

**STUDENT SATISFACTION WITH GROUP PROJECTS:
AN ASSESSMENT OF KEY RELATIONSHIPS**

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ABSTRACT

This study measured student satisfaction with group projects and related it to perceptual beliefs, evaluative approaches, group processes, and the extent of one's participation in group projects. The results point to the efficacy of beliefs and participation in explaining student satisfaction. Basically, the quartile comprised of the most satisfied students evidenced the highest extent of group participation, thus suggesting that the role of experience in group projects creates efficiencies that foster satisfaction. Also, the greater the degree of student satisfaction and group participation, the greater the perceived social benefits due to group projects, the willingness to commit time to group projects, the desire for group over individual grading, and the perceived utility of team projects in the facilitation of learning and with respect to career enhancements.

INTRODUCTION

With the increasing use of active learning and even complete business school positionings around this theme, group projects have expanded in popularity. Many business schools are following a paradigm shift that recognizes the need for teamwork and team building as well as team leadership (Wright, Bitner, and Zeithaml 1994) and this movement has placed a premium on group projects. Despite this shift, little has been written in marketing journals on team concepts. Dommeyer (1986), however, has compared individual versus group projects and Williams, Beard and Rymer (1991) addressed how to achieve the full potential of team projects. Other works have focused on peer evaluations of team member performance (Beatty, Haas, and Scigliampaglia 1996; Van Auken 1994 and 1995); yet, nothing has appeared to our knowledge concerning student satisfaction with the team concept. Since students are increasingly being recognized as stakeholders in continual improvement processes, their perceptions of the team approach are important. Moreover, formal studies of the team concept external to marketing and business have not delved into student satisfaction (e.g., see Cohen 1994; Hertz-

Lazarowitz, Kirkus, and Miller 1992; Johnson, Maruyama, Johnson, Nelson, and Skon 1981; Sharan 1980).

THE STUDY OBJECTIVE

This study is concerned with an assessment of student satisfaction with group projects and relating an overall index of satisfaction to (a) student beliefs concerning group projects, (b) team evaluation methods, and (c) group processes. Additionally, the satisfaction index will be related to the extent of a student's participation in group projects. By assessing relationships to overall satisfaction, the variables that have the greatest explanatory power may be revealed and assessed as to their implications.

THE VARIABLES

A questionnaire was developed that contained eleven, six-point, semantic differential scales that related to student satisfaction with the team approach. Scale anchors included, good/bad experience, good use/waste of my time, valueless/valuable, satisfactory/unsatisfactory, not enjoyable/enjoyable, challenging/boring, educational/not educational, normal/strange, useless/useful, desirable/undesirable, and ineffective/effective. All responses were coded so that higher numbers denote higher levels of satisfaction.

The predictor variables were comprised of 24 perceptual belief variables concerning team projects and were scored on a six-point Likert scale, anchored with 1 = Strongly Disagree and 6 = Strongly Agree. These variables related to student issues concerning team projects (e.g., grades; time demands; quality of other group member contributions; equity of efforts; extent of learning; preparation for the real world; and the development of an understanding of the entire project).

The evaluation methods used to assess team-member performance were assessed on a five-point scale anchored by 1 = Never and 5 = Always. These methods encompassed peer evaluations, meeting reports, attendance records,

instructor observation, confidential memos, journals, and instructor meetings (adapted from William, Beard, and Rymer 1991).

The final set of predictors was comprised of group processes, which were also measured on a five-point never-to-always use scale. These processes include role discussions, individual expectations, scheduling, use of meeting logs, discussion of group dynamics, ensuring individual participation, assessments of individual happiness with the project, and making sure that all team members felt included.

Lastly, insights were sought into the extent of one's past group participation, grade-point average (GPA), and various demographics. Extent of past involvement in group projects was included to assess a possible novelty and learning effect. Grade-point average was assessed to determine if students with higher GPAs differed in their degree of satisfaction or beliefs about groups.

THE SAMPLE

The questionnaire was administered to 128 business students in a rurally-located AACSB accredited business school. The sample was generated by convenience considerations. Future work will concentrate on seniors taking capstone courses from several campuses in an effort to improve the sample's representativeness. However, the sample is certainly adequate for the development of exploratory insights.

DATA ANALYSIS

Reliability of Satisfaction Data

To assess the appropriateness of creating an overall index of satisfaction, the reliability of the eleven semantic differential scales was determined through a Cronbach alpha analysis. The resulting alpha value equaled .91, thus establishing the internal consistency of the eleven measures. Given this consistency, an average score for the eleven measures was calculated for each respondent. Overall, the average score for the entire sample equaled 4.54 (s.d. = .80). The higher a respondent's average, the greater the satisfaction with student teams.

Multiple Regression of Satisfaction Data

In an effort to explain satisfaction, a multiple regression analysis was run using variables from

the three predictor sets (i.e., student beliefs, evaluation approaches, and group processes). Since these variables were characterized by some evidence of multicollinearity, they were initially subjected to a principal components factor analysis with varimax rotation. In this regard, a separate factor analysis was run on the 24 student belief variables, while the evaluation and group processes variables were combined for a second factor analysis. The latter was due to the use of the same scaling formats. The intent of the factor analysis was to reveal the top-loading variable on each revealed factor, so it could be included in the regression analysis.

The results of factoring the 24 student belief variables revealed five factors which explained 62.1% of the variance, while the factoring of the 15 evaluative and group process variables revealed five factors which explained 67.6% of the data variance. These ten variables produced an R^2 value of .35 ($F = 5.02$; 12 and 112 d.f.; $p < .000$) and five of the ten variables were characterized by significant t values. These variables and their respective Beta weights appear as follows: Group projects in my courses have enhanced my learning experience (.31); In a given project, I do my part and I am required to understand everything else (-.23); Procrastination is not likely to occur during a group project (.21); I have an easy time fitting group projects into my schedule (.19); and, Time is taken during meetings to make sure everyone feels included (.19); As can be seen, only the last variable is an evaluation and group process variable. Basically, perceptual beliefs are explaining the variation in overall satisfaction. In essence, those who are most satisfied with team projects see it as a learning experience, are preoccupied with their part and not the whole, do not procrastinate, and can fit them easily into their schedule.

Extreme Quartile Analysis of Satisfaction Data

Given that the regression analysis only revealed five significant predictors out of 39 initial variables, we decided to follow the data partitioning procedure advocated by Weiss and Adler (1981). In this regard, we placed our respondents into quartiles and selected the extremes for further analysis. Thus, we now had a heavily satisfied group and a lightly satisfied group, and the issues germane to each group can be determined. The extreme quartiles encompassed all students who scored less than four and greater than five on the composite index of satisfaction.

As compared to students who have not been as satisfied with their group projects, the highly satisfied group members believe that team projects, are the best way to learn ($m = 4.55$ vs. 3.18 , $\alpha < .001$); have enhanced their learning experiences ($m = 5.03$ vs. 4.03 , $\alpha < .01$); have increased their ability to effectively work in a group ($m = 5.24$ vs. 4.22 , $\alpha < .01$); and, believe that group projects are preparing them for the working world ($m = 5.17$ vs. 4.21 , $\alpha < .01$). These same students were more likely to indicate that group projects demonstrate the division of labor ($m = 4.41$ vs. 3.70 , $\alpha < .05$). However, they were in lessor agreement to the belief that they are required to understand everything in the project ($m = 2.34$ vs. 3.45 , $\alpha < .01$). Apparently, the most satisfied team members are able to efficiently operationalize their efforts; yet the full learning benefit of a team effort may not be making its presence felt. Also, compared to lessor satisfied group members, highly satisfied group members indicate lessor grade worries ($m = 3.79$ vs. 4.61 , $\alpha < .05$) and they reveal that they would much rather be graded as a group ($m = 4.28$ vs. 2.50 , $\alpha < .001$). Further, highly satisfied group members do not resent the time intrusion of team projects ($m = 4.86$ vs. 2.88 , $\alpha < .001$) and they indicate that they have made new friends ($m = 5.29$ vs. 4.12 , $\alpha < .01$). They also indicate lessor agreement with the statement, I am not to blame when one of my group members fails at a task ($m = 3.00$ vs. 4.27 , $\alpha < .001$). This suggests a greater amount of team responsibility. Empathy for others is also seen in that these team members indicate a higher response to making sure that each person has a chance to talk at meetings ($m = 4.21$ vs. 3.36 , $\alpha < .01$). All in all, a profile of the highly satisfied group member has evolved. Especially salient is the contrast with students who indicated less satisfaction with group projects.

The Influence of Past Participation

Students were asked to assess the number of group projects that they had been involved with over their college careers. They were specifically instructed to think about all the courses they have taken and to note which ones had a group project. On average, students had participated in 9.66 group projects. We then sought to determine if there was a statistically significant difference between the high and low satisfaction groups in terms of the extent of team participation. The results revealed that the high satisfaction group had, on average, participated in 11.66 group

projects, while the low satisfaction group had, on average, been involved with 7.88 group projects. This observed difference was statistically significant ($F = 5.58$; 1 and 60 d.f.; $p < .02$). Clearly, there is a relationship between group satisfaction and the extent of team participation.

Given the significance of enhanced participation in accounting for team satisfaction, the extent of team participation variable was ordered from low to high and was split at the median position (8 teams). As a result, low and high participation groups were created. As expected, satisfaction varied between the low participation group ($m = 4.22$) and the high group ($m = 4.63$), ($F = 8.83$; 1 and 126 d.f.; $p < .004$), thus confirming the above finding relating satisfaction groups to participation. In turn, this confirmation led us into an assessment of the relationship between the low and high participation groups on our same sets of predictor variables that we used to explore satisfaction. Compared to students who have not participated in as many group projects, students with a greater extent of group participation are more likely to state that they; like group grading more than individual grading ($m = 3.44$ vs. 2.88 , $\alpha < .05$); do not resent the time intrusions due to group projects ($m = 4.23$ vs. 3.6 , $\alpha < .05$); feel that team participation is the best way to learn ($m = 4.10$ vs. 3.67 , $\alpha < .05$); and, feel that they understand what other team members have done ($m = 3.87$ vs. 3.39 , $\alpha < .05$). This latter finding is the reverse of the extreme quartile satisfaction groups and helps to support the efficacy of the team concept. However, the mean score of 3.87 is still low and it suggests room for improvement.

The high participation group was more likely than the low participation group to have; used peer evaluations ($m = 3.93$ vs. 3.59 , $\alpha < .06$); made sure that members had a chance to talk ($m = 4.19$ vs. 3.49 , $\alpha < .001$); taken time during meetings to make sure everyone is happy with the project ($m = 3.60$ vs. 3.19 , $\alpha < .05$); and, took time to make sure everyone feels included ($m = 3.50$ vs. 3.12 , $\alpha < .06$). The magnitude of these mean scores also suggests that there is room for improvement. Despite this, the results tend to denote an experience factor that impacts satisfaction.

The results suggest that as one participates in more group projects that efficiencies are generated due to the effects of learning and experience. These efficiencies may contribute to higher levels of satisfaction with group projects. Of course, it is possible that too many team

assignments could lead to diminishing or reduced satisfaction. However, our data do not support this.

Ruling Out Alternative Explanations

An analysis was undertaken to determine if GPA had any relationship to satisfaction with group projects. One might conjecture that individualistic students with higher grade point averages would fall in the least satisfied group. However, an assessment of grade point differences between the low and the high satisfaction groups revealed no differences (Mean GPA for each group = 2.88, $F = .00$; 1 and 53 d.f.; $p < .991$). We also partitioned GPA into high and low GPA based upon a median split (low GPA < 2.81 , high GPA > 2.80). Perceptual beliefs were also analyzed by GPA grouping with no significant findings. Differences in GPA appear to have no influence on satisfaction with a group or with perceptual beliefs regarding group projects. Finally, no discernible differences appeared based on gender, academic class standing, or ethnicity. There were some minor differences due to age. In general the older the student, the less satisfied with past group projects. The older students appeared to be more time constrained and less likely to believe the group experience facilitated their learning experience.

DISCUSSION AND CONCLUSIONS

We had initially suspected that a steady dose of team assignments would reduce enthusiasm and that such assignments may even run contra to the western value of individualism that abhors the dependency demanded by group projects. However, our analysis of the high team satisfaction group revealed some interesting characteristics. To illustrate, these students viewed teams as a way to meet new friends, thus denoting more of a social orientation. They also possessed the time for team activities and they perceived the learning benefits of the group project approach for their professional career. Somewhat surprising was the observation that they liked group grading over individual grading. Of course, these findings come from a residential campus and they allow one to infer that students from urban campuses may not perceive the team concept in the same light. In essence, commuting distance and work schedules may impact the efficacy of one's perception of group activities.

Our most interesting finding was that the most satisfied team group evidenced greater team

participation, thus suggesting a learning curve or additional proficiencies that are acquired through team experiences. This would suggest the utility of a commitment by faculty to the group project approach. Again, this commitment may be greater at residential campuses due to possibly lesser external time demands on students.

Moreover, instructors can continually reinforce the benefits of the team approach and can actually enhance group processes through informational lectures. Given the relationship between satisfaction and perceptual beliefs, the instructor could try to influence perceptual beliefs which may influence satisfaction and learning. Of course, these enhancements can come from doing more projects and instructors could play a more informational role regarding groups and group dynamics.

All in all, a model of satisfaction and learning with group projects would appear to exist. The two driving influences for team satisfaction are (a) the extent of group projects (the more the better), as a learning curve apparently exists and (b) the role of the instructor in reinforcing the benefits of the group project approach and influencing the perceptual beliefs that students hold about group projects (e.g., corporations looking for people who can work well in a group.). Additionally, the instructor can facilitate the understanding of group processes. Both of these drivers interact (i.e., the extent of participation and the instructor) to influence team satisfaction and, in turn, should facilitate greater student learning.

Uniquely, the efficiencies that come from greater team participation and which apparently enhance satisfaction, may also weaken a student's understanding of the whole; hence, instructors may need to work on this possible dilemma. In essence, will increased macro understanding among students lead to lesser satisfaction with the team concept?

Overall, these issues are worthy of additional study, especially between urban and rural universities, as their respective cultures vary. This research is thus viewed as a starting point for the enhancement of learning and satisfaction through the team concept.

References, detailed tables, and additional information on scales were omitted due to space constraints and are available upon request.