Teamwork and Technical Writing
A Group Dynamics Module
for Technical Writing 410

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Table of Contents

1. BECOMING PART OF THE GROUP ......................................................... 3
   The Advantages of Collaboration ....................................................... 3
   Analyzing Four Classic Potential Group Problems2 .......................................................... 4
   Individual Accountability ..................................................................... 5
   Eight Elements Necessary for Group Effectiveness ...................................................... 5

2. PLANNING FOR THE PROJECT ......................................................... 7
   Preparation ....................................................................................... 7
   Brainstorming ................................................................................. 7
   Defining Task Types ......................................................................... 7

3. CREATING AND REVISION THE DOCUMENT ................................ 9
   Six Difficulties Associated with Collaborative Writing (and possible solutions) .................. 9

4. CONCLUSION .................................................................................. 11
   How to Assemble, Organize, and Guide a Writing Team .................................................. 11

5. WORKS CITED ................................................................................ 14
   Appendix 1: Group Member Evaluation Instructions for Major Group Project .................. 15
   Appendix 2: Multi-Media ........................................................................ 16
Introduction
The American workplace demands that members of an organization learn how to work effectively in groups or teams. However, growing up in a society that advocates individuality and independence above cooperation with others often provokes conflict in individuals when they are expected to participate in group activities. This course module brings together various source materials that describe how to work successfully as a team, particularly on collaborative writing tasks. The purpose of this document is to show how to participate effectively in a group, specifically a technical writing group, for the student who is asked to work cooperatively with other students in a team setting. The module will include:

- The advantages of working as a team to produce technical documents.
- The problems teams most often encounter.
- A teamwork approach to the three stages necessary for creating a successful technical document, i.e. planning, composing, revising.

According to Gerard M. Blair, former Senior Lecturer in the Department of Electrical Engineering at the University of Edinburgh:

When people work in groups, there are two quite separate issues involved. The first is the task and the problems involved in getting the job done. Frequently this is the only issue which the group considers. The second is the process of the group work itself: the mechanisms by which the group acts as a unit and not as a loose rabble. However, without due attention to this process the value of the group can be diminished or even destroyed; yet with a little explicit management of the process, it can enhance the worth of the group to be many times the sum of the worth of its individuals. It is this synergy which makes group work attractive in corporate organization despite the possible problems (and time spent) in group formation.¹

1. Becoming Part of the Group

The Advantages of Collaboration
According to Bell, there are three clear advantages to organizing members of an organization in groups to create technical documents.² These include:

1. **The need for diversity** - Rarely can a single writer tackle a writing project which requires the skills, talents and insights of several writers working collaboratively.

2. **The pressure of deadlines** - Writing projects must normally be completed within a specified time period which forces organizations to employ more than one writer to complete each project.
3. **The need for “continuity and reliability”** - Having a group of writers working on a project instead of just one individual ensures that the project will still be completed successfully even if one of the members of the group is incapacitated.

**Analyzing Four Classic Potential Group Problems**

1. **Only one or several members of the group complete the bulk of the work while the rest of the group members function as spectators** - To prevent this common problem, group members must assess each other's strengths, talents, and weaknesses and tasks must be assigned accordingly. Each member of the group should be responsible for a portion of the work before the actual work is initiated.

2. **Each group member has a different idea about how the work should proceed** - To prevent differences of opinion from stalling the project, the members of the group must focus on effective strategies as part of an entire gameplan to keep the project moving forward. Group members should assume separate tasks. Each individual will probably be responsible for a portion of the work, create his/her own schedule, and develop a commitment to have the work completed on time. Some tasks must be completed by everyone working together (for example, planning the report outline or drafting the overview). Peer pressure must be exerted for each individual to meet deadlines.

3. **Portions of the project are completed by individuals without the review of the entire group, resulting in several fragmented parts that cannot be unified into a single document** - Issues of style and organization must be determined before the document is written. When individuals are assigned to submit drafts sections, the team should define in advance the requirements for those sections (Notes on a yellow pad? Library note cards? Well written text that is ready to go? Formatted and clean copy?) One or possibly two group members should be appointed to the task of overseeing the editing process; however, all members of the group must review each portion of the document and participate in its final editing and organization.

4. **Conflict and disagreement among team members creates an atmosphere of mistrust and inhibits productivity** - Anticipate differences with other group members but recognize that only compromise and cooperation will result in the project's successful outcome. Some forms of conflict, i.e. **substantive conflict**, can actually be beneficial as disagreement over the substance or strategy of the project or documents often leads to a higher quality outcome. **Personal conflict** (when individuals simply don't like each other or can't get along) must be recognized and addressed with candor and directness, using interpersonal communication skills. **Procedural conflict** (who must do what, when, to what standard) should be addressed through formulating plans, standards, and shared agreements on work processes. Success will only be achieved
through "patient, active participation by team members in sharing insights, resolving conflicts, and coordinating work activities." With all group members focused on the desired goal, communication should be open and immediate so that problems are solved as soon as they arise.

**Individual Accountability**

To insure that the work involved in each project is being distributed fairly among the individual members of each group a system of individual accountability must be devised. Students who contribute more than their fair share of responsibility for the project should be amply rewarded, while students who do not carry their weight should be penalized. Students should be informed about the rewards/ consequences of positive group participation or lack thereof in advance and such information should follow a thorough discussion of the instructor's expectations with respect to group participation, including a substantial portion of in-class time focused on group dynamics such as those outlined in this course module.

**Appendix 1 - Group Evaluation Instructions for Major Group Project**, provides an example of such a system. This system involves an anonymous student survey so that each group member can evaluate the performance of each of the other members in his/her group. Unbiased group evaluation surveys, such as this one, are effective when they have an impact on a student's final grade. See Appendix 1.

**Eight Elements Necessary for Group Effectiveness**

Jarvis identifies eight elements necessary for group effectiveness:\footnote{4}

1. **Shared understanding of general and specific objectives.** The entire team as a group as well as each individual member has a clear understanding of team goals, both general and specific. Each team member is familiar with his/her responsibilities and contributes to the group effort accordingly. Priorities are recognized and an attitude of compliance in order to achieve objectives is maintained. Throughout the project, team members reevaluate these objectives and develop a sense of team awareness to avoid confusion and frustration, which might circumvent team effectiveness.

2. **Openness and confrontation.** An atmosphere of open expression is maintained in which each group member feels comfortable volunteering opinions and providing feedback to other group members. Group members are able to confront problems, mistakes and difficulties without the fear of vindication by other group members.

3. **Support and trust.** Working relationships that express trust and support result from an open-minded attitude, empathy, and a positive approach to the opinions of others. "Ideally, the team can be an open, supportive, unthreatening environment but in reality there is often too much at stake
between people at work (personal rivalry, politics) to make deep personal exchanges with others an easy process."

4. **Co-operation and conflict.** Group members participate in friendly competition, each generating and expressing helpful ideas and suggestions in an effort to benefit the entire group. Rather than promoting hidden agendas and personal stereotypes, conflict functions to provoke creativity. The whole is more effective than the sum of its individual parts.

5. **Sound procedures.** Team procedures should be carefully planned and executed. These procedures, including "the calling of meetings…team notes, records, etc," should function to streamline team activity and help teams to avoid becoming bogged down with excessive bureaucracy. While leadership is important to the decision-making process, it is crucial that consensus among all team members be reached before a decision is implemented.

6. **Appropriate Leadership.** Team leaders must be able to command energy, competence, and an ability to mediate among other team members. In addition, "planning, initiating, organization, and controlling skills," are requisite for team objectives to be realized. Team leaders should serve the group and consider their first priority the collective interests of the whole.

7. **Regular Review (both task level and interpersonal).** Regular review of team objectives and the means to achieve such objectives should occupy an important position on a team's agenda. Such reviews should be undertaken collectively and should focus on both task and interpersonal issues. At the task level, group members should examine project objectives, appropriate orientation to such objectives, and desired results (substantive issues). At the interpersonal level, group members should examine issues that might be holding the group back such as individual members' inabilities to accept the opinions of others, receive feedback, and engage in compromise to the benefit of the entire group (personal issues). At the project level, teams should continually assess progress toward goals and adapt the workplan, roles, and responsibilities as necessary (procedural issues).

8. **Individual development.** Each group member must feel that there is *something in it for me.* Individual development and growth are important barometers in gauging the success of the entire group effort. Once the group project has been completed, each individual should come away from the experience with a sense of personal, as well as collective, accomplishment. It is a good practice to debrief with the team and reflect on what went well, what caused problems, and what lessons can be taken away from the project.
2. Planning for the Project

Preparation
Before the writing begins, "the team collectively identifies the audience (or client), the purpose and goals, the scope of the project, and the deliverables (documents, presentations, artifacts or products). When the deliverable is a document, the team analyzes the overall project, conceptualizes the work to be produced, creates a broad outline of the document, divides the document into segments, and assigns each segment to individual team members, often on the basis of expertise. In the planning stage, the team projects a schedule and sets any writing style standards that team members are expected to follow." Preparation involved finding out who has what skills and trying to align expertise with project roles and responsibilities.

Brainstorming
Brainstorming, a necessary precursor to problem-solving and successfully completing a project, can be defined as a collective activity which provides insight into solving a particular problem. Insight, in turn, can be defined as "a radically new way of seeing the subject that discloses intellectual boundaries and is simple yet permanently true." Insight is often achieved when "a multi-faceted problem is recognized; the problem is confronted in its fullness and complexity; and the problem is considered not only with the intellect but also with emotions, attitudes, and beliefs." There are three benefits associated with insight:

1. Insight leads to action.
2. Insight brings relief because it results in solving problems.
3. Insight creates new understandings.

Effective brainstorming in groups, both in discussion and on paper leads to the creation and implementation of creative ideas which move a project forward. Early brainstorming as the team formulates the project goals can help avert "group think," where someone suggests an idea and everyone agrees because they are not really thinking of alternative and other possibilities.

Defining Task Types
Morgan suggests that tasks can be divided into four categories:

1. **Individual tasks** - "are unitary tasks that cannot reasonably be broken into constituent parts and may be best accomplished by one person." Creating only individual tasks often results in fragmentation among group members as each focuses only on his/her particular assignment.

2. **Melding tasks** - "cannot be broken down into subtasks. And all group members are needed to accomplish the task." Such tasks require all members of the group to reach a consensus before the work is begun.
3. **Aggregate tasks** - "a task that any one group member can complete...(but) often requires a number of operations that allows group members to take on different subtasks." These tasks "call for a high degree of coordination among group members, even if members are essentially doing the same task within a project."

4. **Interdependent tasks** - "is a divisible task....all members must contribute to complete the assignment successfully." In this case, each member of the group is assigned a responsibility and all members must fulfill their respective responsibilities to successfully complete the assignment.

While each of these four categories has its respective place in collaborative writing, most often, successful groups emphasize **melding, aggregate, and interdependent** tasks in their group work, as such tasks require that each member of the group participate actively in the collaborative writing process.
3. Creating and Revising the Document

Six Difficulties Associated with Collaborative Writing (and possible solutions)

Farkas (his principles quoted in bold) offers six difficulties associated with collaborative writing along with possible solutions.8

1. **Highly integrated documents are very complex artifacts.** As complex artifacts, documents often include flaws which cause them to be less than successful. A failing document may result from, "missing information, illogical or nonfunctional organization, and inconsistencies in point of view or treatment of subject." Ultimately, all documents contain both strong and weak points but when the weak points outnumber the strong points, the document becomes untenable. To avoid the above possibilities, collaborative writers must actively scrutinize their documents collectively and depend upon one another to employ objective and constructive criticism.

2. **The process of preparing a document becomes more complex when it is performed collaboratively.** Creating and preparing a document is already a complex process when performed by an individual; it becomes even more complex when undertaken by a group. "The (individual) writer must maintain control of the theme, the organizational structure, the level of detail, the tone, and all other aspects from beginning to end." To create a successful document, all members of the writing team must have a collective image of the desired outcome. Tasks must be disseminated to each individual, a comprehensive schedule must be developed so that those whose task is dependent upon the completed work of others, will receive such work in a timely manner, and individual work must be revised to facilitate the collective image, as well as to correct individual errors and insufficiencies.

3. **The writing process generates strong emotional commitments.** A strong commitment to one’s own personal style of writing often creates difficulties in collaborative writing projects. Team members who "regard their component of a collaborative work as a private document and assume the prerogatives of traditional ownership" jeopardize the group writing process and provoke unnecessary conflict at the entire group's expense. Those who are strongly committed to high quality work should find ways to focus this attitude on efforts to facilitate teamwork and pride in a successful collaborative outcome.

4. **Documents are reworkable and are subject to infinite revision.** “Although thorough revision is an important component in all forms of writing, group members should be discouraged from "excessive reworking." Such obsessive fastidiousness (while perhaps uncommon
among student writing groups) can create individual burn-out and team discord.

5. **Collaborative writers lack fully adequate terms and concepts with which to create a clear and precise common image of the document they wish to produce.** “Writers work with one of the most elusive and poorly understood materials—language—and so they generally use concepts and terms that are imprecise and deficient for communication among team members.” To mitigate this problem, it is useful for teams of writers to create “preliminary and partial representations of the finished product.” By creating outlines, prototypes, partial rough drafts, and by reviewing portions of a document throughout the different stages of its development, collaborative writers can become more certain of reaching a consensus about the meaning they wish to convey in the final draft.

6. **It is difficult to predict or measure success.** "Documents take their meaning and achieve their effects in the minds of readers, and therefore it is difficult to predict whether a document will achieve the intended results." Groups should seek feedback from sources both within the classroom and outside of the classroom to predict and measure as objectively as possible the potential for the success or failure of the documents they produce. Attention should be given to both form and content.
4. **Conclusion**

**How to Assemble, Organize, and Guide a Writing Team**

The following comes from Robert Underwood, a senior technical writer at Lockheed:

As a senior technical writer in my division, I'm usually the first to hear about a major writing project. I get the news by phone call or memo from an upper-level manager. The next step is a meeting with him or her to learn as much as I can about the project: what's expected of me, what resources are available, when the project must be completed, who will review our work, and so forth. I take careful notes at this meeting; the information gathered there must be shared accurately with the writing team I'll be putting together.

I'm usually given some freedom in selecting members for the writing team. After eleven years with the company, I think I know the strengths and weaknesses of our various staff writers. Some are known for their thoroughness and attention to detail, others for their speed in drafting, and others for content knowledge and organizational abilities. My goal is to shape a team that includes all these strengths.

I try to determine approximately how many writers I'll need on the team, then add one more. Too large a team can't work in a coordinated way and too small a team gets swamped by the workload. I don't put the same people together on the same teams time after time. That approach leads to an "A Team," "B Team" mentality that hurts morale. Whenever possible, I try to involve at least one new writer on major projects. Hands-on experience is the only way to grow.

Once I've selected team members and notified them of our first meeting, I put together a folder of project information for each participant. The more information we can share from the beginning, the more productive our initial meetings. The first meeting is a bit more social than later meetings. It's important that we all get to know one another and to trust one another. If we're going to speak frankly about what we like and don't like in each other's writing, we have to establish a bond of good fellow-feeling from the beginning. Otherwise, the work of the group will break down because of personality conflicts and petty disagreements.

I try not to dominate the first meeting of the team. I've learned that the more I talk at the first meeting, the more of the project I'll have to do on my own. My goal is to present what I know about the project as concisely as possible, then to open up discussion for the opinions, questions, and suggestions of team members. I explain why we're doing the project, who will read it, and how much time and money the company wants to spend on it.
By the end of the meeting, our discussion will hopefully lead to at least three initial decisions on the part of the team: (1) when to meet again; (2) what each member will bring to that meeting; and (3) what additional information we need as a group to proceed with our work. I don't try to come up with a working outline or document design at the first meeting. These decisions, made too early or by only one person, can discourage fresh thinking by the group.

At the second meeting, I listen for interest areas. By this time, each team member has had a chance to think through the project and to decide, in a tentative way, where he or she can make a contribution. Team members will tell me what they want to do if I listen well enough. I've learned that they do their best work in their areas of special interest. Once we've settled upon areas of responsibility, we make plans for drawing up a tentative outline. This master agenda for our document will change many times during the writing process. But it's important to make a start--to get some kind of orderly thoughts on paper. We also set approximate milestones for our work. Although these may change, we have to consider the resource of time from the very beginning of the project.

At the following meetings, we will refine our master outline, then move on to the document design, drafting, review, and revision stages. Our work in these areas has been made much easier in the last few years by groupware, a form of word-processing software designed specifically for team writing. Using groupware, we can each work at our computers on our assigned portions of the document while having the work of other team members always accessible at the same computer. Here's a list of the capabilities of our groupware:

1. All team members see document changes suggested by others.
2. Changes can be discussed on screen before becoming part of the document draft.
3. Team members can send comments, questions, and data to one another during the writing process.
4. Team members can develop, and switch back and forth to, alternative patterns of organization, types of graphics, and tentative drafts.

During the outlining and drafting stages, I keep in close touch with upper management to make sure the team is heading in the right direction. Too often in this company, as in others, a writing team has completed a major project without consultation with management along the way. The result can be a wasted effort, squandered resources, and sometimes even terminations.

We formalize the review process by management when the team has compiled its first edited draft. This prototype is circulated among upper managers for their sign-off and suggestions. We revise accordingly.

The team usually settles upon one or two members to act as final editors for the last draft. It's important that each page of the document read as if it were
written by one person, although in fact many team members contributed. We achieve this sense of a single voice "speaking" in the document by limiting the number of final editors. The completed document is then given to each team member for a painstaking final reading. We want to eliminate all errors in form, content, grammar, mechanics, style, usage, and spelling.

I usually invite a senior manager to our final team meeting to receive the completed document. It's important that all team members share in the sense of accomplishment that comes with the presentation of the document to management. Managers have a chance to ask questions about the document at the meeting, and to thank those who worked on it. Although I probably shouldn't say it, we writers value this last meeting as a chance to tell senior managers what's in the document. Often their reading of our work isn't as thorough as it should be."
5. Works Cited


# Appendix 1: Group Member Evaluation Instructions for Major Group Project

**Group Member Evaluation Instructions for Major Group Project**

**Important group evaluation parameters:**

1. Although students in each group will evaluate their fellow group members by assigning numbers (-1,0,1,2,3,4) based on individual performance in the group setting, these are evaluations only. The purpose of the evaluation is to help the instructor determine a participation grade. The instructor will determine the final group participation grade (10% of the course grade) for each student and s/he, and only s/he, is responsible for the individual participation grade that each student receives. As your instructor, I reserve the right to assess the objectivity of the student evaluations and determine if they are consistent with my own personal observations.

2. All group member evaluations shall be conducted anonymously.

**Student Survey Sheet**

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**Grading Parameters**

-1: Hindered group effort
0: Made no contribution
1: Contributed little
2: Contributed adequately
3: Contributed actively
4: Made major contributions

1. **Student's preparation for and attendance at group meetings.**

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2. **Student's participation during group meetings.**

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3. **Student's performance on assigned tasks—quality of work.**

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4. **Student's ability to work with others.**

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5. **Student's ability to accept constructive criticism, compromise, and negotiate.**

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6. **Student's ability to meet deadlines.**

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**Overall Evaluation________**

(Add all 6 evaluations; divide by 6)
Appendix 2: Multi-media

The video, "Teamwork," available at the University of Delaware Morris Library Media Center (vhs 7390), discusses the value of teamwork in the workplace, problems that may arise among individuals in groups, and vertical and horizontal integration among members of an organization within the framework of teams. The focus of the video includes team activities in various sectors of industry and includes comments and feedback from team members from all walks of life, working together to achieve a common goal.