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THE INTER-GROUP INTERACTION: AN INNOVATIVE APPROACH TO COOPERATIVE LEARNING

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ABSTRACT

There has been a growing interest in the use of cooperative learning in colleges and universities during the past several years. This paper discusses the use of an innovative approach to cooperative learning, the *Inter-group Interaction (IGI)*. For many academics, IGI is viewed as an attractive but difficult to implement approach to classroom pedagogy. The authors believe, however, that with proper planning and careful implementation, the IGI can be an excellent pedagogy for enhancing both disciplinary knowledge and behavioral skills for business students. This paper reviews the brief body of literature on the subject and presents the benefits and challenges of using the inter-group interaction method. The paper discusses both the academic advantages and practical logistics of using the IGI approach and presents a model plan for using the IGI approach based on the authors' own experiences with using the approach. The paper also presents a list of combinations where an IGI approach might be beneficial.

INTRODUCTION

There has been a growing interest in the use of cooperative learning in colleges and universities during the past several years (Markulis, Strang, Gosenpud & Wheatley, 1994; Beckman, 1990; Gunter, Estes & Schwab, 1990; Hiltz, 1990; and, Wagner, Scharinger & Sisak, 1992). While there are several definitions or descriptions of cooperative or collaborative learning, most scholars agree that cooperative learning includes students working together to complete a single task, relying on each other for assistance and decision-making (rather than the teacher), and receiving a group grade, as opposed to individual grades. Some of the essential characteristics that differentiate cooperative learning from traditional teaching techniques are:

Positive interdependence.
individual accountability,
heterogeneous membership,
shared leadership,
focus on maximizing each member's learning,
maintaining good working relationships among members.
teaching of group skills.
instructor observation and coaching, and

group processing techniques (Markulis. et al.. 1994).

There are a number of ways in which to implement cooperative learning pedagogies in a collegiate setting. One way, and in our view a very effective way, is to use the IGI approach. Basically, the IGI consists of two (or more) groups interacting with each other to achieve a common endpoint. Each group, generally divided into teams - but not always, is "connected with" another group. The groups may consist of two college classes, or one class and an outside entity. For example, students in an auditing class are formed into teams and asked to audit the financial statements of student teams from a strategic management course (Morse, Laschenski, & Bossung, 1996). Or, MBA student teams are paired with NASA scientists to determine the commercial feasibility of various technologies (Hill & Kuhns, 1994). Of course, an important question is why use IGI? The answer to this question is similar to the answer given to the question: Why use teams? IGI is a variation or extension of teamwork, with one important difference--it adds a dimension of realism to a project as students must not only learn to work within teams, but they must learn to work between teams. That is, student teams are put into a setting in which they must interact (at times, in an adversarial context) with teams of stakeholders other than their teammates in order to accomplish a certain project. This occurs in management all the time: teams of managers working with teams of accountants, auditors, stockholders, customers, consultants, foreign workers, etc. This cross group interaction adds a high degree of complexity to the cooperative learning experience, as participants must understand business functions other than those emphasized in a particular course. Students are well served by this introduction to the functional interdependencies of business units.

LITERATURE REVIEW

The IGI is designed to provide students with a learning experience which incorporates the components of applied experiential learning, as well as an exposure to the integration of two or more areas of academic learning. The following are examples of such exercises reported in the literature.

Greyser-Pollard (1985) linked student teams in a Collective Bargaining course with those from an Integrated Management course. Student teams worked independently

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for the first six weeks of class and then the teams met in pairs to discuss the firm's decisions regarding labor practices including wages, fringe benefits, overtime, and the possibility of strikes. Since each team had approached the simulation from an entirely different standpoint (as management or as labor negotiators), the experience was, according to the results of the student questionnaire, quite enlightening for both teams.

In another exercise, Bellanca, Markulis and Strang (1986) used an actual IGI exercise in which one class served as the managers of a firm (a computerized simulation was used as the firm), and another class of students served as the Board of Directors. The role-playing student teams were required to interview and hire their management team, after the instructor explained the simulation during the first week of class. The teams were required to hold weekly meetings and an instructor might "drop in" unannounced at any time to observe the team's activities. The authors list several traditional management skills, which they believe were augmented during the IGI. The instructors also report a favorable student response to the project, although no rigorous experimentation was conducted in terms of cognitive or behavioral learning.

Pairing students from an International Business (IB) course with students from an Auditing course resulted in thorough and carefully documented business plans (Morse, et al., 1996). The IB student teams prepared a business plan for the startup of an import/export business as a requirement for the course. The IB teams were then assigned an auditing team from the auditing class. The auditing team critiqued the financial plans, the result of which often meant that the IB teams had to re-cast their financial projections. While generally viewed by students as a positive experience, as indicated in the survey (required of all students) and in the selected interviews, this experiment was not without some difficulties. Unanticipated time constraints on the part of both groups and the faculty members, personality differences between groups, lack of financial and accounting knowledge by the IB student teams, and evaluation procedures all served to make the experience realistically challenging for both groups.

Kirts, Tumeo and Sinz (1991) conducted an exercise at the freshman level, which involved two faculty members, one from environmental engineering and one from natural resources management. The exercise required that the 17 students be given a lecture on common property natural resources management by one of the faculty members (the article does not specify which faculty member gave the lecture), while the other supervised the students in playing THE COMMONS game. Students were required to write essays on their decision making during the game and engage in a discussion of the game. A content analysis of the essay

and discussion notes found that the students gained an applied understanding of the management of common property natural resources.

Twenty-eight seniors in a policy course were teamed and then consulted for an existing business. Each group had a team leader (student) and a facilitator (an alumni). The facilitator assisted in the coordination between owner/manager and the team. The course instructor supplied academic instruction and resources: encouraged the team to use the library, AV dept etc. The grading was a culmination of evaluations from the facilitator, the instructor, the owner/manager, and the student's peers. The project was viewed as successful; benefiting students, owner/manager, alumni (gives something back), and the community as a whole (Romani and Stirling, 1996).

An extensive IGI was designed by Hill and Kuhns (1994). They set up an experiential exercise for MBA students at the University of Houston, which required that the students work with scientists in the Space Vacuum Epitaxy Center (SVEC), a unit of NASA based on the campus of the University of Houston. The students were broken up into teams and one SVEC research scientist was assigned to each team. The teams were to determine the commercial feasibility of various SVEC technologies. The entire technical interface was supervised by the director of the SVEC operations. This exercise placed MBA students in a real life situation requiring them to learn how to integrate technological capabilities with their business knowledge in order to identify commercial possibilities for various SVEC technologies.

Finally, one of the most encompassing integrative exercises was conducted by Wheatley and his colleagues (Wheatley, et al., 1990). These authors designed a two semester computerized capstone course for their MBA curriculum which involved a number of local business community members. The MBA students broke up into teams to play a modified version of the CARNEGIE-MELLON game for 12 decision periods. The students had to deal with a union president, who was role-played by a management professional, as part of their labor negotiations for a two-year labor contract. The teams also had to submit pro forma financial statements to the commercial loan officer of a local bank who analyzed the statements. The teams were required to negotiate a financial contact with the bank president in order to finance their operations. Since the game required competition in the international marketplace, the teams had to submit the requisite paperwork to the International Trade and Development Ministry, which issued the necessary permits. This ministry was staffed by a retired CEO from EXXON Corporation. The teams' policy decisions were scrutinized by a Board of Directors Chair, who was a local business executive. In order to create the

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governmental aspect an audit of all financial submissions was done by a local tax accountant who served as the SEC Chair. Finally, in order to provide relevant industry news, there was an industry newspaper, which was published on a weekly basis. This exercise obviously provided students with tremendous depth in their exposure to the integrative nature of business operations.

This literature review provides a look at some IGI applications. As is evident from these examples, IGIs have some common characteristics, which sets them apart from the traditional experiential exercise or cooperative learning experience. First, the IGIs involve groups of participants who must interact with each other - as teams. Second, IGIs are framed around academic topics, which have significant overlap or some symbiotic relationship with each other. Third, they are long-term projects, which often last the duration of the semester. Fourth, because of the duration of the projects, participants are exposed to a number of important process issues that cannot be replicated in shorter exercises. These characteristics add complexity and realism to the IGI and increase their effectiveness as learning tools. While there are relatively few inter-group exercises, as compared to all experiential exercises, reported in the literature, indications are that more IGIs are being developed. In their review of current developments in experiential learning, Gomolka and Ward (1988) found that there was a strong movement toward "hands-on" type of experiences and indicate the importance of cooperative learning as an important vehicle for enhancing management skills.

BENEFITS & CHALLENGES OF IGI

While the literature indicates that most of the participants in an IGI felt the experience was positive, there were a variety of challenges that had to be overcome. From a theoretical standpoint, most teams felt that the exercise was a valuable contribution to the learning process. The challenges associated with IGIs are primarily related to the logistics of the exercise. From the literature review above, one can discern the following benefits and challenges of using an IGI approach.

Benefits:

- exposes students to the process of management;
- develops management skills such as time management, decision-making, goal setting, conflict resolution etc.;
- enhances the creativity process, because students must rely on their own resources to accomplish the task;
- increased opportunities for faculty to creatively apply theory;
- models the realism of business situations;

- students are able to play roles that represent possible career paths;
- highlights the functional interdependencies of business units.

Challenges:

- high start-up costs;
- appropriate student courses and objectives are not always selected;
- logistical problems;
- Student teams in one course feeling that they are the "bosses" of the student teams in the other course;
- instructors feeling that time is taken away from traditional subject matter;
- unclear, ambiguous and/or conflicting goals on the part of the instructors involved;
- student resistance to team exercises, compounded by cross-team component;
- exposes students to their weaknesses (e.g., auditing teams critique strategic management teams financial statements).

While the teaching of content generally takes place in the classroom, the focus of cooperative learning exercises is teaching the application of content. IGIs provide students with the opportunity to learn the process in complex highly textured situations.

FRAMEWORK FOR IMPLEMENTING AN IGI PROJECT

The Inter-group Interaction is an extension of cooperative learning. Therefore cooperative learning methods should be incorporated in any IGI. However, there are other factors that must be addressed when an IGI is to be used. Three distinct phases occur in the development of an IGI; planning, implementation, and evaluation. The inherent complexity of IGIs requires careful consideration of a number of critical issues in order to increase the effectiveness and efficiency of the IGI. The following protocol (a list of critical questions and suggestions) is meant to help those who are considering an IGI project.

The Planning Phase

Faculty Participants - The interaction is usually initiated by one person, who then needs to find a willing partner, either from within their own department or school or from outside. Careful attention should be paid to the time commitments necessary by the participants. If members of the business community are involved, attention to the demands of their job at different times of the project, as well as the desired learning objectives of both parties should be considered.

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The Purpose The learning objectives need to be defined. An outline of the cognitive, behavioral and/or affective goals should be developed. The project should be designed to accomplish these objectives. For example, in the Morse. et al study (1996), auditing students found that, while they possessed expertise in auditing, they often had a difficult time interacting with management students who often saw accounting information as unimportant. The auditing students found that ‘lecturing’ to the management student teams frequently accomplished only animosity. Hence, they had to learn how to behave in constructive ways in order to get the project accomplished.

The Situation - The project should be framed around processes that the students can conceptualize and understand, so that they have a mental roadmap of the project. A blend of both theory and practice should exist. The combination of groups which will participate must be selected. Further, one must also deal with student participation: does the situation require that all students participate, or can it be voluntary for a select group? The roles that each group will play should be clearly defined, with enough detail for both groups to understand the expectations.

The Students - The educational background of the students (or outside participants) must be considered. Generally speaking, upper level or MBA courses are more appropriate, as requisite knowledge of the subject matter is needed. However, one could argue that the experience is excellent preparation for inexperienced undergraduates. The instructors must decide how to form the teams within the groups as well as how to match the teams with the other group. This may be done randomly, or by combining specific talents from each group. Generally, the literature on cooperative learning suggests matching heterogeneous groups of students and having each member of the group provide the expertise on a particular subject matter to the others in the group.

Evaluation & Grading - The method(s) of evaluating students must be determined. Some of the options available are journals, tests, interviews, oral presentations, and reports. A combination of these methods may be more appropriate than any single one. Will both groups have the same set of criteria? Will the end result of the IGI be the only concern or will the process of learning be of significance as well? How much weight will be placed on each components? The difficulty will be in designing an approach that motivates the students to participate without undue pressure on their grade. Further, the instructors need to ask: on what will a successful project be based? If the students complete the task, is that a success? If an expected outcome is that students will learn more using an IGI rather than some other method of instruction, how will that be measured? Comparing class performance on a standard test may be possible, but this

method is not without its problems, as the ability to measure process learning is limited.

Feedback & Debriefing - The instructors need to plan for feedback opportunities. What type of feedback will be provided and by whom? For example, will both classes be debriefed together? Do both instructors participate in the process? Will debriefing consist of discussing academic or behavioral areas--or both? The instructors should also think carefully about when they will debrief the student teams as the project progresses. The incorporation of milestones throughout the project may provide the timing for feedback.

The Implementation Phase

Logistical Considerations - The groups need to have a place to meet. This may require scheduling campus or off-site facilities. Problems with student schedule conflicts should be anticipated. Instructors may make students resolve them, or make suggestions to help teams resolve them. Also the interplay between the faculty involved must be coordinated. The time commitment is extensive and faculty need to incorporate this in their schedules.

Monitoring - The faculty members will need to keep track of student progress. This can be accomplished by having regularly scheduled meetings with the teams. The meetings can be the basis for managing the students’ interactions. The instructors need to agree on which instructor will meet with which teams, under what circumstances, and what each instructor will be permitted to tell student teams? Striking the right balance between student involvement and instructor intervention can be difficult. The instructors will need to meet with each other frequently to work out emerging issues.

Trouble-shooting - What do you do if teams don’t work well with each other, or if there are members of a team that aren’t getting along? Will teams be allowed to disband or withdraw from the project? Some of the solutions depend on the objectives of the interaction. If learning the process of managing is a goal, then requiring teams to stick it out and work it out might be appropriate. Instructors need to expect problems to arise in the course of an IGI, and decide how to address the unexpected issues prior to implementing the IGI. The important point here is that the instructors need to plan for what might go wrong--because it probably will.

The Evaluation Phase

Instructor debriefing - At the conclusion of the interaction, all participants should discuss the project. This aspect of the exercise is as important as the exercise itself. Cudworth

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(1994) contends that the debriefing is where the facilitator makes sure that the participants benefited from the interaction. Debriefing also provides feedback, which may be beneficial for future IGIs.

Student Debriefing - The literature suggests that students need and want to hear why they had the exercise, what the instructors expected them to learn--both academically, as well as behaviorally. The students also need an opportunity to discuss their own team experiences with each other. This last aspect may be critical if students are to see the IGI as an important part of their academic experience.

the principles, is experienced in an IGI.

INTER-GROUP INTERACTION COMBINATIONS

There are numerous combinations of courses and outside groups that could be used as the basis for an Inter-Group Interaction. The availability of resources will be the main constraint. Some of the possibilities are listed in Table 1.

TABLE 1
LIST OF IGI GROUP COMBINATIONS

| PAIRINGS | ROLES | PROJECT OBJECTIVE |
|--|---|---|
| Intermediate Accounting -- Strategic Management | Financial Statement Analysis Business Plan Preparation | The students prepare a business plan with financials |
| International Business -- Auditing | Business Plan Preparation Attest to Financial Statements | The IB students complete a plan with audited statements |
| Marketing -- Commercial Art | Advertising Campaign Artwork for Ads | The students create an actual advertising component |
| Marketing -- Communications | Public Relations Campaign Technical Assistance | The students create public relations material |
| Personnel/ Human Resource -- Finance | Downsizing Plan Financial Analysis | The students prepare a plan to downsize including costs |
| Human Resources -- Production & Operations | Selection Plan Operational Design | Given labor needs, students develop a selection plan. |
| Marketing -- Packaging | Market Research Package Design | Consumer preferences are basis for package design |
| International Business -- Foreign Languages | Product for Export Consumer Consultants | Students complete a product campaign for intern'l market |
| Strategy -- Bankers | Entrepreneurs Venture Capital Board | Business plans are basis for funding of students projects |
| Marketing -- Small Business Owners | Marketing Plan Information Source | Students prepare marketing plan to be used by owner |
| Finance -- Scientists | Financial Analysis Technological Breakthrough | Students determine the financial viability of products |

CONCLUSION

The Inter-Group Interaction, while incorporating many of the principles of experiential and cooperative learning, adds the dimensions of complexity and realism to student projects. IGIs require participants to work not only within their teams but also with other groups. In addition, while most experiential exercises are usually designed to explicate one primary principle or theory, IGIs are specifically directed at exposing participants to several principles or behavioral skills in one exercise. The interaction of these factors, which usually exists, between various organizational processes and

The authors of this paper do not contend that using an IGI is easy. Indeed, it is our experience that it is difficult -- which is probably why it is not used more often. Despite the difficulties in planning and implementing IGIs, we believe the educational benefits, particularly in terms of behavioral skills, are worth making the effort. Student experiences with IGIs supports this view. For example, a survey of students at a medium size college, where active learning is the norm and IGIs have been implemented, indicates a high degree of satisfaction with teaching methods. Eighty-one percent of the students surveyed are satisfied or very satisfied with the class projects" and 64% are satisfied or very satisfied with "group/team projects" (Carey, 1996).

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This article provides some guidelines for interested instructors in developing and using IGIs so that, despite the complex nature of the exercise, additional research and evaluation of this technique can take place.

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