

Effect of Teaching Method on Students' Perceptions of Instructor Attributes

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A long-standing and substantial body of research indicates that an active and/or cooperative teaching method may be more effective in terms of instructional outcomes than a traditional lecture approach. A separate body of research demonstrates that effective instructors have similar personality traits and professional attributes, at least insofar as students perceive those traits and attributes. This article describes a study that merges these two areas of inquiry to explore whether the use of different teaching methods by one instructor affects student perceptions of that instructor's traits and attributes.

No college instructor today could be unfamiliar with the term “active learning,” or a related pedagogical concept such as “cooperative” or team-based learning. The literature is rife with reports of the effectiveness of active learning. Professional development courses and seminars emphasize the need to include meaningful, engaging, and realistic or “active” exercises in course work.

Yet by most reports the majority of college instructors still use primarily a lecture-based approach to teaching face-to-face classes (Paulson & Faust, 2008). Notwithstanding the research suggesting an alternative approach, this reluctance to jettisoning the traditional lecture may be justified: lecture may just be more effective for some subjects, students, or instructors. Lecture may be most effective for instructors who lecture well, and active learning or cooperative learning best for those who are or become adept with that method (Covill, 2011), and there may be other good reasons for relying largely on lecture.

Given this uncertainty, instructors seeking to enhance their teaching effectiveness face a quandary. One obvious solution is to include at least some active and cooperative learning exercises within a lecture-based class (Paulson & Faust, 2008). But this begs the fundamental question of what method should take priority. The answer may be found by reference to a different measure of teaching effectiveness: instructor traits and attributes, as perceived by students. Almost everyone cherishes the memory of a favorite teacher. That memory probably rests more on who that teacher was than how he or she taught. This common phenomenon is corroborated by research summarized in Part II below demonstrating that students rate instructor effectiveness, in part, based on who that instructor is: a combination of personality traits and attributes, such as enthusiasm and fairness, and acquired skills, such as knowledge of the subject matter and professional experience. If students' perceptions of the instructor's traits and attributes are affected - positively or negatively - by that instructor's choice of teaching method, that result should assist the instructor in choosing the more effective method.

For the purpose of assessing the potential impact of instructor choice of teaching method on students' perceptions of the instructor, we compared students' perceptions of the instructor of two sections of the same semester-long course, one section taught primarily with lecture and the other with an active, cooperative method. In the next section, we provide a review of the relevant literature, followed by an introduction of the research method. We then present the results of data analysis and conclude with a discussion of the results and their implications.

Literature Review and Hypotheses

Active learning may be defined as anything that students do in a classroom other than merely passively listening to an instructor's lecture (Paulson & Faust, 2008). Cooperative learning is commonly defined as the use of student groups working together to maximize each other's learning (Johnson, Johnson, & Smith, 1991). Defined as such, active and cooperative learning are conceptually distinct: students could be engaged individually in active learning activities in the classroom and cooperative learning exercises outside the classroom, for example. The actual and perceived efficacy of these two teaching methods could also differ for many reasons, including, for example, the potential detrimental effect on cooperative learning outcomes resulting from the creation of a “dysfunctional” group (Michaelson & Black, 1994). But for purposes of this article, cooperative learning will be considered a subset of active learning (Paulson & Faust, 2008), because the main objective of the reported study is to compare students' perceptions of a lecture-based teaching method to an active and cooperative method.

Although the research is not entirely consistent (Lancaster & Strand, 2001; Struyven, Dochy, & Janssens, 2008), the weight of authority holds that active learning produces better outcomes than lecture (New Horizons, 2005) in

terms of, *inter alia*, measured achievement (Williams, 2007) and retention (Berry, 2008). It is not so clear whether students' perceptions of teaching effectiveness are consistent with actual outcomes. Instead, the research is mixed (Machemer & Crawford, 2007).

Marbach-Ad, Seal, and Sokolove (2001); Caldwell, Weishar, and Glezen (1996); and Johnson et al. (1991), among others, report greater student satisfaction with instruction that includes at least some aspects of an active learning approach. Other studies indicate that students rate the lecture method more highly because they believe they learn a great deal from and will retain the material presented in lectures (Covill, 2011), perceive it to be more organized and a better preparation for tests (McKeachie, 1997), or because they expect to be taught, not to teach themselves (Felder & Brent, 1996). Explanations for students' preference for the lecture method in the face of substantial evidence indicating that an active method of learning achieves better outcomes include habit - students are simply more familiar with the lecture method - and the possibility that students' perceptions of the benefits of the lecture method simply do not correspond with reality (Covill, 2011). Students may in fact have no preference for teaching method, *per se*: in a study comparing active and passive teaching methodologies, Drafke, Schoenbachler, and Gordon (1996) found no difference in knowledge or attitudes between students in two sections of the same class, one taught with the traditional lecture method and the other active teaching methodologies. The authors suggested that other factors besides teaching method may be more important in influencing student learning and interest.

To some extent, of course, the variations in reported student perceptions of teaching method may actually spring from the variations among instructors. Student perceptions of an effective instructor appear to be fairly consistently correlated with specific personal and professional traits and attributes of the instructor. As reported by Faranda and Clarke (2004), Tootoonchi, Lyons, and Hagen (2002), and Centra (1977), communication skills (clarity and speaking ability) and knowledge of the subject matter rank highest. Also commonly included in the attributes correlated with perceived high effectiveness are preparation for class (Tang, 1997), fairness (Centra, 1977; Simendinger, Galperin, LeClair & Malliaris, 2009), enthusiasm for the subject matter (Centra, 1977), encouragement of student thought (Centra, 1977), and currency with the subject matter (Simendinger et al., 2009). The relative significance ascribed to these traits and attributes may vary depending on the students' culture (Alshare & Miller, 2009), and gender (or other) stereotypes may play an independent role in student evaluations (Whitworth, Price, & Randall, 2002). Nonetheless, certain instructor traits are consistently reported as positively affecting students' perceptions of teacher effectiveness.

Fewer studies focus on the effect of teaching method on students' perception of effective instructor traits and attributes. Alshare and Miller (2009) reported that the significance of some instructor traits and attributes depended on whether the class was taught on-line or face to face. Lancaster and Strand (2001) compared students' perceptions of one instructor's traits and attributes teaching multiple sections of one class, two lecture-based and two using a cooperative learning method. All sections were taught face-to-face. In their study Lancaster and Strand (2001) found no statistically significant differences, although they note that the results may have been affected by the facts that the classes shared pedagogical features (e.g., team performance) and the six survey questions used to rank traits and attributes did not specifically address the potential benefits of a cooperative learning environment, instead focusing on a lecture method.

It seems plausible that students have different perception of instructors based solely on whether the class is conducted with a lecture or active learning method. Students may perceive the instructor to be more organized or structured with the lecture method. Because active learning involves interaction with the instructor in a less formal manner, students may rate the instructor to more highly on interactive traits. In addition, there should be no difference in the perception of instructor attributes that simply cannot vary according to the method of instruction.

Based on the above-referenced literature, the following hypotheses were proposed:

Hypothesis 1: Regardless of the teaching method, students' perceptions of instructor attributes that are objectively invariable (e.g., relevant work experience) will be the same.

Hypothesis 2: Students' perceptions of instructor attributes related to student/instructor interaction (e.g., "Friendliness," "Open to questions,") will rank higher when a cooperative learning method of instruction is used.

Hypothesis 3: Students' perceptions of teacher attributes related to class structure (e.g., "Organization" and "Clarity") will rank higher when a lecture-based method of instruction is used.

Research Methodology

The research is based on a one-semester business law course taught by one of the coauthors. The students are upper-level (juniors or seniors). The course is a requirement for all business majors, and with a few exceptions all the students in the class were business majors. The course was taught to two sections. Both sections used the same textbook.

The instructor used a lecture-based method for the control section. Each class period was comprised of at least 50% lecture; approximately one-quarter of the class periods were comprised entirely of lecture. The instructor regularly posed hypothetical questions to the class, and encouraged questions and comments from students. But student participation during the lectures was limited. All students were also required to make two presentations during the semester describing a legal topic in the news, followed by questions and comments from the instructor and the class. Aside from the presenter, student participation in these exercises was limited. Additional assignments for this section included two team projects: (a) writing and presenting a paper on business ethics and (b) negotiating a business contract. Scores for the team assignments comprised 36% of the total grade. The students took four examinations during the semester. Each student took the examinations individually; use of the textbook and notes was allowed during the exam. Examination results comprised 57% of the total grade for the class, and the remainder from presentations on legal topics in the news.

The treatment section was taught using a cooperative learning method. The course was constructed to include aspects of each of the “five pillars” of effective cooperative learning as defined by Johnson et al. (1991): positive interdependence, individual accountability, interpersonal skills, face-to-face promotive interaction, and processing out. The students were randomly assigned to six teams (three or four per team) on the first day of class. Each team was responsible for presenting the material from the textbook and leading the class discussion for three chapters of the textbook. The instructor sat in the classroom, with the students, and asked questions of the presenters and the students in the audience, and made comments, as necessary, to ensure that the material was presented accurately and thoroughly. The quantity of instructor intervention varied, depending on the skills and preparedness of the team, and the relative difficulty of the material presented. Presentations were scored, as a team, by the instructor (90%) and by the class (10%). After the first round of presentations, the class voted on whether (1) to change the teams and (2) alter the requirements of the presentations. The vote was solidly against changing the teams, and for imposing additional requirements (team to present in the front of the classroom, use some graphical aid, and pose three “thinking” questions for the class).

Each student in the treatment section was individually responsible for writing five case analyses, using the standard “IRAC” (issue, rules, analysis, and conclusion) formula. On the date each paper was due, the teams would meet during the class period to discuss their separate analysis and conclusion. Each team then voted on the “right” outcome (as determined by the court’s decision in the actual case). If a team voted correctly - regardless of the outcome on each individual paper - it received 10 additional points. Following the vote, the class as a group discussed the legal principles presented by the case and the rationale for the court’s decision.

The treatment class took six quizzes, which they were allowed to answer together, as a team. They were not allowed to use the textbook or notes during the quizzes. The quizzes contained the same questions as the examinations given the control section. However, the order of the questions differed, because the material in the textbook was presented in a slightly different order in the two sections.

The final assignment for the treatment section was a “moot court” competition, in which each team drafted a brief and presented an oral argument on behalf of its “client.” The briefs were scored by the instructor. The class, sitting as the “jury,” voted for the plaintiff/defendant, and the successful team advocate received an additional 20 points.

Team scores for the treatment section comprised 69% of the total grade, with the remainder from the case analyses.

Although the examination/quiz scores for the two sections could not reliably be compared because of the differing procedures employed for taking the tests, the difference between the students’ total scores for the two sections was not statistically significant.

Data used for the purpose of this study research is based on students’ responses to a questionnaire at the end of the semester. Twenty-one students from the control group responded to the survey and eighteen students from the treatment section. Students completed the questionnaire anonymously.

The questions are related to students’ perceptions of the instructor on a number of attributes that are often discussed in the literature (Simendinger et al., 2009; Jackson, Teal, Raines, Nanssel, Force, & Burdsel, 1999). One set of questions asks students to rate instructor attributes on which perceptions should not differ between the two sections, including knowledge of subject matter, fairness to students, personality, relevant work experience,

professional appearance, and course preparation. Another set of questions concerns attributes on which the treatment class should rate the instructor higher, including communication skills, willingness to assist outside of class, sense of humor, ability to motivate, enthusiasm, friendliness, challenging students to think, open to questions, and making it comfortable to participate. The third set asks for ratings on class organization and clarity, on which instructor attributes students in the control class are expected to rate the instructor higher.

Findings

The results of the data analysis are shown in Table 1. We selected .10 rather than .05 as the test significance level (Lavovitz, 1968).

Table 1: Means and test results

Variable	Lecture method	Active-learning method	Two-group t test
Attributes not expected to vary			
Knowledge	4.95	4.89	Not sig.
Fairness	4.48	4.56	Not sig.
Personality	4.57	4.50	Not sig.
Relevant work experience	4.71	4.78	Not sig.
Professional appearance	4.46	4.78	Not sig.
Class preparation	4.33	4.56	Not sig.
Attributes expected to be rated higher by active learning class			
Communication skills	4.43	4.56	Not sig.
Willingness to assist	4.38	4.50	Not sig.
Sense of humor	4.10	4.28	Not sig.
Ability to motivate	4.24	4.22	Not sig.
Enthusiasm	4.62	4.78	Not sig.
Friendliness	4.71	4.83	Not sig.
Challenging students to think	4.43	4.83	p < 0.03
Open to questions	4.67	4.89	p < 0.09
Making it comfortable to participate	4.67	4.67	Not sig.
Attributes expected to be rated higher by lecture class			
Class organization	4.24	4.78	p < 0.02
Clarity	4.05	4.50	p < 0.07

The first hypothesis - students in the control and treatment sections will rate instructor attributes that are objectively invariable statistically the same - is supported. No statistically different results were found for the control and treatment sections. The second hypothesis - students in the treatment section will rate instructor attributes related to student/instructor interaction higher than the control section - is only partially supported. Except for the attribute of "open to questions," no statistically significant differences were found between the two sections.

We did find significant differences in students' perceptions of the instructor regarding class organization and clarity. However, the findings are opposite to what was suggested in the third hypothesis - students in the treatment section would rate instructor attributes related to class management lower than the control section. On the contrary: students in the active learning section rated the instructor higher on these attributes, as indicated in Table 1.

Discussion

The simplest explanation for the unexpected results of this study is that the hypotheses were poorly reasoned. For example, the second hypothesis may have been based on an erroneous presumption regarding the desire for instructor/student interaction on the part of the students. It may well be that students simply have no preference for a particular degree or type of interaction with the instructor. That is, so long as the instructor is perceived as "fair" and "knowledgeable," whether or not the instructor interacts in a meaningful way with the student is simply not that important. Another explanation is that the instructor traits and attributes intended to measure the relative potential benefits of the cooperative and the lecture-based method did not accomplish that objective.

But to the extent the results are sound, they may serve as good guidance to instructors seeking to improve their perceived teaching effectiveness. Most importantly, for all the significant findings, the section taught using the cooperative method scored the instructor more highly. That the students in the cooperative learning section found the instructor to be more challenging could be due as much to the nature of the assignments as the nature of the teaching method, and some of those same assignments were used in the lecture-based section. But the higher ranking for "open to questions" surely follows from the more open and informal style of the cooperative learning

environment. The high ranking for “organization” and “clarity” from the treatment section suggests that when students are required to participate actively in their own learning, they actually learn the material better, and therefore perceive the instructor as providing the clarity and organization that they have actually achieved on their own. Given past research that indicates that active-learning is often more effective (Berry, 2008; Williams, 2007; New Horizons, 2005), this explanation certainly has merits.

It is also conceivable that, given the substantial evidence that students typically prefer to have some active learning activities in a given course (New Horizons, 2005; Marbach-Ad et al., 2001; Caldwell et al., 1996; Johnson et al., 1991), there might be some halo effect as a result of that attitude. That is, students might have a more positive perception of certain instructor characteristics just because the instructor adopted a teaching method that is active-learning oriented, which is the method they prefer. Future research can help explore why this is the case for some instructor characteristics but not for others.

The findings of this preliminary study by no means settle the debate about the relative advantages of lecture-based teaching versus active-learning-based teaching. However, because the four instructor characteristics as to which there was a statistically different rating by the two sections were all rated higher by the treatment section, from the perspectives of the students active learning is likely preferred. Of course, more research will be needed to address issues raised in this study, and it is certainly not advisable to abandon the lecture-based method because, as discussed above, it may be the more effective and the preference of the students, depending on the particular situation.

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