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DOES IT REALLY WORK?

AN APPLICATION OF THE INTER-GROUP INTERACTION (IGI) FRAMEWORK

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ABSTRACT

The use of cooperative learning at the college level is growing, as is the prevalence of teamwork in organizations. This paper presents the results of a quasi-experimental study using the inter-group interaction conceptual framework developed by Howard, et al. for cooperative learning. Students in strategic management courses were grouped and then paired with groups of Accounting Information Systems students to comprise teams. The cooperative student teams were required to develop a viable business plan for a theoretical small enterprise. To assess the degree of cooperativeness, a pre/post attitudinal survey was administered. The results of the experiment suggest that students attitudes toward teamwork improved, particularly *in* terms of their enthusiasm. However, an interesting effect was that the experiment seems to have had little impact on the students' desires to work alone. Other results are also reported.

INTRODUCTION

Cooperative learning as a pedagogy has increased in prevalence in the college setting over the past few years. The benefits are numerous and widely known (Markulis, et al, 1994; Beckman, 1990; Gunter et al, 1990; Hiltz, 1990; and Wagner et al, 1992). The concept of students working together, to complete a single task, relying on other group members, and receiving a common grade takes on many shapes and sizes when implemented in the classroom.

Teamwork has also become common place in most organizations. The ability to work well in teams and to be adaptable enough to fit into diverse groups

may be the difference between having a job with an organization and having a career. As Lancaster (1997) put it "Teams, teams, teams. Whether you love'em or loathe'em, they're all the rage these days, so learn to live with them. Your career may depend on it." Cooperative learning is an excellent opportunity for students to venture into the teamwork mode.

The Inter-group Interaction (IGI) was described as an innovative approach to cooperative learning, which requires students to work both within teams and between teams (Howard, et al., 1997). One of the principal purposes of the within-between team arrangement (IGI) is to encourage cooperation across different but related disciplines. Although thought to be an effective experiential method of enhancing cooperative learning, it is not always easy to implement such a design. The logistics of coordinating two or more groups from different academic areas can be difficult. The project requires an enormous amount of time on the part of the facilitators, careful planning and monitoring, and a thorough evaluation upon completion. The benefits, however, are: students are exposed to the functional interdependence of business units which models the realism of organizations, management skills are developed, creativity on the part of the students is enhanced, and the students are exposed to the process of management. Howard, et al. (1997), provide a framework for implementing an IGI which describes the planning, implementation and evaluation phases of the project. Based on this framework, a project that incorporated an IGI into the undergraduate Accounting Information

Systems and the Strategic Management curricula was introduced.

THE PROJECT

Project Description & Rationale. This particular combination of disciplines was selected for a number of reasons. First, the teams are commonplace in organizations today and accountants working with managers are a natural combination. Second, both the literature and comments from professionals in the fields of accounting and management suggest that there are negative stereotypes on the part of both groups toward each other. These stereotypes can cause barriers, which lead to problems when the two groups must work conjointly on various projects. Since there is a need for people with different, but related specialties to work together in professional situations, the authors believed that this project could both break down negative stereotypes and get students from different disciplines accustomed to working together.

The project required the students to develop a business plan for a small enterprise. The required components of the plan consisted of: an industry analysis, business description, marketing strategy, strategic planning process, organizational design, financial projections, description of the information system and related database, and funding request. The instructors assisted the students in locating industry data and the local SBDC (located in the business school of the college) provided additional startup information for some groups. The purpose of the project was to get the students to integrate the knowledge from both current and past courses into an actual business plan and to learn to deal with "mixed groups." The teams were instructed to work together as a unit, with both disciplines working on all aspects of the plan - not having the accounting students do the accounting "stuff" and the management students do the management "stuff." This teamwork concept was reiterated and re-enforced (as will be described below) throughout

the semester on a regular basis.

Project Schedule. The instructors involved met several times over the summer to plan the project. It was decided that all students registered in the 3 sections of AIS and the 3 sections of Strategic Management would be involved. This meant coordinating the activities of 110 students comprising 17 groups. A letter was sent to the preregistered students, before the start of the semester, which explained the project in detail. The rationale, expectations, grading scheme, project benchmarks etc. were provided to the students in this letter prior to the final registration date. The letter also informed the students of a large, "mega" meeting, which was to be held in lieu of the second scheduled class for all students. The meeting would allow students to ask questions and to self-select teams.

Eighty-five percent of the students were able to attend the "mega" meeting. Questions were answered, and students were allowed to self-select "teams" if they so desired. The majority of the students opted for self-selection, however a couple of teams were "assigned" by the instructors. Students were also told that the "best" plan(s) would be awarded a monetary prize and used by the local Small Business Development Center (SBDC) as sample plans for their clients.

Benchmarks & Follow-up. The students handed in weekly journals that detailed their progress, any problems encountered and the like. Each team had a mandatory meeting, with both professors, between the halfway and three-quarter mark of the semester. Many of the students also met informally with the instructors on a regular basis. Twice during the semester, students were sent a joint memo evaluating the team's progress. An oral presentation of the business idea was given during exam week. At the end of the semester, the teams were sent a memo that evaluated their final plan and indicated their grade. The project constituted 35% of the course grade. Students

completed peer evaluations for all the group members, which could negatively impact individual grades. In the absence of major group problems, all members of the team received the same grade.

METHODOLOGY

Project Survey. A primary purpose of the project was to determine if the students' attitudes toward cooperating with colleagues from related disciplines improved as a result of the experimental situation. To determine this, an attitudinal survey was developed and administered at the beginning of the semester. The survey attempted to ascertain students' perceptions toward persons from professional disciplines different from their own, (particularly those disciplines that are professionally related to their own) as well as their attitudes toward teams and teamwork. The same survey was completed at the end of the project. The results of this pre/post survey will be discussed later in this paper.

Survey Description. The survey consisted of 20 questions relating to student attitudes. The surveys were administered anonymously, but coded by the students so that the results of the first survey could be matched with the results of the survey completed at the end of the semester. As mentioned, the purpose of the questions presented on the survey was to ascertain the students attitudes toward working in teams, working with various academic majors, the importance of various skills, and the opinions of the students toward management and accounting students specifically. This last topic was included in an attempt to determine what, if any, stereotypes the two groups had about each other.

Specifically, the students were asked to indicate their level of agreement with statements concerning their enthusiasm for teamwork, their positive experiences in teams, and their preference toward individual projects. They were also asked to rank the importance of various skills and the desirability

of working with accounting, management, or economic majors.

RESULTS

Key survey items were tested for statistical significance of differences between pre-project and post-project mean results. The key items examined for this paper were:

1. Enthusiasm about being on teams
2. Having positive experiences with teams
3. Preference for working alone
4. Receiving constructive criticism
5. Enjoyment of working on teams
6. Ranking the importance of various skills
7. Ranking of preference for working with different majors

The t-test for matched pairs was used to assess the attitudinal items (1 through 5 above) while the Wilcoxon test for ranked data (which produces a Z score) was used for items 6 and 7. Table 1 shows the results of the pre and post surveys. As can be seen, the pre-project surveys generally indicate that students agree with the statements concerning: enthusiasm about being on teams, having had positive experiences working on teams, and enjoyment of working on teams. The post-project results also imply a positive attitude toward teamwork, with the mean response higher in 2 of the 3 questions and statistically significant for the enthusiasm level. However, in what appears to be a contradiction, pre and post responses for the statement "I generally prefer to work on academic projects by myself," are statistically different and indicate a stronger desire to work alone. The authors believe that this simply indicates that while students do not dislike group work, and appear more enthusiastic toward it as a result of the IGI, they prefer to work alone. The students must rely on others for a significant part of their course grade and have less control over their own destiny. This reflects a common phenomenon in organizations today as well.

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Students ranked people skills the most important, and marketing and finance skills the least important, in both the pre and post survey instruments. In an interesting, but not unpredictable result, the pre and post surveys indicate that students ranked general management skills higher before the project than after, and human resource skills were ranked more important after than before. While students already perceived people skills as the most important, the necessary interaction among team members may have contributed to the students ranking this similar skill higher after working on the project.

The survey results also indicate that students appreciate constructive criticism from fellow

students more after the project than they did before. The ability to learn from others enhances the experience and may indicate a maturation process occurs as a result of working with diverse groups.

Although students ranked management majors as their first choice and accounting majors second, the means are relatively close. There was no significant change in the rankings after the project. The responses indicate that students prefer to work with other students in their major. The fact that economics majors were so clearly the third choice probably reflects the fact that there were very few, if any, economics majors in either of the two courses.

**TABLE 1
SURVEY RESULTS**

Key Item	Pre - Project Mean	Post - Project Mean	T	Z	P (2-tail)
I am generally enthusiastic about being on teams and doing teamwork ¹	3.52	3.73	1.95		0.05
I have had positive experiences in working on and with teams ¹	3.65	3.78	1.16		0.25
Rank order importance of <i>people skills</i> ²	1.52	1.64		0.65	0.52
Rank order importance of <i>finance skills</i> ²	5.30	5.47		0.84	0.40
Rank order importance of <i>marketing skills</i> ²	5.34	5.33		0.28	0.78
Rank order importance of <i>computer skills</i> ²	3.53	3.48		0.21	0.83
Rank order importance of <i>general management skills</i> ²	3.16	3.66		2.16	0.03
Rank order importance of <i>accounting skills</i> ²	4.58	4.27		1.65	0.10
Rank order importance of <i>human resource skills</i> ²	4.55	4.12		1.90	0.05
Rank groups you would most like to work with <i>accounting majors</i> ³	1.95	1.75		1.93	0.06
Rank groups you would most like to work with <i>management majors</i> ³	1.65	1.68		0.31	0.76
Rank groups you would most like to work with <i>economics majors</i> ³	2.8	2.7		0.63	0.53
I generally prefer to work on academic projects myself ¹	3.06	3.31	2.57		0.01
I usually appreciate constructive criticism from fellow students ¹	3.88	3.99	2.04		0.04
I generally enjoy working on teams ¹	3.64	3.61	0.30		0.76

¹ 5 point scale, 1=Strongly disagree, 5=Strongly agree

² Rank of importance, 1=most important

³ Rank of desirability, 1=most desirable

LIMITATIONS & CAVEATS

Some of the normal limitations of group work were experienced, but this project also had a few new twists. The need to have a team that consisted of two groups (one from each class) meant that the size of the teams ranged from 5-7. This made scheduling meetings and working together effectively much more difficult. The attitude of some groups toward their "other-class" counterparts also created challenges for the teams. The students' lack of business experience led to the creation of some business ideas that were unrealistic. Financial projections were frequently overly optimistic and students frequently assumed plenty of cash for the principals' investment, when in reality there is generally very little. The project was very complex and the amount of time that needed to be devoted to it was significant, resulting in a project that was probably too much for one semester, especially when there were other requirements for each course as well. This time-consuming aspect of the project led some groups to hurriedly put together their report and for the groups to "specialize." Even though it was stressed that both groups work together on all aspects, the instructors noticed that certain components of the project became "the accountants' responsibility, etc. Overall, the projects were relatively well done and there were no major uprisings by the students.

Finally, while the survey results generally indicate a positive response to teams and teamwork, it is by no means conclusive. The data collected needs to be subjected to further analysis and interpretation. Individual responses need to be carefully examined, along with any qualitative information that the student journals might provide. Additionally, the survey instrument itself has not been tested for reliability/validity.

CONCLUSIONS

Cooperative learning has found its place as a legitimate pedagogy in business schools. The inter-group interaction described in this paper

incorporates many of the aspects of cooperative learning, while adding complexity and realism to the student project. Students had to creatively determine which business to start, thoroughly analyze the industry, compute financial projections, and present the project in an oral report to their peers. They had to do all this while learning how to work together as group members and as teams. This combination of theory and practice or content and process provides the students with a valuable learning experience. The attitudinal survey indicates that the experience was a positive one as well.

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