GROUP PROJECT ASSESSMENT: GRADE INFLATION AND OTHER ISSUES

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ABSTRACT

Despite the plethora of benefits derived from group projects, the area of assessment of group performance continues to be plagued with concerns, especially the assignment of individual grades for group work. This paper reviews group assessment techniques and it examines the grade inflation issue emanating from group work, as well as unjust rewards and penalties. The grade inflation issue is noteworthy in that group grades tend to be higher than individual grades for nongroup work. Suggestions are presented for addressing these issues and future research areas are developed.

Group projects are commonly used in marketing education (McCorkle et al. 1999; Mello 1993). The literature discusses the pedagogical aspects of using group projects and issues of assessing group projects. A number of studies have examined the relationship between collaborative groups and learning. The motivational aspects of collaborative learning have been discussed in the literature (Dobos 1996; Johnson & Johnson 1985; Sharan and Shaulov 1990; Slavin 1987). There is evidence that such learning is more successful in promoting achievement than either individualized or competitive learning experiences (Johnson et al. 1981). The type of learning enhanced by collaborative structures includes both memory (recall) and critical thinking. A study of tasks performed in collaborative groups showed that individuals recall more if they had previously recalled with a group than if they had recalled alone (Weldon and Bellinger 1997). Learning in groups may also facilitate the process of learning from experience
(Falchikov 1993; Cell 1984).

Despite the myriad of benefits associated with group projects, the area of assessment continues to be a thorny issue. This paper therefore proposes to review group assessment techniques and to examine issues relating to group grade assignment. It also proposes to utilize anecdotal incidence to foster propositions and discussion. Finally, it hopes to uncover some of the unintended issues associated with group projects that emanate from assessment.

METHODS OF ASSESSING GROUP PROJECTS

A key issue in group projects is how to actually assess group work. The literature reveals that a wide variety of approaches have been taken (Williams, Beard, and Rymer 1991; Conway et al. 1990). In the simplest form of assessment, all team members would be given the same project group score. This form of assessment can occur when the instructor sees no apparent difference between the performance of individual members of the group (Habeshaw, Gibbs, and Habeshaw 1993). Goldfinch and Raeside (1990) developed an assessment technique that divided assessment scores into two parts: one part based on listing names of members who had participated in completing a list of tasks, and one based on a peer assessment of team members' group process skills. The peer assessment score was based on group project score adjusted by peer ratings: PA = Part 1 score x weighting + Part 2 score x weighting (p. 214). Conway developed a similar, two-part assessment scheme with a slightly different formula that produced the same assessment scores. In order to reduce administrative tasks, Goldfinch (1994) reduced the assessment process to group working skills, and revised the formula to read as follows: Individual student's mark = $(PA - Score)^{0.5}$ (p. 32). This new formula had the effect of lowering marks for students who did little or no work. Beatty, Haas, and Sciglimpaglia (1996) developed a nine-item, seven-point scale on which group members made peer and self-ratings. The authors suggest that the individual scale items could be weighted, depending on the importance the instructor wants to assign to each element of the scale. Individual grades can be assigned by using the average of the peer ratings to represent a letter grade. Mello (1993) reports a qualitative assessment technique in which students, depending on the course in which the assessment is used, will write either a few paragraphs about the group experience and participation of individual members; or write a formal paper relating to group dynamics and individual member performance. The instructor assigns a grade based on interpretation of the written assessments. Unless some problem with individual students is uncovered in the writings, each group member gets the same (group) grade. Johnson,

Johnson and Smith (1991) developed a rating method which assigned bonus points if all group members achieved performance above some preset criterion task level. Habeshaw, Gibbs and Habeshaw (1993) describe a method in which students allocate a group score among all group members, as they individually see fit. They also describe an assessment method where members use specific group process criteria to rate group members.
A more detailed method of assessment calls for the group to rate peers on performance relative to several tasks necessary to carry out the project (Beatty, Hass, and Sciglimpaglia 1996) or include a combination of overall group peer ratings and individual member self-assessment (Haas, Haas, and Wotruba 1998; Goldfinch 1994). Goldfinch is not concerned with self-assessment overrating, assuming that students who overrate themselves will inflate the scores of their peers. She also recommends pulling a student's assessment forms from inclusion in group evaluations if the student in question has not attended many group meetings. Other assessment measures make a distinction between group process and output or product. The instructor assesses the product or output and the process is assessed by peer ratings and self-assessments (Falchikov 1988, 1991). Assessment is also measured by splitting group project output by an element of group activity which is assessed as a group, and an individual component which is assessed as an individual activity (Hindle 1993).

THE GROUP GRADE ISSUE

Regardless of the project assessment procedure used, there may be a question about equity in assigning individual grades based on group projects. Falchikov (1993) notes that one of the problems most frequently faced by teachers in group projects is assessing differential contributions by group members. There are two questions to the issue of group project grades: are grades assigned to the group equitable; and are grades assigned to individuals in the group fair? The first issue has to do with whether the grade assigned to the group equitably reflects the efforts and work of all students in the group. That is, if all students in the group do not have the same level of commitment, do not share equally in the work, and do not provide the same quality of input, then the grade assigned to the group does not fairly reflect the contribution of all group members. Thus, the group grade is unfair. Subsequent attempts to measure the contribution of individual members through peer or self-ratings would simply assign some percentage or partial score to individuals based on an inequitable group grade. The second issue is one of whether grades assigned to individuals accurately reflect the work and effort on individual group members. Do students honestly and accurately rate their peers?

If grades are to be assigned to group work, how should grades be assigned?
Some authors maintain that all students in a group should get the same group grade (Johnson, Johnson, and Smith 1991). Other authors believe that individual grades should be assigned. Kagen (1995) maintains that group grades are unfair on several counts, that group grades are partially a function of luck of the draw -- who one gets as a team mate; that slackers get more than they deserve while high achievers may get less than they would on their own, and that group grades violate the principle of individual accountability. Resolving the issue of dealing with students who do not do their fair share or work is the primary reason for assigning individual grades.

A major issue involving group project grading is the issue of individual performance versus group performance. An assumption underlying teamwork is that the group will achieve collectively more than individual members could achieve alone or by combination of efforts of group members. This has been called the "assembly effect" or a performance "bonus" (Collins and Guetzkow 1964). The literature on this topic shows mixed findings. For example, Michaelsen, Watson, and Black (1989) found that 97% of the project teams in their study outperformed the best group member. This would imply that group grades would be higher than individual grades and that group project scores would have the affect of raising student grades, depending on the weighting of group project grades in final course grading. Watson, Michaelsen, and Sharp (1991) found a slight increase in gains in the effectiveness of group decision making over time. The group decision tended to increase relative to the "best member" decision, although the best member decision still exceeded that of the group. The authors did find that group decision making effectiveness improved significantly over time. The best (i.e., the most knowledgeable) group members were less important to group performance as the groups gained experience. Thus, over time, students who are not the better performers individually may develop the ability to contribute significantly to good group decisions. This would be consistent with the literature describing the advantages of group projects and student learning. Other studies have not supported the assembly line effect (Hill 1982; Laughlin 1980). Stasson and Bradshaw (1995) found that not only was the assembly line effect not found, but that the average group score was significantly

lower than the best combination of individual scores. Bacon, Stewart, and Stewart-Belle (1998) conducted a study in which same course individual-level grades were used to predict team performance. Examining the relationship between average, minimum and maximum individual ability scores, they found that average student ability was significant in predicting team performance. The authors note that, "Our findings suggest that when a student's grade is based primarily on a team project, the grade may not reflect that individual's ability but instead the average of the abilities of the student team" (p. 69). From this study it appears that project team performance would have the effect of raising scores of students who have low individual scores, and lowering the marks of students who have high individual scores. Habershaw, Gibbs, and Habershaw (1993) similarly note that, "if groups are randomly formed, the average ability of the members of the groups will be similar and will lead to a narrow overall spread of marks" (p. 93). These finding may be confounded by the possibility that grades given a team for a group project may be higher, and have less variance, than grades on individual assignments (Conway et al. 1993; Habeshaw, Gibbs, and Habeshaw 1993). Whether groups perform better, the same or worse than the average of individuals in the group may depend on the importance of the project (percent of grades) and the length of time the group works together (Michaelson, Watson, and Black 1989).

The issue of slackers or social loafers, or hitchhikers may not be addressed directly by peer rating schemes (Mesch 1991). While team members have the ability to assign a slacker a low score, there is a question as to whether they do, in fact, assign a low score. Results of studies are mixed regarding peer ratings and self-ratings. Some studies show a close association between peer ratings and average group ratings when students are asked to rate the work of others. Falchikov (1993) did a small study in which students rated group members on task functions and on maintenance or process functions of the project. She found no significant difference between individual ratings and mean peer ratings on how individuals assessed task functions. There was a significant difference between mean peer ratings and individual ratings on maintenance functions. There is evidence that students tend to give themselves higher scores than they believe the average of the group will assign them (Isenberg 1986). Williams (1992) found that students tend to inflate marks when assessing the work of other students, and that students said that two main drawbacks of peer assessment are that they do not like to criticize friends and that assessment can be arbitrary. A study by Haas, Haas, and Wotruba (1998) found that self-ratings were higher than group peer ratings and that the difference was significant. The authors point out that the higher self-ratings might be an attempt to influence performance ratings and grade. In a study of business students Sharrard, Raafat and Weaver (1994) examined the association between average group ratings and individual member ratings on eight independent variables, including GPA, course grade and several demographic variables. They found significant differences only in gender (females tended to peer evaluate groups higher than did men). On the other hand, Krause and Popovich (1996) found that when peer ratings and self-ratings differed, the self-ratings tended to be lower. Because of the inherent confusion in the literature regarding group project assessment issues, especially with regard to individual versus the group's performance, we sought to further investigate the nature of this relationship.

EXPLORATORY RESEARCH

Despite the prior mentioned conflicts, insights can be achieved by looking at anecdotal evidence. Exploratory research was done to examine the relationship between the grades students received on individual assignments not related to group projects and the grades received on group projects. To carry out this investigation, three instructors compared grades for classes in which they taught multiple sections of the course in the same semester. The instructors were not teaching the same course. Each instructor compiled information for two sections and student's individual grades (e.g., homework, quizzes and examinations) on other than group projects were averaged, and compared to their individual group project grades. Group project grades for each student were based on the grade assigned to the entire team, adjusted by group member peer ratings. The results are shown in the tables below.

TABLE 1
Grade Comparisons for Instructor 1

	Project Group Grades*				
Individual Grades	A	B	C	D	Total
A	1	3			4
B	3	10	4		17
C	3	23			26
D	2	9	3		14
F		4		1	5
Total	9	49	7	1	66

*The grade assigned to each student based on the grade assigned to the team, and adjusted by peer ratings.

The comparison for instructor 1 revealed that of 66 students, 48 (72.7%) received a group project grade

higher than their individual average grades, 11(16.7%) received the same grade, and 7 (10.6%) received lower group grades than their individual average grades.

TABLE 2
Grade Comparisons for Instructor 2

Individual Grades	Project Group Grades A	B	C	D	Total
A	1				1
B	8	6			14
C	12	23			35
D	6	16			22
F					0
Total	27	45			72

The comparison of grades for instructor 2 shows that of 72 students, 65 (90.3%) had higher group project grades than the average of their individual grades, and seven (9/7%) students received the same group grade as their individual average grade.

TABLE 3
Grade Comparisons for Instructor 3

Individual Grades	Project Group Grades A	B	C	D	Total
A	6	2	1		9
B	18	8	5		31
C	11	5	6		22
D	2	4	2		8
F	1				1
Total	38	19	14		71

Comparison of instructor 3's grades for 71 students shows that 43 (60.6%) students got higher group grades than the average of their individual grades, 20 (28.2%) students got the same grades, and 8 (11.3%) students received lower group grades.

Discussion of Findings.

Findings from the exploratory research reveal that for the six class sections examined, group grades were higher than nongroup project individual grades. In the aggregate, 156 of the 209 students (74.6%) received group project grades higher than the average of their individual grades in that class. These results could be due to several things. First, the motivational aspects of group work cited in the literature suggest that working in groups might result in better work being done by students who perform less well on individual assignments. Perhaps these less well performing students are motivated by the nature of the project itself, or are motivated and encouraged by the better students in the group. Thus, higher group grades may reflect true improvements in performance. Second, higher group grades may be a reflection of the effort of the better students alone. That is, students who earn higher grades on individual assignments may carry the group, contributing a disproportionate amount of work. A third reason for the higher group grades may be a reflection of instructor grading. Instructors who mentor their groups and encourage them to perform well may perceive that the quality of group projects is high and, therefore, assign higher grades. Instructors may also believe that the amount of effort inherent in a group project justifies a higher grade.

Based on the literature and the findings from the exploratory research, there may be unintended consequences associated with group work, and the authors elect to express them as research propositions for further study and investigation. These propositions follow.

Proposition 1: Group projects lead to greater grade inflation. If higher grades are awarded for group projects than the average of nonproject related individual grades of all students, then grade inflation may appear in final grade assignments.

Proposition 2: Group projects cause excellent students to devote a disproportionate amount of time to projects in order to help protect their individual grades. At the same time, better students may be penalized by group projects to the extent that the group grade is lower than the average of their individual grades.

Proposition 3: Group projects may unjustly reward poorer students. This may be true either because proposition 1 holds true and/or proposition 2 holds true.

Remedies to the Problem

To address the problems stated in the propositions stated above, the authors offer several possible remedies. These remedies call for further research and investigation into the areas of group grade assignment, and/or additional monitoring practices on the part of the instructor.

1. Research to examine the issue of grade inflation. This may validate the proposition that group project grades lead to greater grade inflation. Work in this

area may foster awareness among instructors of the issue. This in itself may lessen the problem of grade inflation. Still, if the instructor sees his or her mentoring as an important part of group work and if, in fact, group grades reflect the high quality of group output because of mentoring, then grade inflation may be endemic to group work.

2. Research in the area of individual versus group performance. The literature in this area is contradictory. Many studies dealt with short and artificially constructed learning assignments, rather than the group projects that are typically assigned to marketing students and which require the integration of theory and application. In addition to research in this area, the unjust rewards issue (propositions 1 and 2) might be addressed through an examination in which team members are tested on the marketing theory and content (application) of the project. Additionally, instructors might adopt process measurements such as group logs and individual diaries to track individual efforts and contributions.

CONCLUSION

Group projects are an important pedagogical tool in marketing education. Despite refinements in group project management, several issues exist. One is the question of the assignment of grades to the group project and the attendant problems of individual performance in nongroup work versus group performance. Another issue involves possible grade inflation. To the degree that the latter exists, business education may be perceived as having a lack of rigor with its attendant issues.

To address questions of grade equity and possible grade inflation, instructors need to look at these issues through additional research and they need to contemplate procedures (e.g., examinations covering group material and practice, as well as encourage the use of logs and diaries) to help assess individual contributions to group work. Such practices may expand variances in grading and introduce greater rigor in the assignment of group grades.

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