

Student Attitudes Towards Group Work Among Undergraduates in Business Administration, Education and Mathematics

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Group work is a widely used teaching technique in higher education. Faculty find themselves utilizing this method in their classes more and more, yet few studies examine what students actually think about group work. The current study surveyed Mathematics, Education, and Business Administration majors at a mid-sized southeastern university in order to measure students' attitude towards group work. Participants completed a 5-point Likert type attitude scale and selected positive and negative aspects of group work. The scale scores were submitted to a One-Way ANOVA and results indicated a difference in attitude across majors. Analysis of the positive and negative aspects of group work revealed generally similar results across majors, but with some exceptions. Education majors had a more positive attitude toward group work than Business and Mathematics majors and Business majors selected more negative aspects than the Education and Mathematics majors. As may be anticipated, across majors "free riding" was cited as an obstacle to group work as was the difficulty in coordinating schedules. Additionally, over one-third of students indicated that they would rather work alone.

Student Attitudes Towards Group Work in Higher Education

Group work is an increasingly viable alternative to the lecture-based method for classroom learning in higher education (Fink, 2002; Johnson, Johnson, & Smith, 1991b; Parsons & Drew, 1996; Phipps et al., 2001). Since 2001, the National Survey of Student Engagement's (NSSE) annual report has included group work, cooperative learning or collaborative learning (all used interchangeably for the purposes of this article) as one the five benchmarks for assessing effective educational practice along with level of academic challenge, student interaction with faculty, enriching educational experiences, and supportive campus environment (National Survey of Student Engagement 2001, 2002, 2003, 2004, 2005). The 2005 NSSE results indicated that nationally, 88% of first year students and 89% of seniors reported that they worked with other students on projects

inside of class at least "sometimes." Additionally, 85% of first year students and 93% of seniors reported working on projects with others outside of class. These reports suggest that the amount of active and collaborative learning is an indicator of the pedagogical effectiveness of the institution as a whole. Group work is also considered by many instructors as a methodologically sound way of utilizing class time and a robust technique for students to interact and learn from each other. Nevertheless, the reasons why faculty in higher education use groups are not necessarily linked with the results obtained from empirical research but rather, anecdotal evidence. They have heard other instructors' experience with it, or they may have the intent of introducing variation in the classroom. But what does the research really tell us about group work in practice, aside from previous studies on achievement gains (e.g., Johnson & Johnson, 1989; Slavin, 1995)? Furthermore, what do the students themselves think about group work?

Review of Literature

Several studies have addressed the issue of students' reaction to the use of group work and the results vary. Overall, the past findings support the claim that students think positively of group work as a method of instruction (e.g., Hagen, 1996; Phipps et al., 2001; Rau & Heyl, 1990; Van Duyne, 1993). Rau and Heyl (1990) documented that collaborative discussion groups during class time were well received by approximately 75% of their students, whereas the remainder would rather work alone. In addition, they found that students performed better on group test questions than on individual test questions and formed more social networks, compared to a class where group discussions were not implemented. However, on the negative side, there was free riding, as evidenced by students' end of course evaluations.

Van Duyne (1993) surveyed 264 students from three different universities and found that on a scale of 1 to 5, five being very favorable, students had a mean score of 3.82 (SD not reported) for attitude toward group work, suggesting that overall they had a positive view of group work. Hagen (1996) surveyed 172 undergraduate students in a Human Service class over a 3-year period in order to gauge their perception and satisfaction with the cooperative learning strategies employed in the course. Overall,

Hagen found students' perceptions of cooperative learning in her class to be positive. Open-ended comments from students indicated that they: 1) had fear or worry that other students in the group would not do their share, 2) did not like others who did not do their share and, 3) did not like other teammates to depend on them. Students indicated that they liked that they developed close relationships (19.5%), liked the interaction between people who are different (24.8%), and they liked to work as a team (16.8%). Only 9 out of 134 responses indicated that students preferred the lecture style over cooperative learning.

Phipps *et al.* (2001) surveyed 210 freshman, sophomore, and juniors from four different disciplines. Phipps *et al.* used a 5-point Likert scale that ranged from 1-very ineffective to 5-very effective. They found that overall, students had positive perceptions of cooperative learning yet students did not feel that the use of cooperative learning groups increased learning, motivation, or study time. They found that only 18% of students thought the amount of learning increased, 48% self reported more motivation, and 11% reported studying a lot more.

Pfaff and Huddleston (2003) studied factors that affected students' attitude toward group work. According to them the study of attitude in relation to group work is relevant because:

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. (p.39)

Pfaff and Huddleston used a step-wise regression model to test predictors of attitude toward team work based on eight dependent variables. The 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. They administered a questionnaire to 70 students before any group work took place in the class. Thus, the students were answering questions about group work based on their last group project, previous to the class. The researchers found that significant predictors of attitude were perceptions of workload (beta

coefficient=.332), having time in class to work in teams (beta coefficient=.211), use of peer evaluation (beta coefficient=.264), and absence of a free rider from the group (beta coefficient=.401). Pfaff and Huddleston concluded 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. (2003, p.44)

Studies about the effect of group work on achievement suggest that group work is a viable alternative to lecture and other instructional methods, yet the research is limited on how students feel about group work (McManus & Gettinger, 1996; Phipps et al., 2001). The current study is innovative in that it adds to our understanding of undergraduate student attitudes towards group work. Additionally, it highlights undergraduates' perceived positive and negative aspects of group work. The majority of previous research conducted on group work has taken place in the researchers' classroom, thus the current study examined three groups of undergraduate majors across the University, virtually eliminating the bias that is introduced in classroom research.

As previously mentioned, group work is a widely employed technique in the classroom, however there are still questions left unanswered as to the effectiveness of this method, the students' attitude toward group work, and the faculty's reaction to it by discipline. The current research was undertaken in order to fill the lacuna in this area of investigation. Specifically, this study addresses two research questions:

1. What are undergraduate Education, Business Administration, and Mathematics majors' attitudes toward group work?
2. How do attitudes vary across majors?

The specific majors were chosen based on previous findings from Antony and Boatsman (1994) related to a continuum of usage across discipline. Antony and Boatsman found that education faculty used collaborative pedagogy the most, math faculty used it the least, and

business faculty fell somewhere in the middle of the 13 disciplines that were surveyed. In the current study, it was hypothesized that if there was a continuum of usage across disciplines, than it would be important to measure attitude of students across disciplines, and not make inferences about attitude based on one cohort. Education, business, and math student were therefore surveyed accordingly.

Table 1

Demographics of Survey Participants and Response Rate

Department		Education N=206	Business Administration N=55	Math N=27
Gender	Male	6.3%	40.0%	40.7%
	Female	93.7%	60.0%	59.3%
Age*	<18	0.5%	0	0
	18-27	87.9%	83.6%	88.9%
	28-36	5.8%	9.1%	3.7%
	>36	5.8%	5.5%	7.4%
Race	Black/African American	13.1%	27.3%	18.5%
	Caucasian	83.0%	69.1%	74.1%
	Other	3.9%	3.6%	7.4%
Class	Freshman	24.3%	0	29.6%
	Sophomore	23.3%	0	25.9%
	Junior	29.6%	20.0%	33.3%
	Senior	21.8%	20.0%	11.1%
	Other	1.0%	0	0
Response rate		24.8%	16.8%	29.7%

Note. *One student in Business Administration did not indicate their age, so numbers will not sum to 55.

Methods

All undergraduate students (N= 1,249) majoring in Education, Business Administration, and Mathematics at a mid-size Southeastern university were invited to complete an anonymous online questionnaire. The university where the study took place enrolls a high number of students who live in neighboring towns and

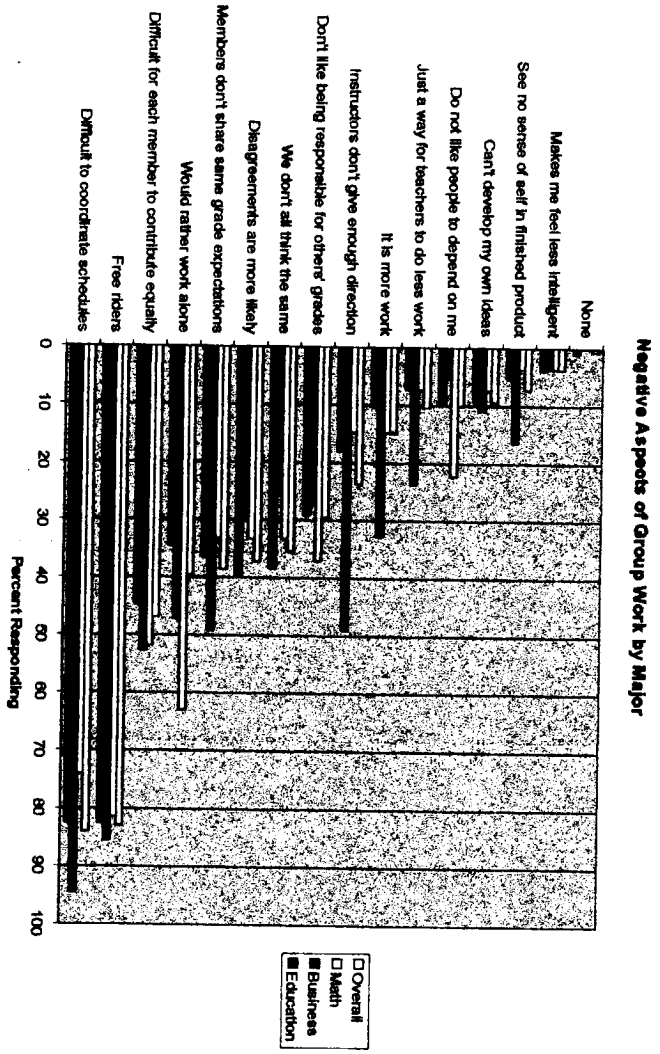
commute to class on a daily basis. The questionnaire contained five demographic questions, three multiple choice questions about the group experience, and one open ended question that asked students to describe their attitude toward group work. The questionnaire concluded with a 5-point Likert-scale with nine statements designed to measure attitude toward group work. The effect of acquiescence response set was controlled by reversing the wording (and scoring) of items 2, 4, 5, and 7 of the attitude scale. Invitations were sent to 830 Education Majors, 328 Business Administration majors, and 91 Math Majors. Table 1 shows the demographic characteristics of participants.

A total of 291 questionnaires were returned, 288 from the target population (overall return rate of 23.7%). As can be observed in Table 1, most of the questionnaires came from Education (N=206), followed by Business Administration (N= 55), and finally Math (N=27); the majority of respondents were females (93.7% in Education, 60% in Business Administration, and 59.3% in Math), and most of the volunteers (over 83%) were in the age group of 18 to 27. Prior to administering the questionnaire (Appendix A), five students (one male, four females) from a nearby college participated in an oral interview in which the participants' responses were used to create the multiple choice questions on the questionnaire. Interview questions inquired about students' perceived positive and negative aspects of group work. Additional questions used in constructing the questionnaire were taken from the existing literature on group work (e.g., Johnson, Johnson, & Holubec, 1993; Millis & Cottell, 1998) and from the results of write-in responses on a pilot study conducted with a separate group of students.

Analyses

The data collected were entered into an SPSS database. An item analysis was performed on the student attitude scale in order to exclude items that did not intercorrelate. To establish the reliability of the attitude instrument, an index of inter-item consistency (alpha) was computed. The internal consistency coefficients for administrations to each student group were substantially high, ranging from .90 to .94. Consequently, no items on the scale were excluded. Final student attitude scores were submitted to an Analysis of Variance (ANOVA)

Figure 1. Negative Aspects of Group Work by Major



- Overall
- Math
- Business
- Education

Table 2
Negative Aspects of Group Work by Major

Number Questionnaire	on Negative Aspect	Percent Selecting			Overall N=288
		Edu. N=206	Bus. Admin. N=55	Math N=27	
2.	Difficult to coordinate schedules	82.5	94.5	74.1	84.0
5.	"Free riders"	82.5	85.5	81.5	83.0
15.	Difficult for each member to contribute equally	44.7	52.7	51.9	46.9
3.	Would rather work alone	34.5	47.3	63.0	39.6
11.	Members don't share same grade expectations	36.4	49.1	33.3	38.5
8.	Disagreements are more likely	39.8	29.1	33.3	37.2
9.	We don't all think the same	38.3	25.5	33.3	35.4
7.	Don't like being responsible for others' grades	29.1	27.3	37.0	29.5
12.	Instructors assign group work without enough direction	18	49.1	14.8	23.6
4.	It is more work	10.2	32.7	14.8	14.9
13.	Groups are just a way for teachers to do less work	7.3	23.6	7.4	10.4
1.	Do not like people to depend on me	9.7	5.4	22.2	10.1
6.	Can't develop my own ideas	9.2	10.9	7.4	9.4
10.	See no sense of self in finished product	5.3	16.4	3.7	7.3

to check for differences among majors. Questions 1 thru 6 were demographic and frequency analyses were performed. The answers to the open-ended question about attitude were used to verify the reliability of the quantitative attitude score.

The overall attitude toward group work for the three groups was measured by averaging each student's score on the attitude scale. Negative, neutral, and positive cutoff points (1-2.99, 3.0-3.99, and 4.0-5.0) were verified by recoding the quantitative scores into three different categories: 1 for scores between 1.0 and 2.99, 2 for scores between 3.0 and 3.99, and 3 for scores between 4.0 and 5.0. Data were sorted from highest to lowest score, based on the new category so that the comments could be viewed and compared with the category.

Results

Students' selection of negative and positive aspects of group work was similar across the three majors in the sense that all three groups (Mathematics, Education, and Business Administration majors) shared the same top eight negative aspects (receiving 25% or more agreement) of group work and the same top three positive aspects of group work (receiving 70% agreement or more). Twenty-five percent was decided as a cutoff point after consulting with a faculty member regarding the minimum percentage of students that would have to complain about something in order to elevate the complaint to a problem that should be addressed.

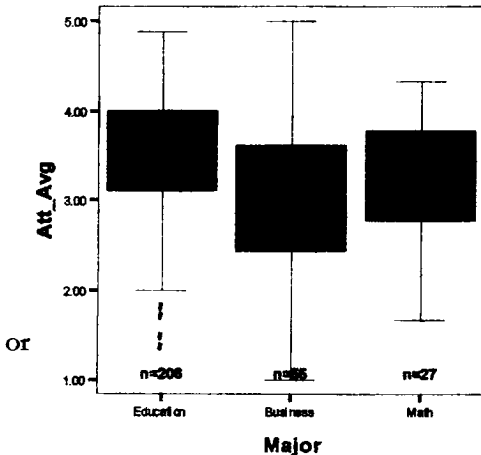
Students' Selection of Negative Aspects of Group Work

Looking at Figure 1, it can easily be observed that topping the negative aspect list was Difficult to coordinate schedules (Education=82.5%, Business=94.5%, and Math=74.1%), "Free riders" (Education=82.5%, Business=85.5%, and Math=81.5%), and Difficult for each member to contribute equally (Education=44.7%, Business=52.7%, and Math=51.9%). Math students showed a little variation because more participants indicated that they would rather work alone (63.0%, versus 34.5% in Education and 47.3% in Business), making this the Math majors' second highest choice. The percentages of selection for each aspect are in Table 2, arranged in order of highest percentage to lowest percentage. The remaining five

negative aspects that received an average of 25% response or more were Members don't share same grade expectations (Education=36.4%, Business=49.1%, and Math=33.3%), Disagreements are more likely (Education=39.8%, Business=29.1%, and Math=33.3%), We don't all think the same (Education=38.3%, Business=25.5%, and Math=33.3%), and Don't like being responsible for others' grades (Education=29.1%, Business=27.3%, and Math=37.0%).

Business majors had 10 negative aspects selected by 25% of students, whereas Education and Math majors had eight aspects each. Forty-nine percent of Business majors indicated that Instructors assigned group work without enough direction and 32.7% of Business majors thought that It was more work (working in groups). Two students out of 288 indicated that there were no negative aspects. These students were Education majors.

Figure 3. Attitude Score Distribution of Students



Students' Selection of Positive Aspects of Group Work

In Figure 2 it can be observed that students in all three majors shared the same top two positive aspects (receiving 70% more agreement) of group work. These aspects, shown in Table 3 were, Can generate more ideas (Education=86.4%, Business=85.5%, and Math=70.4%), and Learn how to work with others (Education=76.2%, Business=70.9%, and Math=70.4%) (Items 1 and 2 respectively in Table 3). Additionally, students in Business and Education indicated that they Develop relationships with classmates (Education=74.8%, Business=72.7%) (Item 8 in Table 3).

Figure 2. Positive Aspects of Group Work by Major

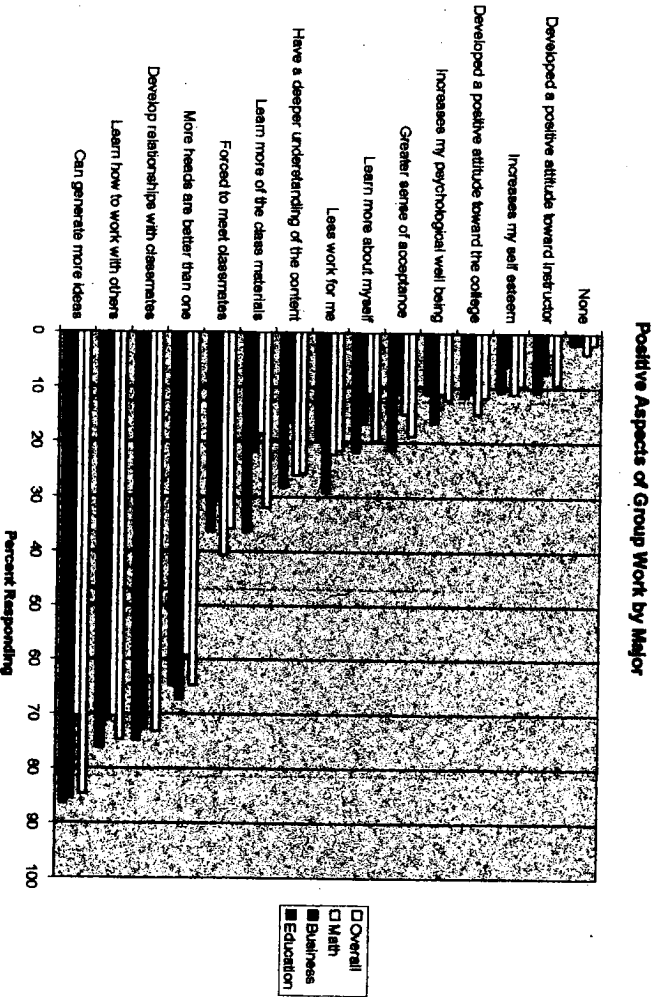


Table 3
Positive Aspects of Group Work by Major

Number on Questionnaire	Positive Aspect	Percent Selecting				Overall Average N=288
		Edu. N=206	Bus. Admin N=55	Math N=27		
1.	Can generate more ideas	86.4	85.5	70.4	84.7	
2.	Learn how to work with others	76.2	70.9	70.4	74.7	
8.	Develop relationships with classmates	74.8	72.7	63.0	73.2	
3.	More heads are better than one	64.6	67.3	59.3	64.6	
7.	Forced to meet classmates	36.4	30.9	40.7	35.8	
4.	Learn more of the class materials	36.4	21.8	18.5	31.9	
13.	I have a deeper understanding of the course content	28.2	16.4	26.0	25.7	
5.	Less work for me	19.4	29.1	22.2	21.5	
6.	Learn more about myself	21.8	16.4	11.1	19.8	
11.	I have a greater sense of acceptance by my classmates	21.4	10.9	14.8	18.8	
14.	Group work increases my psychological well being	11.1	16.4	11.1	12.2	
10.	I developed a positive attitude toward the college	11.7	10.9	14.8	11.8	
9.	Increases my self esteem	10.7	5.5	11.1	9.7	
12.	I developed a positive attitude toward the course instructor	10.7	7.3	3.7	9.4	

Students' Overall Attitude

The distribution of attitude scores of all three majors are shown in Figure 3. Education majors had the highest attitude score ($M=3.48$, $SD=.72$) and Business Administration majors had the lowest attitude score ($M=2.95$, $SD=.92$). Mathematics majors had a mean of 3.21 ($SD=.67$). The overall mean for all three majors was 3.35 ($SD=.78$). The ANOVA showed significant differences between groups (Table 4).

The Scheffe post hoc procedure was conducted to determine which groups differed. The results from the Scheffe procedure indicated that the difference between Education majors and Business Administration majors was statistically significant ($p=.000$). No other differences between groups were found. These results illustrate that Education students had a more positive atti-

Table 4
Analysis of Variance for Student Attitude

Source	SS	df	MS	F
Between Groups	12.38	2	6.19	10.77***
Within Groups	163.92	285	.58	
Total	176.31	287		

Notes: N=288. *** $p<.001$

tude towards group work than Business Administration majors but there were neither differences between Education and Math majors, nor between Math and Business Administration majors.

Table 5 shows that just over half of Business Administration majors (54.5%) had a negative attitude toward group work, whereas approximately the same percentage of Education majors (54.4%) had a neutral attitude. Education majors also had the highest percentage of students with a positive attitude. Combining the positive and neutral category yields a majority of students in Education and Math who do not think negatively about group work, but mostly have a positive experience with it, depending on the group factors. This is evidenced in the comments that they made.

Table 5
Percent of Students with Negative, Neutral, or Positive Attitudes Toward Group Work

Attitude Category	Percent in Category		
	Education N=206	Bus. Admin. N=55	Math N=27
Negative 1.00-2.99	18.9	54.5	37.0
Neutral 3.00-3.99	54.4	30.9	48.1
Positive 4.00-5.00	26.7	14.5	14.8
Total	100	100	100

As far as preference for group work, 63% of the Math majors who responded to the online questionnaire indicated that they would rather work alone, as did 47.3% of Business Administration majors and 34.5% of the Education majors. The overall mean scores for attitude was 3.35 ($SD=.78$), which is slightly below what Van Duyne (1993) found in her study ($M=3.82$, SD not reported) using the Classroom Life questionnaire developed by Roger and David Johnson.

The majority of students who scored between 1.0 and 2.99 wrote negative comments about group work. Student A and B's negative comments are representative of most students who scored below 3.0. Student A said, "There is way too much of it [group work] and as a full-time worker and a full-time student who commutes, there is just no time for it!" This lack of time was echoed by Student B who said, "Negative. Most students just don't have enough time outside of class to work with groups. Most of us work or have other obligations."

The majority of students who scored within the neutral range (3.00 to 3.99) wrote comments that were positive but added a linguistic mitigator to their comment such as "...but...", "...when...", and "...as long as..." Student C in the neutral category explained, "I think group work is good as long as students also have as many or more opportunities to work alone." Student D wrote, "They're alright as long as you have a group you're compatible with, who think like you and who do the work." Student E said, "So far,

I've only had to work in groups for one class, and because I got to pick my group, it made it a more positive experience."

Students who scored between 4.0 and 5.0 wrote comments that were positive, such as "I enjoy working in groups." Specifically, Student F, who had a positive attitude score expressed, "I thoroughly enjoy working in groups most of the time, as groups can lessen the load of a project as well as expand my thinking which results in a more complete final project." Student G indicated, "Great way to network with people in classroom." Student H said, "The use of group work (especially mixed racial groups) allows students to gain real world knowledge of how life after college will be as far as working with others that are different from them."

Conclusion and Implications

Students' attitudes toward group work in this study can be categorized as positive, neutral, or negative. The results from this study indicate that Education students have a more positive attitude than Business Administration students but no other differences were found. Only 15% of Math majors expressed a positive attitude toward group work and the majority (48%) were neutral. The percentage of students in the three categories of attitude varied across majors, suggesting that students are experiencing different problems with group work that may or may not be dependent on their field of study. For example, Business Administration students included the highest percentage of students with a negative attitude and at the same time, nearly half of Business Administration students indicated that instructors assign group work without enough direction whereas one fourth designated groups as a way for teachers to do less work. Business Administration students are likely having different course experiences than Education majors. However, students are also being influenced by courses outside of the major. Nonetheless, differences do exist. It is however necessary to mention the main limitation of this study: low response rate. It is impossible to know whether the students that did not respond would have agreed with what their peers indicated in the survey. A follow up interview to a sample of the nonrespondents is therefore essential to compare the noncompleters' answers to the sample of the population that did complete the survey.

The results related to negative aspects for Math and Education majors support Millis and Cottell's (1998) suggestion that the free riding effect is the most common problem with group work, but results from Business Administration students suggests that trying to coordinate schedules is the biggest problem, not the "free riders." The results related to the difficulty in coordinating schedules contradict Hagen's (1996) findings, where only 3.7% of students indicated that it was difficult to get together outside of class. The problem with coordinating schedules is not prominent in the current literature, however, the frustration with "free riders" is documented in a plethora of previous research (e.g., Hagen, 1996; Pfaff & Huddleston, 2003; Rau & Heyl, 1990). Currently, free riding is cited as the leading problem with group work, though if a student cannot find a time to meet with the group, by default, it does contribute to the problem of free riding. Students expressed much concern regarding "free riding," which calls to question the usefulness of current literature that provides guidelines for reducing it. Faculty can implement strategies for increasing interdependence (Johnson et al., 1993; Sharan, 1994), such as Rau and Heyl's (1990) assignment of roles to students, however, this is not easy to control when the group projects take place outside of class. When students work outside of class (as well as inside of class), it is difficult to ensure that each student is equally motivated to engage in the task (Deutsch, 1962). As Deutsch pointed out, the decision to work in a group is dependent on many factors, one being "the attractiveness of secondary goals whose attainments may be facilitated or hindered by engaging in cooperation" (p. 294). Given the demands on students and the multiple options within a grading scale (A, B, C, and sometimes D) that will ultimately result in a passing grade, students may have a higher priority goal which is influenced by another class, work, or home life, that is more attractive to attain, and thus the student will choose to not engage fully in the cooperative goals of the group. The following comment from a student exemplifies this mismatch of goals that Deutsch discussed:

I think working in a group is good, but can also be a major hassle. Working in a group often ends in more of a negative way than working alone does. When working in groups you

have to deal with people who do not care about their grades and are not as concerned about the value of their work. It is often difficult.

Alternatively, it may be that students are not alerting faculty to the problems caused by a particular group member, due to students' reluctance to give peers poor evaluations, as previously found by Ochoa, Gottschall, and Stuart (2004). This would explain the continuous problem with free riding. However, given Deutsch's (1962) early observations, it is likely that students are not equally motivated and thus, free riding on some level should always be expected. In response, faculty need to continue to try and find ways to ensure a fair assessment system that reflects students' individual efforts.

Several students in open-ended comments indicated that there was not enough time for group work outside of class. This was also reflected in students' multiple choice responses. The lack of time on behalf of the students indicates that instructors need to take into account students' work schedules, family schedules, and possibly numerous other group projects in which the student may be involved. Pfaff and Huddleston (2003), after finding that the time given in class for student to meet with their group was a significant predictor of attitude towards group work, recommended allowing time in class for students to arrange schedules, group tasks, and negotiate group roles. They noted that any amount of time would be appreciated. This need is supported in the current study. The university where the study took place enrolls a high number of students who live in neighboring towns and commute to class on a daily basis. The large number of commuters hinders the ability of students to arrange meeting times. Faculty should also consider making the group size as small as possible. For instance, scheduling three people is easier than scheduling five people. However, allowing students to meet during class time may alleviate some frustration with finding common meeting times but it will not alleviate problems with "free riders." This is evidenced by Rau and Heyl's (1990) use of CLGs in class and Hagen's (1996) use of groups during class time and the pervasive presence of "free riders," despite the strategies employed to reduce it. In any case, the overall results suggest that there are many factors and

variables to take into account when assessing students' attitudes towards group work.

Some students' preference to work alone, as documented in this study, is not new. Rau and Heyl (1990) received comments from students suggesting a preference to work alone. Rau and Heyl addressed the students' preference by informing them that groups could "complement their personal work styles." Rau and Heyl saw group work as "an antidote to excessive individualism" (p. 153). Approximately 25% of their students indicated that they would have rather worked alone, instead of in collaborative learning groups. The minority preference to work alone holds true for younger students also. McManus and Gettinger (1996) found that 42% of the Grade 3 students in their study indicated a preference to complete assignments alone.

The consistency of findings from Rau and Heyl (1990) and the findings from the current study suggest that in the context of a student completing coursework in college and preparing for a career, some would rather work alone, regardless of their ability to get along with others. The following quote from a business student in the current study exemplifies this:

Group work is difficult because I am an adult student working full-time, have a family and only go to campus two nights a week. Having to find time to meet with other students for group work is very difficult. I prefer communication via email with the group or discussions during breaks the night of class. Meeting outside the nights I am on campus is inconvenient. Also, depending on how the group is selected, adult students and younger students do not always have the same philosophy in completing group work. If you can select your own group and work with those that have the same attitude towards school as you do, makes it a little easier. Working with younger students who are not interested in completing work or who do not have the same work ethic as you do, makes it very difficult. For me, it is easier to do it myself and just direct the others on what they have to do in order to contribute to the group.

The preference for students to work alone is not emphasized in the group literature. Over one third of students in this study would rather work alone, thus, the preference to work alone should be taken into consideration when formulating lessons. If faculty feel strongly that students need to be able to work with each other, then an additional course added to the program of study for each major which specifically teaches group skills should be considered. The teaching of group dynamics was suggested by Schoenecker et al. (1997), though in the context of teaching group members about the benefits of diverse group members. Even so, no harm can come of teaching group dynamics.

The variations in student responses and scores on the attitude scale across disciplines suggest that there is a pedagogical uniqueness to each discipline. These variations are influenced by, but not limited to, the content and material that instructors employed, their teaching styles, and possibly the culture of the department. Just as people rationalize their everyday choices, faculty in their practice, can weigh the costs and benefits of the options available to them in the classroom, and choose a method that satisfies their sense that they are performing their job well and that students are learning. The historical culture of education does not dictate that faculty have to limit themselves to proven research-based lesson plans, but that they have the freedom to use methods with which they feel comfortable. If, at the end of the semester, their various assessment plans and tools demonstrate that students have learned and made gains in other peripheral areas as a result of the course experience, then the faculty will likely continue with the methods that they have chosen or try something different. Group work is an easily accessible way to introduce variety and interaction into the classroom. Students have different experiences and when they are in groups talking and negotiating a task, a different dynamic is created that cannot be achieved through lecture or by working alone.

The positive aspects of group work confirmed by the students in this study assert that group work has a place in teaching and learning, however, the positive aspects should not be assumed to outweigh the negative aspects.

Faculty also have different reasons why they use group work

in their classes and it certainly depends on the discipline, class, and audience that they have. Location of the institution, type of professor, course subject are among the many possible factors and variables that may play a role when analyzing attitudes towards group work.

Many instructors use group work because they feel it is useful, they want to introduce variety in their classes, other instructors employ it, or because their experience leads them to conclude that students benefit from it or simply like it, however they do not base this pedagogical tool on research-based evidence. It is likely that group work will continue to be used in higher education; however, this study suggests that there is room for improvement.

Future Studies

As has been previously mentioned, the main limitation of this study is the low response rate. It would be highly beneficial to conduct follow-up interviews to the section of the population that did not respond to the survey in order to ascertain whether they represent similar trends to their peers in the three academic fields. An aspect of group work that was not considered in this study is the different opinions of students according to year. Furthermore, it would be revealing to compare opinions of undergraduates versus graduates to ascertain whether different class levels result in a different attitude.

Another valuable piece of information not covered by this study is the opinions of students in other disciplines. Three majors were considered in this study; however it is well known that group work is utilized in many other disciplines. For instance, group work is methodologically essential to teaching foreign languages (Lee & VanPatten, 2003). In this case, it would be interesting to know if attitudes toward the group activities have any relation to amount of language acquisition. In what circumstances is negative attitude toward a method not an adequate basis for selecting a different method? Related, how does attitude influence learning?

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Appendix A

Online Student Survey on Group Work in Higher Education

Thank you for taking the time to participate in this survey. Please answer the following questions regarding your experiences with working in groups in your college classes.

1. **Gender:** Male Female

2. **Age:**

- Under 18
- 18-22
- 23-27
- 28-32
- 32-36
- 37-41
- 42 or older

3. **Race:**

- Alaska Native
- American Indian
- Black or African American
- Caucasian (white)
- Native Hawaiian
- Pacific Islander

4. **Class standing:**

- Freshman
- Sophomore
- Junior
- Senior
- Graduate
- Non-degree seeking student
- Other

5. **Major:**

- Education
- Business Administration
- Math
- Other _____

6. Group work in education involves two or more students working together to complete a task or goal. Please describe your experience with completing assignments in a group:

None

Little (have been involved with group work once or twice a year)

Moderate (have been involved with group work three or four times a year)

Lots of experience (have been involved with group work more than 4 times a year)

7. What are negative aspects of working in groups (select all that apply to you, or select none if you feel there are no negative aspects of group work)?

1. Do not like people to depend on me

2. Difficult to coordinate schedules

3. Would rather work alone

4. It's more work

5. Free riders or slackers

6. Can't develop my own ideas

7. Don't like being responsible for my classmates' grade

8. Disagreements are more likely to arise than when working alone

9. We don't all think the same

10. See no sense of "self" in finished product

11. Members don't share same grade expectations

12. Instructors assign group work without enough direction

13. Groups are just a way for teachers to do less work

14. Working with others often makes me feel less intelligent

15. Difficult for each member to contribute equally

16. None

Other:

8. What are positive aspects of working in groups (select all that apply to you, or select none if you feel there are no positive aspects of group work)?

- | | |
|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|
| <input type="checkbox"/> 1. Can generate more ideas | <input type="checkbox"/> 2. Learn how to work with others |
| <input type="checkbox"/> 3. More heads are better than one | <input type="checkbox"/> 4. Learn more of the class material |
| <input type="checkbox"/> 5. Less work for me | <input type="checkbox"/> 6. Learn more about myself |
| <input type="checkbox"/> 7. Forced to meet classmates | <input type="checkbox"/> 8. Develop relationships with classmates |
| <input type="checkbox"/> 9. It increases my self esteem | <input type="checkbox"/> 10. I developed a positive attitude toward the college |
| <input type="checkbox"/> 11. I have a greater sense of acceptance by my classmates | <input type="checkbox"/> 12. I developed a positive attitude toward the course instructor |
| <input type="checkbox"/> 13. I have a deeper understanding of the course content | <input type="checkbox"/> 14. Group work increases my psychological well being |
| <input type="checkbox"/> 15. None | |

Other:

10. Please agree or disagree with the following statements by selecting 1-5.

1=Strongly Disagree

2=Disagree

3=Undecided

4=Agree

5=Strongly Agree

	Strongly Disagree	Disagree	Un- decided	Agree	Strongly Agree
Students learn more when working in groups.	1 O	O 2	O 3	O 4	O 5
Group work is a waste of students' time.	1 O	O 2	O 3	O 4	O 5
Group work increases students' ability to work with others.	1 O	O 2	O 3	O 4	O 5
Good teachers don't use groups.	1 O	O 2	O 3	O 4	O 5
Teachers should spend less time using groups.	1 O	O 2	O 3	O 4	O 5
I think more teachers should use group work.	1 O	O 2	O 3	O 4	O 5
I enjoy any other method of teaching over group work.	1 O	O 2	O 3	O 4	O 5
Group work should be used more in teaching.	1 O	O 2	O 3	O 4	O 5
Working in groups is better than working alone.	1 O	O 2	O 3	O 4	O 5