

**CASTL End-of-Year Report**

**Submitted by**

**Sarbani Banerjee**

**Computer Information Systems Department**

**Spring 2006**

## **Project title:**

How Fair Is The Assessment of Student Group Project? Comparison of Two Models

## **Project description:**

With the increase of the group assignments, many teachers face the potential dilemma of awarding the same group grade to individual student regardless of the contribution made by each group member. The question is how to make fair assessment of the student's group work where the participation of group members would likely to vary. The goal of current project is to devise an assessment system that encourages equal contribution or maximizes effort by each group member and discourages free riding. Students will be working on their group projects under two different settings. In one setting, each group will have one of the students acting as a project manager who would be responsible for proper submission of the project as well as evaluating other group members on their effort and participation in that project. In the other setting there will be no project manager but a non participating member could be fired from the group. At the end of the semester students will be asked to compare the two settings. This project is focused on investigating the factors that promotes effective assessment of student group assignments. It would encompass both the criteria that would be applied to determine the grade of student's group work, as well as description of the process through which such determinations would be made.

## **Research Background:**

Assessments of group project have been researched by many academicians in the areas of computing and information technology. Perceived benefits of group assignments are

numerous (Ford & Morice 2003); it facilitates active learning (Livingstone & Lynch 2002) and provides opportunity for teamwork like that required in a real organization (Bourner et. al. 2001). Many studies found different group formations have different impacts on the overall group assessment (Mahenthiran & Rouse 2000; Pitt, 2000; Reif and Kruck 1999; Schoenecker et. al. 1997). The inclusion of peer evaluation into the assessment of group work has been found to be meaningful and fair (Lejk et. al.1999, 2001, 2002; Cheng et. al. 2000).

### **Problem Statement:**

Often times with the group assignments, teachers usually have very little data or observations to assist them in valuing one student's contribution to the group success over another's. Although the evaluation problem can be solved by gathering student input regarding the contributions of their team members, the other problem of equal contribution of each team member to the group work still remains. One possible solution could be to devise an assessment system that encourages equal contribution or maximizes effort by each group member and discourages free riding.

### **Methodology:**

Students registered in Systems Analysis and Design course (CIS 370) course in Fall 2004, Spring 2005 and Fall 2005 constitute the sample for this research. Each semester about 30 students enroll in this course. Eight to ten groups are usually formed with three to four students in each group. There are usually seven to eight group assignments that students complete in a semester.

The research would be conducted in two phases using two sets of assessment criteria. In the first phase, one set of assessment criteria would be applied to the first four projects and in the second phase another set of criteria would be used for the later three to four projects. At the end of the semester each student would be asked to complete a survey comparing the two settings related to these assessment methods.

In the first phase, each team would have a project manager for each project. Project management would rotate among the team members for the first three or four projects giving everybody equal opportunity to take on the leadership and receive extra credits. As a part of project manager's responsibility (see Appendix A) the manager would fill out a confidential peer evaluation where s/he would assign a percentage of effort of all the team members excluding herself or himself; these percentages must aggregate to one hundred percent. In a team of four (including the project manager), if everyone participates equally, project manager should assign every other member 33.3% of effort. Non-participating or minimal participating students would be identified using the project manager evaluation assessment system and their project score would be decremented accordingly.

In the second phase of the study with the later projects there would be no project manager. All the team members would be jointly responsible for dividing up the project work, assembling the project parts and submitting the project. But, this time they would be given the power of firing a non-contributing member from the team, who would receive a zero grade in that project. Since lack of participation becomes a common

problem towards the end of the semester this assessment system would discourage the free riders. All the surviving members would receive same grades.

**Results:**

Table 1 describes the respondent’s demographics. Total of 87 students responded to the survey over three semesters. Majority of the students are males (85.4%) and are majoring in CIS (91.7%). Among the three age groups most of the respondents (58.3%) are less than 23 years old and are junior (54.2%) in class standing.

***TABLE 1. Demographics of the respondents***

---

	Valid Percentage
Gender	
Male	85.4%
Female	14.6%
Age	
Less than 23	58.3%
Between 23-30	27.4%
More than 30	14.3%
Major	
CIS	91.7%
Non-CIS	8.3%
Class	
Freshman	8.4%
Sophomore	15.7%
Junior	54.2%
Senior	21.7%
Total	N = 87

Table 2 contains descriptive data of the comparison of the two settings. It summarizes the students’ response on five assessment related questions.

Respondents found Setting 1, with the project manager present, to be two to three

times more effective on all four of five accounts. Students found that termination of non-participating group member to be equally difficult in both settings.

**TABLE 2. Comparisons of two models**

	Setting 1 Proj. Mgr. Present	Setting 2 Proj. Mgr. Absent	Neutral
	Percentage	Percentage	Percentage
Liked more	69.0%	28.7%	2.3%
Fair distribution of grade	72.4%	25.3%	2.3%
Maximized student effort	69.0%	28.7%	2.3%
Increased contribution	62.4%	32.9%	4.7%
Hard to terminate free-riders	47.7%	48.8%	3.5%

**Contributions this project has made (or will make) to the campus or academic community:**

Any faculty member teaching a lecture or a lab course where students work in group to complete class assignments or projects would be benefited by the results of this study.

**Professional benefits you have experienced as a result of your fellowship**

The fellowship gave me an opportunity to conduct a study with the issues of fairness of group project assessment that I was grappling with for a long time. I will be presenting the paper at the Conference on Faculty-Student Partnerships in Teaching and Learning in Geneseo, New York on May 18, 2006. I am also in process of sending the article to a

peer reviewed journal in my academic area called *Journal of Education for Business* for publication.