Toward Solving the High Enrollment, Low Engagement Dilemma: A Case Study in Introductory Business

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Abstract

The challenges of high enrollment, apparent low engagement, questionable evaluation, and a scarcity of faculty to teach an introductory business course were addressed by reformatting the course delivery to a hybrid style "inverted classroom," which devotes classroom time to active learning and assigns reading and videotaped lectures for completion outside class. In 75 minute class meetings each week, faculty and part-time business-oriented instructors work with 24 students per section to clarify and reinforce concepts through discussion of related current events and a group problem-solving exercise. We sought to determine if the new format achieved our learning objectives and engaged students. Factor and content analyses of student surveys (N = 868) show that the students' level of overall satisfaction with the course and their perceived learning of concepts correlates with their in-class engagement. Results indicate the reformatted delivery has successfully addressed the challenges presented by this high enrollment course.

Keywords: Student engagement, pedagogy, inverted classroom, business introduction

Introduction

The all-too-common phenomenon of holding introductory courses in large lecture halls raises familiar concerns: little or no interaction with the professor, limited student engagement with the material, problematic evaluation of learning, and little positive impact on retention. This paper describes our college's modifications to the delivery of our foundation course in order to address these issues. We focus on students' engagement in their learning and students' perceived and actual learning. Engagement is a key issue, given that students who are engaged in learning are more likely to retain the information and be able to apply it to new situations (Eder, 2010), a necessity with a foundation course such as ours.   We sought to discover if students are engaged and do learn the foundation concepts. We present here survey results indicating positive results for both engagement and learning. Students also experience a high level of satisfaction with the course. To begin, we describe the context driving the decision and the supporting theoretical and pedagogical rationales.

Why Change was Needed

Our freshman level introductory course is the foundation for our business program, which has one of the largest enrollments in the United States. The course serves not only our own business students but also those in other colleges, who can explore their potential interest in business without committing to a major.

Parents of entering freshman know that their son or daughter can either begin the business program immediately or include the course as general education if the student later decides on a different major. Historically, our college auditorium, with more than 300 seats, allowed us to offer the course to over 1700 students each academic year. The large lectures are quite different from our faculty's typical class size of up to 48 students, but they do accommodate the familiar financial pressures to build enrollment without hiring additional faculty. However, after ten years of such accommodation, serious problems were evident. The well of professors willing to teach the 300-student sections was nearly dry. Another major concern was ensuring that students were actually learning, given the problematic nature of online, multiple-choice exams administered outside of class. The preferred alternative, short-answer, in-class exams, was not feasible due to the large class size; hiring more tenure-track faculty to reduce class size was out of the question due to resource restrictions. A third concern was the students' level of engagement under the almost anonymous conditions. Our auditorium has more seats than many high schools have students, and we are reluctant to have entering freshmen enroll in such high capacity sections in their first semester. The impracticality of in-class discussion left many students uninvolved in the material.

The large lectures limited perceived meaningful interaction (Salemi, 2009) with our experienced business professors and full engagement in applying the concepts, thereby jeopardizing both the course learning objective of building deep understanding, as well as the college's objective of building connections among students and between students and the college. Our solution addresses these issues of engagement and assessment, both of which are typical needs in universities today. Student engagement is a crucial, ongoing challenge. The National Survey of Student Engagement (Kuh, 2001) uses the term as a proxy for the five benchmarks of effective educational practice identified by the Carnegie Foundation for the Advancement of Teaching and the Pew Forum on Undergraduate Learning: level of academic challenge, active and collaborative learning, student interactions with faculty members, enriching educational experiences, and supportive campus environment (cited in Kuh). Although Kuh singles out inadequate student-faculty interaction as being particularly problematic, we suggest that an additional, growing aspect of the challenge is the culture of current students, who are sometimes referred to as "Generation NeXt" and "increasingly being recognized as a unique cohort" (Pew Research Center, cited in Taylor, 2007). This cohort is described as "Über-consumers" who "feel a sense of entitlement" and have an "entertainment orientation, short-event horizons, and expectations for immediate gratification [that] interfere with protracted work either at school or on the job" (Taylor, 2007, p. 2:35).

To compound faculty concerns, this cohort of students "want to negotiate and will protest vigorously (or leave) if their expectations of ease and success are not met …." The high proportion of students' who lack reading preparedness (Jameson, 2007), and their reputed affinity for technology is well documented. The combination of culture, skills, and interests paints an unflattering picture of students with a short attention span and expectation of immediate gratification. The instructional approach suggested to meet their needs is high-engagement, active involvement in their own learning, a stark contrast to the traditional lecture, to which students' response is largely passive. The broad definition of engaged learning includes situational and experiential learning, both of which "increase interest and involvement" (Cobian & Newberry, 2009, p. 76). Engaged learning is [intended] to affect motivation . . . thereby resulting in greater student satisfaction and performance" (p. 3). Here, we define engaged students as "those who devote time and energy to educationally purposeful activities" (Salemi, 2009). Engagement during the classroom discussions and small-group, problem-solving exercises is important to academic success (Lo, 2010, p. 48): "… stimulating instructional methods … generat[e] student satisfaction that may be linked to successful academic outcomes (p. 48). Thus, student satisfaction may indicate, though it is not proof of, learning and engagement (Ramsden, 2004).

Our Solution: Reformatted Delivery

We adopted a blended learning approach, which can be defined as ". . . an approach . . . that can enhance and extend learning and offer designs that efficiently manage large classes" (Garrison and Vaughn, 2008). Many varieties of blended learning are possible. We chose face-to-face interaction once each week; the remaining portion of the course is online. This approach is also known as a "hybrid," meaning that two dissimilar elements are brought together to produce the same (or better) result (Sands, 2002). In doing so, the hybrid ". . . join[s] the best features . . . to promote active independent learning and reduce class seat time" (Garnham & Kaleta, 2002).
Changes to Delivery. Our implementation of the hybrid model changes only the delivery format. The original learning objectives of the course continue in the redesign, but with the additional objective to develop a connection among the students and between the students and the college.

The redesign incorporates lecture content and builds in engagement via in-class discussion in 24-person seminars facilitated once each week by part-time, business-oriented faculty. In contrast to many hybrids, which offer the *learning* activities online, ours is taught as an "inverted classroom" (Gannod, 2007). That is, the lecture is downloaded online, whereas the learning activities are held in class.

Pedagogy. In the redesigned course, students are encouraged to interact during discussions, and they are expected to collaborate with their peers in classroom teams. The interaction helps students gain exposure to alternative perspectives and should promote development of deep learning (Garrison & Vaughn, 2008). Such learning goes beyond the surface learning achieved when students are only expected to recall facts (Garrison & Vaughn, 2008). Deep learning requires students to be engaged in "discourse and collaborative tasks" and to have an ". . . opportunity to discuss, reflect, and digest the meaning of the material . . ." (88).

The reformatted approach was predicated on pedagogical theory and experience. It draws from both deep and surface approaches to learning (Marton & Saljo, 1976), which are addressed by the assignments and assessments (Garrison & Vaughn, 2008, 88). The assigned chapter readings and related videos provide the necessary factual understanding before students can apply concepts to their current events assignments. Experience says that students, particularly freshmen, may not have developed the discipline to prepare the material every week. To provide extrinsic motivation, five-question in-class quizzes were instituted, which comprise 15% of the students' final grade. Students who must complete a weekly quiz are more likely to have better class attendance, complete the assigned reading before class, attend weekly voluntary discussion groups, achieve higher performance on exams, and have an improved understanding of the assigned reading material (for a review, see Marcell, 2008). The reading and written current event assignments build students' individual preparatory time outside the classroom into the design. The weekly class meeting is designed to reinforce individual learning with interactive and collaborative activities, a combination designed to foster "deep learning" (Groves & O'Donoghue, 2009). The presence of multiple opportunities has been shown to be important in building engagement and connection (Dixson, NCA 2009). These performance measures and the portion of the students' grades for each are shown in Table 1.

The redesign draws on the students' reputed inclination to use technology and to be more actively involved in their own classroom learning. Having students actively involved is in synchrony with our goal as a college to create a learning environment that maximizes students' capacity to make effective, ethical decisions in multiple contexts. It also addresses the university's "student-centered" philosophy for student success. The redesigned format not only takes advantage of technology to maximize student opportunities but also offers a way for students to practice thoughtful decision-making with the guidance of their facilitator. Facilitators are faculty members or business professionals who have at least a master's degree, preferably in business, and substantial business-related experience. Facilitators are provided informal training in the pedagogical rationale for the course, and work with an experienced course coordinator, who is available to assist instructors throughout the term.

Description of the New Format. The redesigned course is taught in 24-person seminars that meet once each week face-to-face. Students are responsible for downloading and watching prepared videotaped lectures, reading the assigned chapter(s) prior to class, and completing online assignments. The students complete up to four current events assignments each week in which they summarize the events and apply the week's concepts by answering several questions in writing before class. To measure learning, quizzes and exams can be easily proctored in these sections.

At the weekly class meeting, students take a five-question multiple choice quiz during the first several minutes of the period. After reviewing the quiz with students and responding to any questions, the classroom facilitator guides a discussion of the current event assignments. Students can see and interact with each other as they sit at rectangular tables arranged in a single U-shape around the room. They then work with their peers as a team to solve a business problem related to the week's topic. We anticipated improved evaluation validity by administering weekly quizzes and thrice-per-semester essay exams during class. We also expected improved student engagement with the redesigned format.

Method
Survey

We surveyed students near the end of each of the first two semesters of the reformatted delivery (Spring 2009 and Fall 2009). Our response rates were 37.7% (n, 210) and 53% (n, 653) respectively.

Students earned extra credit points (1.5% of final grade) for participating. To encourage forthright answers, students were assured that classroom teachers would be given only the respondents' names and university ID numbers, sufficient for extra credit to be assigned. Answers were separated from student identifiers, and overall results are reported only in the aggregate.

The goal of our survey was to determine if the new format engaged students and helped them learn. The survey is in the spirit of recommendations set forth by Ramsden (2004) for development of the Course Experience Questionnaire (CEQ), with questions focusing "on whether students experience a teaching and learning environment that provides the conditions for effective learning." To determine engagement, rather than ask students directly if they *felt* engaged, we asked about their own and others' *behaviors*, a more easily quantifiable measure from students' observations. Students answered 21 Likert-style questions and two open-ended questions about the new instructional approach (videos, current events, quizzes, and team cases), their learning process, and their perceived learning. One question is asked on students' satisfaction with the course, which, as recommended by Ramsden, may be interpreted as a validation check of the other dimensions. The two open-ended questions, which were optional, asked students what they especially liked and what could be done to improve the course. The closed-questions, along with a summary of their "positive" response percentages, are shown in Table 2.

Analysis

Results were analyzed with both quantitative and qualitative methods. First, students' responses were tabulated to provide an initial indication of students' learning and engagement. Second, factor analysis was performed on the twenty-one Likert-scale questions in an effort to identify any underlying themes in the responses. Third, content analysis of the two open-ended questions iteratively sorted the student responses into related groups. Five response categories resulted: student engagement, course design, teacher, real-world usefulness, and other.

Results

Tabulation of responses

The results of the tabulated responses to the closed-questions are presented in Table 2. The data support our expectations of engagement and learning, and satisfaction with the format and learning processes. One indication of students' engagement is their level of preparation prior to class. Over 90% of the students said they "usually agree," "agree," or "strongly agree" that "[s]tudents in my section are usually prepared." Those who agreed or strongly agreed exceeded 60%. The preparation allows students to participate in the ungraded classroom discussion, another indicator of engagement. Students responded that "students in my class join in the discussions" sometimes, frequently, or always, an observation that was nearly unanimous at 96.2% and 98.3% during the respective semesters. When only the "frequently" or "always" responses are counted, 65.2% and 73.8% of the students are included. A slightly higher number of students (71.5% and 81.8%) describe themselves as "satisfied" or "very satisfied" with the course.

One expected cause of students' satisfaction is their perception that they are learning material important for their career choice. Further support for actual, as well as perceived, learning is shown by the 96% of students who agree that "The quizzes motivate me to attend class." The quizzes clarify and reinforce the concepts and count for 15% of the course grade. As Table 2 shows, over 90% of the students believe they are "... learning the concepts covered in this class." Students' learning is likely improved by reinforcing activities such as the current events discussions. The students agree that the current events "illustrate elements of the business environment" (91.9% and 94.1%) and "application of business concepts" (86.2% and 95.2%). In addition, students agree that "The team cases demonstrate the application of business practices" (89.6% and 92.7%).

Factor analysis

Factor analysis investigated the possible existence of an informative underlying structure among the students' responses. Scores were assigned to question responses by coding the Likert-scale levels as 1, 2, 3, 4, etc. Principal components analysis with Varimax rotation and Kaiser normalization returned six factors having eigenvalues greater than 1 and explaining a total of 61% of the variance in student responses. Table 3 shows the factor compositions for all variables with loadings greater than 0.3.The most important factor is dominated by the five responses involving students' active involvement in the classroom and, to a lesser extent, applications-focused cases and the perception of learning concepts. Thus, we designate this factor, Engagement. The second factor captures the actual pedagogical content of the course, particularly elements involving relevant, practical applications.

This factor is labeled Real-world. Both of those factors are largely independent of the videos, textbook and preparation, expected grades, and prior exposure to the material, all of which have their own factors. We suggest that the factor locations of two survey variables are particularly telling: Students' overall satisfaction with the course and students' sense of whether they were successfully learning new concepts had their heaviest loadings on the Engagement and Grade factors. While these variables are expected to correlate with Grade, their relationship to Engagement supports our contentions that students (1) value the engagement elements of the course design, and (2) associate that engagement with their learning of the course concepts. This interpretation was confirmed by a follow-up factor analysis done excluding those two survey items. Again, essentially the same Engagement factor emerged as primary, and the Satisfaction and Learning responses both correlated most strongly with that factor.

Content analysis

The survey asked two open-ended questions, providing an opportunity for students to express in their own words what they liked about the course and their suggestions for improvement. Content analysis sorted these responses into one or more of the following five dominant categories: engagement, teacher, course design, real-world usefulness of content, and NA or other. Table 4 presents the summary of this analysis, and several representative comments follow.

What did students especially like about the course? Seventy-two percent of the students chose to respond to this open-ended question. Of those, 35% commented on some aspect of the course design**,** such as the following:
- "I like that its [sic] more independent and the teacher doesn't lecture the whole time."
- "The class makes it so each student is involved and requires everyone to be prepared."
- "I like how its [sic] only one day a week and there is a lot of group work and not all lectures."
- "I liked that there was a good mix of team assignments and individual work. Working together is important but being able to develop your thoughts on a topic solo is also important."

Typical among the 27% of comments given about engagement were these:
- "I really enjoyed the team activities, [sic] they sparked my attention to learn what was going on around me."
- "I like the discussions in class, if I raise my hand with an idea i'm [sic] always being challenged and having to defend why it's right, it helps me to understand the material better."

Another 13% of the respondents focused on the teacher and said:
- "I like the way we interact in class discussions [sic]. I love the way out [sic] Instructor interacts with us teaching but still listening to our opinions and caring about how we feel on certain topics. It shows his interest in our knowledge and learning experience."
- "Not only the material, but I really enjoyed the methods used by the instructor for teaching. The layout of the classroom was also wonderful for student participation."

Those who commented on the real-world usefulness of the content (24%) said:
- "I like the Individual Current Events assignments because it helps me become more connected with what's going on in the business world."
- "I really like the case studies because they allow you to take business practices and work with them which gives [sic] you a strong uderstanding [sic] of how they are applied in the real world."
- "I like the fact that it gives me a general idea of the business world and business concepts without being to [sic] difficult to grasp."

What could be done to improve the course? For this second open-ended question, even those who especially liked something often suggested an improvement. A total of 422 suggestions were given by nearly half of the respondents. Table 4 shows how these suggestions were sorted into the same categories used for the "likes." Some students generously provided more than one suggestion, so the responses shown in Table 4 exceed our total number of survey respondents.

The vast majority (83%) of suggestions for improvement fell under the Course Design category. Within that category, students' responses varied from complaints about the "talking-head" videos to specific evaluative measures (i.e., exams, quizzes, current events), and to the absence of comforting study guides. Thirty-two percent of these suggestions urged a return to the lecture format, and 15 % advocated getting rid of the videos. Representative comments were phrased as follows:

- "Get rid of essay exams"
- "[H]ave the professor actually teach course content" (in class)

Discussion

The high level of interaction identified in all three data analyses points to a high level of engagement and learning. In general, most students like the way the course is taught with abundant student interaction and a facilitator (rather than a lecturer), with whom many students feel a connection. To have approximately two-thirds or more of the students join in discussions suggests a high level of engagement, in stark contrast to the prior version of the course. Also, they are motivated to attend class, and enjoy the classroom interaction. It is reasonable to assume that the stimulating interaction would help create bonds with those involved in the experience, thus indicating success with our indirect objective.

Students' satisfaction with the class is also high. One reason appears to be their perception that they are learning material important for their career choice. The students describe themselves as typically prepared for class, where the class discussion and team problem-solving would help them learn by applying, clarifying, and reinforcing the concepts. Although deep learning was not directly measured, the application of concepts suggests that more than surface learning is occurring. The evidence supports the likelihood of students' experiencing deep learning by having a chance to digest and reflect on the material. Students' reports of the level of participation in the discussions suggest that their peers have done so in applying the concepts.

A clear majority of students favor the new format, but not all liked the reformatted delivery in its entirety. Such diversity of responses, with one group of students strongly positive and another adamantly negative, is common in students' end-of-term course evaluations, and it may be relevant that the majority of the students in this course are freshmen. Among the minority who expressed dissatisfaction, complaints in the Course Design category dominated other concerns by a factor of ten. Further analysis shows that approximately one-third of those objections were to the non-lecture format and one-third to the essay exams, both of which are departures from the typical learning environment for today's students. The exam objections may in large part simply reflect these students' lack of prior experience with the more rigorous, essay exam format. We believe that students deserve and need the opportunity to practice expressing their ideas in their own words, rather than choosing from among sets of words offered by others. The former is far better preparation for the critical thinking and decision making vital to their careers.

The remaining third of the course design objections were divided equally between emphasis on activities and dislike of the videos. The activities objectors were approximately equally divided between those who wanted more and those who wanted fewer. The videos elicited the most vehement objections, including some wanting them abolished. The videos had been designed to focus on concepts while avoiding specific examples that would date the material. They contained critical study guidance for the exams, which was apparently either missed or disregarded by many. One constructive suggestion given to make the videos more appealing to students was to package them with exercises or a "pause" feature that encourages the students to do a quick exercise or answer a question before they move on to the next concept. Such a feature could assess students' understanding throughout the video and alert facilitators to unexpected challenges in the material, and, of course, would make even the videos somewhat interactive.

Conclusions

The redesigned delivery format is a worthwhile improvement. The college has gained a cost-effective way to promote student engagement with learning the material, while continuing to address the original course learning objectives. These results also support the achievement of the college's objective, to build connections among the students and between the students and the college.

Limitations of the research

One limitation of this work is that the students self-selected for the survey, which may have limited it to students who needed extra credit for an improved grade, although the 1.5% increment would have limited impact. It should also be noted that such an agenda-driven audience would not necessarily have produced the very favorable, yet anonymous, results that were seen. Another limitation is that we did not directly survey the students in the earlier (auditorium) course format for their engagement, learning, or satisfaction.

However, the reactions to the redesigned course are in strong contrast both to the prior experiences reported anecdotally by teachers and students of our own college's earlier, large lectures and to the overall reputation of large lecture classes in general. Although initial results are very encouraging, and have generally continued in recent semesters, sustainability is yet to be demonstrated. We have presently offered the newly formatted course for ten terms. Administrative time to manage the recruitment, training, and scheduling for the large number of facilitators has been considerable. However, we believe the benefits to students merit the investment of time and effort. An additional benefit is the cadre of facilitators we have now developed who ask to return each semester and are knowledgeable emissaries to the larger community on our innovative approach to engaging students in learning.

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Table 1.
Course Performance Measures and Point Values

Quizzes	10 @ 15 points each	150 points
Current Events	10 @ 10 points each	100 points
Problems and Cases	10 @ 12 points each	120 points
Career Assignments	3 @ 10 points each	30 points
Tests	3 @200 points each	600 points
Total		1,000 points

Table 2.
Survey questions and summary of percentage positive responses

Survey question	Spring	Fall
	usually agree, agree, strongly agree	
Most material in this course is new to me.	77.2	72.8
Students in my section are usually prepared.	90.2	91.3
The quizzes motivate me to read the assignments.	80.5	86.9
The quizzes motivate me to watch the video.	60.4	49.6
The quizzes motivate me to attend class.	96.2	96.6
I am learning the concepts covered in this class.	91.6	94.8
The current events assignments illustrate elements of the business environment.	91.9	94.1
The current events assignments illustrate application of business concepts.	86.2	95.2
The team cases demonstrate the application of business practices.	89.6	92.7
The classroom layout improves student interaction.	92.0	93.9
I enjoy the interaction in the classroom.	89.0	94.3
Having a classroom facilitator, not a lecturer, improves the learning environment.	86.7	89.7
	helpful, worthwhile, essential	
The textbook used for this course is	88.5	85.4
The cases are	84.3	89.3
The downloaded videos are	69.3	59.0
	satisfied, very satisfied	
My overall satisfaction level with this course is	71.5	81.9
	Yes	
This is the first time I have enrolled in this course.	93.2	96.5
	frequently, always	
Students in my class join in the discussions.	96.2	94.9
I typically spend this many hours (each week) preparing for class, including watching video, reading material, material, studying for the quiz, and preparing the case.	> 3 hours	
	19.5	21.2
	several, most, all	
Estimated number of tapes downloaded and watched	56.2	37.1
	% ≥ B	
The grade I expect to receive in this course is a/an	84.3	78.8

Table 3. Factor Loadings of Survey Responses (N = 868)

Survey Question	1. Engagement	2. Real-world	3. Videos	4. Textbook	5. Grade	6. Newness
I enjoy interaction	**0.77**					
Layout improves interaction	0.74					
Most join discussions	0.67					
Facilitator improves environment	0.64	0.33				
Students usually prepared	0.59					
My overall satisfaction	0.55				0.42	
Cases demonstrate applications	0.51	0.49				
Cases are helpful, etc.	0.4	0.35		0.37		
Business concepts illustrated		**0.87**				
Business environment illustrated		**0.87**				
Downloaded videos are helpful, etc.			**0.84**			
Quizzes motivate videos			0.83			
Number of videos watched			0.82			
Textbook is helpful, etc.				**0.79**		
Hours spend preparing			0.32	0.59		
Quizzes motivate reading	0.35			0.52		
Quizzes motivate attendance				0.34	0.34	
Grade I expect					**0.83**	
I am learning concepts	0.45	0.34			0.5	
My first enrollment					0.37	**0.78**
Most material new to me						0.58
% of variance explained	17	12	11	8	7	5

Table 4.

Number of Responses in Content Analysis Categories

Category topic	What do you especially like?	What could be improved?	
Course design	216	350	
		Restore lecture	112
		Modify exams or grading	102
		Add more activities	23
		Have fewer activities	25
		Omit video lectures	53
Engagement	167	37	
Real-world content	145	6	
Teacher	84	29	
NA, none, or other	323	486	