

I hate group projects!

A solution to group work angst using
interdisciplinary consulting as a guide

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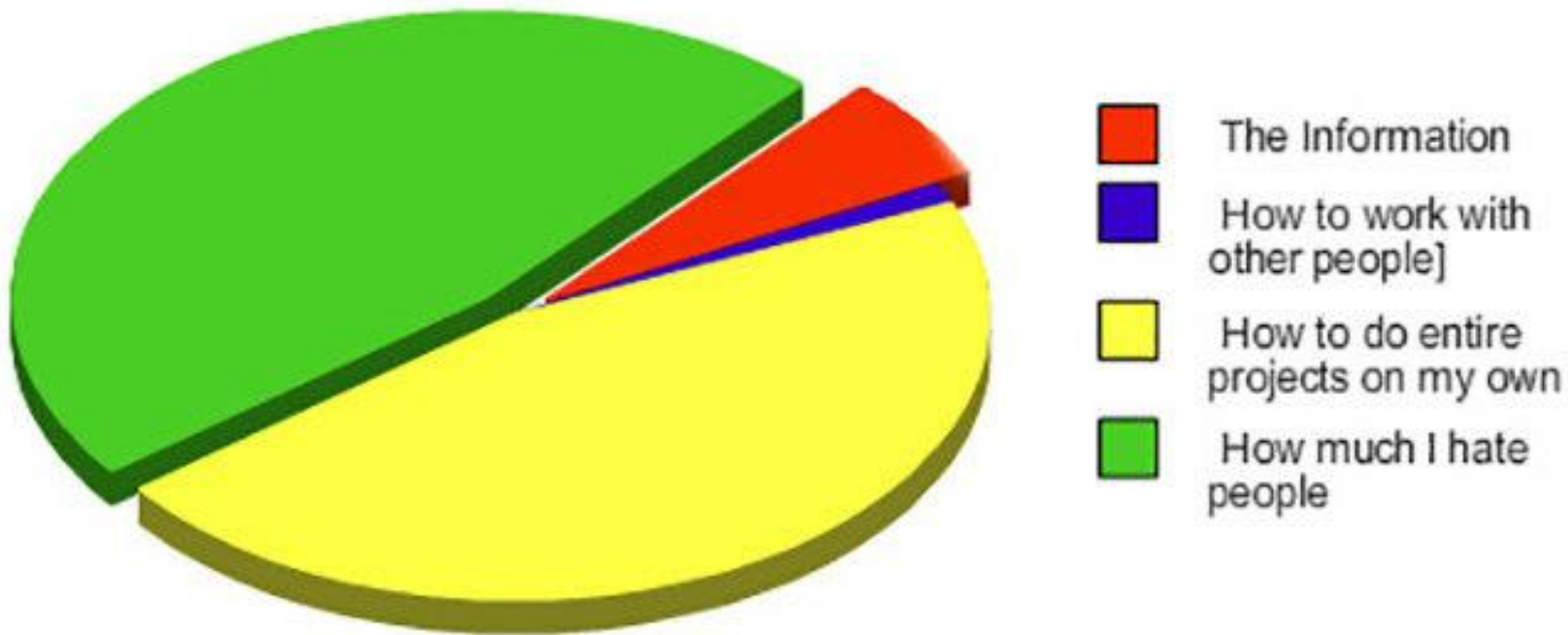
EVERY GROUP PROJECT



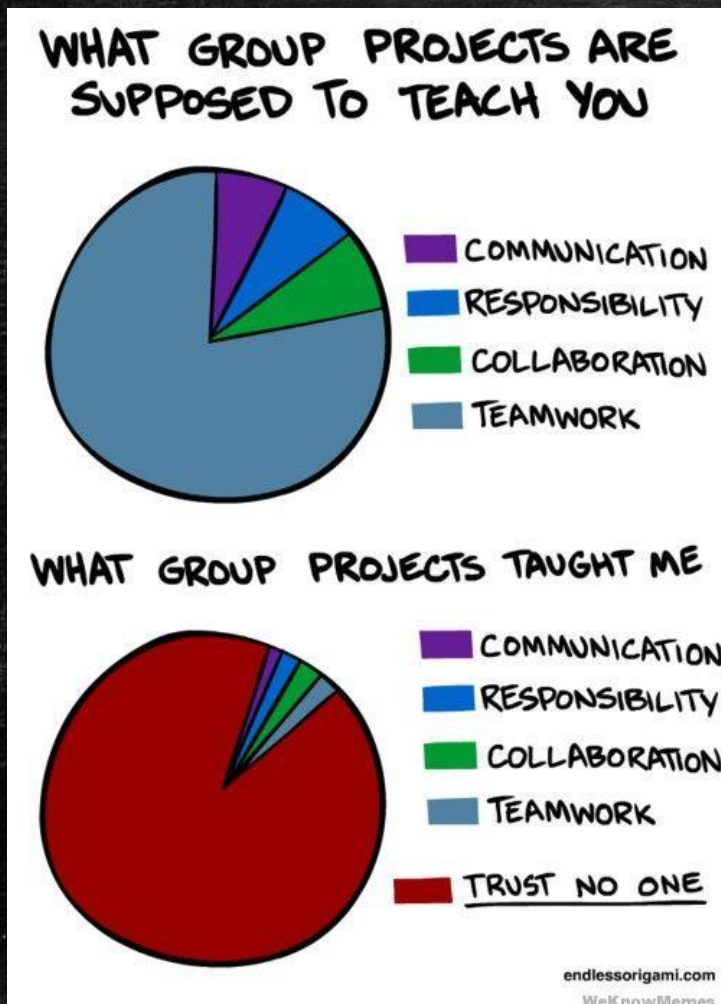
IN SCHOOL YOU HAVE EVER DONE

Group work is assigned to teach us to work in groups when we get jobs, but what we really learn is:

What I Learn from Group Projects



Education research on group work



- Do not allow students to choose their own groups
- Have students interact outside of groups so they have some sort of relationship before the project begins
- Have students report on the participation of each group member

This helped, but it was not enough

Principle question

Why do group projects
work at work but fail at
school?

Why do they work?

- Everyone has a specific job on the project
- We support each other with our individual tasks
- Weekly meetings
- Everyone reviews all of the work on a regular basis
- Fixed deadlines with clear action items
- Accountability for each member of the group

Note: Groups do not always work at work. The stakes are high in consulting. If you cannot do quality work in a short amount of time the contract will be awarded to someone else and you will go out of business. This is understood by everyone. You figure it out, or you are canned.



Group structure

- Create groups soon after the first week of class (3-5 per group)
 - No one should be adding the class at this point
 - One week of attendance and participation
 - Group members should have something in common: I look at major and diversify across class rank (FSJS)



Getting Acquainted

- Have groups find each other in class and sit with each other
 - Give 5-10 minutes for them to get to know each other and exchange contact information
 - Explain that this is their support group for the class and what that means
 - Assign group tasks together at least once a week (quizzes, group worksheets)
 - They have to sit by each other every day in class
 - Do group activities in class periodically through the semester



Setup of project

- Carefully design project and separate it into several weekly assignments – there must be more assignments than group members and an assignment due at least once a week
- Each student knows who is responsible for each assignment
- Each student must submit something every week
- Deadlines are critical - no credit for late work
- Every student must present their part in the final presentation
- Every student must answer a question about another student's part of the project
- Each student must review the other group members

Setup of project – simple statistical study

- **Proposal:** Information quiz, project approval (done in person), assign individual tasks
- **A1:** Submit slides introducing project
- **A2:** Collect data
- **A3:** Submit slides with data collection information and issues in collecting data
- **A4:** Select a statistical test (meet with instructor)
- **A5:** Submit slides with preliminary data analysis
- **A6:** Submit slides with statistical test and results
- **A7:** Submit rough draft of class presentation
- **A8:** Submit final presentation slides and present
- **A9:** Submit group member evaluation

Let the games begin

- Make sure the project is started early enough
 - If there are 7 assignments it must start at least 8 weeks before the end of the semester
- Have the students read the instructions and take a detailed quiz on them
 - They must get 100% to proceed with the class
- Give them time in class to get things organized as a group
- Have a Google Drive spreadsheet where they sign up for each assignment (this is also an assignment)
 - This is imperative! You need to know who is handling which part in and it makes sure the group is clear. The group can juggle assignments through the project, but they must update the spreadsheet

Group Project Instructions

You will be working on your group project for the rest of the semester. Although you will be working on this as a group, there will also be a strong individual component. Deadlines will be set throughout the semester to ensure that you have plenty of time to complete the different parts of the project. You will do a Power Point presentation of your project to the entire class during finals week.

Outcomes

- Perform a statistical project from start to finish. This includes
 - Planning
 - Data collection
 - Data summary: includes looking for weird stuff in your data
 - Test selection
 - Statistical Analysis
 - Conclusions
- Learn how to organize, finalize, and develop a power Point presentation – This is a valuable job skill and it is common for employees in all fields at all levels to give presentations.
- Learn how to work in a group: the organization of this project closely mimics how projects work in a real life job.
 - Strong individual component
 - Feedback to group members at all stages
 - Personal responsibility for project

Project Organization

- Before you begin the project, your group will need to meet with Sister Lundell to get your project approved. This must be completed before any other assignments will be accepted or graded.
- This is a group project, but each of you will have an individual assignment that you will need to complete and submit for grading
- Each of you must provide feedback on every individual assignment. You are each responsible for making sure that the slides are correct at every stage, even if they are not your slides. Every member of the group will get the same grade for the slides, so if there is a mistake that you miss, you will lose the points too.
- After slides have been submitted they will be graded for correctness and Sister Lundell will provide feedback on the slides. The slides will be emailed back to every member of the group.
- At the end of the semester the entire group will present to the class and the final presentation will be graded.

Assignment Sign-Ups

At the beginning of the project you will need to assign a group member to each of the assignments. This will be done on Google Docs so that the group and Sister Lundell know who is doing each assignment. Your assignment will not be graded if you do not have that information correct and current.

Instructions on Comments

An important aspect of any group project is feedback from other group members. When a group is working on a project in the workplace, group members have individual assignments that they must complete. After these assignments are completed, the work is compiled together and all team members review all of the work to look for mistakes and to look for ways to improve what was done. You will be commenting on your group members' slides to make sure they are correct. This is the process that will be followed in this class:

1. The group member in charge of that week's assignment will complete the slides and/or other materials and email them to the other group members **at least two days** before the due date.
2. The other group members will review the slides and/or other materials and return their comments **at least one day** before they are due. Your review should consist of the following:
 - Grammatical and spelling errors
 - Organizational helps
 - Content correctness
 - Reevaluation of computations and graphs to make sure they are correct (yes, I really mean that)
 - Anything else that you think may need to be said
 - Be tactful!
3. The group member in charge of that week's assignment will review the comments made and make any appropriate changes to the slides.
4. The amended slides will be submitted through I-Learn by the group member who made them.
5. The other group members will submit the same comments they provided to their group member to Sister Lundell via I-Learn so that she knows you did it and so that she has a record of your comments.
 - Remember that your comments are for the benefit of the group, not for Sister Lundell.
 - If your comments are not helpful or if Sister Lundell cannot tell that you reviewed the slide, you will not get credit for them.
6. Late comments and late slides will only get half credit so be on time!
7. Slides will be graded for correctness. No matter how amazing your comments are, all group members get the same grade. However, if you point out a gross error, your comments were given the appropriate group member on time, and that group member ignores your comment, we may be able to work something out.

Outline of Individual Project Components:

Below are listed the assignments associated with the group project. It looks like a lot, but it really is not nearly as much work as it appears. Some of the assignments are a group effort, but some are individual. Detailed instructions for each are in I-Learn and should be carefully read before completing each assignment. Remember that each of you have to give feedback at every stage; not just for the parts for which you are in charge.

Proposal (Entire Group): Select a project and meet with Sister Lundell. At least two group members must be present at the meeting. Bring the Group Project Approval Sheet with you to the meeting. It should be filled out and signed by **all** group members before coming to the meeting. The meeting will take about 10 minutes.

Assignment #1 (Individual): Put together a few slides that introduces your project. The slides should include a title page, motivation, and a detailed study question, and the type of sampling that will be used.

Assignment #2 (Group/Individual): Collect the data. Each of you will have to submit the data that you personally collect to Sister Lundell through I-Learn. The group member in charge of this assignment will submit the group data sheet properly formatted for analysis. If you have questions on how this should be done ask Sister Lundell before it is due.

Assignment #3 (Individual): Write-up of data collection. The group member in charge will make slides that describe how the data were collected and the repercussions of issues that arose during data collection.

Assignment #4 (Group): Test selection. The group must meet to determine the appropriate statistical method to answer their data. This requires meeting with Sister Lundell to ensure that the correct method is used. At least two group members must be present at this meeting.

Assignment #5 (Individual): Preliminary data analysis. Slides will be produced that include the plots and summary statistics that are appropriate for your data. Outliers must be identified and dealt with appropriately.

Assignment #6 (Individual): Completion of statistical test or method and statement of conclusions. Slides will need to present all of the parts of the statistical test and the conclusions of your study should be presented in a way that anyone could understand the results.

Assignment #7 (Group): Rough Draft – the group will meet together and compile the slides into a rough draft. Any errors that had been previously identified should be fixed before the rough draft is handed in.

Optional (Group): Presentation Center – the entire group will go to the presentation center and give their presentation. Each group member should be present for this.

Assignment #8 (Group): Final Presentation – the entire group will present the final presentation in class. It is essential that you are at your presentation to receive credit for the assignment.

Assignment #9 (Individual): Group project evaluation – after your group presents, you will fill out a quick assessment to let me know how everyone in your group participated in the project. This is not optional.

Final Presentation

At the end of the semester your group will present the group project together. Remember, one of the outcomes is to learn how to do a good presentation so do a good job on all aspects, not just content. You are not required to dress up, but you must be professional. Your final grade will consist of the following components:

- **Overall presentation**
 - Quality and appearance of slides
 - Presentation of the material
 - Organization
 - Correctness
- **Attendance:** you will get a 0 on this portion unless you attend all of the days of presentations
- **Individual question:** I will ask each group member a question at the end of the presentation. If a group member misses his or her question, the rest of the group will not be penalized.
- **Participation in the entire process:** each group member will fill out a short questionnaire after the end of the project. You will rate the performance of all of the other group members, tell me about your personal contribution, and let me know about any issues within the group or process that you would like me to know about. If you did not pull your weight, I will know.

Late Assignments

You will only receive half credit if you submit an assignment late. This includes comments.

Human Testing

If you will be doing anything involving humans outside of your group you will need to get permission from Sister Lundell, complete Human Subjects Training, and get your project approved through the university. This is not nearly as difficult as it sounds so do not let it deter you from doing a project you in which you are really interested.

Problem Group Members

If you have a group member that is not pulling their own weight or that you suspect has dropped the class, please let Sister Lundell know. The situation can be worked out in a way that is best for the remaining and participating group members.

Group 1		Group 3	
Number	Name	Number	Name
Assignment 1		Assignment 1	
Assignment 2		Assignment 2	
Assignment 3		Assignment 3	
Assignment 4	Entire Group	Assignment 4	Entire Group
Assignment 5		Assignment 5	
Assignment 6		Assignment 6	
Assignment 7		Assignment 7	
Assignment 8		Assignment 8	
Assignment 9	Each Member Must Submit	Assignment 9	Each Member Must Submit

Weekly responsibilities

- **Wednesday:** Assignment needs to be completed and sent to group members for review
- **Thursday:** Each group member must review the assignment and give their review to their group member
 - Feedback like, “Look’s great!” is worth 0 points because they didn’t review it
- **Friday:** Assignments are submitted to Canvas
 - Person in charge of that week’s assignment hands in the assignment
 - Other group member submit Thursday’s review on Canvas
 - All assignments are worth the same amount of points – not reviewing is costly
 - A mistake on the assignment is a mistake for everyone, unless you call it out in your review (everyone else misses the points, but you are safe)

Use the gradebook to motivate

- **Week 1 complaint:** I did the assignment and none of my group members would comment or do anything!
- **Week 2:** Group members get 0 in the gradebook and course grades drop from A to C overnight
 - Frustration ensues when stressed students want a chance to hand it in late and their request is denied
 - Explain that a review after the assignment is submitted is useless
 - By the end of the project this 0 will have little impact on their score, but the sudden drop in their overall grade is a huge motivator
- **Week 2 complaint:** There usually aren't any



What about group members who don't do anything?

- Missing or unhelpful reviews get 0 points
- Late assignments get 0 points
- Students who get assignments to the group late or who submit reviews late get grade penalties
- Group members who point out an error and are ignored are not penalized for the error
- Group members who fail to point out a mistake lose the points for the mistake
- If a group member does not submit the assignment, they get a 0. The other group members have a few days to complete and submit the assignment with no penalty.

Group member evaluation

- Each student was required to evaluate each of their group members
- They submitted the answers to 3 questions
 - Tell me something that went well in your group
 - Tell me something that did not go well in your group
 - Tell me how much effort each group member put into the project by dividing up 100 points between them (do not include yourself)
- Their grade for this part of the assignment was based on feedback from group members

Miscellaneous observations

- Add a short quiz to each review assignment
 - Did your group member get you the materials by the due date
 - Have them answer for each group member
 - Automatic deduction if they don't
- Don't assume students know how to work in a group or organize a project
 - Nobody has taught them how to do it
 - Spell it out for them in detail
 - You are training them how to be a good worker
- Fast and thorough feedback is Essential!
 - Note when they miss deadlines or tasks
 - Heavily comment on submitted assignments so they can learn

Teacher Observations

- Students liked that the project was not overwhelming
 - Small weekly assignments prevented gross procrastination
- It was rare that a student did not do their part
- Gradebook motivation and fast grading is essential
- Timely feedback from me was crucial
 - Make many comments on slides
 - Email group members whenever there is an issue
- Clear expectations in writing are vital
- Students learn how a project is organized instead of being thrown to wolves

Student Observations

(Comments from A Student Participant)

- Groups became “self-enforcing” - naturally balanced the workload.
 - Well defined roles
 - Well defined expectations
 - Well defined consequences
- Group relations were less tense because we didn’t have to enforce the rules ourselves.
- Due dates spread over long period of time reduced anxiety.
- Group-member evaluations were still tough, but at least based on objective guidelines.