

Assessing Individual Student Performance in Collaborative Projects: A Case Study

S. E. Kruck
Harry L. Reif

New college graduates who can collaborate, share skills and knowledge, and communicate their ideas effectively are valuable to businesses. Skills learned from team projects translate into the workplace, creating employees with these abilities. Reaffirming the importance of team projects, this article investigates alternative solutions to the dilemma facing educators who must evaluate team members who do not contribute equally to the team's accomplishments. It posits and evaluates several alternatives to the challenge of evaluating team members. The article presents a methodology for implementing the most useful alternative. Finally, the article offers concluding comments based upon student evaluations from a course where the recommended methodology was implemented.

Businesses seek new college graduates who can collaborate, share skills and knowledge, and communicate their ideas effectively (Bryant, 1998; Fowler, 1995; Martinez, 1997; Maslow, 1998). Consequently, it is important for educators to design curricula that incorporate the use of team projects to provide students with the opportunity to develop these skill sets—prerequisites for success in today's business environment.

A review of online syllabi for junior- and senior-level information systems business courses at a number of randomly selected colleges indicates that many include collaborative work requirements. This provides evidence that business schools have heeded the request of businesses to produce students that are adept at working in collaborative teams. A problem for educators and students alike is motivating team members to contribute to the group's success. Some students report that they are shouldering more than their fair share of the burden for the team's success, while all team members benefit equally from the team's accomplishments. As educators, we strive to evaluate students fairly. Educators face a dilemma when they feel obliged to include group projects in coursework and are uncertain about finding an accurate way to assess an individual student's contribution to the results achieved by the group.

This research offers preliminary data regarding how one particular strategy for assessing individual team members' contributions to the team's success

can motivate students and accurately measure their contributions. Current literature does not offer specific formulae and measurable variables that will conclusively answer the research question of how best to assess individual student performance in collaborative projects. A unique dilemma with collaborative student projects is that students, faculty members, and the student's peers are not in a position to have global knowledge of each student's contribution. Instead, the assessment must be derived from an amalgamation of data and perceptions coming from multiple sources. This assessment is difficult to quantify, given the uncertainty of the particular variables that need to be measured, the multiplicity of sources of assessment, and the lack of experimentally validated methodologies to rank or weight the variables and sources of data. Yin (1994) suggests using the case study methodology in situations such as this when there are many more variables of interest than data points, and when there are multiple sources of

S. E. Kruck is Assistant Professor, Computer Information Systems and Operations Management Program, James Madison University, Harrisonburg, Virginia.

Harry L. Reif is Assistant Professor, Computer Information Systems and Operations Management Program, James Madison University, Harrisonburg, Virginia.

evidence to consider. The distinguishing characteristic of the case study is that it examines contemporary phenomena in real-life contexts (Lee, 1989). This is particularly useful in situations where the objects of study (students, faculty members, group assignments, and circumstances surrounding the group experience) change so rapidly that a controlled experiment conducted over an extended period of time is not practical. For these reasons, the case study method is used for this research so that a baseline theory can be developed, subject to further testing and refinement over time.

This article reaffirms the importance of team projects and investigates alternative solutions to the dilemma facing educators in evaluating team members who do not contribute equally to the team's accomplishments. It posits several alternatives; each is subjected to a SWOT (strengths, weaknesses, opportunities, and threats) analysis. It presents a methodology for implementing the most useful alternative. The authors collected student evaluations to appraise the effect the methodology had upon student performance and to determine whether the methodology encouraged potential under- or non-performing members to contribute to their groups at a higher level.

Importance of Collaborative Projects

Collaborative projects have become increasingly important in business. As businesses become more global, projects become larger. These projects tend to cross more functional and geographical boundaries. The scope and reach of large projects is further accentuated as firms take on the role of providing total solutions on a multinational basis. Organizations are making increased use of groupware tools such as Microsoft Project and Lotus Notes to support the size and complexity of their projects. Many college courses now include instruction regarding the purpose and mechanics of using groupware tools. Students must become adept at collaborating with peers as group members, using these groupware skills to facilitate the groups' interactions (Heinemann, 1996; Kennedy, 1993; Mennecke & Bradley, 1998). College and university faculty have recognized this trend and are

attempting to integrate the ability to productively contribute as a group member into coursework.

How can an instructor motivate his or her students to do their best work in a group atmosphere? Some researchers suggest making incentives to succeed a priority (Lodewijks, Wildschut, Syroit, Visser & Rabbie, 1999), while others recommend goal-setting behaviors and anonymity (Sosik, Avolio & Kahai, 1998). Leadership styles within the group will also affect the overall creativity of the group (Sosik, Avolio & Kahai, 1998). If there is an overbearing person in the leadership role, creativity and motivation to succeed will be low, whereas more cooperative leadership styles promote creativity and increase motivation.

Prior to group formation, the instructor can include incentives to promote motivation. Grades are often an effective motivator in an educational environment. Ensuring that the group project represents a significant portion of the course grade influences students to be part of a high-performing group where cooperation and teamwork flourish.

In addition to setting incentives, the instructor should encourage the groups to set goals from the beginning. In this manner, the groups will know what is expected. The groups can develop project timelines that include required activities. Each member will have to contribute to meet the group's goals.

Educational Challenges with Group Assignments

Group assignments are inherently problematic because they involve merging diverse skills and personalities with the hope that they will collaborate towards a common goal. Many of the problems encountered when using teams in education and business environments are similar. This paper focuses on these problems from an educational perspective. Readers should recognize that the same basic problems exist in the business sector, with slightly different nuances.

The first challenge to consider when assigning a course-related group project is whether the groups will be instructor-assigned or self-selected. Members of assigned groups must deal with diverse personalities and discover the underlying skills of

each member. A “warm-up” period is necessary for the members to get acclimated to each other. During this period, working relationships between members may be strained until they feel comfortable suggesting ideas or providing opinions about ideas presented.

It is possible that an unworkable group may be formed. In an unworkable group, members cannot agree on anything; most of their time is spent debating points rather than on completing their project. Members of unworkable groups may become so engulfed in conflict resolution that they are not able to concentrate on the project.

Self-selected groups offer increased potential for forming groups with a history of working relationships. Many students choose to group with others whom they already know and with whom they have worked before, thus eliminating the need for a “warm-up” period. By consistently selecting the same classmates to work with, however, students insulate themselves from achieving some of the pedagogical goals of group work assignments. In the working world, most teams are not self-selected. Instead, they are assembled based on skills inventories, historical performance, and individual availability.

A second inherent challenge with group assignments occurs when all team members are either not able or not willing to contribute equally to the team’s success. This is a double-edged sword because the group may contain either “free-riders” or members who dominate the group. Both “free-riders” and members who dominate can be problems. A “free-rider” is nomenclature employed by students to describe team members that coast on the productive members’ efforts without doing a proportional amount of project work. Conversely, one or several students may dominate the group. Dominating students may inhibit other group members from participating. Members who dominate the group may take on more of the group’s work than is appropriate and may not allow other members ample opportunity to participate. This can result in conflict because the team members’ contributions are unequal, as are their perceptions of the contribution of each member to the group’s success.

The final challenge inherent in group work assignments occurs with conflict resolution. Faculty

members want to motivate all students to contribute equally and to provide methods for conflict resolution. Faculty may be required to mediate conflicts within the group to prevent the group from becoming non-functional or non-performing. The best methods encourage teams to solve problems without faculty intervention. Allowing groups to solve problems without interference will enhance students’ teamwork and problem resolution skills. At the same time, faculty must be cognizant of situations that require intervention to avoid non-performance. Faculty must be able to sense the pulse of the group, identifying the elusive middle ground that lies somewhere between nursing the group through every stage of the work and allowing the group to become mired in conflict to the point of self-destruction.

The rewards for group work are inherently different in the educational setting than in business. Education’s reward structure consists of grades; higher grades reflect better performance. In business, the parallel structure is money and recognition. The difference between these two structures is that, theoretically, every student can receive an outstanding grade while in business there is a finite amount of money to be awarded. If the goals of the faculty are to award grades based upon performance and at the same time to prepare students for entry into the business world, a mechanism is required to mete out the best grades to the best performers while recognizing that not everyone can be rated as a best performer.

Even though students accept the concept of a limited amount of money being available to reward business performance, they do not necessarily envision that there may not be an unlimited number of top grades. If grades are to be used as the academic equivalent of business’ financial rewards, students must develop the ability to recognize high performers and award less recognition to under-performers. Students are often unprepared for the realization that all team members do not automatically receive the same “excellent” performance rating regardless of the individual team members’ contributions. Consequently, they have difficulty assigning lower individual group participation grades when appropriate.

Once students begin to accept the concept that not all team members can be rated as excellent, the

problem of how to communicate members' perceptions of each other's contribution arises. Students are not comfortable directly confronting each other with negative evaluations. Anonymity provides group members with a means to assess other members freely and truthfully without peer pressure. Group members know that other members will rate them; therefore, members should be more likely to do their best to avoid receiving low assessments from their peers. With members working up to their potential, group motivation and creativity should improve, with a concomitant increase in the quality of the groups' final products.

Alternative Solutions

Several alternatives exist for answering the challenges that were described above. This section of the paper offers five potential solutions. It then subjects them to a common management tool, the SWOT (strengths, weaknesses, opportunities, and threats) analysis with the goal of identifying the most viable solution. The results are summarized in Table 1.

Solution 1: Eliminate group projects because of the difficulty of administration. **Strengths:** Eliminating group projects allows students' grades to reflect their personal accomplishments. This reduces the possibility of students becoming "free-riders" and receiving credit for work that they have not personally completed. **Weaknesses:** Eliminating group projects also eliminates the benefits associated with group work. **Opportunities:** There may be other methods to develop teamwork skills; eliminating this option will force faculty to seek them out. These alternatives will require validation to ensure that students' teamwork skills are being developed. **Threats:** Students will graduate without skills that employers have indicated are important. They may be less desirable employees without teamwork skills and experience.

Solution 2: Faculty monitoring of all group meetings. Monitoring could be accomplished through faculty attending group meetings, through status reports, or by requiring groups to submit minutes of their meetings. **Strengths:** Faculty involvement provides the opportunity to recognize group members' participation in group activities and contribution to the group's success. Faculty

involvement with collaborative groups should serve to assist groups in maintaining focus on the project issues deemed most important by faculty.

Weaknesses: Faculty attendance at group meetings places an enormous burden on faculty time and meeting facilities. The faculty member's influence could direct the group's efforts to the degree that individual groups' creativity might be homogenized. Students may feel inhibited and may not be as free to contribute to the group. Status reports and meeting minutes cannot capture the details of the group's dynamics. **Opportunities:** Faculty could identify common task problems among groups, bringing the problems to the classroom for early discussion and resolution. **Threats:** The focus of the group's work may change from results-oriented to process-oriented, yielding less effective solutions.

Solution 3: Build student teamwork skills using classroom activities. This would be accomplished by devoting additional class time to teamwork activities. **Strengths:** The goal of teamwork experiences is to enhance students' teamwork skills. Teaching teamwork skills directly accomplishes this goal. **Weaknesses:** Current in-class activities would need to be reduced to allow time for in-class teamwork activities. **Opportunities:** By focusing on teamwork skills as a separate objective, better methods may be found to teach teamwork skills using faculty best suited to develop students' teamwork skills. **Threats:** There are a limited amount of class and credit hours available; this additional time would have to be somehow accommodated. Separating the teaching of teamwork skills from existing coursework would require altering and possibly reducing the content of current courses or adding new courses to teach teamwork skills.

Solution 4: All group members receive the same grade. **Strengths:** No additional effort is required to determine individual group members' grades. **Weaknesses:** The grades earned by students on group work projects do not take into consideration differences in individual contributions and accomplishments. This solution does not penalize students that are "free-riders," nor does it recognize those who contribute most to a group's success. **Opportunities:** Faculty could seek simpler methods to motivate students to contribute to group work. **Threats:** Students discover that it is possible to be a "free rider" without penalty. Students who perceive

that contributions to the group are not rewarded fairly may develop an aversion for group projects that will carry forward into the workplace.

Solution 5: Students evaluate other individual team members' contribution to the group's success.

Strengths: This motivates students to contribute their fair share to group work, since individual contributions are rewarded. Student evaluation of team members provides students with realistic experiences working as team members, providing support to other team members, and working through problems encountered by the team.

Weaknesses: This solution is difficult to administer because each student's peer ratings must be solicited and tabulated. There is a risk of students providing inaccurate peer assessments.

Opportunities: If individual contribution to the group's success is recognized as one component of the group's overall success, this component can be combined with other components to reward the group for its accomplishments. This solution recognizes individual group members based upon their contributions. *Threats:* Group members could single out one member and evaluate that member based upon criteria other than that member's performance. An inconsistency is introduced into the grading process since the same evaluators evaluate no two students.

The five alternative solutions and the SWOT analysis are summarized in Table 1. The SWOT analysis is useful in that it brings to the fore those strengths that recommend a particular solution while identifying inherent weaknesses or threats. If the weaknesses are such that they present an insurmountable constraint, the solution must be abandoned. If the remaining alternatives contain weaknesses or threats, the analyst weighs all factors to select the best alternative. Recognizing weaknesses that appear problematic but avoidable by refining the solution results in a set of viable options.

Applying these guidelines to the five alternative solutions, the first two solutions are not desirable due to insurmountable weaknesses. The first solution eliminates engaging students in group work without offering a workable alternative for developing those skills. This is contrary to the wisdom gleaned from the literature and from employers indicating that group work experiences are necessary. The second solution is not viable because it is unreasonable to expect faculty to be present during each team meeting in a class with more than a few teams. Faculty members are usually unaware of individual student contributions to the finished team product unless they are present for the team meetings.

Solution 3 requires substituting material not normally included in the course for current course content. Most courses already have an overabundance of content and limited time to cover it. This precludes the addition of new material to the course syllabus without removing existing content. This conundrum renders this solution not viable.

Solutions 4 and 5 have the common attribute of requiring group work and not requiring faculty monitoring. Each offers multiple strengths and no insurmountable weaknesses, making them both acceptable choices. Furthermore, each solution

| Solution | Strengths | Weaknesses | Opportunities | Threats |
|------------------------------------|--|---------------------------------|---|---|
| 1. Eliminate group projects | Grade accurately reflects personal work | Eliminates benefits of teamwork | Build teamwork skills using other methods | Weaker group skills |
| 2. Faculty monitoring | Direct observation of individual efforts | Excessive time requirements | Early warning system for potential problems | Student focus shifts to process, not outcome |
| 3. Build team work skills in class | Directly teaches the skills | Eliminates other course content | Increased emphasis on teaching skills | Less time for course related material |
| 4. Same grade for entire group | Simplifies grading | "Free-riders" | See simpler ways to motivate "free-riders" | Student perception-unfair |
| 5. Peer evaluation | Rewards individual contributions | Difficult to administer | Motivates individuals to contribute | Inconsistent grading process-different evaluators |

meets the overarching goal of enhancing student teamwork skills through experience.

Solution 4, the same grade for entire group, motivates the group to function as a team by awarding a grade based upon the quality of the group's final product. The grade rewards the entire group based upon the outcome, not based upon individuals' contributions. This is analogous to the way consumers reward producers by making purchases based on the final product rather than on the individual contributions of the persons that produced it.

Solution 5, student evaluation of individual members, rewards students based upon how much their peers feel they contributed to the group's success. Group members know who did what work for the group and are, therefore, best prepared to assess each other's performance. The peer evaluation process reinforces for students the lesson that some team members contribute more to the accomplishment of the team's mission than do others. Consequently, team members who outperform their peers can expect to receive greater recognition than the others.

Blending solutions 4 and 5 into one that offers a combination of grades based upon the group's total performance and upon individuals' contributions to the group's overall result offers the most promise for a viable solution to the challenge of motivating and rewarding individual team members engaged in group work projects.

Implementation Strategy

In order to be effective, the implementation strategy must integrate easily into the course. It must provide students with a realistic experience that will develop their teamwork skills by creating environments analogous to those they will encounter in the business world. Ideally, the group work experience will challenge students by subjecting them to many of the same dilemmas that exist in business team environments (Mennecke & Bradley, 1998). Those challenges include motivating members to contribute, providing disincentives for "free-riders," promoting fair and confidential assessment of individual contributions to the groups' success, and requiring group members to

differentiate among levels of peer members' contributions.

To demonstrate to students the relevance of this approach, instructors can cite business environments based on work teams where each team member evaluates every other team member (Fowler, 1995; Kennedy, 1993; Roberts, 1998; Sahl, 1998; Van Winkle, 1997). Students are usually unaware that resources for employee recognition are allocated from a fixed pool of benefits; the resources given to one entity are not available for allocation to another entity. In the business environment, these resources are usually dollars; in the educational environment, we can substitute points. The proposed implementation strategy provides students with experience allocating scarce resources by providing each group member a fixed number of points that must be distributed among all other group members. As part of the peer evaluation process, team members are required to award points, as integers, to each team member based on that member's contribution and performance as a team member. Using a total number of points that is not evenly divisible by the number of team members and requiring that points be awarded in whole number increments prevents awarding each team member the same number of points. If students choose to award equal points to each group member, 100% of the available points will not be allocated. This point allocation scheme forces student evaluators to recognize differences in team members' contributions.

Occasionally, during the course of a project, a team member's performance may be so poor that it is impractical to wait until the end of the project to address the problem through peer evaluations. When students perceive a group member to be a "free-rider" during the early or middle stages of the project, team members have the option to "fire" under-performing team members. As in the workplace, students must initiate the "firing" process by documenting performance problems, informing the under-performing team member of his or her deficiencies, and discussing ways for correcting the deficiencies. Often, this action is enough to motivate the "free-rider" to perform. If the offending team member fails to improve the substandard performance, the remaining team members can "fire" the offender. Student team

members who are “fired” will, at the faculty member’s discretion, receive a failing grade for the team project, be required to complete the project independently, or complete alternative work in lieu of the group project.

Students lack experience confronting team members who under-perform and documenting performance-related problems. Often, students find it difficult to challenge team members who do not contribute their fair shares to team projects. While students recognize that substandard performance by team members presents obstacles to the accomplishment of the team’s mission, they do not know how to remedy the problem or how to motivate team members to improve performance. The ability to “fire” a team member is intended to enhance the learning objectives and provide an opportunity for “free-riders” to correct their inappropriate team behavior.

The practice of allowing the team to fire a team member may create problems. One problem that may arise is that the group may gang up on one member and decide to fire him or her for inappropriate reasons. If the other group members decide that this person should no longer be in the group, they can begin to “conclude” that the ostracized one is not performing up to standard. Eventually, this member is fired. To avoid this problem, faculty must be involved in the firing process. This is accomplished by requiring that groups experiencing difficulty with a member meet with the faculty member to discuss the problem once a group initiates the “firing” process. The faculty member can assist the group with documenting the performance issues and in arriving at desired actions to remedy the deficiencies.

A final consideration related to the implementation involves the use of the Internet as the method for delivering the peer evaluations. This allows students to enter the evaluations at a convenient time and location. It also addresses the pragmatic considerations associated with collecting and tabulating the results of peer evaluations by electronically capturing the evaluation data. This data is then easily formatted for transfer to a spreadsheet or grading software package. Peer evaluators must be assured of their confidentiality to encourage honest and candid evaluations. The proposed Internet-based solution accomplishes this.

Student Evaluation of Group Work Experience

The researchers developed a questionnaire to gain insight into student perceptions of the group work experience and evaluation process (see Figures 1 and 2). Questions obtained group behavior and demographic data from the students. Colleagues with experience in student survey research reviewed the survey instrument for applicability prior to its use.

Students in two sections of a single upper-level course, Telecommunications, participated in group projects as part of their course requirements. The project required that self-selected groups use a refereed journal article as a basis for investigating and reporting on a current telecommunications topic. Each group was required to present its topic to the class and to offer opinions about what the future might hold for the topic. Twenty-one three-to-four person groups were formed. Topics were selected by the students, which included encryption, e-commerce, and Internet telephony. At the end of the semester, all 68 students completed the survey about their group project experiences. All survey instruments were fully completed; there were no unusable responses.

There was no significant difference in the responses between three-person or four-person groups. Seventy-five percent of the participants were computer information systems, computer science, or integrated science and technology majors. The remaining twenty-five percent reported miscellaneous business majors. Fifty percent of the participants were seniors; two-thirds were male. The average self-reported grade point average (GPA) was 2.85 on a 4-point scale, and the analysis indicated that students with the highest GPAs chose to be grouped with others who had high GPAs.

Twenty percent of the participants indicated that peer evaluations motivated them to perform differently, while 36% thought the evaluations motivated their team members (significant at $p < .001$).

Peer evaluations contributed to 20% of each student’s project grade. Students were asked if they thought the percentage of their grade for peer evaluations was appropriate. Forty-one percent felt that it was exactly right. Three percent of the

Figure 1: CIS 320 Group Work Survey—Spring 1999

Instructions: Please circle your answer, write in your answer, or mark horizontal bar with an 'X' to indicate your answer regarding group work that you participated in for CIS 320 this semester.

How would you rate your contribution to the group's success?

Zero contribution •-----• I did it all

If asked about your contribution, your group members would they say that you did ...

almost everything
more than your fair share
your fair share
less than your fair share
almost nothing

How would you rate your fellow group members' contributions to the group's success?

They did
nothing

They did
it all

Member 1: •-----•

Member 2: •-----•

Member 3: •-----•

Overall: •-----•

Twenty percent of your project grade is based on peer evaluations. What percentage of the project grade do you feel should have been based on peer evaluations? _____%

Why do you feel this is a better choice?

Did the fact that your peers were going to evaluate (or fire) you make a difference in your contribution?

Yes

No

If yes, please list the most significant thing you did differently.

Do you think that your evaluation of your team members encouraged them to contribute more?

Yes

No

If yes, please list the most significant thing they did differently.

Have you ever had a functional problem in a group that you've participated in?

Yes

No

If yes, please describe your problem and how you tried to solve it.

students thought it should be less than 10% of the grade, and nine percent thought it should be more than 30% of the grade.

Discussion and Limitations

This study yielded several interesting findings that are summarized in Table 2. No statistically

Figure 2: CIS 320 Group Work Survey—1999 (Continued)

Consider your **most** productive group member, and the work that they did, would you say they...

- did almost everything
- did more than their fair share
- did their fair share
- did less than their fair share
- did almost nothing

How much work did you do on your CIS 320 project?

- I did almost everything
- I did more than my fair share
- I did my fair share
- I did less than my fair share
- I did almost nothing

How many courses required you to participate in group projects this semester? _____

How many courses listed in the previous question used a peer evaluation? _____

How many people, including yourself, were there in your CIS 320 group? _____

What course grade do you expect to receive in CIS 320? _____

What is your major?

- CIS
- ISAT
- Other _____

What is your academic rank as of today?

- Sophomore
- Junior
- Senior
- Other _____

What is your gender?

- Female
- Male

What is your cumulative GPA at JMU? _____

significant differences arose from the students' response to the questions concerning who contributed the most/least, should the percent of grade be different for peer evaluations, and does firing make a difference in performance.

Most of the students, 80 percent, reported that they were not motivated by peer evaluations, indicating that these evaluations did not affect their contributions to the group. Simultaneously, students felt that peer evaluations motivated more than one-third of their group members to contribute more to the group's success. This is an interesting

contradiction that warrants further investigation. It may be that even though 41 percent of students reported that the weight of the group grade was exactly right, the group evaluation grade was not a significant motivator for individual students.

These results are subject to several limitations. Participants were students from a single course in a single institution, which limits the generalizability of the results. The external validity of this study may be limited. Finally, the reward portion of the grade attributed to the peer evaluation may not have been

high enough to motivate performance at the desired level.

Conclusions

Group work skills are a necessity for today's business graduates. Group projects provide a means for students to develop skills in collaborating with other members, sharing skills and knowledge as part of a focused team, and communicating their ideas effectively to ensure the successful accomplishment of the team's mission. The addition of peer evaluations to students' group project experiences is a rational method to address student concerns about the differing levels of contribution to the groups' success as exemplified by "free-riders" and students who dominate the group. Peer evaluations also allow faculty to introduce students to the practice of evaluating peers using a reward structure that forces students to rate some peers' performance higher than others.

Initial analysis of student responses regarding the effectiveness of the peer rating process does not provide for statistically defensible confirmation that the process is promoting the desired behaviors. It does provide a basis upon which to conduct future studies and confirms that students perceive the peer evaluation process as having the potential to affect the behaviors and contributions of other group members to the group's success.

Moreover, peer evaluation responses provide individual team members with the opportunity to improve their individual performance by observing how their peers evaluate their work. This experience prepares students to enter the workforce more able to meet the challenges of contributing effectively to team-based environments. It is important for faculty to find ways to reward "above-average" contributors and to discourage "free-riders." In this paper, a method has been offered that does both of these.

References

Bryant, A. (1998, February 22). All for one, one for all and every man for himself. *New York Times*, p. 4-1.

Table 2: Results Summary

| | Number of Responses | % of Responses |
|--|---------------------|----------------|
| <i>Gender</i> | | |
| Female | 22 | 32.4% |
| Male | 46 | 67.6% |
| <i>Major</i> | | |
| CIS, CS, ISAT | 51 | 75.0% |
| Other business majors | 17 | 25.0% |
| <i>Rank</i> | | |
| Senior | 34 | 50.0% |
| Junior | 31 | 45.6% |
| Sophomore | 3 | 4.4% |
| <i>GPA (self-reported, based on 4.0 scale)</i> | | |
| Average | 2.85 | |
| 3.51-4.00 | 6 | 9.0% |
| 3.01-3.50 | 14 | 20.9% |
| 2.51-3.00 | 28 | 41.8% |
| 2.01-2.50 | 16 | 23.9% |
| 1.50-2.00 | 3 | 4.5% |
| <i>Group size</i> | | |
| Number of groups | 21 | |
| Number of 3 person groups | 8 | |
| Number of 4 person groups | 56 | |
| <i>Student preferred grade weight of peer evaluation</i> | | |
| Exactly right (20%) | 27 | 40.9% |
| Should be 10% or less | 10 | 15.2% |
| Should be 30% or greater | 14 | 21.2% |
| <i>Did peer evaluation affect your performance?</i> | | |
| Yes | 14 | 20.6% |
| No | 54 | 79.4% |
| <i>Did peer evaluation affect team members' performance?</i> | | |
| Yes | 24 | 36.4% |
| No | 42 | 63.6% |

- Fowler, A. (1995). How to build effective teams. *People Management*, 1, 40-41.
- Heinemann, K. G. (1996, March) What do today's employers want from job applicants? *T. H. E. Journal*, 23, 69-71.
- Kennedy, M. M. (1993). Where teams drop the ball. *Across the Board*, 30, 9-10.
- Lee, A. S. (1989). Case studies as natural experiments. *Human Relations*, 42, 1-20.
- Lodewijks, H. F. M., Wildschut, T. Syroit, J. E. E. M., Visser, L., & Rabbie, J. M. (1999). Competition between individuals and groups: Do incentives matter? A group adaptiveness perspective. *Small Group Research*, 30, 387-404.

- Martinez, M. N. (1997, May). Rewards: Given the right way. *Human Resources Magazine*, 42, 109-110.
- Maslow, A. (1998). Hard work and common sense: Maslow on management. New York: John Wiley.
- Mennecke, B., & Bradley, J. (1998). Making project groups work: The impact of structuring group roles on the performance and perception of information systems project teams. *Journal of Computer Information Systems*, 39(1), 30-36.
- Roberts, G. E. (1998). Perspectives on enduring and emerging issues in performance appraisal. *Public Personnel Management*, 27, 301-320.
- Sahl, R. J. (1998). Good teams or good performance: Issues in developing team-based measurements. *Journal of Compensation & Benefits*, 13, 28-33.
- Sosik, J. J., Avolio, B. J., & Kahai, S. S. (1998). Inspiring group creativity: Comparing anonymous and identified electronic brainstorming. *Small Group Research*, 29, 3-31.
- Van Winkle, S. (1997). Customized management. *Public Management*, 79, 26.
- Yin, R. K. (1994). *Case study research. (2nd ed.)*. Newbury Park, CA: Sage.

Material published as part of this journal, either on-line or in print, is copyrighted by the Organizational Systems Research Association. Permission to make digital or paper copy of part or all of these works for personal or classroom use is granted without fee provided that the copies are not made or distributed for profit or commercial advantage AND that copies 1) bear this notice in full and 2) give the full citation. It is permissible to abstract these works so long as credit is given. To copy in all other cases or to republish or to post on a server or to redistribute to lists requires specific permission and payment of a fee. Contact Donna Everett, d.everett@morehead-st.edu to request redistribution permission.