STUDENT APPRAISALS OF COLLABORATIVE TEACHING

Kimberly Dugan and Margaret Letterman

Abstract. Scholars have argued that team teaching promises great benefits for students. However, little systematic research exists to show how such benefits occur. Team teaching takes various forms including the simultaneously taught two-person course (coteaching), the alternating two-person course (alternate), and the panel of three or more faculty (panel). The authors analyze and compare student appraisals of these three different models of team-taught classes to a norm of traditional, solo-instructed courses. Team-taught student assessment data were compared with a baseline of student evaluations of individually instructed courses nationwide. Results indicate that there are no real differences in student attitudes toward team-taught and traditional classes. However, there were some significant differences between the types of team-taught courses.

Keywords: *assessment, collaborative teaching, coteaching, educational assessment, student learning, student perceptions, team teaching*

Universities and colleges encourage faculty to try new and innovative techniques to spark student interest, inquiry, and learning outcomes. Team teaching has surfaced as one mechanism for such innovation. Educators have used team teaching (also known as coteaching, collaborative teaching, or cooperative teaching [Murawski 2005]) for a variety of reasons. Coteaching has been used as a tool for integrating material from different disciplines and remedying problems. For instance, Helms et al. (2005) reported on graduate students who were lacking communication abilities such as "interpersonal, oral, and written skills," contending that these students may benefit from team-teaching methods as a way of addressing these problems.

Team teaching can be achieved with different approaches. Two or more faculty members can work together teaching one course, or faculty can work together planning several classes as "cluster courses." Vogler and Long (2003) presented diverse models of team teaching such as faculty from various departments presenting a cross-disciplinary class, several faculty who are teaching a particular section (for example, introductory psychology) teaching one course together, or each member of a team of faculty teaching one special area of a course (with several sections). For example, in an introductory psychology class, a behavioral analyst might teaching the chapter on learning, a biopsychologist would teach brain and behavior, and a clinical psychologist could teach the chapter on abnormal behavior. Each professor would then give a lecture to all sections of that particular course, based on his or her experience and expertise (Vogler and Long 2003).

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Other styles suggested were faculty members teaching their own sections (of a particular course) as usual (once or twice weekly) and combining the sections for a team-taught session once a week; or faculty members team teaching with their graduate assistants or public school teachers (Vogler and Long 2003).

Helms et al. (2005) describe three team-teaching styles as the "interactive, the participant-observer, and the rotational models" (30). The interactive model requires two professors in the classroom together. Both participate in the lecture or activities, with a great deal of interaction and dialogue between them and their students. In the participant-observer model, both professors would be present, but only one would be actively engaged with the students while the other observes. The observing professor holds a passive role and interacts only when asked questions. The rotational model finds each professor teaching specific areas of the course (turn-taking style of teaching). This model requires less interaction, time, and communication for the teachers and less involvement with the integration of course material (Helms et al. 2005). One individual often will coordinate syllabus material, teaching schedules, and other administrative duties. Typically, team teachers develop a common syllabus, integrate their various perspectives, select topics, and share teaching activities and lectures (Davis 1995). Studies show that students benefit from these collaborative teaching methods.

Student Benefits

When experts from different perspectives pool their resources in a scholarly presentation, students can be exposed to the strengths of varied viewpoints (see Letterman and Dugan 2004). Students can develop critical-thinking skills by synthesizing multiple perspectives and relating the information to a larger conceptual framework (Davis 1995). Wilson and Martin (1998) found that students who participated in team-taught classes reported improved teacher-student relationships. Likewise, Benjamin's (2000) research reveals improved student learning outcomes when teaching is reflective and collaborative. Students were found to be more "likely to integrate disciplines successfully" with collaborative cross-disciplinary instruction (Otzinger and Kallgren 2004, 64) and feel more prepared for future courses in their field than students in traditional courses (Nead 1995). Johnson et al. (2000) found higher achievement levels, greater retention rates, and improved interpersonal skills for students in collaboratively taught classes. Other researchers found improvement in developing skills of analysis and judgment (Harris and Watson 1997). Furthermore, studies show that collaboratively taught classes can promote diversity by including team members with different ethnic, racial, and/or cultural backgrounds and from academically varied disciplines (Hinton and Downing 1998; Wilson and Martin 1998).

Indeed, some researchers suggest that the presence of multiple teachers in the classroom fosters the development of student communication skills (Helms et al. 2005) and improved student-teacher relationships (Wilson and Martin 1998). However, little has been done to examine students own perception of the value of team-taught courses compared to traditional, individually instructed classes. Given the numerous configurations of collaboratively taught courses, our inquiry focuses on student perception of the different models of team-taught courses when compared to individually instructed courses.

As previously mentioned, collaborative classes can be taught with two team members or a panel of teachers and members. Two team members can either coteach throughout the entire course or may choose to divide duties by teaching on different days or on particular subjects in the course. A panel of members (three or more) may teach from different perspectives (such as psychology, sociology, or biology) or as guest lecturers for a course. Although collaborative teaching is presented positively, there is little evidence for which style of team teaching is most beneficial.

In what follows, we examine student self-reported appraisals of the excellence of the particular course and instruction, and teacher appraisals in various team-taught settings. Further, we explore these appraisals against comparable courses taught by one instructor.

Data Collection

Data for this study are primarily quantitative. Data were derived from a survey of students and faculty participants in team-taught courses at three New England universities. Surveys were administered in the classrooms at three state universities in eleven different team-taught courses. Instructors were identified through each university's registrar and by examining course schedules and classroom bulletins. These instructors were contacted through e-mail with an invitation to participate in the study. Those who agreed to participate were then contacted to arrange the distribution of the survey to the students in their team-taught classes.

In the classroom, we informed students about the nature and purpose of the study and that their participation was strictly voluntary. Furthermore, in all but one of the classes we were unknown to the students. We provided confidentiality assurances to the participants, emphasizing to each group that it would be impossible to identify individuals who had completed the survey. Students placed their completed instrument into an envelope with the others.

Prior to data collection, we submitted our proposal and subsequently gained approval and exemption by the Human Subjects Review Committee at Eastern Connecticut State University in October 2004. At the urging of a few of the universities we contacted, we also filed our proposal with their respective institutional research boards (IRB). We proceeded with data collection only at those universities that approved our research through their IRB.

Instrument

Our student survey instrument was a standard form developed by the Individual Development and Educational Assessment Center (IDEA) in Manhattan, Kansas. It has measured student learning outcomes nationwide in courses taught by one instructor (see http://www.idea.ksu.edu). We expanded on the form's original purpose by administering it to students in team-taught classes. The IDEA instrument and the collection practice allowed for students to freely rate various aspects of instruction. The instrument is composed of forty-three questions that include student ratings of overall outcomes of the course, progress toward objectives, methods and styles, and self and course characteristics.

The survey includes both fixed-response questions and room for open-ended comments. Although we did not gather a representative sample of each of the classes, we compiled the qualitative remarks in an effort to provide more depth to the quantitative findings.

Data Analysis

Once we completed data collection, we submitted the forms to IDEA, which then provided an aggregate analysis. The analysis is unique in that it compared our group of team-taught courses to the norm for instruction by an individual instructor. Each year, more than 60,000 courses taught by one instructor compose IDEA's "benchmark" database (http://www.idea.ksu.edu/StudentRatings/index.html).

In addition, we also examined the qualitative data for common themes that would round out the picture of student perceptions of collaboratively taught courses compared to those taught by one instructor.

Results

Two hundred and eleven students in eleven different classes returned completed surveys. Of those, just twenty-five, or about 12 percent, provided open-ended remarks about the classes. Three different team-teaching models were represented in the data; coteaching dyad, alternate-teaching dyad, and collaborative panels. First, we compare team teaching to courses taught by one instructor. Second, we perform within-group comparisons of the different teaching models. Finally, we present a discussion and conclusions.

Team- versus Solo-Instructed Courses

We expected to find that team-taught classes would receive higher ratings from students in terms of their perception of overall course excellence, effort put into the course, feelings toward the field of study, and attitude toward the course. In fact, previous research in collaboratively taught courses yielded comparable findings (Benjamin 2000; Harris and Watson 1997; Johnson et al. 2000). However, the data show a quite different picture. The team-taught courses received ratings that were similar across the board to courses taught by one instructor.

Using a five-point scale representing the degree of true or false, students were asked to "describe their attitudes and behavior in this course" on a series of items (IDEA 2005). Items included ratings of the course as excellent, the degree of effort put into the course, the excellence of instruction, and the positive feelings toward the field of study. The team-taught classes in our sample scored similarly to the national norm of courses taught by one instructor. Students rated them comparably.

We looked at the overall outcome measures on items related to "progress" on course-related objectives, "improved student attitude," and "excellence of course." The standardized scores (IDEA's converted averages that enable easy comparison between and local samples) reveal similar findings. Both the national sample of courses taught by one instructor and our collaboratively instructed sample yielded comparable student perceptions. That is, there are no significant differences between any of the items on the instrument comparing the team-taught sample to IDEA's national baseline. Student perceptions in team-taught courses about progress on course objectives, improved attitudes, and course excellence are no different than student attitudes in courses taught by one instructor. Given these findings, the answer to the question "What are the differences between team-taught courses and solo-instructed courses?" is none. We now turn our attention to an examination of the differences between the various styles or methods of team teaching.

A Comparison of Different Models of Team Teaching

Although the data indicate no statistically significant differences between traditional and team-taught classes, we did find differences between the three main models we examined—the coteaching dyad (simultaneously teaching), alternate-teaching dyad (sequential teaching), and collaborative panel (classes with three or more instructors). To assess differences between the teaching models we used converted averages (see IDEA 2005). Using the standardized scores, a one-way analysis of variance (ANOVA) was performed to compare three styles of team teaching (coteaching dyad, alternate-teaching dyad, and collaborative panel) and resulted in significant differences between groups ($F(2, 10) = 16.665$, $p = .001$). Post hoc analyses found significant differences between the coteaching dyad ($M = 58.40$, $SD = 4.758$) and the collaborative panel ($M = 34.50$, $SD = 6.50$; Tukey's HSD, $p = .01$) and the alternate-teaching dyad ($M = 56.50$, $SD = 1.803$) and the collaborative panel ($M = 34.50$, $SD = 6.50$; Tukey's HSD, $p = .01$). Despite the slight preference for the coteaching dyad over the alternate-teaching dyad style, no statistically significant differences were found. More simply, students scored the different team-teaching models similarly with a slight preference for the coteaching style. However, they clearly rated the dyad models more favorably than the panel collaborations. According to student ratings, the least effective and desirable means of instruction is three or more faculty sharing responsibility for one course.

Open-ended Comments by Students on Collaboratively Instructed Courses

We also collected and analyzed students' qualitative comments, looking for possible trends. The open-ended responses were overwhelmingly positive. However, some critiques of the team-taught class emerged from the data as well. The main negative theme concerned communication and organizational problems that could translate into problems with the faculty evaluations of student performance. That is, students mentioned problems with student-professor communication, instructor-to-instructor communication, and course organization. For instance, one student commented that the course "does not allow you to form a personal relationship with the professors (most didn't even know our names)." Another clearly articulated that there was simply a "lack of communication between professors." Students expressed some concern that communication and/or organizational problems would translate into difficulties for them in trying to achieve good grades. One student advised that it is "important that the professors have good communication and keep the same standards. [Because] at times I felt like the professors used different evaluation standards." Another remarked that the "teachers need to all be on the same page and be organized, otherwise this can be a problem."

In one panel-instructed course, a student remarked that "if too many teachers

are team teaching, there is a clear lack of communication." Another articulated that the course "was disorganized and lacked proper communication. The class had much difficulty pleasing all teachers." One noted that this disorganization was a source of "a significant amount of frustration." Clearly, the lack of communication with and between instructors and the difficulty with organization of the course presented a challenge to the students who commented.

In sum, a small percentage (12 percent) of those who completed surveys offered open-ended comments. An overwhelming majority of those who offered open-ended feedback shared positive remarks about the team- or panel-taught courses. However, a pattern of critique emerged from these data as well. Team-taught courses faced the challenge of problems in communication and organization. This situation was especially problematic for students as they tried to ascertain the professors' expectations and the way to earn good grades.

Conclusion

Previous research on team teaching indicates a variety of benefits for both students (Benjamin 2000; Davis 1995; Harris and Watson 1997; Hinton and Downing 1998; Johnson et al. 2000; Wilson and Martin 1998) and their teachers (Coffland et al. 1974; Davis 1995; Ramsden 1992; Robinson and Schaible 1995; Schrage 1995; Senge 1990). Past research has also found negative consequences for the team-teaching faculty (Cohen and DeLois 2001; Davis 1995; Rothman 1980). An examination of the literature resulted in few studies reporting negative results for the students. However, Helms et al. (2005) found that team-taught courses rated lower (4.5 average) than the traditional class taught by one instructor (5.5 average).

Our research found no differences between students' ratings of team-taught classes compared to the traditional style of classes taught by one instructor. However, an examination of overall outcome measures on three styles of collaborative teaching—coteaching (two members teaching together), alternate team-teaching dyad (sequential two-member team), and a panel of teachers (three or more instructors)—yielded significant differences. Whereas student evaluations were similar in traditional classes taught by one instructor versus team-taught formats, students' quantitative results indicate a preference for the coteaching dyad over the alternate-teaching dyad. Most important, there was a statistically significant difference found when comparing the two-person, team-taught course to the collaborative panel.

WHEREAS STUDENT EVALUATIONS WERE SIMILAR IN TRADITIONAL CLASSES TAUGHT BY ONE INSTRUCTOR VERSUS TEAM-TAUGHT FORMATS, STUDENTS' QUANTITATIVE RESULTS INDICATE A PREFERENCE FOR THE COTEACHING DYAD OVER THE ALTERNATE-TEACHING DYAD.

Qualitative data were also examined for the different team-taught courses. Most students who commented indicated their satisfaction with the particular course. However, a notable pattern emerged that indicated difficulties with communication and organization in some of the courses. Some students were concerned that the lack of communication between professors translated into barriers to good grades.

Results of this study cannot be generalized to the population because of sample size; however, the findings suggest that students prefer team-taught courses with truly collaborative teaching methods. The most preferred style of team teaching in this study involved two instructors who were in the classroom together for all class meetings. The second favored style of team teaching involved two instructors who alternated teaching times in the classroom (either by a set time frame or particular area of study). The least favored team-teaching method was the collaborative panel.

NOTE

This is a coauthored paper. Authors are listed alphabetically.

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