Group Projects in Higher Education: How Demographic Factors Affect Student Perceptions of Grading, Leadership Roles, Assessment, and Applicability

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This Article reports the findings of a 2020 multi-campus study on students' attitudes regarding group work assignments. Group work topics evaluated include assessment, formation, frequency, size, real-world applicability, efficiency, and learning outcomes. While student perceptions are generally negative toward group work, they also recognize the importance of the practice. When the data is analyzed based on demographic factors such as gender, religion, and academic major, interesting differences are discovered that illuminate potential causes for different views on group work. The Article concludes with implications for further research in this area.

Keywords: group work, group projects, group formation, gender, assessment, survey

INTRODUCTION

The ability to work effectively in a group setting is a mandatory trait for twenty-first century jobs. Therefore, it is paramount that higher education equips students with the skills necessary to meet this job requirement. Katzenbach and Smith (2005) explained that teams bring together people with different strengths to accomplish tasks that would be impossible acting alone. In a recent survey of employers, teamwork was identified as the most important trait for employees to possess (Gaskell, 2019). Students know that the business world demands proficient teamwork skills (Wesner, Smith, & Austin, 2018).

LITERATURE REVIEW

Studies that support the benefits of group projects are numerous. Shimazoe and Aldrich (2010) found group work increased collaborative learning, social skills, and critical thinking. Hillyard, Gillespie, and Littig (2010) found group work increased deep learning and higher grades but also found that a significant

portion of students viewed group work negatively. Betta (2016) concluded that group work expanded students' knowledge and resulted in higher grades.

Group work on campus is not without controversy, however. A major criticism is the inability of group work grades to reflect the efforts of each participant. Grading is a troublesome issue, and finding an equitable solution has been a challenge. Marks and O'Connor (2013) compared business and non-business students and found business students were more willing to be responsible for the errors of other group members but also indicated more support for the group's ability to terminate free riders.

Schultz, Wilson, and Hess (2010) found a deep divide over whether students preferred group work or individual work, usually contingent upon the issue of grading and free riding. Grzimek, Marks, and Kinnamon (2014) found that high achievers (higher GPA) had different views on group work than low achievers. In that project, low achievers preferred group projects. Additionally, Rudawska (2017) and Rafferty (2013) found the issue of non-contributing students (free riders) was a problem that affected the group effort overall.

Assessing student group work is a significant issue. Pearsall, Christian, and Ellis (2010) examined the grading system and found that the implementation of either sole individual grades or sole group grades lowered performance. Consequently, they suggested a hybrid approach that includes both individual and group grade components.

Finally, the effective implementation of group work projects necessitates the understanding of student diversity. Chapman and Van Auken (2001) conducted a broad survey (32 campuses) and found an inverse relationship between GPA and positive attitudes toward group work. Su (2007) found low performing students preferred group work, especially when teamed with those of higher abilities. This difference is not just between low- and high-performing students.

Grzimek, Kinnamon, and Marks (2020) analyzed the perceptions of group work among business and non-business majors. They found that gender did not affect perceptions of group work among business majors. However, non-business males preferred group work to non-business females. They also found that issues related to grading fairness did not significantly vary by major. Finally, they found that business students wanted to select their own leaders and assign their own tasks.

DEVELOPMENT OF SURVEY

The current project is a replication of the surveys designed by Marks and O'Connor (2013) and Grzimek et al. (2014). Six additional questions regarding summative assessment of group work were added. Two campuses were utilized to increase the sample size and to measure any student opinions attributable to geographic differences.

Campus 1 was a large state university (17,000 students) in the Southwest that offers master's degrees. Campus 2 was a medium-sized state university (10,000 students) in the Southwest that offers master's degrees.

After obtaining Institutional Review Board approval, the survey was administered online to 271 participants in the spring and summer of 2020. Participants were undergraduate and graduate college students from the two regional college campuses previously described. Female participants comprised 64.2% of the total and males comprised 35.8%. The average age was 23.7.

The survey consisted of 58 questions, including questions on the survey taker's demographics, study habits, and employment. Questions on group work perceptions were answered utilizing a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). For a complete copy of the survey, see the appendix.

TABLE 1
DEMOGRAPHICS OF RESPONDENTS

Demographic Results				
Male	35.8%		Freshman	22.8%
Female	64.2%		Sophomore	14.2%
Married	15.2%		Junior	18.7%
Single	84.8%		Senior	22.8%
Unemployed	29.5%		Graduate	21.6%
Part-Time	37.3%			
Full-Time	33.2%			
Have Kids	14.2%			**Averages**
No Kids	85.8%		Age	23.67 years
First Generation	36.2%			
Not First Generation	63.8%		Studying	12.4 hours/week
Military Service	5.5%		Internet/Class	12.4 hours/week
No Military Service	94.5%		Internet/Leisure	13.4 hours/week
Taken Bus. Ethics	16.7%		Reading/Leisure	3.4 hours/week
No Bus. Ethics	83.3%		Work for Pay	22.0 hours/week
Major/College			Group projects in major	2.75 courses
Fine Arts	2.2%		Group projects not in major	2.53 courses
Math/Science	8.1%			
Education	1.1%			
Liberal Arts	1.8%			
Business	57.4%			
Nursing	12.9%			
Other	16.5%			

RESULTS

Of the 58 questions, questions 1 through 36 were Likert scaled from 1 to 5. Questions 37 through 58 were demographic-related. Two hundred seventy-two completed surveys were collected. Of these, 65 respondents chose not to answer all the Likert questions. The average missing value rate was 3.7%. That is, 96.3% of every completed survey answered every Likert-scaled question. Rather than throw out surveys with missing values, the authors chose to replace missing values with the average response for each question. Utilizing the mean response in this manner works well with small data sets when results are numerical and not categorical (Bader, 2019), such as in the present study.

Figure 1 shows the correlation table for all 36 numerical questions. Darker shades of red indicate stronger correlations. Questions 18 through 36 were a series of questions with strong relationships, with correlations ranging from -0.37 to 0.82. Questions 23 through 36 were strongly positively correlated with an average correlation equal to 0.5 (r = 0.5).

FIGURE 1
CORRELATION TABLE FOR QUESTIONS 1 THROUGH 36

	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30	Q31	Q32	Q33	Q34	Q35
Q1																																			
Q2	0.2																																		
Q3	-0.1	0.0																																	
Q4	0.0	0.0	-0.7																																
Q5	0.0	0.1	0.0	0.2																															
Q6	-0.1	0.0	0.0	0.1	0.3																														
Q7	0.1	0.0	0.1	-0.1	-0.3	-0.2																													
Q8	0.1	0.2	0.0	0.0	0.0	0.0	0.1																												
Q9	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.2																											
Q10	0.0	0.0	0.0	0.0	-0.1	0.1	0.0	0.1	0.0																										
Q11	0.1	0.1	0.0	0.0	0.0	0.1	0.1	-0.1	0.0	0.3																									
Q12	0.1	0.1	-0.1	0.0	0.0	0.0	0.1	0.1	0.0	0.4	0.4																								
Q13	-0.1	-0.2	0.1	0.1	0.0	0.1	0.0	0.1	-0.1	-0.2	0.1	-0.3																							
Q14	-0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0	-0.1	0.0	0.0	-0.1	0.3																						
Q15	0.2	0.1	0.0	-0.1	0.0	0.1	0.1	0.0	0.2	0.1	0.0	0.2	-0.2	-0.4																					
Q16	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.2	0.2	0.2	0.0	0.2	-0.1	-0.1	0.0																				
Q17	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.2	0.0	0.2	-0.1	0.1	0.1	0.1																			
Q18	0.1	0.2	-0.1	0.1	0.0	0.0	0.1	0.2	0.1	0.0	0.0	0.0	0.2	-0.1	0.1	0.1	0.1																		
Q19	0.0	-0.1	0.0	0.0	0.0	0.1	0.0	-0.1	0.1	0.1	0.2	0.2	0.0	0.0	-0.1	0.0	0.1	0.2																	
Q20	0.0	0.0	0.1	0.0	-0.1	0.1	0.1	-0.2	0.1	0.2	0.3	-0.1	-0.2	0.0	0.0	0.1	0.1	-0.3	-0.4																
Q21	0.0	0.1	0.1	-0.1	0.0	0.0	0.1	0.2	0.1	-0.1	-0.1	-0.1	0.1	0.1	0.0	0.1	-0.1	0.4	-0.3	-0.3															
Q22	0.0	0.0	0.1	0.0	0.0	0.2	0.1	-0.1	0.2	0.0	0.0	0.0	0.1	-0.1	0.0	0.0	0.2	-0.2	0.4	0.4	-0.3														
Q23	-0.1	-0.2	0.1	-0.1	0.1	0.0	0.0	0.0	-0.1	0.0	0.2	0.0	0.1	0.1	-0.1	0.0	0.0	-0.2	0.4	0.2	-0.3	0.3													
Q24	0.0	0.0	0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.1	0.1	0.1	-0.1	-0.1	0.1	-0.1	0.3	0.3	-0.2	0.4	0.7												
Q25	0.0	-0.2	0.0	0.0	0.1	0.1	0.0	0.0	-0.2	-0.1	0.2	0.0	0.2	0.0	-0.1	-0.1	0.1	-0.1	0.4	0.1	-0.2	0.3	0.5	0.5											
Q26	0.0	-0.1	0.1	0.0	0.1	0.2	0.0	-0.1	-0.2	-0.1	0.2	0.0	0.1	0.0	-0.1	-0.1	0.1	-0.1	0.4	0.2	-0.1	0.3	0.5	0.5	0.7										
Q27	0.0	-0.1	0.1	0.0	0.1	0.1	0.0	0.0	-0.1	-0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.0	-0.2	0.3	0.3	-0.2	0.3	0.5	0.5	0.7	0.6									
Q28	0.1	-0.1	0.1	0.0	0.1	0.1	0.0	0.0	-0.2	-0.1	0.1	0.0	0.1	0.0	-0.1	0.0	0.0	-0.2	0.4	0.1	-0.2	0.3	0.4	0.4	0.5	0.7	0.6								
Q29	0.0	-0.2	0.0	0.0	0.1	0.1	0.0	0.0	-0.1	-0.1	0.2	0.0	0.2	0.0	-0.1	0.0	0.0	-0.1	0.4	0.2	-0.2	0.3	0.5	0.5	0.5	0.7	0.6	0.8							
Q30	0.0	-0.2	0.1	0.0	0.0	0.1	0.0	0.0	-0.1	0.0	0.3	0.0	0.1	0.0	-0.1	-0.1	0.0	-0.2	0.4	0.2	-0.2	0.3	0.4	0.4	0.6	0.6	0.6	0.7	0.7						
Q31	0.0	-0.1	0.1	-0.1	0.1	0.1	0.0	-0.1	-0.1	-0.1	0.2	0.0	0.2	0.0	-0.1	-0.1	0.0	-0.1	0.4	0.1	-0.1	0.2	0.4	0.5	0.6	0.6	0.6	0.6	0.6	0.6					
Q32	0.0	0.0	0.1	0.0	0.2	0.1	0.0	0.0	-0.1	-0.1	0.2	0.0	0.0	0.1	-0.1	-0.2	0.0	0.0	0.2	0.1	-0.1	0.3	0.4	0.4	0.4	0.5	0.3	0.5	0.5	0.4	0.5				
Q33	0.0	-0.2	0.0	-0.1	0.1	0.0	0.0	0.0	-0.2	0.0	0.2	0.1	0.1	0.0	-0.1	0.0	0.1	-0.3	0.3	0.1	-0.2	0.2	0.4	0.4	0.6	0.7	0.5	0.6	0.5	0.6	0.6	0.5			
Q34	0.0	-0.2	0.0	0.0	0.1	0.0	0.0	-0.1	-0.1	-0.2	0.0	0.0	0.0	0.1	-0.1	-0.2	0.0	-0.2	0.4	0.2	-0.2	0.2	0.4	0.4	0.4	0.5	0.4	0.5	0.5	0.4	0.6	0.6	0.5		
Q35	-0.1	-0.2	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.2	0.1	0.1	0.0	-0.1	-0.2	-0.1	-0.2	0.3	0.2	-0.2	0.2	0.2	0.2	0.3	0.3	0.4	0.3	0.3	0.3	0.4	0.4	0.3	0.5	
Q36	-0.1	-0.3	0.1	-0.1	0.0	0.1	0.1	0.0	0.0	-0.1	0.2	0.1	0.0	0.1	-0.1	-0.1	0.0	-0.2	0.4	0.2	-0.2	0.3	0.5	0.5	0.6	0.6	0.5	0.6	0.7	0.6	0.6	0.5	0.6	0.6	0.4

Attitudes Toward Group Work

In the survey instrument on questions to assess group work, the authors used a five-item Likert scale from strongly agree to strongly disagree. For this comparison the authors merged agree and strongly agree (responses of 4 and 5) and merged disagree and strongly disagree (responses of 1 and 2). The authors ignored responses of 3, which were labeled in the survey as "neutral."

The first construct involved six questions on the students' attitudes toward group work. The results are listed in Table 2 below.

TABLE 2
CONSTRUCT 1: ATTITUDES TOWARD GROUP WORK*

Question	Agree & Strongly Agree	Disagree & Strongly Disagree
25. I prefer to work in a group or team on class projects, as opposed to working independently.	15.8%	48.0%
26. Working in a group results in better mastery of course material.	18.0%	39.7%
27. Group work benefits my course grade.	23.9%	29.2%
28. I enjoy working in groups in my classes.	25.5%	35.9%
29. Group work should be used more often in classes.	18.7%	40.6%
30. I find classroom group work socially rewarding.	32.5%	31.0%

* Neutral responses are ignored for this portion.

The findings indicate students do not like group work, and those views are deeply felt. Students favored individual work over group work by a 3-to-1 margin. Students thought that group work should be used less often by a 2-to-1 margin.

The strong dislike for group work is a natural consequence from the student opinion that group work provides little benefit. Students disagreed 2-to-1 that group work yielded better mastery of the subject. Additionally, the students felt that group work did not benefit their course grades and was not enjoyable.

The only aspect of group work that did not receive a majority negative response was how it can be socially rewarding. But even there, only a slight preference for the socially rewarding benefits of group work were expressed.

Peer Review and Grading

Perhaps no subject generates the amount of controversy on college campuses as grading. While always subject to dispute, grading a group project poses several unique problems, such as the free-rider problem. In group work, the free-rider problem is when a group member does minimal work because he/she knows that others in the group will pick up the slack and then all members in the group will receive the same grade (Chapman & Van Auken, 2001). The second construct used six questions to assess views on peer review and grading of group projects. The results are listed in Table 3 below.

TABLE 3
CONSTRUCT 2: PEER REVIEW AND GRADING

Question	Agree & Strongly Agree	Disagree & Strongly Disagree
10. The professor should ask us to complete peer review to evaluate the other group members.	63.1%	9.0%
11. I trust other group members to evaluate me fairly in a peer review.	57.0%	9.4%
12. Professors should use the feedback in peer reviews when determining our grade.	48.7%	14.8%
13. Every group member should make the same grade.	10.3%	59.6%
14. I should be held accountable for errors made by other group members.	13.8%	55.1%
15. My grade should reflect only the portions of the projects that I completed.	32.4%	26.1%

* Neutral responses are ignored for this portion.

Grading was divided into two main issues: peer review and individual accountability. Students strongly supported peer review of their work. By a 7-to-1 margin, students wanted their group work evaluations to include a peer-review assessment. Students had a very high expectation of fairness when judged by a peer (5-to-1). Students felt strongly that their peer reviews should influence the grade (3-to-1).

The second issue, individual accountability, also revealed strong student views. Students overwhelmingly rejected the idea of giving every member of a group the same grade (5-to-1). Students felt strongly that they should not be accountable for the errors made by one of their group members (4-to-1). Lastly, students were asked about only being graded on their portions of the project. Students agreed with this idea, but not as strongly as the other five questions on grading.

Group Composition

A significant impediment to the implementation of group work in the classroom is structural. Complications arise in determining group size, leadership, division of tasks, and how involved the professor is in these decisions. The third construct used nine questions to assess students' views on group composition. The results are listed in Table 4 below.

TABLE 4
CONSTRUCT 3: GROUP COMPOSITION

Question	Agree & Strongly Agree	Disagree & Strongly Disagree
1. I prefer to select my own group members (as opposed to the professor assigning them).	47.6%	17.5%
2. I believe that students should be grouped by abilities (stronger students work together, weaker students work together).	14.8%	44.5%
3. If there is going to be more than one group project, teams should be reassigned each time.	31.5%	35.8%
5. Professors should assign a group leader.	9.3%	62.8%
6. Professors should require the group to select a group leader.	25.1%	38.4%
7. Professors should let the groups decide whether or not they need a group leader.	53.0%	18.4%

8. Foreign students with weaker language skills should be grouped together.	9.1%	68.1%
9. Smaller groups (2 to 3 people) are preferable to larger groups (4 to 6 people).	61.2%	8.6%
16. Groups should have the right to terminate the members who do not do their share.	62.0%	14.5%

* Neutral responses are ignored for this portion.

Students overwhelmingly preferred to be in smaller groups (2–3 people) by a 7-to-1 margin. Students also preferred to select their own group members, as opposed to having them selected by the professor. Students did not like the professor picking the groups. Students also strongly disagreed with the professor selecting a group leader, as opposed to letting the leadership emerge naturally.

Students also did not like the idea of grouping students based on abilities or segregating foreign students into specific groups. Lastly, students wanted to have the power to regulate their groups, terminating those group members who were not pulling their share of the work.

Real-World Application

How important do students perceive group work to their future careers? Do students believe that employers demand this skill in the workplace? The fourth construct involved eight questions about the real-world application of working in teams. The results are listed in Table 5 below.

TABLE 5
CONSTRUCT 4: REAL-WORLD APPLICATION

Question	Agree & Strongly Agree	Disagree & Strongly Disagree
17. Professors should teach us how to work in groups effectively before projects are started.	36.8%	20.2%
18. Professors use group work to reduce their grading responsibilities.	15.6%	50.8%
19. Learning to work in a group is an important skill.	81.4%	3.7%
20. Employers value individuals who can work effectively in a group or team.	84.8%	2.2%
21. Ability to work independently is more valuable than the ability to work in a group or team.	18.6%	30.3%
22. Ability to work in a team environment is as important as mastery of a specific field of study.	53.7%	11.1%
23. Group work in the classroom is similar to group work in a professional business setting.	35.6%	27.2%
24. Group work in the classroom does a good job of preparing me for group work in a professional business setting.	38.0%	21.7%

* Neutral responses are ignored for this portion.

Students believed strongly that group skills are important (20-to-1), that employers value group skills (35-to-1), and that the ability to work in groups is an important skill to master (5-to-1).

Some of the results in this construct show professors need to validate their projects. Students have less strongly held beliefs that classroom group projects resemble the work in a professional business setting. Students also indicated professors should instruct students on how groups can work effectively before the group project. Lastly, and perhaps most cynically, students disagreed (3-to-1) with the statement that professors use group work to reduce their grading responsibilities. Taken together, these indicate students

think that group work is important, but the specific projects used and the expectations and training from the professor need more detail.

Overall Evaluation of Group Work

The fifth construct involved six questions as a summative assessment regarding the students' overall perceptions of group work. The results are listed in table 6 below.

TABLE 6
CONSTRUCT 5: OVERALL EVALUATION OF GROUP WORK

Question	Agree & Strongly Agree	Disagree & Strongly Disagree
31. In general, groups work effectively.	22.7%	25.4%
32. In general, group members fairly share the workload.	18.5%	38.7%
33. In general, I learn more working in a group than if I work alone.	19.0%	39.2%
34. In general, the group process is managed well by the professor.	22.6%	26.0%
35. In general, the grading process is fair.	41.6%	13.8%
36. In general, group work is a positive experience.	34.8%	21.9%

* Neutral responses are ignored for this portion.

These responses indicate that while students believe the grading process is fair and members fairly share the responsibilities, they see problems in the process. Students indicate that groups did not always work effectively, and the process was not managed well by the professor, again offering insight into how professors can improve this important class procedure.

VALIDITY AND RELIABILITY

To test for reliability and validity, we conducted a Cronbach's alpha test for each of the constructs using SPSS v.24. The results from the four constructs used in the prior 2014 project are provided for comparison.

TABLE 7
CRONBACH'S ALPHA

Construct	Current project	2014 Study
General attitudes (6 questions)	0.917	0.913
Peer review and Grading (6 questions)	0.630	0.616
Group composition (9 questions)	0.760	0.545
Real world application (8 questions)	0.831	0.711
Overall assessment (6 questions)	0.808	Not reported

Since the results were near or above the guide of 0.70, it can be concluded that the constructs are valid and reliable.

GENDER DIFFERENCES

Analyzing the data based on participant gender uncovers significant differences in how males and females perceive group work. Females are 49.4% more likely to agree that they should be allowed to select their own groups, 44.2% more likely to agree that professors should use the feedback in peer reviews when determining group work grades, and 81.4% more likely to agree that their grades should reflect only the

portions of the project that they completed. Males are much more likely to agree that every group member should make the same grade. This suggests that females are more concerned about their grades being negatively affected by a free-riding group member.

Perhaps this opinion—likely formed from personal experience—is the best explanation for the overall disapproval of group work by females. Compared to their male counterparts, they are 67.4% more likely to disagree with the statement that they enjoy group work and 49.5% more likely to disagree with the statement that group work should be used more often. However, the results of another question cast doubt on the explanation that females are demonstrating opposition to free riders. Namely, females are 87.6% more likely than males to agree that group members fairly share the workload. Perhaps females and males are victimized by free riders to an equal extent, but females just exhibit more concern for such a potentiality.

TABLE 8
GENDER DIFFERENCES

Question	Females Agree & Strongly Agree	Females Disagree & Strongly Disagree	Males Agree & Strongly Agree	Males Disagree & Strongly Disagree
1. I prefer to select my own group members (as opposed to the professor assigning them).	52.9%	18.02%	35.4%	16.7%
12. Professors should use the feedback in peer reviews when determining our grade.	54.1%	15.1%	37.5%	13.5%
13. Every group member should make the same grade.	5.8%	68.0%	16.7%	39.6%
14. I should be held accountable for errors made by other group members.	9.3%	61.6%	18.8%	35.4%
15. My grade should reflect only the portions of the projects that I completed.	37.8%	23.3%	20.8%	29.2%
28. I enjoy working in groups in my classes.	26.2%	40.1%	21.9%	24.0%
29. Group work should be used more often in classes.	16.9%	43.6%	19.8%	29.2%
32. In general, group members fairly share the workload.	21.5%	37.79%	11.46%	37.5%

Figure 2 shows the average response by gender for all 36 numerical questions. For each question, a t-test assuming equal variances was used to test whether differences existed based on gender. Questions 1, 12, 13, 14, 15, 16, 18, and 29 were all significant, indicating that differences existed between men and women.

FIGURE 2
AVERAGE RESPONSE BY GENDER
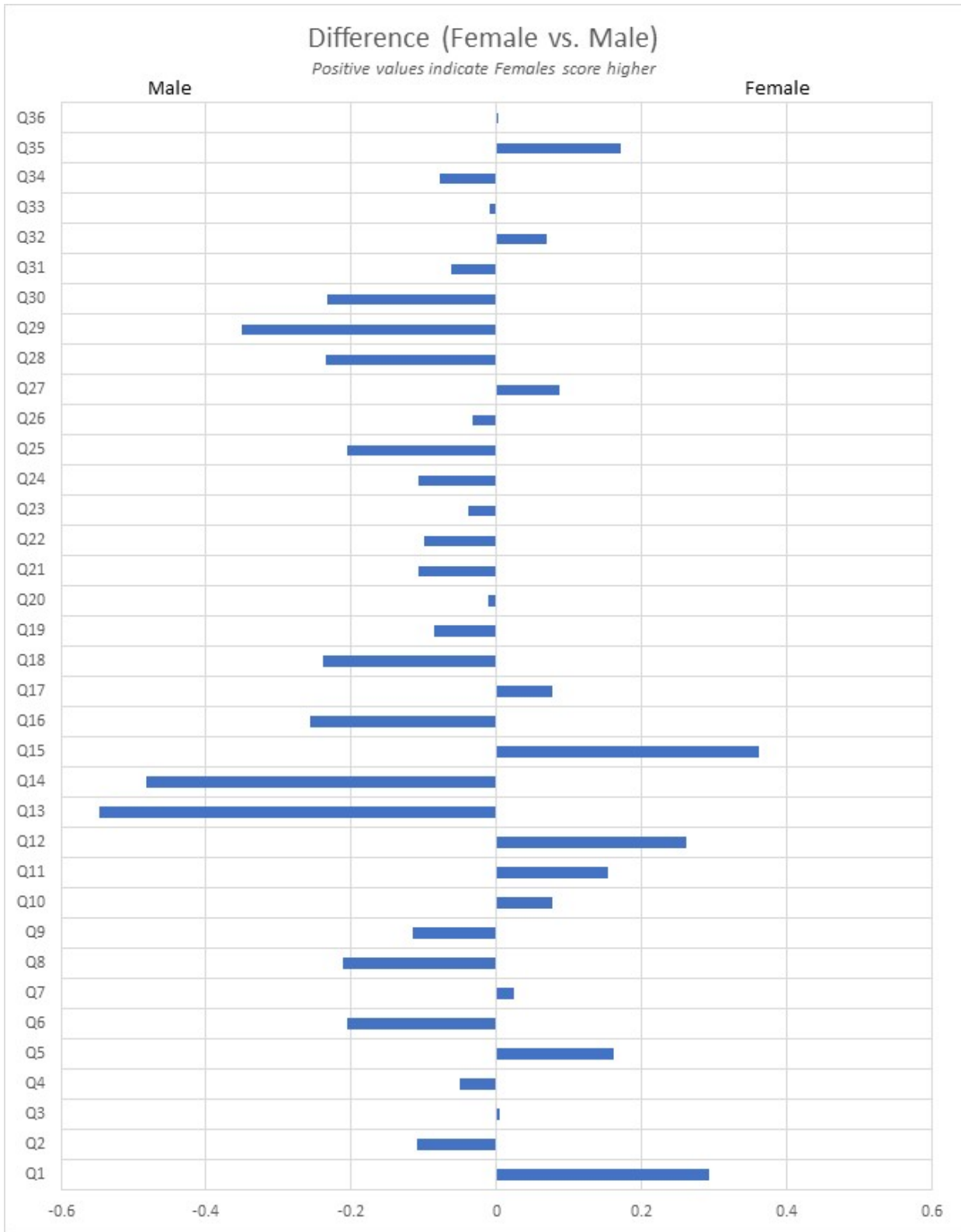
Taken together, these results indicate that females strongly believe that efforts are not fairly apportioned in groups and that this unfair burden makes the grading unrepresentative of the individual efforts. This could be the result of how females are often tasked with the administrative efforts of the group, and those efforts are not rewarded in the grading system.

BUSINESS MAJORS VERSUS NON-BUSINESS MAJORS

Analyzing the data based on business versus non-business majors provides more nuanced insight into what causes student perceptions of group work. Results by major are shown in Table 9. Non-business majors are 52.7% more likely to agree with reassigning teams for each group work project. Business majors are 169.0% more likely to agree with being held accountable for errors of team members. Non-business majors are 60.7% more likely to agree that, in general, groups work effectively.

TABLE 9
DIFFERENCES BY MAJOR

Question	Bus. Major Agree & Strongly Agree	Bus. Major Disagree & Strongly Disagree	Non-Bus. Major Agree & Strongly Agree	Non-Bus. Major Disagree & Strongly Disagree
3. If there is going to be more than one group project, teams should be reassigned each time	23.7%	42.0%	36.2%	27.0%
14. I should be held accountable for errors made by other group members.	19.1%	43.5%	7.1%	60.3%
31. In general, groups work effectively.	16.8%	29.8%	27.0%	19.9%

*Neutral responses are ignored for this portion.

In interpreting these results, it is important to note demographic differences between the two groups. Business majors were more likely to be upperclassmen (3.95 vs. 2.23 on a 1–5 Likert scale), work longer hours (28.7 vs. 15.9 hours a week), and be assigned group projects in their classes (2.98 vs. 1.6 on a 1–5 Likert scale); they were also on average six years older.

RELIGIOUS VERSUS NON-RELIGIOUS

Examining survey responses based on religious affiliation demonstrates consistent disparities in perceptions of group work. Students who identified as non-religious were more likely to disagree with the statements in questions 22 through 36 when compared to both Catholic and Christian students (other categories such as Muslim, Hindu, and Buddhist did not receive enough responses to analyze). On these fifteen questions, Catholics and Christians averaged 3.04 and 3.00, respectively, while non-religious individuals averaged 2.62. This means that non-religious students had a more negative outlook on group work grading, real-world significance, overall enjoyment, professor facilitation, and suggested frequency of use.

This stark disparity is likely due to the early exposure Christians and Catholics receive to group work activities. Bible study groups and religious summer camps familiarize participants with group work dynamics. Furthermore, the group work activities at a religious summer camp are low stakes and more focused on having fun than those involved in higher education. This may cause religious students who have their opinions about group work formed through religious group work activities to be conditioned into a more positive outlook on the practice. Positive attitudes toward group work formed from religious activities may also be the result of the homogeneity present in religious groups.

An additional explanation is that perhaps non-religious students have a more negative outlook on group work due to a general sense of not fitting in. This phenomenon could be even more prevalent at the two colleges utilized for this study, as they are both in solidly Republican states with higher-than-average levels of church attendance.

DISCUSSION

This replication project has supported the conventional wisdom that college students do not like group projects and the associated grading mechanics. However, this study goes deeper and examines the underlying views behind these beliefs. We found students believe group work is important, highly valued, and necessary to succeed in their professional careers. Students have accepted that reality.

However, students have significant negative views about the value of specific group projects and identify several areas in which professors could improve their practices in using graded group work in the classroom, including self-selected groups; more lecture emphasis on how groups are effective; the type of project assigned matching real world tasks; and allowing students to control at least some aspects of their groups, whether selection, peer evaluation, or monitoring students who do not contribute.

Unsurprisingly, the majority of questions returned little difference between business majors and non-business majors. On the few questions that did result in a significant disparity between business and non-business majors, it is somewhat challenging to provide an explanation. Perhaps the diminished frequency of group work for non-business majors is responsible for their more positive outlook on group work.

FUTURE RESEARCH

The project could benefit from a larger sample size. This would provide for more analysis and comparisons of different majors (e.g., business, history, English) and specific disciplines (e.g., marketing, accounting, chemistry).

In addition, a larger sample size would allow for more demographic analysis to explore whether non-traditional students (e.g., married, older, parents) preferred group projects to traditional students, or comparisons based on other demographic factors (e.g., nationality).

Future projects should compare attitudes toward group work in the traditional face-to-face class compared to the online, hybrid, and virtual classroom teaching modalities, which have become the norm due to COVID-19. Group work, like all academic issues, has been forced to adjust to the current crisis.

A modified methodology that recorded the participant's GPA would allow for further analysis of how different students view the free-rider problem and the method of calculating group work grading.

More questions regarding prior group work experience would help illuminate how such experiences contribute to the formation of group work preferences in college. This would also further test the hypothesis proposed in this Article that church experience contributes to more positive attitudes toward group work by familiarizing participants with the practice early in life. Future research could include questions regarding participation in sports, clubs, and whether the student was homeschooled to better inform this part of the research.

CONCLUSION

The findings of this study help better inform college professors as to how students perceive group work. Understanding the results regarding issues of assessment, formation, frequency, size, real-world applicability, efficiency, and learning outcomes should contribute to the ability of college professors to administer group work in a more efficient manner. Additionally, the results of this study invite replication with variation in future research to further contribute to the body of knowledge regarding group work.

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APPENDIX

This is a voluntary research project on student views of group projects for class. The survey should take five to ten minutes to complete. There is no penalty for refusal to participate. You must be at least 18 years old to take this survey. DO NOT PUT YOUR NAME OR IDENTITY NUMBER ON THE SURVEY. ALL ANSWERS ARE ANONYMOUS AND CONFIDENTIAL. If you do not wish to participate, you may hand in the survey form blank. Thank you for your input on this research project. All survey questions are ANONYMOUS.

For the following questions, use this scale:

1. Strongly Disagree   2. Disagree   3. Neutral   4. Agree   5. Strongly Agree

1. I prefer to select my own group members (as opposed to the professor assigning them).
2. I believe that students should be grouped by abilities (stronger students work together, weaker students work together).
3. If there is going to be more than one group project, teams should be reassigned each time.
4. If there is going to be more than one group project, teams should remain together for all.
5. Professors should assign a group leader.
6. Professors should require the group to select a group leader.
7. Professors should let the groups decide whether or not they need a group leader
8. Foreign students with weaker language skills should be grouped together.
9. Smaller groups (2 to 3 people) are preferable to larger groups (4 to 6 people).
10. The professor should ask us to complete peer review to evaluate the other group members.
11. I trust other group members to evaluate me fairly in a peer review.
12. Professors should use the feedback in peer reviews when determining our grade.
13. Every group member should make the same grade.
14. I should be held accountable for errors made by other group members.
15. My grade should reflect only the portions of the projects that I completed.
16. Groups should have the right to terminate the members who do not do their share.
17. Professors should teach us how to work in groups effectively before projects are started.
18. Professors use group work to reduce their grading responsibilities.
19. Learning to work in a group is an important skill.
20. Employers value individuals who can work effectively in a group or team.
21. Ability to work independently is more valuable than the ability to work in a group or team.
22. Ability to work in a team environment is as important as mastery of a specific field of study.
23. Group work in the classroom is similar to group work in a professional business setting.
24. Group work in the classroom does a good job of preparing me for group work in a professional business setting.
25. I prefer to work in a group or team on class projects, as opposed to working independently.
26. Working in a group results in better mastery of course material.
27. Group work benefits my course grade.
28. I enjoy working in groups in my classes.
29. Group work should be used more often in classes.
30. I find classroom group work socially rewarding.
31. In general, groups work effectively.
32. In general, group members fairly share the workload.
33. In general, I learn more working in a group than if I work alone.
34. In general, the group process is managed well by the professor.
35. In general, the grading process is fair.
36. In general, group work is a positive experience.
37. What year in school are you presently?

38. Are you male or female?
39. What is your college?
40. What is your major?
41. Are you currently employed (this semester)?
42. Are you married?
43. What is your age?
44. How many children do you have?
45. How would you describe your religious views?
    | Catholic | Christian | Hindu | Jewish | Buddhist | Muslim |
    | Lutheran | Not Religious | Other |
46. How would you describe your religious views?
47. How often do you attend church or religious meetings in a month?
48. Did one or both of your parents attend college?
49. Have you served in the military?
50. How many courses in your major have had a graded group project?
51. How many courses outside of your major have had a graded group project?
52. Are you currently enrolled in a course in business ethics?
53. How many hours per week do you spend studying?
54. How many hours per week do you spend on the internet for class?
55. How many hours per week do you spend on the internet for leisure?
56. How many hours per week do you work for pay?
57. How many hours per week do you spend reading for leisure?
58. What is your nationality?