

"REAL-WORLD" COLLABORATIVE LEARNING EXERCISES: USING MULTI-CLASS, MULTI-DISCIPLINARY PROJECTS TO ENHANCE STUDENT LEARNING

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ABSTRACT

Maximizing learning effectiveness continues to be a challenge for educators striving to find techniques to stimulate students and enhance the overall learning process. One methodology gaining prominence as a promising tool to augment or replace traditional classroom techniques is collaborative learning. This article reports on the application of two collaborative learning projects in a multi-disciplinary, multi-class setting. The authors briefly describe the components of collaborative learning and describe two in-depth, real-world projects used to bring collaborative learning to the college classroom. The article then presents a summary and discussion of qualitative student feedback analyzed by the use of the Critical Incident Technique. The authors conclude by presenting the advantages and disadvantages of the collaborative learning projects, discussing the main challenges experienced during implementation, and providing adjustments and alternatives to the project-based exercises.

INTRODUCTION

Recently there has been a renewed interest in using alternative teaching techniques to stimulate and enhance student learning and retention levels. One alternative teaching technique showing considerable promise is collaborative learning. Collaborative learning is a broad term encompassing a variety of innovative approaches involving joint intellectual effort by students, or students and teachers together (Smith and MacGregor 1992).

The focus of these types of approaches is on encouraging active student participation in the learning process. Several common features exist that qualify a technique to be collaborative learning. Past research (Cuseo 1994) identifies six key principles necessary for the development of successful collaborative learning exercises. These principles are:

- 1) Face-to-face peer interaction.
- 2) Intentional group formation.
- 3) Promotion of positive interdependence by assigning complementary roles to different group members.

- 4) The design of an active learning task for students to perform.
- 5) The instructor must serve as the facilitator of the learning exercise.
- 6) In-depth analysis of the group learning exercise is warranted.

The following two multi-disciplinary, multi-collaborative projects were designed with the collaborative learning principles outlined above being used as the framework.

COLLABORATIVE LEARNING EXERCISE #1

During the Spring 2002 semester, two Associate Professors of Business at a mid-sized university located in the southeast jointly developed and conducted the following multi-class, multi-disciplinary collaborative learning exercise. Students enrolled in Purchasing, Personal Selling, and/or Services Marketing were informed the first day of class that one of the course requirements was participation in a semester long, multi-course collaborative learning exercise. The focus of the project was to allow students to experience the entire interactive buying/selling process beginning with the identification of a need and culminating with reaching a negotiated agreement between buyer and seller.

Project development was precipitated in large part after interaction with several business practitioners who indicated that effective negotiating and bargaining skills were highly important to establishing effective and long-lasting business relationships in the current marketplace. They further indicated that many graduates tended to lack effective negotiating and bargaining skills. One practitioner felt that "poorly negotiated contracts can be the Achilles heel to a successful business relationship and can dramatically hinder firm performance." Furthermore, he indicated "a failure to negotiate an effective contract is often a function of the negotiators' ability (or lack of) to properly handle people in a group setting."

The task of participating in successful negotiations is a skill most new employees appear to lack, especially those with limited business experience. As a result,

the instructors elected to devise a collaborative learning exercise incorporating the entire interactive buyer/ seller process beginning with request for proposal (RFP) formulation and concluding with a successful mock negotiation resulting in a buyer/seller relationship. From a practical course administration standpoint, developing a project culminating in the negotiation process between buyer and seller was also chosen because it fit nicely into the courses being taught by both instructors.

The instructors initiated the project by identifying and conveying a realistic need for a service (day care). Identification of a real-world service scenario was based on Hyundai automotive company's search for their first U.S. production facility. One of the four sites under consideration was within fifteen minutes of the university, making the project immediately relevant to the students.

The professors wrote up a realistic, real-world scenario where Hyundai officials decided to outsource the offering of day care services to a qualified third-party provider. The scenario established that Hyundai officials believe including high-quality day care as a benefits option available to their employees working at the local manufacturing plant would help employee recruiting and retention efforts. With Hyundai strongly considering the local area as the future site of their newest automotive manufacturing operation, students were easily able to collect data, obtain updates, and follow the site selection decision progress by reviewing local newspapers and news broadcasts. The level of realism built into the multi-course project seemed to invigorate the students and enhance their involvement and creativity.

Assignment Overview

The project requirements were communicated to the students via the attached assignment. The Purchasing students were responsible for developing a request for proposal, the Services Marketing students were responsible for developing a comprehensive proposal to satisfy the needs outlined in the RFP, and the Personal Selling students were responsible for preparing and conducting a sales presentation. Upon completion of the sales presentation, the purchasing team (buyers) and the sales team (sellers) were required to conduct a mock negotiation. The primary goal of the negotiation was for buying and selling teams to reach an agreement for the personal selling and services marketing team members to jointly provide the requested service to the buyers (purchasing course representatives). The services marketing team was present during the negotiation process. However, Services Marketing

team members only served as expert advisors to the personal selling team in cases when the purchasing team had specific questions about the proposal.

Course Demographics

The Purchasing course, offered through the Department of Aviation Management and Logistics, had 36 students enrolled. The other two courses (Personal Selling and Services Marketing) were offered through the Department of Marketing and had 43 and 58 students enrolled respectively. Given the design of the exercise, each course was required to have the same number of teams. Therefore, team assignments were made by the instructor with the size of each team a function of the size of the course. Instructors attempted to assign groups based on their knowledge of each student and with the assistance of information available for each student (e.g., class standing, major, past courses completed).

Specific Phases of the Assignment

Once students had a chance to review the assignment, a joint class session with students from all three classes was scheduled and subsequently convened. The class session was team-taught by both professors with the primary goal being to provide students with an in-depth overview of the project. The overview of the project was followed by a detailed description of the role each team from each course would play in the process throughout the semester. This discussion included distributing an outline of due dates, a list containing student team assignments, and a process to be followed for terminating ("firing") a team member who was not performing their job satisfactorily.

Phase One of the project was to have the purchasing course team members perform the steps in the purchasing process necessary to effectively develop a detailed request for proposal. Each team was asked to research the service (day care), articulate their specific needs in detail, determine potential sources, research potential sources, narrow the list of potential suppliers to three, perform both a financial and non-financial analysis of remaining potential suppliers, and turn in a detailed written RFP for a grade. Team members were given between three and four weeks to complete the RFP phase of the project.

Once the instructors collected the RFP's from the purchasing teams, one general and standardized RFP was developed. Both instructors felt it was necessary to standardize the RFP's received by each team in the services marketing class in order to retain project consistency and maintain fairness in the grading

process. The standardized RFP was purposely constructed to lack specifics and key details. Providing a generalized RFP was done primarily to encourage innovation and in-depth research by the members of each services marketing team when developing their proposal for providing services to the buyer (purchasing team).

Phase Two of the project was to distribute the standardized RFP to the services marketing course teams. The services marketing course teams were given seven to eight weeks to complete their detailed proposal for providing the requested service to the buyers. The services course team members were required to perform a detailed analysis of how to efficiently and effectively provide the service requested by the buyers. The instructors verbally directed the services marketing course students to perform a detailed and complete services proposal designed to address all of the concerns outlined in the standardized RFP. While the instructors expected research into many areas including, but not limited to, the demographic, legal, cost, regulatory, price, service quality, and building aspects of the project, specific areas to address were not verbalized to the students. Identification of key areas to address was the responsibility of each team and was a valuable part of the learning exercise.

Once the services marketing teams had worked on their proposals for a sufficient length of time, Phase Three began. Each services marketing team was allowed to discuss their proposal with the pre-assigned personal selling team responsible for selling the service. Upon completion of consultation with the personal selling team, the services marketing team was allowed to revise their proposal prior to submission. The instructors subsequently collected two copies of the final services marketing proposal from each team. One copy was kept for grading purposes while the second copy was distributed to the pre-assigned, corresponding purchasing team for their review prior to the sales presentation and mock negotiation. As the purchasing teams were reviewing the services marketing proposals, the personal selling teams were preparing their sales presentations. This phase of the project lasted about two to three weeks.

At the conclusion of Phase Three, a multi-team, multi-class mock negotiation was scheduled. Each group of three teams involved in each mock negotiation was allowed to select an appropriate time for them to participate in the negotiation process. The mock negotiation was scheduled to last a total of thirty minutes with the first eight minutes reserved for the personal selling team members to conduct their sales presentations. The sales teams were instructed to

take the eight minutes to perform a complete and professional sales presentation. Each team was encouraged to be innovative with their presentation materials. Each team used some type of personal computer-based presentation software and many augmented the presentation with other visual aids including day care facility diagrams, detailed diagrams and pictures of internal and external day care furnishings, and budget information.

At the conclusion of the sales presentation, the next two minutes were reserved for face-to-face buyer/seller introductions. The last twenty minutes of the mock negotiations were reserved for buyer/seller negotiations and seller consultation with the services marketing representatives on an "as needed" basis. The mock negotiations were filled with spirited debates, clarification of both the original RFP and the services marketing proposals, disagreement over legal and regulatory issues, and disagreement over the financial requirements necessary for providing a full-service day care facility. While each phase of the project was well received and contained considerable student participation, both instructors felt that, when compared to the other phases of the project, students were more heavily engaged in the mock negotiation phase of the assignment. Performing the mock negotiation concluded the collaborative learning exercise.

COLLABORATIVE LEARNING EXERCISE #2

Project two was patterned after the first exercise; however, it included only two classes and a different project assignment. Students enrolled in International Supply Chain Management and/or International Marketing were informed the first day of class that one of the course requirements was participation in a semester long, multi-course collaborative learning exercise.

Course Demographics

The International Supply Chain course, offered through the Department of Aviation Management and Logistics, had 54 students enrolled. The International Marketing course was offered through the Department of Marketing and had 51 students enrolled. Given the design of the exercise, each course was required to have the same number of teams. Students from both courses were formed into groups and then groups from the international supply chain course were randomly assigned to team up with groups from the international marketing course.

The project was based on a new product recently patented by a start-up company. The new product

was designed to revolutionize a segment of the sport fishing industry by introducing a new type of fish bait. The two instructors provided both classes with a summary of company facts and included the specific wishes of company representatives. Students enrolled in the international marketing and international supply chain courses essentially served as consultants for management of the start-up company.

One key client request was to help the company assess four international markets and provide a detailed and complete proposal for marketing and exporting the revolutionary fish bait to Japan, Brazil, Australia, and the United Kingdom.

Specific Phases of the Assignment

The international marketing course was given four primary tasks: 1) to provide a country background, 2) to provide a demand analysis, 3) to provide a detailed promotion and advertising budget, and 4) to provide detailed financial statements. The country background (primary task #1) was to include things like a background of the country, its geographic location, the current economic situation of the country, the currency used in the country, recent performance of the currency, an overview of the political stability of the country, important cultural issues that impact business operations, and important legal issues that may impact business operations. Task #2 was a demand analysis. The demand analysis was to include estimates of overall market demand and what percentage of the demand was reasonable for the new product to capture. Task #3 focused on how they were to promote the product and the total cost of promotion while task #4 focused on building spreadsheet income statements to show the estimated net profit (loss) from the venture.

Once the international marketing group completed their analysis, students of the international supply chain course were to provide a detailed and complete plan for how to export the product to the assigned country (Japan, Brazil, Australia, or the United Kingdom depending on which country a group was assigned). In essence, the international supply chain groups were to serve as the freight forwarder for this business exporting opportunity.

The freight forwarders job was to guide the company exporting the product through various processes common to freight forwarding firms. It was made clear that most exporters rely heavily on an international freight forwarder to perform these services because of the multitude of considerations involved in physically

exporting goods. Therefore, the student reports from the international supply chain course needed to be thorough and complete since they were serving as the "expert" to the international marketing course groups.

Once the international marketing students completed the first portion of their project, and the international supply chain students completed their freight forwarding and consulting obligations, the two groups convened to devise a final presentation and compile summary financial statements. Once the international business proposal was completed, the two groups were responsible for conducting a business meeting to include a presentation of the business plan and time for questions and answers.

IMPLEMENTATION CHALLENGES OF COLLABORATIVE LEARNING PROJECTS

One challenge with project implementation was obtaining an agreeable time and date when every member of all the teams could convene to perform their group work. In both cases, the instructors obtained permission to conduct the mock negotiation and/or presentations on the university provided student study days immediately prior to the start of final exams. In exchange for having the students agree to participate in a mock negotiation and/or presentation during the study ("dead") days period, each professor compensated the students in their course by eliminating one traditional class meeting.

Other challenges faced by the instructors included handling students enrolled in more than one of the courses simultaneously and dedicating sufficient class time to the project while simultaneously retaining enough time to cover the necessary course topics. In addition, logistical issues such as organizing multi-class meetings and arranging for a facility conducive to conducting mock negotiations and/or presentation occurred occasionally and were addressed with relatively minor effort.

Two potential challenges not faced by the instructors included the handling of a team member dismissal and conflict within the team. Throughout the collaborative learning exercises, all of the instructors had a strong desire to keep the projects as "real-world" as possible. Therefore the instructors agreed ahead of time to handle both dismissals and conflict issues much like team members in a business environment would be expected to address the issues. First, a legitimate dismissal was to be handled by informing the student who was "fired" they could either: 1) convince another team to hire them, or 2) complete the project as an individual. Second, conflict resolution issues of any type were to be handled

internally by the members of the team or between teams.

RESULTS

Feedback was solicited in several ways. First, verbal student evaluations and periodic scheduled student feedback sessions utilizing portions of the Critical Incident Technique methodology outlined in previous research (Sautter and Hanna 1995 & 1994) indicated a positive learning experience. Throughout project administration students indicated they were gaining important experiences well beyond the typical classroom learning approach. For example, many of the students indicated that in addition to sufficiently learning the material of the course they were enrolled in, they also learned important aspects of the content of the other courses.

In addition, at the conclusion of the learning project, students were asked to fill out two evaluations. The first evaluation was a peer evaluation where each member of each team was asked to evaluate the relative contribution of fellow teammates to achieving the overall team goal. Completion of the evaluation form was a portion of each student's grade for the project. Second, each student was required to fill out an evaluation for each course. Once summary data were obtained, a statistical comparison of course evaluation numbers for the collaborative learning-based course were compared to past evaluation numbers for the traditional lecture-based course. No statistically significant differences were noted during the comparison. However, in general the numerical ratings were one to three-tenths higher for the course taught partially by using collaborative learning techniques when compared to past evaluation results of traditional lecture-based courses.

CONCLUSIONS

In sum, the instructors identified three primary benefits of assigning the collaborative learning projects to their classes. First, the collaborative learning exercises applied to the researchers resulted in improving students' interactive skills. Second, the projects increased student involvement in the learning environment by enhancing interest and in-class discussion. Third, student energy and preparation throughout the projects were generally enhanced due to student perception in a class project with "real-world" applicability. In addition, there were numerous secondary benefits identified.

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