Building a Case for Active Learning: The Use of Lecture vs. Other Classroom Activities at LMBC

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ABSTRACT

An action learning process was used at a large Midwestern business college ("LMBC") to promote greater use of active learning approaches in the classroom. At an all-college gathering, faculty received instruction and encouragement in the use of the case method in their respective classes. Faculty were subsequently surveyed about their use of lecture versus other more active classroom learning activities, such as problem-solving, case discussions, group work, and individual reflection. Results obtained demonstrated widespread use of active learning across the college, though with many differences based upon academic discipline, rank, age, and gender. Connections are made to models of change and experiential learning theory.

Key words: action learning, active learning, experiential learning, lecture method, case method

Lecture has been a primary pedagogical form throughout history (Friesen, 2011). Though often maligned, it remains a dominant method of teaching, both to younger and university-level students (Bowen, 2012; Harmon, Alpert, Banik, & Lambrinos, 2015; Petrović & Pale, 2015). Over the past 50 years, many alternative learning activities have been advanced, including active, experiential, and problem-based learning (Bain, 2004; Carvalho, 2015; Slavich & Zimbardo, 2012; Sroufe, & Ramos, 2015). Ungaretti, Thompson, Miller, and Peterson (2015) noted that problem-based learning, widely used in medical education, could be a useful addition to management education. Evidence suggests superior student outcomes result from more experiential, rather than lecture-based classes (e.g., Cajiao & Burke, 2015; Fitzsimons, 2014; Kahl & Venette, 2010; Schermerhorn, Gardner, & Dresdow, 1992; Malik & Janjua, 2011; Waddock & Lozano, 2013; Williams & McClure, 2010). Both Mesny (2013) and Rendtorff (2015) provide strong theoretical and empirical grounding for the use of case studies in management education.

The considerable interest in more active or experiential forms of learning may appear to clash with the continued widespread usage – or at least perceptions of usage – of "traditional" lecture formats (Goffe & Kauper, 2014; Wieman, 2014). Hassan (2011) studied faculty perceptions of their own need for professional development to implement innovative teaching and learning methods, such as problem-based learning and technology-enhanced learning. Dhar (2012) addressed various "alternative" pedagogical approaches used in business schools. Mitchell, Parlamis, & Claiborne (2015) used a change model to address faculty resistance to online education. Models of change, as well as resistance to change, have been widespread since Lewin (1951) presented his influential force-field theory.

In an effort to move towards more evidence-based approaches to learning (Teare, 2013), the present study made use of an action learning framework, as first proposed by Revans (1982). In essence, this approach invites

participants to meet and discuss a "live" organizational issue, and then seek suitable solutions to that issue. This approach aligns with efforts by researchers in other settings (Yeo & Marquardt, 2015). For example, Smith and Stitts (2013) used action learning to introduce critical thinking skills in a capstone undergraduate business course. Soffe and Hale (2013) used action learning to promote ethical questioning by business students. Edmonstone and Robson (2014) used action learning to develop a Master's program in human resources for health. Faculty in our study were exposed to various active approaches to learning, and in an iterative and interactive manner, were encouraged to discuss and apply active learning techniques in their respective classrooms via action learning. That is, action learning was used to promote increased active learning techniques within a single business school. We next review the rationale for active/experiential learning, and then for this study.

David Kolb's experiential learning theory has had a major impact in advancing experiential approaches to management education (Bergsteiner & Avery & Neumann, 2010; Kayes & Kayes, 2003; Kolb, 1984; Kolb, 2014; Kolb & Kolb, 2005; Schenck & Cruickshank, 2015). Kolb identified four primary learning modes, including concrete experience, reflective observation, abstract conceptualization, and active experimentation (Kolb, 1984). He argued that effective instruction should engage learners in all modes of learning. However, the one-way flow of information from instructor to student via lecturing can result in passive student learning, and does not foster all four learning modes. Bergsteiner and colleagues identified common pedagogical activities, in addition to the lecture, and listed them under Kolb's learning modes (Bergsteiner et al., 2010). Table 1 presents this breakdown. Activities are included in Table 1 that typically occur in the classroom, such as lecture, discussion, case studies, and the showing of videos, as well as activities that would generally take place outside of the classroom, such as reading, homework, papers, or fieldwork.

The "Case" for Active Learning at LMBC

A one-hour teaching and discussion session on the case method was conducted at an all-day college kickoff gathering before the start of classes in August, 2014 at a large Midwestern business college (here referred to as "LMBC"). Two forces for change led to this being included in the agenda for that faculty gathering. First, several individuals in the LMBC Dean Suite expressed concerns that, despite claims that graduate courses in the college made more extensive use of the case method than was true in undergraduate courses, perusal of graduate course syllabi did not support this claim. Second, in the summer of 2014, one of the authors of this study had just returned from attending a case workshop offered by Harvard University, and presenting a case there. Another author from a different department had previously attended Harvard case workshops, and a third author had been writing and using Harvard-style cases for over two decades in capstone business courses. These three individuals were asked by the acting dean to lead an interactive session on the value of the case method, which included departmental discussions by table, as to what aspects of the case method could be utilized in each department. While potential drawbacks of the case method have been noted by others (Bridgman, Cummings, & McLaughlin, 2015; Mesny, 2013), the goal coming from the college Dean Suite was to promote more active learning in general, with the case

Table 1
Classroom Activities Associated with Kolb's Four Learning Modes

Concrete experience	Reflective observation	Abstract conceptualization	Active experimentation
Lecture examples	—-	Lecture*	Lecture examples
Laboratories	—-	—-	Laboratories
Readings	—-	Text readings	—-
Fieldwork	—-	—-	Fieldwork
—-	—-	Projects*	Projects*
Simulations*	Thought questions	Model building	Case studies*
Observations	Brainstorming	Model critiques	Homework
Films/videos*	Discussions*	Papers	—-
Problem sets*	Logs, journals*	Analogies	—-

Source: Bergsteiner, Avery, & Neumann (2010).
*Denotes an activity addressed in this study.

method providing one example, especially for both classroom and online graduate courses (Gragg, 1940).

At the end of the LMBC college kickoff gathering in August, 2014, the acting dean of the college stated that it would be good to know what college faculty were, in fact, doing in the classroom. This led the authors to initiate the university-level internal review process to survey college faculty. A fourth faculty member was added to the original three ("case presenters"), and data was collected for the present study in Fall, 2014. A decision was made to also include questions of technology usage in the classroom in this same survey.

Concerning technology, Friesen (2011) questioned how lecture, as an "old" form of oral communication, can interact with, or even survive, the increasing use of today's newer media technologies. A survey of university students found that 16.1% preferred a lecture-focused class, 19.4% preferred an interactive class with considerable discussion and group work, and 64.5% preferred a combination of lecture and interaction (Young, Douang, Vinz, Yencheske, & Flash, 2014). The focus of the survey, then, was to determine the extent to which lecturing, versus other more active learning methods, were being used by business faculty, as well as the extent to which various technology options were used by faculty in their courses (Rollag & Billsberry, 2012).

The three primary research questions addressed in this survey include:

1. What pedagogical methods are business faculty currently using in their classrooms?
2. To what extent do demographic variables, such as academic discipline, rank, etc., relate to the use of lecture versus other pedagogical approaches?
3. To what extent are technological tools, such as email, PowerPoint, etc. used by business faculty as they teach classroom-based courses?

Methodology

In fall 2014, faculty and staff with teaching responsibilities at a large Midwestern university ("LMBC") were surveyed about the extent to which lecturing, versus other pedagogical approaches, were being used in graduate and undergraduate courses. Faculty at LMBC have full responsibility for teaching courses, with no recitation sections, or any other form of teaching conducted by graduate assistants. Potential pedagogical methods included: lecture, discussion, group work, problem solving, cases, presentations, audiovisual content, individual reflection, simulations, and "other" (where faculty could include methods not already included in the list provided). These activities were largely drawn from Bergsteiner et al. (2010), with a focus on activities where the authors had anecdotal evidence of usage by at least some college faculty.1 The 30-item questionnaire was completed electronically via SurveyMonkey.2

Six questions focused on faculty opinions of active learning. Response scales ranged from 1= strongly disagree, to 5=strongly agree. Seven questions concentrated on the use of technology in classroom-based courses, specifically email, PowerPoint, Gradebook, Dropbox, Turnitin3, Facebook/Social Media, and Twitter. A five-point scale was used for these questions, from 1= not at all, to 5= all the time.

Results

A total of 94 completed surveys were received. With 125 college faculty members, this constituted a response rate of 75.2%. Table 2 summarizes the respondents' demographic data.

A follow-up was conducted, where those who volunteered at the end of the electronic survey had an observer in one of their fall 2014 classes capture time usage in a single class of the instructor's choosing. The purpose of this observation was to compare estimates to actual class time usage. Of the 26 who expressed interest in the follow-up, 13 participated.

Research Question 1: Pedagogical Methods

Faculty estimated their class time usage retrospectively in all of their classroom courses for the prior academic year. They were then asked to select one course they would teach in the current year and perform a similar estimation. As seen in Table 3, faculty estimated that over half of class time was spent in active learning activities other than lecturing. After lecturing, the three most common classroom activities were general discussions, small group activities, and working on problems. Three activities with

1 Beyond these classroom activities, the college has extensive involvement of students in college – or major-related student organizations, internships, and study abroad opportunities. These activities are also viewed as strategic college priorities, but were not the focus of this survey.

2 The full survey is available upon request from the authors.

3 Turnitin is a web-based plagiarism prevention service that checks document originality.

Table 2
Respondent Demographics

Variable	#	Pct.
Total Respondents	94	100
By Academic Rank		
Full Professor	21	22
Associate Professor	12	13
Assistant Professor	27	29
Academic Staff	34	36
By Gender		
Male	64	68
Female	30	32
By Department Affiliation (n = 93)		
Accounting (ACCT)	11	12
Economics (ECON)	7	7
Finance & Business Law (FIN)	11	12
Information Technology & Supply Chain Management (ITSCM)	16	17
Management (MGMT)	19	20
Marketing (MKTG)	14	15
Occupational Health & Safety (OHS)	11	12
By Age (n = 84)		
24 – 34	11	13
35 – 44	23	28
45 – 54	23	28
55 – 64	17	20
65+	9	11
By Employment Status		
Full-time	78	83
Part-time	16	17
By Course Level Taught		
Undergraduate lower levels	7	7
Undergraduate upper levels	28	30
Undergraduate all levels	15	16
Graduate levels	4	4
Undergraduate lower levels with Graduate	3	3
Undergraduate upper levels with Graduate	26	28
Undergraduate all levels with Graduate	11	12

Table 3
Faculty and Staff Estimates of Their Use of Class Time, Over All of Their Courses (2013-14), and For One Particular Course (2014-15)

Class Activity	Means	
	All Courses	One Course
Lecture	47.4%	44.3%
General Discussion	10.5%	10.4%
Small Group Activities	9.9%	11.8%
Working on Problems	8.5%	10.2%
Case Discussion	6.3%	5.6%
Student Presentations	6.3%	6.0%
Audiovisual Content	4.6%	4.5%
Individual Reflection	3.0%	2.8%
Simulations	1.5%	1.4%
Other	2.0%	3.0%

moderate usage were case discussions, student presentations, and use of audiovisual content. The three least used activities were individual student reflection, simulations, and other activities (guest speakers were the most frequently mentioned activity under "other"). By comparison, the 13 individuals who had a class period timed by a volunteer spent an average of 43.5% lecturing. The range was large for this sub-sample of faculty, from 0% to 77.6% lecturing.

Faculty agreed that active learning methods such as cases and experiential learning were vital in undergraduate education (M= 4.11; SD= 0.74), though they also agreed that their courses required a substantial amount of lecture (3.57; 1.16). There was moderate agreement that their courses were conducive to case and class discussions (3.39; 1.17), and that cases and experiential learning were vital in graduate education (3.35; 0.74). Faculty disagreed that they were more comfortable lecturing (2.55; 0.96), and that they used more cases in graduate courses (2.13; 1.51).

Technologies used in the classroom varied by type of technology. Instructors made the greatest use of the online Gradebook (M= 4.24; SD= 1.31), followed by email (4.20; 0.97), PowerPoint (3.83; 1.10) and Dropbox (3.65; 1.47). Faculty and staff were least likely to use the Turnitin plagiarism detection software (2.40; 1.52), and made almost no use of social media sites such as Facebook (1.24; 0.71), or Twitter (1.04; 0.63).

Tests for Differences Across Demographic Variables

Table 4 list the significant findings resulting from ANOVA analyses of the full year (2013/2014) estimated percent of class time usage for all courses, as well as the estimated percent of class time usage for a course to be taught during the 2014/2015 academic year (Research Question 2). Table 5 identifies the significant differences in opinions about active learning and technology usage (Research Question 3). Statistically significant differences were observed based on academic rank, department affiliation, gender, age, and course levels taught ($p < .05$). For informational purposes, differences are also included in Tables 4 and 5 that approached statistical significance ($p < .10$).

Discussion

A primary finding of this survey is that business faculty at this university use active learning techniques during class time. Given that only 13 participated in the follow-up study, comparing self-reported versus observed classroom time usage is not possible. Nevertheless, the similarity between "estimated" and "actual" time use suggests that faculty were not simply projecting "desirable" responses. While differences by department and demographic variables were noted, Table 3 indicates that less lecturing happens in business classrooms than might be expected (Wieman, 2014).

There are logical differences across academic disciplines. For example, Accounting faculty use more class time for problem solving. Management faculty are more likely to discuss cases. Marketing faculty integrate more social media into courses. However, many of the differences identified raise additional questions. Why isn't problem solving more widely used – outside of accounting classrooms? What are the reasons that faculty make relatively scant use of individual student reflection and simulations in their classrooms, despite strong arguments in favor of such classroom practices (Dehler & Welsh, 2014; Kane & Goldgehn, 2011; Rachman-Moore & Kenett, 2006; Waddock & Laozano, 2013; Welsh & Dehler, 2013)? What impact does gender play in the use of active learning techniques? On faculty technology usage? Why do associate professors in our sample lecture more than other ranks? Given that only 12 associate professors completed our survey, caution is needed in extrapolating from our results.

Table 4
Significant Differences by Survey Variable

Variable	Significant Differences	
	All Courses Combined Estimates 2013/2014	**Single Course Estimates 2014/2015**
Academic Rank	Associate professors – most amount of class time lecturing ($p = .069$ – approached significant) As rank increases, so does the likelihood an instructor uses class time for case discussions. ($p < .01$)	Associate professors – most amount of class time lecturing ($p = .064$)
Department Affiliation	Amount of class time solving problems: ACCT – most; MKTG – least. ($p < .05$) Amount of class time lecturing: ECON – most; MGMT – least ($p < .05$)	Amount of class time solving problems: ACCT – most; MGMT – least ($p < .05$). Amount of class time devoted to audiovisual content: ECON – most; MGMT – least ($p < .05$)
Gender	None	Males spend more time lecturing ($p = .067$)
Age	Older instructors – most amount of class time using audiovisual content ($p < .01$)	Instructors 65+ – most amount of audiovisual content during class time; Youngest group (24 – 34) – least ($p < .01$)
Course Level Taught	Instructors of 300–400 level courses – most amount of class time for lecture. ($p = .077$) Instructors of 100–200 & 700 level courses – most amount of class time for individual work & reflection ($p < .01$)	Instructors of 100–200 level courses – most amount of class time for problem solving ($p = .067$) Instructors of 100–200 & 700 level courses – most amount of class time for individual work & reflection ($p < .01$)

Table 5
Significant Differences Regarding Opinions about Active Learning & Technology Usage

Variable	Active Learning Opinions	Technology Usage
Academic Rank	None	Associate professors – more likely to use Turnitin ($p < .05$)
Gender	None	Females – more likely to use Gradebook ($p < .05$) and Dropbox ($p < .01$)
Department Affiliation	"My courses are conducive to case/class discussions." MGMT most likely to agree; ECON least likely ($p < .05$) "Cases/experiential learning is vital to undergraduate education." MGMT most likely to agree; ECON least likely ($p < .01$) "Cases/experiential learning is vital to graduate education." ITSCM & MGMT most likely to agree; ECON least likely ($p < .01$)	MKTG – uses Dropbox most; ACCT least ($p < .05$) MKTG – most likely to use social media; OSH and FIN – least likely ($p < .05$)
Course Level Taught	"I am more comfortable lecturing." Instructors who teach graduate level courses most likely to agree ($p < .05$)	None

We question whether lecturing is seen as a safer classroom technique, and if active learning may raise "vulnerability" issues for some faculty, as discussed by Brown and others (Brown, 2012; Pacansky-Brock, 2016). A concern to avoid risk in the classroom could explain why associate professors were less likely to engage in active learning than other levels of faculty, though does not necessarily explain the fact that female faculty in our sample were slightly more likely to engage in active learning in their classrooms. Future research should address such issues, as well as others raised by our findings. Comparable studies at other institutions could address questions concerning the generalizability of these findings. A larger sampling of actual class time usage would address concerns as to whether faculty self-reported time usage in fact mirrors what happens in the classroom.

This study originated from a discussion of case use across disciplines at a college retreat prior to the 2014 academic year, and can be viewed as a form of action learning (Yeo & Marquardt, 2015). Results were shared with faculty via email. A presentation of the results at a college meeting in August, 2015 was followed immediately by small-group discussions (by department) concerning possible impact on teaching methods used in that department. Individual faculty responses were then summarized and sent out to all faculty.[4] In November, 2015, a new college dean presented three strategic priorities related to teaching and student experiences, i.e.,

- Exceptional student experiences, with emphasis on involvement in student organizations, internships, and study abroad
- Relevant and rigorous curriculum
- Effective and innovative teaching

As a follow-up to these strategic priorities, the LMBC dean set up brown bag lunch discussions on the top three faculty requests from this survey, i.e., improved discussion leading, using cases in class, and using problem-solving in class. The brown bag on the case method was held in March, 2016. Thirteen faculty attended the March gathering, with over half stating that they had little previous experience with the case method. When asked why more active learning methods were not more widely used in the business classroom, the immediate response by one faculty member was, "loss of control." A discussion ensued after this comment, with more experienced case teachers

4 Sixty individual responses were submitted. Examples include: "My own exposure to different methods (such as cases) impacts my use of these methods," "What do students want from these classes?" and "We are still doing too much talking." A summary is available from the authors upon request.

addressing how they handle this issue. We do not have direct measures of change in faculty class time usage at this time. However, faculty interest in active learning across departments, combined with the top-down support from the dean, suggests that this change initiative is gaining traction.

The results of this study should encourage business faculty from all disciplines to integrate more active learning activities into their classrooms. Bowen (2012) stated that if a goal of higher education is to develop key skills, then the focus in the classroom should be less on content delivery and more on interaction. The value of learning by experience is well-established (Kolb, 2014). Yet, for many reasons, the traditional lecture refuses to "go away." This study should encourage business faculty to engage in what at least one group of business students said they most preferred, i.e., a combination of lecturing and active/interactive learning (Young et al., 2014). Perhaps it is not so much a matter of "lecturing or letting go," as much as "lecturing and letting go" (cf., Kahl & Venette, 2010). The breakdown of common teaching methods from Bergsteiner et al. (2010) – presented in Table 1 – implies that multiple teaching methods are needed to foster multiple forms of learning (Kolb & Kolb, 2005). It is hoped that these findings will promote the use of a more diverse array of innovative learning methods, and that this will take place across academic departments, ranks, and other distinguishing demographic variables. Future research can then examine whether or not this in turn leads to greater student learning across disciplines and levels of education (Shaw, Fisher, & Southey, 1999; Bologna & Weiskircher, 2015).

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