group (A, B, or C). Once a month, each student attended an instructor-led small group discussion to discuss a case related to the lectures. On meeting days, on which the student had neither a lecture nor a small group case, the student was given an online assignment (see Table 1 for a sample schedule).

This mixed-methods strategy was used with undergraduate students in the fall of 2018. In the spring of 2019, the process was replicated with the addition of a supplemental instructor. In the fall semester of the mixed-methods teaching strategy, undergraduate students attended a large group lecture once a week. All lectures, focusing on content material, were taught by the instructor. On a subsequent day, the student attended a randomly assigned small group discussion. Groups remained the same all semester. Instructor-led small groups met monthly (at least three times) to discuss a case related to the lectures. The course instructor facilitated the discussions.

In addition, discussion groups met with teaching assistants (TAs), called supplemental instructors (SIs), once a month. SIs are students who had taken

Table 1.
HLTH 3355 Sample Class Schedule

	Group A	Group B	Group C
Week 1	Monday: Lecture Wednesday: In class small group case	Monday: Lecture Wednesday: Online	Monday: Lecture Wednesday: Online
Week 2	Monday: Lecture Wednesday: Online	Monday: Lecture Wednesday: In class small group case	Monday: Lecture Wednesday: Online
Week 3	Monday: Lecture Wednesday: Online	Monday: Lecture Wednesday: Online	Monday: Lecture Wednesday: In class small group case
Week 4	Exam		

HLTH 3355 in fall 2018 in the large group lecture/mixed-methods strategy model. Training for the SIs, who are paid for their work, was conducted by both the course instructor and the university.

Instructor training was done in person and covered information regarding the flow and content of the course. University training involved SI responsibilities, expectations, and university policies, as well as soft skills, such as relationship building, communication strategies, and techniques for assisting the students. In the small group meetings, the SI reviewed course materials with students to determine if there were gaps in learning, answered student questions, and clarified materials.

FINDINGS

Student success in the mixed-methods class was measured by class performance and by student satisfaction surveys. All students were given surveys at midterm to measure satisfaction with the methodology, as well as learning outcomes. The Office of Institutional Effectiveness at the university provided class performance data.

SURVEY RESULTS

Using an online survey tool, each class received a 10-question midsemester evaluation (Appendix). The link to the evaluation was posted to the course Blackboard site. Students also received the link by e-mail. In fall 2018, 106 stu-

dents, or 92%, completed the survey. The average time to complete the survey was less than one minute. In spring 2019, 92, or 110%, of students completed the survey. (Several students completed the survey more than once. Because the survey was anonymous, we were not able to determine which students completed the survey multiple times and to drop their duplicate responses.) The average time to complete the survey was less than one minute.

Approximately 81% of students in the fall 2018 mixed-methods course indicated that the course almost always or frequently created opportunities for students to apply course content outside the classroom. The same question elicited a similar response in spring 2019, with 83% reporting that the course almost always or frequently created opportunities for students to apply course content outside the classroom. Students in the fall 2018 mixed-methods course indicated, by 86%, that the small group discussion almost always or frequently introduced stimulating ideas about the subject. In spring 2019, 87% of students indicated that the small group discussion almost always or frequently introduced stimulating ideas about the subject.

Overall, student feedback midsemester was positive. In fall 2018, 89% of students indicated they would take another mixed-methods course, and in spring 2019, 77% of students indicated they would take another mixed-methods course. A summary of results from the fall 2018 survey is provided in Figures 1, 2, 3, and 4. Spring 2019 results are shown in Figures 5, 6, 7, and 8.

In addition to the midterm survey, information was also gathered from the end-of-course Individual Development and Educational Assessment (IDEA) survey. IDEA is a system rating of student instruction feedback (SRI) that allows students to comment on teaching and learning based on their direct course experience. The IDEA SRI uses campus labs to provide a student-friendly, easily accessible format for evaluation.

IDEA qualitative results from fall 2018 related to the mixed-methods instruction were universally positive. They included comments such as:

- “I liked that she took a 200 something class but made us into smaller groups to be able to break down the content to ensure everyone understood. I would defiantly [sic] recommend others to take this course.”
- “Professor was a great professor and allowed us to use the material we learned in real-life situations.”
- “Loved the way this class was structured. While the lecture was big, discussion groups were small and facilitated more in-depth learning on the subjects presented in the lecture. Very similar to the labs that most science classes have.”

IDEA qualitative results from spring 2019 related to the mixed-methods instruction also were positive, with such comments as:

- “I really loved working in small groups. It helped me get a better understanding of the material.”
- “I liked the format of this class with the class as a whole on Monday and broken down into group learning on Wednesdays. It was new to me, but it worked for this class. It was a good way to facilitate learning in groups as well as apply what we are learning.”
- “I love the divide of the class into groups for the case studies. This made it easier for students to have a more intimate learning environment which I thoroughly enjoyed.”
- “Having two separate ways of teaching class made it way easier to master the subject.”

Although no students directly provided negative feedback, experiences with small groups suggest that there could be a weakness in the composition of the group itself. Even though students are randomly assigned to a small group, the possibility exists that a student could end up in a dissonant group. The makeup of certain groups can negatively affect learning.

CLASS PERFORMANCE

Data on class demographics and performance was requested from the Office of Institutional Effectiveness. Fall 2018 data reported that 45% of the class was African American, 23% of the class was Hispanic/Latino, and 54% of the students in the course were the first generation. Spring 2019 data reported that 36% of the class was African American and 21% of the class was Hispanic/Latino. In the fall of 2018, 68% of the students received a grade of A, 26% received a B, 4% received a C, and 2% received a D in the course. In Spring 2019, 62% of the students received an A, 25% received a B, 6% received a C, 5% received a D, and 2% received an F in the course.

On the course's final exam in Fall 2018, 41% of the students received an A, 39% received a B, 17% received a C, and 3% received a D or F. Spring 2019, 45% of the students received an A on the exam, 31% received a B, 15% received a C, and 9% received a D or F. In comparison, when HLTH 3355 was taught as a small class lecture in spring of 2018, 31% of the students received an A on the course's final exam, 38% received a B, 23% received a C, and 8% received a D or F. All final exams were administered via Blackboard and used the same bank of questions. This bank contains 80 multiple-choice, fill-in-the-blank, and true/false questions. Each exam in each semester is a Blackboard random generation of 40 questions.

One of the essential additions to the large lecture course in spring of 2019 was the opportunity to attend small group sessions led by a SI. During the case studies, the SI worked individually with students to ensure comprehension

and applicability of materials. In addition, the SI was available to assist all HLTH 3355 students outside the classroom during SI established office hours.

In spring 2019, 12% of students attended SI sessions and/or office hours. Every student (100%) who attended SI sessions and/or office hours received an A or B, as compared to 83% of students who did not attend SI sessions and/or office hours (Table 2). No students attending SI sessions received a C, D, or F.

Table 2.

Spring 2019 Student SI Interactions and Final Grade in HLTH 3355

Grade	# of students	# of times attended SI
A	20	1 – 5
B	5	1 – 2
C	0	0
D	0	0
F	0	0
Total # students	25	

DISCUSSION

Because of the reemergence of the large class lecture, this model of teaching sought to explore a mixed-methods way to facilitate learning in a large classroom environment. This mixed-methods model used both a large lecture and a small group active learning discussion, with the objectives of enhancing comprehension of course material, reducing the anonymity associated with large lecture classes, and promoting student accountability.

Findings from student evaluations and data from university representatives indicated a positive response to this teaching methodology for undergraduate healthcare administration and public health bachelor of science majors. Learners both enjoyed the methodology and academically benefited from the course design.

Expected challenges for the instructor center on the required fluidity of teaching styles necessary to ensure student success in a mixed-methods classroom. The instructor must be able to both engage students in a large lecture and be capable of instruction in a more personal setting.

CONCLUSIONS

As healthcare as an industry continues to diversify and grow, educators are looking for new and creative ways to improve upon the skills of future managers. For a variety of reasons, in undergraduate education, the large

class lecture is reemerging as a standard teaching approach. In general, the large class teaching methodology has been characterized by a lack of student participation, student accountability, and student engagement. Additionally, some students in large lectures report feeling disconnected from the course material, the instructor, and classmates. However, as this pilot indicates, some techniques can benefit both the student and the instructor in the large class environment.

Through a mixed-methods strategy involving a large lecture and a small discussion group, learners noted that they had an opportunity to relate the content to real-life situations. According to students, this combination facilitated a connection to the material and a deeper understanding of the information. For the instructor, the mixed-methods teaching strategy allowed for the dissemination of considerable amounts of information compactly, while also facilitating meaningful relationships. Further, and more significant to the instructor, this teaching strategy demonstrated the value of teamwork among students, a competency needed by future health service managers.

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