Does It Matter if I Hate Teamwork? What Impacts Student Attitudes toward Teamwork

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The ability to work in teams is a skill that is often taught in universities to be applied in the business world. This study of junior and senior college students shows that project grades, perceived workload, time in class for project work, use of peer evaluations, and absence of a "free-rider" problem were significant predictors of attitudes toward teamwork. On the basis of their results, the authors suggest assigning a reasonable workload, allowing class time to work on projects, and using peer evaluations as strategies for improving student teamwork experiences.

Keywords: *college; positive attitudes; student; success; teamwork*

WHY USE TEAMWORK?

Ability to collaboratively create, write, and manage tasks and projects is becoming increasingly important in the business world. As Gardner and Korth (1998) asserted, "To remain innovative and competitive, businesses are looking for employees who can work and learn effectively in teams" (p. 1). For example, Ingersoll-Rand Company has been using work teams among division leaders since 1993 (Perrella 1999). Frito-Lay, Incorporated uses teamwork to solve problems creatively (Higgins 1995). In the "Careers" area of their Web site, Ford Motor Company emphasizes being "on the team" and working within a "learning community" (http://www.mycareer.ford.com). Students in business programs at many colleges and universities are required to work in teams in preparation for the work world. In any field, employees must know how to interact with people—a skill that can be learned by working with others in groups. Studies have further shown that together, students are able to achieve and learn more than any student is able to individually (Freeman 1996; Johnson and Johnson 1984-85). The purpose of our study is to examine the variables that contribute to positive student attitudes toward team project experiences.

Instructors of large classes who wish to use evaluation tools other than exams or want to include evaluation tools to supplement exams may find team projects to fit well into their courses. Furthermore, the use of team projects can reduce the burden of evaluating hundreds of individual projects. Although groups of students generate one final product, team projects still provide the opportunity for the instructor to apply, and for individual students to learn, course concepts. Teamwork may also allow instructors to have more significant contact with students; although meeting individually with each student in a large course is incredibly difficult and time-consuming, meeting with groups of students is a more reasonable possibility and more effective use of time. Not only is meeting with groups more time-effective, meeting with groups of students also creates a different conferencing dynamic; when meeting with groups of students, the power differential is more diffuse. Students may feel more comfortable and open talking with an instructor in groups rather than in a one-on-one setting where the instructor may dominate a discussion.

SUCCESSFUL TEAMS

Many studies offer insight into various aspects of successful teamwork. Some have focused on the advantages and disadvantages of group characteristics (Feichtner and Davis 1984; McCorkle et al. 1999), while others have highlighted the effects of teams on overall student performance (Boyer, Weiner, and Diamond 1985). These studies support the earlier

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assertion that teamwork is a crucial part of a contemporary higher education. Boyer, Weiner, and Diamond (1985) claim that work in a team provides students with access to many different learning, working, and writing styles, thus allowing students to gain a greater understanding of collaboration generally and of course concepts specifically. Researchers also postulate that because our culture is becoming increasingly less independent, students need to know how to work well with other people and to negotiate differences in personalities and task approaches. Feichtner and Davis (1984) suggested that it is important for students to learn to work with and form relationships with others who are not like themselves. This skill can then be applied to students' work in other classes and to the workplace. A study by Johnson, Johnson, and Smith (1998) shows that collaborative learning increases individual achievement more than either individual or competitive learning. According to these authors, other advantages for students who work in teams include persistence when facing adversity, willingness to perform difficult tasks, ability to translate knowledge from one task to another, greater social skills, and intrinsic motivation. Furthermore, cooperation is related to indicators of mental health, including high self-esteem. These are persuasive arguments for collaborative work and team projects.

TEAMWORK PROBLEMS

Although the positive outcomes of teamwork are numerous, there are problems related to work in group contexts. When students have their work divided for them or divide work themselves, the possibility exists that each student learns only about his or her area of specialization (McCorkle et al. 1999). There is no reward for students to learn about the parts of a project other students are responsible for, so students may be inclined to learn only what is necessary. This may restrict students from developing a good general education in their subject area. Students also need to gain knowledge not related to teamwork. Independent learning and mastery of course concepts are crucial skills for students to develop individually. Because of these variables, instructors should not necessarily force teamwork just because teamwork and collaborative learning have become a popular trend (McCorkle et al. 1999).

However, many of the problems that arise in teamwork contexts can be remedied. Some problems in team-oriented work result from the actions of the students themselves. For example, one common problem is a student team member who does not contribute his or her full potential. This can be addressed by periodically changing team membership or by increasing individual accountability (Joyce 1999). Sometimes there is a "leader" in a team who takes over and works independently, discouraging—openly or suggestively—the participation of other team members. Potential solutions to this problem include assigning team member roles (so that other students have agency in the situation), dividing necessary resources among members, and basing the team's grade on the lowest individual score (Johnson and Johnson 1984-85; Joyce 1999). Another problem is created by students who do not contribute to the team or who disrupt team dynamics so that other members are prevented from performing their tasks. Instructors can address this problem by confronting problem students directly and requesting behavior change. Other options include giving problem students specific roles to play in their teams or removing students from teams entirely and assigning them the task of observer who must document and account for the activities of the team. Another possibility is to offer a particularly tempting reward for team success (Johnson and Johnson 1984-85). This reward could range from allowing students to use notes on a test to a pizza party for successful teams.

Other problems related to integrating teamwork are caused by the instructor. Success is often mediated by instructor assignment of team members. For example, problems can arise when team membership is assigned by the teacher versus by the student. In addition, if the instructor does not carefully and deliberately assign teams, these may not include students with a variety of skills.

The way the instructor grades individuals and teams can also cause problems. If team performance does not affect a student's grade or if it affects the grade only minimally, students are more likely to report a negative experience (Feichtner and Davis 1984). This is also true for situations in which one particular team project counts for a very large percentage of a student's grade. Relying solely on instructor-based evaluation can also cause problems; not including a peer evaluation in the grade may adversely affect student attitudes toward teamwork (Feichtner and Davis 1984).

If an instructor does find teamwork to be the best learning strategy for a particular course or assignment, there are additional factors that can affect a team's academic success. For example, there is some disagreement on whether teams should exist for long periods of time. Feichtner and Davis (1984) suggested that teams of students not be frequently dissolved and reformed but instead maintained across time and across projects. In contrast, another study revealed that long-duration teamwork decreased the effectiveness of the team and the quality of the resulting teamwork (Salas et al. 1999). Team identification and morale can affect success. For the greatest chance of success, teams should remain intact between projects by sitting together in class and/or by creating a team name or logo with which all members identify (Feichtner and Davis 1984).

Anecdotal evidence based on the first author's recent experiences and the second author's 20 years of teaching experience suggest that a significant number of students harbor very negative attitudes toward team projects. Understanding these variables will assist instructors and students in structuring teams and organizing team projects that maximize

these variables, while minimizing those that contribute to negative experiences. Positive experiences may reduce the chance of interpersonal conflict within teams and create a more conducive learning environment. This will enable students to focus on the substance of the task at hand rather than on interpersonal dynamics.

HYPOTHESIS DEVELOPMENT

On the basis of reviews of the literature and personal experiences, we propose several hypotheses that support the goal of examining and better understanding variables that contribute to positive student attitudes toward teamwork.

Participants in a team project can assume active or passive roles by choosing to dominate, lead, follow, or—in some cases—bounce between roles. Passive members are unlikely to derive social or academic benefits from team membership. Dominating members are apt to feel "used and abused" because they have assumed more than their share of the workload. Furthermore, dominant members prevent other team members from working to their own potential and inhibiting the team from working collaboratively (Johnson and Johnson 1984-85). We predict that students who are passive or dominant will have more negative attitudes toward teamwork than those who do no more than minimally contribute. In contrast, students who consider themselves leaders will have more positive attitudes toward teamwork. Leaders seek input from other members, provide coordination efforts, and often serve as the "glue" that holds a team together. Pescosolido (2001) identified the "informal leader" of a team as a member "who exerts influence over other team members" and "is chosen by the team" (p. 78). In a study of MBA students, Pescosolido found that informal leaders influenced group efficacy to a greater degree than nonleaders. We believe that student team leaders will be invested in the project outcome, will feel they have contributed to the project, and result in a positive attitude toward teamwork. Therefore, we propose the following hypothesis:

Hypothesis 1: Students who perceive themselves as leaders will have more positive attitudes toward teamwork than those who perceive themselves as followers.

Anecdotal evidence based on the second author's 20 years of experience with student teams suggests that students who receive good project grades are more likely to express a positive attitude toward teamwork and are less likely to articulate having problems within the team. A search of the literature did not reveal empirical studies that examined this specific relationship (project grade and attitudes toward teamwork). We identified only one study that examined the relationship between student attitudes toward teamwork and performance. Freeman (1996) found that an *individual's attitude* toward teamwork influenced GPA. While Freeman's work supports a relationship between performance and attitude toward teamwork, we think that project grade will predict attitude toward teamwork. The second author has witnessed numerous situations where receiving a poor project grade has "soured" a student's attitude toward his or her team. The converse has not been true: students receiving a good grade on a project usually express positive attitudes about the team experience. Therefore, we propose a second hypothesis:

Hypothesis 2: Project grade is a predictor of positive attitudes toward teamwork.

While the relationship between team size and attitudes toward teamwork has not been examined, considerable debate exists about the optimal team size to enhance performance (Cossé, Ashworth, and Weisenberger 1999; Ingham et al. 1974; Wolfe and Chacko 1983; Yetton and Bottger 1983). The general theme of the team size–performance research points to an inverse relationship between these two variables. Ingham et al. (1974), in their attempt to replicate the Ringelmann effect,[1] found that individual performance decreased as group size increased. Bacon, Stewart, and Stewart-Belle (1998) found that increasing the number of team members beyond two did not increase performance, as measured by project grades. However, these authors suggest that team size be kept small. Wolfe and Chacko (1983) found that three was the best team size in a business game situation. In a marketing simulation with teams of two, three, and four, team performance varied by team size, with performance significantly higher for the four-person teams (Cossé, Ashworth, and Weisenberger 1999). Yetton and Bottger (1983) noticed performance gains on a NASA simulation as group size increased from three to five members. Gains declined as team size increased with no noticeable improvement in performance observed for groups larger than five. Large team size (eight or more members) has been found to adversely affect teams (Feichtner and Davis 1984; Salas et al. 1999). In summary, small team size is best as long as there are more than two members (Feichtner and Davis 1984). Our third hypothesis thus proposes:

Hypothesis 3: Team size and positive attitudes toward teamwork are inversely related.

Feichtner and Davis (1984) found that the amount of work completed as a team affected students' perceptions of the team experience for upper-division speech communications and business policy students. Requiring no team presentation or only one presentation was more likely to elicit a "best" rating for team experience. Two or more such presentations made students more likely to report a "worst" rating. Written papers had a similar effect. When from zero to two written

reports were required, students were very likely to indicate a best experience. Students were also likely to pick best or worst when three reports were required. More than three reports made students less likely to indicate a best experience. In contrast, having more team exams in the class made students more likely to report a best experience. Feichtner and Davis (1984) thus theorized that to become cohesive, groups need a specified amount of work and a certain amount of time to complete the work together. Too much work contributes to a negative experience. This lends support to our fourth hypothesis:

Hypothesis 4: Perception of workload is a predictor of positive attitudes toward teamwork.

Cooperation is defined as "the act of working together to one end" (*Webster's New Universal Unabridged Dictionary* 1983). If the purpose of teamwork is to complete a project that would be difficult to complete individually, teams composed of *cooperative* members should have more positive experiences than teams of *competitive* members. We found two empirical studies that examined cooperation in relationship to team success. One study of 608 project managers investigated perceptions of the importance and presence of organizational and team commitment factors in their work environments (Sweeney and Lee 1999). It found that cooperation, rather than competition, was essential for teams to develop synergy. Although the importance of cooperation was rated 4.31 on a 5-point Likert-type scale, there was a significant discrepancy between perceptions of importance and what was actually observed in their workplaces (4.31 vs. 3.35). Perceptions of the importance of cooperation varied by gender. Women perceived cooperation as more important than men. In a longitudinal study of upper-class undergraduate students, Robbins and Fredendall (2001) found that team cohesiveness and a collaborative team climate had a significant, positive effect on team success. On the basis of these studies, we anticipate that cooperative students are more likely to be team players and cooperative students are more likely to have a positive attitude toward working with others than competitive students. We thus hypothesize:

Hypothesis 5: Cooperativeness is a predictor of positive attitudes toward teamwork.

Student respondents in a study by Feichtner and Davis (1984) reported that their worst teamwork experiences involved less work time in class than their best experiences. Students who reported worst experiences noted that an average of 10% of class time was set aside for teamwork, while students who reported best experiences were allotted 36%. The worst experiences also involved less time spent outside of class than the best experiences. The authors suggest that it may be the extra time spent together that makes the team cohesive and affords members a more positive experience.

As an additional impetus for the following hypothesis, it is our perception that it is very difficult for college students—especially those working in larger teams—to find time outside of class when every member is available to meet. One reason for the difficulty in arranging schedules is that more than half (50.4%) of college students are employed while attending school (Digest of Education Statistics 2000). This is but one of many reasons why students are reluctant to concede scant free time to work on a team project. Because of time demands placed on students, we propose the following:

Hypothesis 6: Students will have more positive attitudes toward teamwork when they have class time to work on team assignments.

Siciliano (1999) suggested that confidential student rating of other team members on certain criteria be incorporated into a team project. Ratings can be averaged for each team and used during the semester to help the teams improve. Ratings should also be reassessed at the end of the semester and be included in final grades. Mallinger (1998) had success using a system of two evaluations per semester. Feichtner and Davis (1984) found that three out of five students gave a teamwork experience a "best" rating when peer evaluations were used and when evaluations contributed to the course grades. That ratio fell to one out of three when peer evaluations were not used. In narrative-response, open-ended questions included in their survey, students expressed regret and complaints when peer evaluations were not used.

Our own experiences—as a student and as an instructor—indicate that there are two reasons why students might be in favor of peer evaluations: First, students who know they will be evaluated by their peers may be more motivated to participate. Second, a sense of fairness may prevail when students know they can provide input and create an impact on the grades of team members. In light of these arguments, we hypothesize the following:

Hypothesis 7: Use of peer evaluations is a predictor of positive attitudes toward teamwork.

As Latané, Williams, and Harkins (1979) defined it, free riding or "social loafing" is "a decrease in individual effort due to the social presence of other persons" (p. 823). Free riders are one of the major problems involved in teamwork and have received much attention from researchers (Ingham et al. 1974; Johnson and Johnson 1984-85; Joyce 1999; Latané, Williams, and Harkins 1979; McCorkle et al. 1999). McCorkle et al. (1999) found that 65% of the students enrolled in advanced marketing classes thought that free riding was a problem in groups they had belonged to. Large

teams encourage free riders because each member is responsible for only a small part of the whole project. Loafing students feel that their contribution is insignificant and shirk their responsibilities.

In an attempt to replicate an unpublished study, Ingham and colleagues (1974) showed that individual performance in pulling a rope decreased when individuals were part of a team or felt as if they were part of a team as compared to how they acted when they felt they were working alone. In a similar experiment, Latané, Williams, and Harkins (1979) found that people clap and cheer less loudly when in teams than when alone. It seems likely that students who have had an experience with free riders will have more negative attitudes toward teamwork than other students. Therefore, we propose the following hypothesis:

Hypothesis 8: Absence of a free rider problem is a predictor of positive attitudes toward teamwork.

METHOD

Instrument Development

To test our hypotheses, we developed an instrument to measure student attitudes toward teamwork. The instrument was divided into three sections: Section 1 dealt with students' general attitudes toward teamwork (see appendix). Section 2 asked students to recall a recent team situation and then queried them about their attitudes toward this specific teamwork situation and the project grade. In the third section, questions about the number of people on the team; grade or expected grade on the project; and demographic information, such as major and age, were included. A 5-point Likert-type scale format was used to rate most items on the first two parts of the instrument (1 = *strongly disagree*). An exception is the rating of their team experience, which used a 10-point scale (1 = *awful*, 10 = *excellent*).

Three questions that focused on peer evaluation of teamwork were prompted by the work of Siciliano (1999), who suggested that peer evaluations be incorporated into a group project, and Feichtner and Davis (1984), who found that students are more likely to give a teamwork experience a "best" rating when peer evaluation is used.

Eight questions regarding the free rider problem were prompted by Johnson and Johnson (1984-85) and Joyce (1999). Four items associated with cooperation versus competition were sparked by Tang (1999), who studied the difference in learning styles between Chinese students and American students. Four items addressed perceptions of leadership and were influenced by the work of Joyce (1999) and Johnson and Johnson (1984-85). These studies mentioned the problems of students who do not participate when in a team and those who "take over" the team and lead.

The work of Feichtner and Davis (1984) was the impetus for questions related to perceived workload, which was measured by questions relating to the number of projects on which a team works. These authors suggested that students' perceptions of workload will have an impact on their attitudes toward teamwork. The four items on class time devoted to teamwork were also sparked by Feichtner and Davis (1984), who studied the relationship between perception of time spent on a project in class and attitude toward that project.

Sample Characteristics

The participants in our study were undergraduate students at a large midwestern university. These students were primarily Merchandising Management students in their senior year of study and a few business majors; other participants were also undergraduate students. Our sample of 70 students was 83% female. The questionnaire was distributed and completed at the beginning of the semester, before significant teamwork took place. All respondents had previous experiences with student teams.

Analysis

We computed summary scales for degree of leadership, cooperativeness, extent of free riding, number of projects with team members (perceived workload), time spent in class, and use of peer evaluations. Results are presented in the appendix; items in italics were included in the analysis. Cronbach's alpha reliability coefficients were computed for each of the scales and ranged from .62 for workload to .87 for peer evaluation. All scales except perceived workload reached a .7 level deemed acceptable by Nunnally (1978). Once reliabilities for each scale were computed, remaining items were summed and then averaged for further analysis.

To test our hypotheses, stepwise multiple regression was used. Student rating of a recent teamwork experience (1 = *awful*, 10 = *excellent*) was the dependent variable (student attitude toward teamwork). The independent variables were leadership, grade earned on the project, team size, workload (number of projects), cooperativeness, time given in class to work on projects, use of peer evaluation, and free rider perceptions. Leadership was determined by four items associated with the extent to which students felt they were leaders in teams. A sample item from this scale was "I felt that I was in charge of the group." After deleting one item, Cronbach's alpha reached an acceptable level of .75. Other independent variables—grade earned on the project and team size—were measured by asking students to report grade earned and size of the team on a recent team project. The workload variable assessed whether students thought that the team should have worked on more projects together. This variable was measured by three items, such as "It would have been nice to work on more projects together" (Cronbach's $\alpha = .62$). Coopera-

tiveness was assessed by two items (Cronbach's $\alpha = .70$); a sample item from this scale was "I like to work with other people." Perceived time in class to work on projects was measured by a two-item scale, with a sample item being "We should have had more class time to work on our project" (Cronbach's $\alpha = .84$). A peer evaluation scale was created from two items to test Hypothesis 7 (Cronbach's $\alpha = .87$); one of the items included in this scale was "Peer evaluations should be part of the teamwork experience." Free rider experiences were calculated from five items regarding perceptions of shared workload (Cronbach's $\alpha = .74$); one of the items included in this scale was "Everyone did an equal amount of work."

RESULTS AND DISCUSSION

Five independent variables were retained in the model, $F(5, 55) = 23.295$, $p < .0001$, adjusted $R^2 = .655$ (see Table 1). We discuss results related to each hypothesis.

Hypothesis 1: Students who perceive themselves as leaders will have more positive attitudes toward teamwork than those who perceive themselves as followers.

Stepwise multiple regression revealed that leadership was not a predictor of attitudes toward teamwork. Thus, leadership does not appear to influence student attitudes toward teamwork. Hypothesis 1 was rejected. Our findings do not coincide with Pescosolido's (2001) finding that informal group leaders had an influence on group performance. This could be due to the greater responsibility required of leadership, tempering positive attitudes. Conceivably, leaders may feel pressured into their roles, rather than taking them on willingly, which then reduces the likelihood of a positive experience.

Hypothesis 2: Project grade is a predictor of positive attitudes toward teamwork.

Our results revealed that grade received on a project was a significant predictor of attitudes toward teamwork. Project grade was the strongest predictor, with a beta coefficient of .496. Our findings regarding attitudes and grades support the work of Freeman (1996) and confirm anecdotal experiences of the first author. An individual who has received a good grade on a project is more likely to have a positive attitude toward work in teams. It could also be that students who receive a good grade on a team project remember the project in a more positive light than those who received poor grades.

Hypothesis 3: Team size and positive attitudes toward teamwork are inversely related.

TABLE 1
STEPWISE REGRESSION OF PREDICTORS OF TEAMWORK EXPERIENCE

	Sum of Squares	df	*Mean Square*	F	*Significance*	R
Regression	171.168	5	34.234	23.395	.0001	.655
Residual	79.016	54	1.463			
Total	250.183	59				

Variable	β	t	*Significance*
Grade	.496	6.428	.0001
Free rider	.401	5.208	.0001
Perception of workload	.332	4.305	.0001
Peer evaluation	.264	3.382	.001
Time in class	.211	2.693	.009

Team size was not a significant predictor of attitudes toward teamwork. Our findings refute previous work; Cossé, Ashworth, and Weisenberger (1999); Ingham et al. (1974); Wolfe and Chacko (1983); and Yetton and Bottger (1983) all found a relationship between group size and either performance or attitudes toward teamwork. One possible explanation for this finding is a lack of variation in team size within our sample. Almost 75% of the respondents indicated that the team was made up of five or six members. Only 11 cases were outside this range. Future research should reexamine this variable with a wider variety of team sizes.

Hypothesis 4: Perception of workload is a predictor of positive attitudes toward teamwork.

Perception of workload was a significant predictor of attitudes toward teamwork, with a beta coefficient of .332, thus supporting Hypothesis 4. Our results confirm the claims of Feichtner and Davis (1984); this relationship might occur because a team that has more time to work together also has more time to become an actual team, rather than just people who work together. Once a team has bonded, it is logical for perceptions of the experience to be more positive.

Hypothesis 5: Cooperativeness is a predictor of positive attitudes toward teamwork.

Our analysis revealed that cooperativeness was not a predictor of attitudes toward teamwork. Thus, Hypothesis 5 was rejected. Previous work on cooperativeness (Robbins and Fredendall 2001) revealed that for teams of college students, cooperation was related to team success and effectiveness. Sweeney and Lee (1999) found cooperation to be perceived as important in business teams, but cooperation was not nec-

essarily observed to the same extent that it was reported to be valued. Our findings are surprising and counterintuitive. Perhaps our sample is similar to the project managers (Sweeney and Lee 1999) who rated cooperation among team members as important but actually observed a lower level of cooperation in their team experience.

Hypothesis 6: Students will have more positive attitudes when they have class time to work on team assignments.

Time in class was found to be a significant predictor of attitudes toward teamwork, with a beta coefficient of .211, suggesting that more class time devoted to work on a project yields more positive attitudes toward teamwork, affirming the work of Feichtner and Davis (1984), who found that a project that requires more work outside of class is likely to provoke a worst rating. Many students work while attending school and participate in social and extracurricular organizations and, therefore, might find it difficult to arrange meeting times with other team members because of busy schedules. Thus, the opportunity to work in class contributes to a more positive experience. We measured time in class as a perception of time provided rather than actually measuring time spent in class. Future research should include detailed questions about actual amount of time allowed.

Hypothesis 7: Use of peer evaluations is a predictor of positive attitudes toward teamwork.

Use of peer evaluations was a significant predictor of attitudes toward teamwork, with a beta coefficient of .264; thus, we accepted Hypothesis 7. Our findings support previous work (Feichtner and Davis 1984; Mallinger 1998). Use of peer evaluations yields a more positive attitude toward teamwork. Such measures allow students to feel that they are in more control of the result of their efforts. Students are able to report that they did a good deal of work and/or that another team member did not do his or her fair share. Providing students with an opportunity to communicate negative aspects of a team experience may reduce frustration, and students may feel as if their concerns are taken seriously.

Hypothesis 8: Absence of a free rider problem is a predictor of positive student attitudes toward teamwork.

We found that absence of a free rider problem was a significant predictor of attitudes toward teamwork. This perception was the second best predictor of the dependent variable, with a beta coefficient of .401. Hypothesis 8 was thus accepted. Our study found that the greater the perception that the work was shared equally, the more positive attitudes toward teamwork. Our results differ from those of Ingham and colleagues (1974) and Latané, Williams, and Harkins (1979), who found that a person will not work as hard when part of a group, as contrasted to individual work effort. However, we measured attitudes, not outcomes, so further exploration of this issue is needed.

ADVICE TO INSTRUCTORS

Our study revealed that student attitudes toward teamwork were predicted by grades on projects, number of projects worked on as a team, amount of class time dedicated to group work, use of peer evaluations, and perception of a free rider problem. Our study did not find any relationship between degree of leadership, team size, level of cooperation, and attitudes toward teamwork. On the basis of our results, we suggest the following to instructors who wish to make group projects a more positive experience for students:

Try to emphasize the relevance of group work. Assert the importance of teamwork to real-world situations. Discuss the importance corporate recruiters place on being able to work in teams as a hiring criterion in cooperative and job recruitments and interviews. Stress the interpersonal skills that can be acquired by working in teams. Invite guest speakers to lecture about the relevance of group work to their jobs and to give examples of the need to work in teams. If students feel that the team project is a worthwhile experience, they will have more positive attitudes.

Assign a reasonable workload. Assess the value of teamwork in relation to the course goals and desired class outcomes. Make sure that the group work expected meets the overall goals of the course and is reasonable for the scope and pace of the course. Although the purpose of work groups is to accomplish a certain number of tasks that an individual could not accomplish alone, if students perceive that they have been assigned too much work, they will develop negative attitudes toward teamwork and may receive poorer grades.

Allow some class time to work on group projects. Allot an appropriate amount of in-class time for student groups to form. Provide time at the beginning of a project to enhance team formation and reduce scheduling issues; give students time to initially work in groups to share contact information; discuss individual preferences, work patterns, and personalities; and negotiate in-group roles and responsibilities. In addition, allow class time for groups to meet on a regular basis to confer, to discuss deadlines, and to share work. Understandably, students prefer to work on team projects during the time they would be in class anyway. Although it may not be possible to sacrifice much class time, any amount is likely to be appreciated.

Use peer evaluations. Provide students with opportunities to evaluate individual contributions (both their own contributions and those of others) and group processes. Be sure to

emphasize the reasons for, and organization of, peer evaluations early in the course. Peer evaluations may allow students to have a sense of control over their grades or provide a legitimate opportunity to express dissatisfaction with team member performance.

Monitor free riding. Use peer evaluations to monitor in-group processes and patterns developing within groups. Identify free rider behaviors early and intervene when needed by meeting with the team members or individuals. Encourage free riders to participate by changing group membership on occasion and/or by increasing individual accountability (Joyce 1999). Assess accountability and measure individual participation and group function by using peer evaluation several times throughout a longer project. Peer evaluations will allow students to self-monitor, but students may also appreciate instructor attention to accountability and intervention in certain unproductive or problematic situations.

LIMITATIONS AND SUGGESTIONS FOR FUTURE RESEARCH

Although this study offers insight for teachers and researchers interested in the variables that affect student attitudes toward teamwork, one study limitation is the homogeneity of the sample in terms of major (Merchandising Management), class level (senior), and gender (female). The cross-sectional nature of the study is also a limitation because it captures student attitudes at only one point; attitudes may change over a period of time. Therefore, a study that takes measurements during the time period when a team is intact may yield additional insights into attitude formation. A study involving a more heterogeneous sample and a greater variety of team sizes would allow for more generalization of results. Using a single-item measure as the dependent variable can be considered a limitation. Future research should focus on developing multiple-item measures of attitudes toward teamwork to ensure construct validity.

Earlier discussion emphasized both the relevance and benefits of group work. Research must continue to address the complex nature of group work and of student attitudes toward group work. Future research should examine other factors that might influence student attitudes, such as degrees of leadership. Variables that may also affect student approaches to teamwork include cultural issues. Research has been done comparing Chinese and U.S. student approaches (Tang 1999), but this research must be extended to recognize and better understand different cultural customs, beliefs, and approaches to group work and how differences *and* similarities in approaches affect student attitudes.

Conflict resolution abilities and how conflict management shapes student experiences and attitudes deserve further study. Conducting pre- and postteamwork assessments of student attitudes might be useful. Further examination of the influence of free riders and/or social loafing on team dynamics and student attitudes is needed. Notions of affective, procedural, and substantive conflict (Burnett 1993) need to be more fully explored and understood, with specific attention as to how degrees of conflict affect student attitudes toward team processes.

Another important research path is the influence of often complicated dynamics of gender in group work; for example, future research should assess whether women continue to take on stereotypically feminine, task-oriented roles (e.g., note taker) or whether—and if so, when and how—women are recognized as group leaders (Morgan 1994; Morgan and Murray 1991).

The literature related to teamwork suggests that experience with group dynamics aids students in preparation of their roles and tasks in the work world. Although much more work is needed, the discussion here indicates that positive student teamwork experiences can be fostered by instructors who are willing to tend to student needs and interests so as to carefully situate group work in their courses and to monitor group dynamics and student attitudes.

APPENDIX
Teamwork Constructs

Team Experience
- *On a scale of 1 to 10, rate your experience with this team (1 =* awful, *10* = excellent).

Leadership (α = .75)
- *I felt like a leader.*
- *I felt that I was in charge of the group*.
- *I was a follower in the group*. (r)
- I felt like I was always being told what to do. (r)

Workload (α = .62)
- *This group worked together on too many projects during the semester.* (r)
- *It would have been nice to work on more projects together.* (r)
- *We didn't have enough projects together to bond as a group*.

Cooperation (α = .70)
- *I like to work with other people*.
- *Cooperation is preferable to competition*.
- I consider myself to be a competitive person. (r)
- It was helpful to the quality of my work to have someone to compete against.

Class Time (α = .84)
- *We should have had more class time to work on our project*.
- *We didn't have enough time in class to work with our group*.
- Most of the project work was done during class. (r)
- There was plenty of class time devoted to working on this project. (r)

Peer Evaluation (α = .87)
- Peer evaluations should be part of the teamwork experience.
- *Overall, peer evaluations are more hurtful than helpful*. (r)
- *Peer evaluations help the instructor see what really goes on in teams*.

Free Rider (α = .74)
- Those who don't do their share ruin teamwork for the rest of us. (r)

People who don't do their share are just one disadvantage that must be dealt with to get the greater advantage of teamwork.
Everyone did an equal amount of work.
Some people did more work than others. (r)
Everyone did his or her share.
A few people did the majority of the work. (r)
I dislike teamwork because there are always people who do not do their share. (r)
I still like working in groups, despite the fact that I've had to deal with members who don't contribute.
How many people were on this team?
What grade did you earn on this project? (r)

NOTE: (r) indicates a reversed item. Items in italics were included in the analysis.

NOTE

1. A group effort in a rope-pulling task is inferior to the sum of individual performances; the discrepancy between potential and actual effort increases with size of group.

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