

Project Team Formation Processes: Student Attitudes And Experiences In Nine Alternative Methods

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Abstract

This study reports on a survey of undergraduate business students about their perceptions of the team formation processes used in their courses. Results indicate that perceived fairness is the most important predictor of students' overall satisfaction with team formation method. Two bid processes were evaluated very positively overall, while random assignment and proximity-based methods were evaluated very negatively overall.

I. INTRODUCTION

The benefits of team experiences for undergraduate students are well documented (for a concise review, see Williams, Beard, and Rymer 1991). Students in teams learn not only content-specific skills, but also highly transferable skills related to communication, time-management, and cooperative action (McCorkle, Reardon, Alexander, Kling, Harris, and Iyer 1999). Experiential learning via in-course teams is clearly the *modus operandi* in most business school curricula. Although teams do present administrative and social hurdles in their exercise, those teams can provide very relevant, real-world experience to undergraduate students.

In order for students to reap the fullest potential of these team exercises, they need to be fully engaged in the experience – intellectually and socially involved in the team and its outcomes. Previous research has explored the impact of varying conditions on student outcomes, for example the skill levels of members (Lejk, Wyvill, and Farrow 1999) or the role of top performers in the project team (Hacker 2000). However, the student's attitudes toward the project and subsequent involvement in the team are a function not just of the scope of the project and the relevance of the task; the team formation process itself has an appreciable effect on student attitudes in the team.

We are not the first to suggest this link between team formation and team outcomes. However, previous research has explored relatively few team formation options. In this research, we report on student experiences and attitudes toward nine separate team formation methods, thus allowing a comparison among these team formation options.

We examine four groups of team formation methods, yielding nine separate approaches:

1. random or quasi-random assignment
2. instructor-controlled methods
 - 2a. selection by proximity
 - 2b. maximization of preferences
 - 2c. competence balance
3. student-controlled methods
 - 3a. selection by proximity
 - 3b. sign-up sheet
 - 3c. self-selection
4. gaming or bidding methods
 - 4a. students bid for teams
 - 4b. student leaders bid for members

Our primary dependent variable is overall student satisfaction. We also explore several other outcomes: the degree to which the method mimics “real-world” job selection processes, the likelihood that students would get along with team members using this process, whether or not the process created an interesting learning situation, whether the process demonstrates that the instructor cares about student learning on the task, and perceived fairness of team formation results.

II. METHOD

We collected data from 132 undergraduate students about nine separate team formation methods, resulting in a data set of 1188 observations. We used mean substitution for any missing data. The instrument was a pencil and paper questionnaire that measured students’ perceptions using 5-point Likert style questions anchored by “strongly agree” and “strongly disagree.” Overall Satisfaction was measured using a three-item scale with excellent reliability ($\alpha = .88$). The three items measuring satisfaction were:

“I enjoyed this group formation approach.”

“With this method, I am usually satisfied with the performance of the group.”

“I would recommend that this group formation approach be used in all my classes.”

Other constructs were assessed using single item measures: Realism (“This group formation process appears to mimic the ‘real world’ job process”); Likelihood of getting along with team members (“With this method, I usually get along very well with my group members”); Interesting learning situation (“This group formation approach provided a more interesting learning situation than other group formation processes”); Shows instructor cares (“This group formation approach suggests that the instructor cares about me learning); and Fairness (“This method of forming groups is a fair technique to use”).

III. RESULTS AND CONCLUSIONS

Results of the study suggest very different patterns of student responses regarding perceived fairness and their satisfaction level. An examination of the mean responses and the relative ranks of the nine methods demonstrates these differences (see Table 1). Generally speaking, student self-selection (perhaps the most common team formation method) performed well in terms of overall satisfaction but did not perform as well on every other

specific perceptual outcome except the ability to get along with team members. This result suggests that satisfaction is strongly affected by the rapport and interpersonal dynamics within the work project team.

A review of the results shows that the more logical, performance-based methods of determining project team membership were found to be the most fair. Moreover, regression analysis shows that perceived fairness is the strongest predictor of overall satisfaction in seven of the nine methods. Only the two proximity methods exhibited a different pattern. In the proximity methods, the likelihood of getting along with project team members was the strongest predictor of satisfaction, with fairness the second strongest predictor for both methods. Still, both proximity methods ranked near the bottom on all measures. Random assignment to project teams was perceived negatively by students on all measures except for its realism.

The more uncommon methods in the list are the two bid processes. This method has been explained more fully in Oliphant and Hansen (1996). Clearly, the students who had experience with these bid processes had positive experiences. The two processes rank at the top in terms of overall satisfaction, realism, interesting learning situation, and perceived fairness. Moreover, the two were very near the top in terms of members' likelihood of getting along with team members, and instructor attention to student learning. Unfortunately, relatively few students in this sample had experience with bid process of project team formation (< 30).

The different patterns of results clearly indicate that students do notice the team formation methods being using in their courses and, more importantly, that the method itself has an appreciable effect on the students' satisfaction with the project. It seems reasonable to assume that a negative reaction to the project team formation method could easily be transferred to the project itself or the other team members, diminishing that student's engagement with the project or experience. For long-term projects, this effect could be mitigated by positive experiences within the team, but in shorter experiences, this is less likely to occur. If, in an in-class exercise, a student feels that a method is unfair, s/he may simply withdraw and not be able to maximize the experiential learning opportunity. The upside of this analysis is the common importance of fairness in determining students' perceptions of project team formation processes. The instructor would be well advised to emphasize the aspects of fairness that are emphasized by the selection process being used, regardless of the method. Driving up perceptions of fairness is likely to drive up student satisfaction with the selection process and promote a more positive project team experience from the outset.

IV. REFERENCES

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Table 1. Means (Ranks) for Nine Project Team Formation Methods

| Method | Overall Satisfaction | Mimics Real World Hiring | Gets Along With Team |
|------------------------------|-----------------------------|---------------------------------|-----------------------------|
| 1. Random Assignment | 7.62 (9) | 3.14 (4) | 3.09 (9) |
| 2a. Proximity (Instructor) | 8.14 (8) | 2.58 (7) | 3.37 (7) |
| 2b. Preferences Maximization | 10.40 (3) | 3.05 (5) | 3.46 (5) |
| 2c. Competence Balance | 9.66 (5) | 3.27 (3) | 3.22 (8) |
| 3a. Proximity (Student) | 8.71 (7) | 2.57 (8) | 3.42 (6) |
| 3b. Sign-up Sheet | 9.54 (6) | 2.67 (6) | 3.52 (4) |
| 3c. Self-Selection | 10.40 (3) | 2.49 (9) | 4.17 (1) |
| 4a. Students Bid | 11.04 (2) | 3.56 (2) | 3.84 (2) |
| 4b. Student Leaders Bid | 11.44 (1) | 4.09 (1) | 3.57 (3) |

| Method | Interesting Situation | Fairness | Shows Instructor Cares |
|-----------------------------|------------------------------|-----------------|-------------------------------|
| 1. Random Assignment | 2.96 (7) | 2.89 (8) | 2.61 (9) |
| 2a. Proximity (Instructor) | 2.85 (8) | 2.82 (9) | 2.62 (8) |
| 2b. Preference Maximization | 3.50 (3) | 4.03 (1) | 3.78 (1) |
| 2c. Competence Balance | 3.28 (4) | 3.52 (4) | 3.60 (4) |
| 3a. Proximity (Student) | 2.74 (9) | 2.95 (7) | 2.67 (7) |
| 3b. Sign-up Sheet | 3.20 (5) | 3.43 (5) | 2.90 (6) |
| 3c. Self-Selection | 3.14 (6) | 3.21 (6) | 2.96 (5) |
| 4a. Students Bid | 3.80 (2) | 4.00 (1) | 3.72 (3) |
| 4b. Student Leaders Bid | 3.94 (1) | 4.00 (1) | 3.74 (2) |