Teaching collaborative writing for real-world application to the field of technical writing

Cory Vaillancourt Holder

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TEACHING COLLABORATIVE WRITING FOR REAL-WORLD APPLICATION TO THE FIELD OF TECHNICAL WRITING

A Thesis
Presented to the
Faculty of
California State University,
San Bernardino

In Partial Fulfillment
of the Requirements for the Degree
Master of Arts
in
English Composition

by
Cory Vaillancourt Holder
June 1998
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ABSTRACT

The needs of business and industry dictate that students be taught skills transferable to the workplace. Teaching collaborative writing for real-world application to the field of technical writing is one way to help prepare students for future employment in scientific and technical industries where the communication of technical information is part of conducting daily business. Research in the field of technical writing and composition shows that teaching collaborative writing not only prepares students for the workplace but teaches and reinforces communication skills necessary to be successful in academic as well as professional pursuits. The research presented in this thesis relates collaborative writing theory with practice in the classroom, and relates classroom practices with collaborative writing in the workplace. A case is made for teaching collaborative writing in composition and technical communication classes as part of the college and university curriculum. A proposal is also offered to form coalitions between academia and the workplace to ensure that what is taught in the classroom is relevant and transferable to the workplace.
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I would also like to acknowledge the individual areas where each committee member was most helpful. Dr. Elinore Partridge, the chair of my committee, provided me with the organizational direction I needed to pull the document together and support my thesis statement. Dr. Jeffrey Galin helped me to relate theory and practice and aided me in effective grammatical and rhetorical structuring. And I especially want to acknowledge Professor Patricia Reed for her common sense approach in dealing with academic research and providing me with a “reader-response” evaluation of my thesis.
To my husband Robert
whose support and understanding
helped me to succeed in this venture
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INTRODUCTION

Emily Sopensky points out in "The Skill and Art of Collaboration," that "current trends in company downsizing and the ever more compressed time to market require the cooperation and interaction of several people to deliver quality products in record time" (709). For most companies to remain competitive in all facets of production, including the production of technical information, collaboration is necessary.

The use of collaboration to produce technical documents is commonplace in businesses and industries such as Lockheed Martin, IBM, or Microsoft, where producing quality products or providing services is dependent upon communicating technical information as an integral part of daily business.

To meet the needs of business and industry, students must learn collaborative writing skills in composition or technical communication classes to help prepare them for future employment possibly in the field of technical writing. In many technical publication departments or other areas within companies where documentation is produced, there is a need for writers who not only possess good writing skills, but who also have the ability to work in collaborative writing situations. Teaching collaborative
writing, therefore, adds value to what our students learn about writing because it helps them see the relationship between what they learn in the classroom and how that learning can be applied to real-world writing.

Linda Flower in *Problem Solving Strategies for Writing* describes what she calls "real-world writing." Real-world writing is "the kind of writing people do when they know something they want to communicate to a reader, who wants or needs to hear it" (4). Flower also mentions that "one of the most common yet demanding kinds of real-world writing people do is expository writing, or writing that analyzes or explains" (4). Technical writing is one type of expository writing that Flower may be referring to as real-world writing because in technical writing "the writer has something to say, the reader needs or wants to hear it, and the topic demands clear and logical discussion" (4).

Technical writing is a field where the need for good writers continues to provide job opportunities in technological or scientific industries like those previously mentioned. Therefore, it is vital to the future of composition and technical communication programs in our colleges and universities to form coalitions with the world of work by teaching and reinforcing skills needed in the workplace.
Through the research I present in this thesis, I hope to provide an awareness of the importance of using collaborative writing activities in composition or technical communication classes, especially those activities providing the best transference of classroom learning to the workplace.

Collaborative writing in the workplace usually involves working on a given project as part of a team where the writing tasks are divided among the members. The members of the team may include not only technical writers but also engineers, designers, product training personnel, or even members of management, who are all brought together to produce a proposal, report, technical manual, or any of various other types of technical documentation.

Using collaborative teams like those used in business and industry is one method of producing documents where often more is accomplished as a team than one person might accomplish alone. Teaching this process of writing in the classroom presents challenges as well as benefits. In "Writing as Collaboration," James A. Reither and Douglas Vipond discuss the use of collaborative writing projects to teach composition and the benefits of writing as teams. They believe collaborative writing "enables a small team to accomplish more than its members could acting individually" (864). Reither and Vipond, however, base their remark on
collaborative writing projects in the classroom; what takes
place in the workplace is often quite different. They do not
necessarily imply that writing as teams shortens the time-
line of a writing project; on the contrary, it often length-
ens it. The benefits, however, of group participation can
often outweigh the added time spent. Students in Reither’s
and Vipond’s classes learn what constitutes collaboration by
participating in what are termed as “short-range activities
such as coauthoring and peer editing” and a long-range col-
laborative activity called “knowledge-making,” where stu-
dents learn to collaborate on investigative research
projects.

Adding to what Reither and Vipond have stated about the
benefits of “team” writing, I believe collaborative writing
also tests the parameters of group dynamics and provides
each individual member of a collaborative writing group with
an environment for writing that can be both stimulating and
challenging. What collaborative writing should also be (but
sometimes is not in these situations) is a unified effort by
a group whose interaction among its members enhances and
adds quality and dimension to the production of a document
through group decision-making.

Within the decision-making process, however, is the
potential for substantive conflict which can involve
political, personal, or even petty rivalries. This aspect of collaboration, however, provides an opportunity to better understand group dynamics and how the organization of collaborative writing groups can affect the quality of the writing and the success or failure of the group to complete the writing project.

Meg Morgan’s study in “Patterns of Composing: Connections Between Classroom and Workplace Collaborations” provides research on group dynamics in relation to writing collaboratively. Her study demonstrates the way groups organize to accomplish writing in the workplace bears a direct relationship to the way student groups organize a writing task in the classroom. Morgan believes these processes of organization used in the classroom are transferable to the workplace environment.

Based on Morgan’s study of both classroom and workplace collaborative writing, as well as Reither and Vipond’s research into ways to effectively use collaborative writing projects to teach composition, it seems relevant and necessary to further examine collaborative writing in the classroom and how it compares with writing done in the workplace, specifically technical writing.

I begin this examination of collaborative writing and technical writing in Chapter One of this thesis where I
discuss technical writing as a writing process using several technical writing handbooks as well as academic research on technical writing as a basis for this discussion. Collaborative writing process theory as presented in current composition and technical writing research is also presented in this chapter.

Chapter Two contains a discussion of technical writing instruction and the limitations posed by many of the technical writing texts presently used in most technical communication classes. Technical writing instruction where collaborative projects are part of the curriculum is also examined. Various collaborative writing projects designed to engage students in "real-world" writing activities they might one day do in the workplace are described and evaluated. Collaborative writing in the classroom as it relates to various modes of collaboration, coauthoring versus group projects, and criteria for good collaborative writing assignments is also presented. Additional discussion of collaborative writing projects and activities for use in composition or technical communications courses is provided in Appendix A.

Chapter Three contains descriptions of several collaborative technical writing situations in the workplace as detailed by Andrea Lunsford and Lisa Ede in Singular Texts/
Plural Authors: Perspectives on Collaborative Writing. A brief description of collaborative technical writing in the technical publications department at Lockheed Martin where I work as an editor is also provided in this chapter. A more detailed description of a typical collaborative writing project at Lockheed Martin is presented in Appendix B. This examination of technical collaborative writing situations in the workplace provides the basis for determining if the way collaborative writing is accomplished in the workplace relates to the way students are being prepared in the classroom to do this type of writing.

Chapter Four contains an analysis of the material presented in the previous chapters in relation to the transference of classroom learning to the workplace. Social and political implications that evolve when colleges and universities form coalitions with the world of work is also discussed in relation to the role the study of writing plays in determining the success or failure of our students when they enter the workplace.

Through presentation and analysis of current research on technical and collaborative writing; examination of collaborative writing in the classroom as discussed by Kyle Anne Gearhart, Meg Morgan, Reither and Vipond and others; discussion of collaborative writing in workplace settings as
described in the research of Lundsford and Ede; and my personal observations of writing in the workplace, I will demonstrate that collaborative writing skills taught in the classroom can be transferred to collaborative writing situations in the workplace despite their differences in praxis.

As a working professional in the field of technical communication, I plan to use this research to lay the foundation for proposing changes in some of the methods of performing collaborative writing in the workplace. These changes would be designed to make better use of writing skills taught in the classroom, and to promote effective transference of knowledge from the classroom to the workplace.
CHAPTER ONE

Writing process theory encompasses many different aspects of how writers write. In this chapter the processes involved in technical writing as a specific kind of writing, and collaborative writing as a specific method of writing are both examined in relation to rhetorical concerns, and group organization and interaction.

Technical Writing as a Writing Process

In *The Elements of Technical Writing*, Gary Blake and Robert W. Bly describe technical writing as a field that is “defined by its subject matter: It is writing that deals with topics of a technical nature. By technical we mean anything to do with the specialized areas of science and technology” (3). Blake and Bly also point out a number of industries where technical writing is most often accomplished which include aerospace, defense contractors, consumer electronics, chemical processing, pulp and paper, mining, construction, fiber optics, instrumentation and controls, as well as other industries and businesses related to the physical, natural, and social sciences.

The main difference between technical writing and ordinary composition is purpose. The main purpose of most technical writing is to communicate useful or needed
information. Technical writing shares many of the same attributes of other types of writing; however, the technical nature of the subjects of technical writing make its style and content often quite different.

Good technical writing according to Blake and Bly is technically accurate, useful, concise, complete, clear, consistent, correct in spelling, punctuation and grammar, targeted toward a specific audience, well organized, and finally, interesting. This last item is important because if the writing is boring and does not keep the reader's attention, it has no hope of ever being read, despite the possible importance of its subject matter.

According to Linda Flower's definition of "real-world writing in Problem Solving Strategies for Writing, technical writing seems to exemplify her concept of a writer having something to say the reader wants to hear. The skills required to do this "real-world writing" Flower describes, are often the most difficult to learn because the writer usually faces three major tasks: making meaning, communicating, and persuading (5).

The first of these tasks, making meaning, involves making sense out of complex situations using words. Flower says that "a writer must use language to make meaning, i.e., to name key issues, to describe their interrelationships, and
turn that sense of the whole into concepts expressed in words” (5). This task best describes the impetus behind technical writing. The complexity of scientific and technological knowledge makes it essential for the writer to bring this knowledge into the realm of the reader so the reader can make sense of it.

The second task, communicating, is uniquely germane to technical writing. The need to communicate effectively makes it necessary for the writer to “use language to anticipate and guide the reader” (5). Lois Johnson Rew, in *Introduction to Technical Writing, Process and Practice*, reiterates Flower’s task of communicating, with specific application to technical writing: “technical writing is the communication of specific—usually technical information to an identified reader...” (2).

Flower’s third task, persuasion, is used in situations where “a writer often has to move another person not only to understand but to respond or take some action” (5). Persuasion is often an integral part of technical writing, particularly in proposal writing, where the writer must convince a particular reader to accept the ideas presented in the proposal.

Deborah C. Andrews, and Margaret D. Blickle, in *Technical Writing: Principles and Forms*, mention three
aspects of technical writing that relate to Flower’s three major writing tasks of making meaning, communicating, and persuading. These three aspects involve their definition of rhetoric. Rhetoric, they state, is “the art of writing or speaking to achieve a particular effect such as to persuade, instruct, or describe” (4). Adding to that definition, Edward P.J. Corbett in *Classical Rhetoric for the Modern Student* states, [rhetoric] “deals with the use of discourse, either spoken or written, to inform or persuade or motivate an audience...” (3). The addition of “audience” to the definition correlates with Andrew’s and Blickle’s claim that good [technical] writing is “appropriate to the subject, purpose, and audience” (4). In other words good technical writing is writing that by the nature of its subject and purpose is directed to a particular audience in order to inform, persuade or motivate them in some way.

Andrews and Blickle also believe that in technical writing “words may be selected and arranged in an almost infinite number of ways (limited only by the conventions of language itself) to fit the specific rhetorical situation” (4). They seem to place few restrictions on using language to express the rhetorical concerns of communicating technical information that describes, instructs, or persuades and in turn achieves success in accomplishing
Flower's writing tasks of making meaning, communicating, and persuading.

In Technical Report Writing, James W. Souther, and Myron L. White view the process of technical writing as one that is dictated to by the demands of the workplace: "Most scientific and technical writing, whether in business, industry, or government results from assigned work. Writing grows out of work, and writers rarely find themselves able to write about subjects they choose" (2). This lack of being able to choose a subject is compounded by having to write according to specific style guidelines or requirements imposed by the customer, government agency, or the writer's own company. These restrictions along with specified purpose and audience provisions make the task of technical writing a process, which I believe both Souther and White would agree, is highly controlled.

Collaborative Writing Process Theory

Collaborative Writing Defined

In "Collaboration Is Not Collaboration Is Not Collaboration: Writing Center Tutorials vs. Peer-Response Groups," Muriel Harris provides a simplified definition of collaborative writing: "writing involving two or more writers working together to produce a joint product" (369).
Harris also mentions terms such as "shared document collaboration" that Nancy Allen and her coauthors use in "What Experienced Collaborators Say About Collaborative Writing," and "coauthorship," the term Lisa Ede and Andrea Lunsford use in "Why write....Together?" to describe the collaborative writing they do. Harris describes Ede's and Lunsford collaboration as "a melding process by which they create one text together, discovering and thinking through ideas together, talking through sections together, and writing drafts together" (369).

Emily Sopensky in the "Skill and Art of Collaboration," sums up collaborative work in general, but also with reference to collaborative writing: "At its worst collaborative work engenders confusion and inconsistency; at its best, it offers opportunities for heightened creativity and enhanced quality" (709). It is this last statement that seems to underpin the dichotomy of collaboration. Subsequently, it makes the decision to work collaboratively, one that requires the realization of the possible consequences of collaboration, which may either add to or detract from the end-product.

Chuck Keller, in "A Practical Approach for Managing Team Writing Projects," defines collaborative writing in terms of two basic forms: "The writing segments can be
assigned to individuals and then merged later, or the team writing can be a collective effort with group members involved in all writing phases” (695). Keller provides a more detailed definition of collaborative writing by listing four types of collaborative writing that David Farkas describes in “Collaborative Writing, Software Development, and the Universe of Collaborative Activity, ”:

(1) Joint development of text by two or more people; (2) Contribution of document components by two or more people; (3) Development of a document by one or more people, modified by edit and/or review by one or more people; and (4) Development of a document by one person who interactively works with one or more people and drafts the document based on the input from the contributor(s). (695) Farkas’s four types of collaboration provide a broad view of collaboration which allows for certain parameters such as the organizational structure of writing groups to guide and shape the collaborative effort.

The makeup of any collaborative group is also influenced by certain rhetorical concerns: the content (subject) of the written work, the purpose for writing (persuade, describe, inform), and the audience who will read and possibly be motivated by the writing. These rhetorical concerns in
relation to collaborative writing are discussed in the following section.

**Collaborative Writing as Rhetoric**

Charles E. Beck states in "Rhetoric and the Collaborative Nature of Technical Communication," that "since rhetoric is the art of human discourse, rhetoric forms the theoretical base for the field of technical communication" (781). He goes on to say that "technical communication involves a rhetor acting on behalf of an organization. Consequently, the rhetor usually is not the originator of the ideas, for the ideas themselves may come from other individuals or groups..." (783). His concept of a rhetor as a representative of others provides the basis for collaborative writing---working as a team "crafting ideas, inventions, or programs developed by others so that the information is accessible by a user who needs the information to act" (783). Beck echoes Linda Flower’s concept of "real-world writing" in that it is writing done as the result of having something to communicate that someone wants or needs to know. Beck’s ideas also reflect the rhetorical concerns of audience and purpose without which there would be no need to collaborate in the first place.
David L. Wallace in "Collaborative Planning and Transforming Knowledge," also takes a rhetorical approach to collaborative writing by pointing out the need business and technical writers often have to "write for multiple purposes, addressing the needs and attitudes of different and sometimes conflicting audiences" (41). This is the reason that he and others "have begun to use assignments that simulate workplace situations to prepare students for these situations" (41). Wallace continues by saying that "despite these efforts, many student writers fail to realize that audiences have different needs" and therefore, they must learn to do what he calls "transform knowledge" to meet the needs of different rhetorical situations (41).

Wallace also feels that students need to "learn to go beyond collecting and arranging information" (42). This is particularly true for writing tasks in business and technical communication courses, such as proposal writing where he feels it is necessary to create "an audience-specific argument that demonstrates how the proposed solution addresses critical aspects of the problem" (42). He also cites several studies that suggest that most elementary, junior high and even first-year college writers "may not have developed an awareness that writing can do more than report information or the skills necessary to transform knowledge according to rhetorical concerns" (42).
He seems to believe, however, that most students are "developmentally ready to do the knowledge transformation that rhetorical planning demands" by the time they take upper division business or technical communications courses (Wallace 43). What this means in terms of collaborative writing is that students at this level are able to make decisions about what their purpose for writing is and what needs of their audience must be met. This awareness of purpose and audience is paramount to being able to transform knowledge in the way Wallace describes and work effectively in collaborative writing situations.

Kyle Anne Gearhart in "A Collaborative Writing Project in a Technical Communication Course," also mentions the need for technical writing students to learn the concept of audience analysis. She says that "the concept of audience analysis is generally foreign to my students, but they need to be aware that once they graduate and start writing in the workplace, they will be addressing audiences who are unfamiliar with their field as frequently as they will address audiences who share their expertise" (362). Gearhart's observation about her students' lack of awareness of audience reinforces Wallace's belief that assignments in the classroom should not only be relevant to the workplace, but should incorporate rhetorical concerns such as audience.
Substantive Conflict in Collaborative Writing

In addition to the organization aspects and rhetorical concerns involved in collaborative writing situations is the concept of substantive conflict. Various kinds of conflict can occur in collaborative situations. Citing the research of Rebecca Burnett, Chuck Keller points out in "A Practical Approach for Managing Team Writing Projects," that "conflicts caused by individual or situational dynamics are not necessarily bad...Burnett identifies affective conflict (interpersonal disagreement) procedural conflict (disagreement over how the group should operate), and substantive conflict (disagreement about content and rhetoric). Of these substantive conflict is seen as a possible enhancement to the decision process—particularly in a cooperative rather than a competitive context" (698).

David L. Wallace in "Collaborative Planning and Transforming Knowledge," believes that substantive conflict is an important consideration in collaborative writing activities because he says, it "may serve different functions in group activities where participants are coauthors than it does when collaborators are helping each other with single-authored documents" (58). This means that differences that arise in group planning may not be as crucial to the overall writing process in an individual writing situation, because
a writer can reject what others in the group suggest; however in collaborative writing situations that are based on coauthoring, resolving substantive conflict involves group decisions that must be adhered to if the group is to be successful in its collaboration.

In "Recent Research on Collaborative Writing in Industry," Mary Beth Debs states this same idea but in a different way when she mentions how Meg Morgan and Mary Murray in "Insight and Collaborative Writing," "suggest that groups need to be open; interpersonal conflicts and intolerance to multiple perspectives may overwhelm a group's efforts to make decisions in producing a document" (482). Debs also mentions several studies that show the success of a group "depends on a group's ability to plan and negotiate through difficulties; failures may be caused by a group's inability to resolve conflict and to reach consensus. The conflicts," she continues, "most often arise from different interpretations of the rhetorical situation, different concepts of the intended audience, and different purposes" (481). This observation also underscores the importance of rhetorical concerns such as audience and purpose that both Wallace and Gearhart mention.

Carol McGarry in "An Overview of Collaborative Writing for the Publications Manager," also addresses the role of
conflict in collaboration when she mentions how conflict can refocus a group and send them in new directions in search of answers to their disagreements. On the other hand, she also mentions that conflict can slow down the progress of a group. The key to using conflict in collaboration is difficult to achieve; however, she points out that "encouraging and sustaining constructive conflict may be a difficult and complicated task, but finding the medium is necessary for successful collaboration" (31).

McGarry’s ideas and the research of Burnett seem to correlate with both Debs and Gearhart’s concerns regarding conflict---that the success or failure of a collaborative group depends on its ability to resolve conflicts, or whenever possible, use conflict to its best advantage to advance the progress of the group and complete the writing task.
Like many aspects of teaching writing there are no
definitive methods for teaching technical writing and/or
collaborative writing; however, there seems to be a lack of
emphasis on teaching collaboration as part of the technical
writing process. Teaching technical writing and more spe-
cifically collaborative technical writing provides the op-
portunity to create new techniques and methods for teaching
writing. An overview of technical writing instruction and an
indepth look at teaching collaborative writing in both the
technical writing and composition classrooms are discussed
in this chapter. This discussion provides the basis for
advocating teaching collaborative writing as part of the
technical writing curriculum and the use of collaborative
writing assignments in the composition classroom.

Technical Writing Instruction

Writing in the workplace both individually and collabo-
ratively provides a challenge for the technical communica-
tions instructor. Kyle Anne Gearhart addresses issues that
relate to what instructors teach in their technical commu-
nication courses in relation to the workplace, in “A
Collaborative Writing Project in a Technical Communications Course.” She states that instructors in technical
communication courses need "to convey an accurate picture of the importance of both written and oral communication skills...[since] students do not seem to have an accurate perception of the role of writing in the workplace" (360).

To make matters worse the textbooks instructors have to choose from to teach their courses do not relate to most if any, aspects of workplace writing. The field of technical writing abounds with handbooks and textbooks that discuss techniques and strategies to produce text for the various forms of technical writing; however, what seems to be missing from most of these books, is discussion of collaboration as part of the technical writing process. Emphasis is placed on the technical writer as an individual, not as part of a collaborative group. The use of existing technical writing texts as the basis for teaching technical writing limits students' writing experiences to those that only emphasize writing as an individual. This emphasis is contrary to what is actually happening in most technical writing departments.

Fortunately, the discussion of collaborative writing and related topics is taking place in professional technical communication journals such as Technical Communication\(^1\),

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\(^1\) Technical Communication is one of two publications produced by the Society for Technical Communication which is based in Virginia. The Society has a national membership and uses its publications to publish informative articles based on scholarly research as well as feature articles of general interest to those in the field of Technical Communication.
This discussion needs to find its way into texts used in technical writing and composition classrooms in order to facilitate teaching collaborative writing skills and provide a wider range of learning experiences students later can transfer to the workplace.

Chuck Keller in "A Practical Approach for Managing Team Writing Projects," continues on this line of thinking when he states, "Team writing, a common requirement in today's business world, is a skill often neglected by our educational system...schools commonly teach writing as an individual skill" (694). He shares the sentiments of Gearhart, who believes that "designing a technical communication course solely around a textbook may be ineffective because these texts often do not accurately reflect real-world writing experiences" (361). She encourages her students to use the textbook she requires for her courses only as a reference. She supplements this "reference" with

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2 *The Journal of Business and Technical Communication* is a journal founded in 1986 at Iowa State University and serves as a forum for discussion of practices, problems and trends of communication in professional writing. It combines the perspectives of academia and industry and covers both theoretical and practical concerns related to business and technical writing and related subjects. Stephen Doheny-Farina whose writing is referenced in this thesis is on the editorial board for this publication.

3 *The Journal of Technical Writing and Communication* strives to meet the diverse communication needs of industry, management, government, and academia and serves as a major professional and scholarly journal for practitioners and teachers of most forms of communication. The editors, Board members and authors bring ideas from the classroom, the laboratory and a variety of corporate settings to provide readers with successful methods, techniques, theory, and case studies.
outside materials including professional journals, textbooks and journals in the students' fields, and handouts that cover topics such as collaboration which may not be covered by any of the other materials.

Gearhart has constructed a course in technical writing which she feels provides a collaborative writing learning situation designed to make the experience of writing in the workplace as "real" as possible for her students despite being in a classroom when they write. The course provides requirements for writing both long and short projects, and using the computer to write. It emphasizes such things as audience analysis, oral communication, nonlibrary research, and teamwork.

To accomplish the task of making the experience "real" and to provide instruction of job-related skills, the course is based primarily around a collaborative writing project—one that emulates what might be done in the workplace. The project involves groups of four to six students who choose a project manager and form mock consulting firms as their premise for writing a proposal as a group. "The mock consulting firms," Gearhart states, "allow them [students] to integrate technical and managerial problem-solving skills with writing...this opportunity typifies professional writing situations and prepares them for actual
writing tasks they will face once they graduate.” She feels “this project provides the students with as close to a real-world scenario as possible” (363).

Gearhart’s course is definitely on the right track because it employs the use of a collaborative writing project; in this case it is a proposal written on a subject that involves the school. After completion of the proposals the students actually submit them to the administrative staff for consideration. (Refer to Appendix A for a more detailed description of this proposal writing project.)

The learning situation Gearhart provides for her students serves as an appropriate model for technical communication and composition teachers alike, to use when teaching collaborative writing in the classroom. Based on descriptions of workplace collaborations Andrea Lundsford and Lisa Ede describe in Singular Texts/Plural Authors: Perspectives on Collaborative Writing (refer to Chapter Three) Gearhart’s model seems to simulate a real-world workplace. In some ways it goes beyond a simulation since the students write “real” proposals and organize their writing projects much like the group Ede and Lundsford describe in their research, who wrote proposals collaboratively for the Office of Educational Research.

Gearhart’s collaborative writing experience is also similar to the collaborative writing project Meg Morgan
describes in "Patterns of Composing: Connections Between Classroom and Workplace Collaboration." Gearhart's students, like the ones in Morgan's study, are given the opportunity to learn to write collaboratively—a method of producing writing they may not be familiar with, or experienced in doing. The success of this experience for the students in Morgan's study, and the students in Gearhart's classes, suggests it could be included in upper division composition classes, and most certainly in technical communication courses.

Gearhart's belief that "technical writing courses should simulate professional activities, and written reports should be realistic in content and approached from an organizational perspective" supports her approach to teaching writing which includes teaching collaborative writing (365). This approach should be embraced by other teachers of writing, so they too, like Gearhart, can provide a collaborative writing situation in the classroom where students learn useful skills that are relevant and transferable to the workplace.

Others in the field of technical communication are also discussing the need to make what is taught in the classroom relevant to the workplace. Patrick Scanlon and Anne C. Coon, who conducted a survey of 420 technical communication
professionals, report the results of this survey in "Attitudes of Professional Technical Communicators Regarding the Content of an Undergraduate Course in Technical Communication: A Survey." They mention in conjunction with the results of that survey that "the profession of technical communication is and has been changing rather dramatically. Technical communicators have taken on new responsibilities in document design, production, and project management. They are being challenged by new technologies such as desktop publishing and multimedia" (439).

The changes Scanlon and Coon mention serve to illustrate the need for technical communication courses to meet the needs of professionals in the field, who they say the term "technical writer simply no longer applies" (439). The expanding roles of those in the workplace also makes it important that they know how to work collaboratively in writing situations, where they may be asked to be a team leader, or a group participant. Knowledge of the dynamics of group work can aid in their success in meeting new responsibilities and challenges brought about by a changing workplace.

Andrea Lundsford and Lisa Ede pose the following question in Singular Texts/Plural Authors: Perspectives on Collaborative Writing: "If men and women in the work force frequently write collaboratively, should not writing
teachers help prepare them for an important part of their job?” (13). I am fairly certain Gearhart, Keller, and Scanlon and Coon would all say “yes” to this question. They might also agree the emphasis in technical writing handbooks and classroom texts needs to be expanded to include discussion of collaborative writing as well as other topics related to new technologies and the changing role of the technical writer in the workplace.

Collaborative Writing in the Classroom

Modes of Collaboration

To see the possible correlation of how collaborative writing activities in the classroom relate to collaborative writing in the workplace, Meg Morgan in “Patterns of Composing: Connections Between Classroom and Workplace Collaborations,” uses research of how groups accomplish writing in the workplace to corroborate her belief that the way student groups organize a writing task is transferable to the workplace environment. Morgan’s research attempts to make some connections between the study of collaborative student writers in a classroom setting and studies of collaborative writing in the workplace. These workplace studies include research by Paradis, Dobrin, and Miller, who in “Writing at Exxon ITD: Notes on the Writing Environment in
an R & D Organization," provide a description of how a document is cycled through an organization. In another study in Singular Texts/Plural Authors: Perspectives on Collaborative Writing, Lisa Ede and Andrea Lundsford describe two "modes of collaboration,:" hierarchical and dialogic. In a third study, the "division-of-labor and integrated-teams" models of collaboration which are similar to Ede and Lundsford's two modes of collaboration are described by Killingsworth and Jones in "Division of Labor or Integrated Teams: a Crux in the Management of Technical Communication?"

Morgan's primary focus in her study was "the part of the project where students identified and explored a problem within an organization and wrote a proposal to a decision-maker within the organization to suggest a method for researching solutions to the problem" (541). The study involved four collaborative student writing groups who organized themselves in one of four organizing patterns, decided whether the work would be divided or not, and also decided who in the group would assume responsibility for the completion of the document. The organization patterns they chose from related to either the hierarchical, or dialogic mode of collaboration. The hierarchical mode of collaboration as described by Ede and Lundsford involves dividing the work among the members of the group with one person serving as
the leader of the group. In the dialogic mode the group works interactively and no one person is the leader. The dialogic mode is similar to the division-of-labor/integrated-teams models of collaboration that Killingsworth and Jones describe.

The results of Morgan's study provide many interesting observations about group organizational patterns. For instance, she found that some groups did not really choose how they would organize: their organization just evolved over time. Another interesting thing she noted was that the groups' "choice" of what mode of collaboration to use often correlated with the gender makeup of the group. Morgan points out that "Ede and Lundsford maintain that the hierarchical mode of collaboration is a 'masculine mode of discourse'" (543). She also mentions that "Ede and Lundsford call their dialogic mode of collaboration 'predominantly feminine'" (543). One group in Morgan's study, who chose a hierarchical mode, was made up of four males, and another group who chose the dialogic mode was made up of two males and two females, one of whom became a dominant factor (although not the leader) in the decision-making process of the group. The group whose writing project was ranked the highest by an independent group of graders chose the dialogic/integrated-team approach.
What Morgan's study illustrates, in relation to what goes on in the classroom that can be transferred to the workplace, provides some interesting contradictions. She mentions that we usually "think of applying workplace experiences to help students learn" (544). This is why she uses the research of workplace collaborations when she discusses patterns of organization for student collaborations. What she discovers, however, is that the opposite application is more appropriate: "The findings of this research project may inform collaborative writers in the workplace. Student group decisions can mirror decisions made by inexperienced writers at work" (544). What this means, according to Morgan's study, is that inexperienced workers might believe that a strict division of labor and a hierarchical mode of collaboration is best. Since one person coordinates the work of the group and makes most of the decisions for the group, time is not spent in discussing the work in progress. This might be particularly true if the workplace were made up of mostly males.

Morgan's study also seems to show that a document written using the hierarchical mode of collaboration may not be as successful as when group interaction plays a part in its creation as it does in the dialogic mode of collaboration. The time factor that might concern some writers in a work
setting may induce them to use the hierarchical mode rather than the dialogic/integrated-team approach. Collaborative writing even for experienced writers sometimes takes more time than individual writing, but documents produced using collaborative methods are often considered to be better than documents written individually.

Morgan believes her study "suggests to the workplace writer that those inexperienced at working in groups may need some background in group dynamics in order to learn how to choose the best organizing pattern for the task at hand..." (545). I think it is quite likely, however, that the collaborative writing groups in the workplace will not always be given the choice of how to organize; their organization might be dictated by other factors including the organizational patterns of the company itself, which may for instance, be hierarchical in nature despite a group's inclination to take a more dialogic approach.

Morgan seems to feel that the most direct and important application of her findings is to the classroom (545). And despite the fact that her study showed that the group who used the dialogic/integrated-teams model wrote the best document, she does not seem to imply that this particular model will work for all collaborative writing groups in the classroom. What she does imply is that the makeup of the
groups themselves will be the deciding factor in how they are organized and what mode of collaboration they will choose to use.

**Coauthoring Versus Group Projects**

James A. Reither and Douglas Vipond in "Writing as Collaboration," describe the use of collaborative writing projects in their composition courses as a way to explain their theories of the writing processes used in group work. They believe writing is a process that involves three forms of collaboration, including two short-range activities: coauthoring and peer editing, and also what they consider a long-range collaborative activity they call "knowledge making." Their aim is to incorporate all three forms of collaboration in courses that are "organized to focus both teachers' and students' attention upon the necessary, natural way in which writing and learning projects are governed by collaborative impulses" (856). They also believe that "we will do a better job of teaching not only writing, but also content-area courses, when we understand the ways in which these processes are grounded in collaboration and when we find ways to design courses to make writing and knowing truly collaborative activities for students---just as they are for the rest of us" (857). I think an underlying goal
for Reither and Vipond is to have their students see collaborative writing not only as a writing process, but also as a social activity to reinforce cooperative interaction and help them become involved in the process as well as the product.

Reither and Vipond call their way of learning to collaborate "Collaborative Investigations." This process begins with posing a question to the students who must function as a research team where tasks are divided among the members of the team. Library research as well as other types of investigation are used in an attempt to answer the question. The organization of these research teams they say, "sets a situation that encourages the students in our writing and content-area courses to establish---through authoring, coauthoring, and workshopping---immediate, local communities of writer-knowers" (862). These local communities they mention can then interface with the larger communities established by canons of literature from which existing knowledge will be learned and new knowledge will emerge as the students conduct their research.

The kind of investigative research Reither and Vipond have their students do in their "collaborative investigations," is similar to what James W. Souther and Myron L. White in Technical Report Writing, provide as a specific
process for professional writers to follow in “solving a technical problem” (2). Souther and White contend that writers “must first determine their objectives and define their approaches. Then, reducing the process to its simplest terms, they set out looking for answers by…conduct[ing] an extensive and detailed investigation of the problem… examin[ing] and evaluat[ing] the material that has been gathered…[and] mak[ing] professional judgments about the material and the ideas growing out of it” (2). In other words, they do the needed research, decide what to use or not use of what they obtain, and then attempt to synthesize and make new knowledge from what they have learned in relation to “solving a technical problem.”

Somewhat like the professional writers Souther and White describe, Reither and Vipond’s students are also restricted by a specific assignment and have to function within the constraints of the writing question; however using processes like those Souther and White describe, they set out to investigate and solve a problem, not as individuals, but as part of a collaborative group.

The long-term goal of knowledge-making Reither and Vipond mention in conjunction with collaboration receives its impetus from the research question itself and gives the students the opportunity to read literature in the field

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they are researching and to become part of that field's discourse community. The students also have the opportunity to learn "that writing and knowing consist in using and building on others' writing and knowing" and that "writing and knowing are collaborative acts---vital activities people do with other people to give their lives meaning" (866).

The collaborative process for these students involves not only the organization and execution of their research plan, it involves writing and presenting their findings in relation to the research they have done in smaller investigative teams. Coauthoring, Reither and Vipond point out, "helps students experience the frustrations of cooperation but also the joys---the synergy that enables a small team to accomplish more than its members could acting individually" (864). In this type of writing situation, the members of the group may divide writing tasks but eventually build parts of the text together. Students become decision-makers, deciding what is to be researched and how the information obtained will be organized. These decisions are made as a group where consensus by the group determines the direction the group will take in achieving both short-term and long-term goals.

I believe the sense of teamwork that Reither and Vipond mention with regard to coauthoring is the primary
foundation for collaboration. There is power in working as a group, not only through agreement of purpose, but through the power to achieve more as a group than as an individual. Collaborative writing and knowledge-making experiences like the ones Reither and Vipond describe, also seem to have some definite correlation to writing experiences outside and beyond the classroom like those of the professional writers mentioned by Souther and White. I believe the collaborative writing activities used in Reither and Vipond's classroom serve as examples of how people often function in the workplace.

It is interesting, however, that Reither and Vipond do not comment on how the groups in their collaborative investigations actually organize with regard to any particular mode of collaboration. After reading the Morgan study, it is possible to conclude that the success or failure of these groups, despite their knowledge of problem-solving and research techniques, might depend on many of the same organizational factors Morgan describes.

**Collaborative Writing Assignments**

As part of their research project on collaborative writing in the workplace discussed in *Singular Texts/Plural Authors: Perspectives on Collaborative Writing*, Lundsford
and Ede also discuss teaching collaborative writing. Like Gearhart and others, they believe there are ways to approach teaching collaborative writing that serve to add to students' knowledge of group interaction and achieve the goal of effective learning that relates to the workplace. They are reluctant, however, to provide specific, concrete guidelines for teaching collaborative writing because they appreciate "the complexity of our rhetorical situation as teachers and our awareness of the profound ways that exploration of collaborative writing challenge not only many traditional classroom practices in English studies but our entire curriculum" (123).

As a premise for proposing what constitutes good collaborative writing assignments, Lundsford and Ede point out the fallacies of poor collaborative writing assignments, based on their research as well as their own experiments with collaborative writing assignments. "Poor collaborative writing assignments are artificial in the sense that one person could really complete the assignment alone: such assignments lead only to busy work and frustration" (123). In other words writing projects must be of a large enough magnitude to warrant dividing them into smaller tasks to be completed by individuals, or into segments where group interaction is necessary to complete the project successfully.
Another reason they offer is that poor writing assignments "fail to provide guidance for students about the processes they might best use to complete the assignment effectively. Students are simply assigned a topic or a project and abandoned to negotiate the minefield of interpersonal and group processes alone" (123). What Lundsford and Ede are saying seems logical; however, Morgan's study shows that students are quite capable of choosing a way to organize themselves, and for the most part, they interact according to the way they are organized.

This is not to say that some instruction on effective group dynamics is not needed; however, it may be necessary to allow the natural way in which various groups organize according to their makeup guide the teacher in deciding what skills the students need to work effectively as a group. Interaction between the teacher and the students, along with some instruction in group dynamics, can facilitate peaceful negotiation of the "minefields" Lundsford and Ede mention.

Perhaps the most significant aspect of Lundsford and Ede's research is their findings with regard to what successful collaborative writing assignments should include. They provide a list of shared characteristics which are abridged as follows:
1. They allow time for group cohesion (but not necessarily consensus) to occur and for leadership to emerge.
2. They call for or invite collaboration; students need to work together to complete the assignment together.
3. They allow for the evolution of group norms and the negotiation of authority and responsibility.
4. They allow for and encourage conflict and protect minority views.
5. They allow for peer and self-evaluation during and after the assignment.
6. They call on students to monitor and evaluate individual and group performance and reflect on the processes that made for effective or ineffective collaboration. (123)

Based on the criteria Ede and Lundsford provide, Kyle Anne Gearhart’s collaborative proposal writing assignment discussed earlier in this chapter seems to typify what Lundsford and Ede would call a successful collaborative writing assignment because the assignment is done over a period of several weeks, which allows time for group cohesion; the task is such that the students must work
together to complete it; the group evolves from a project manager structure where the authority, although not necessarily negotiated, is clearly defined; the groups are encouraged to challenge each others' ideas and to resolve conflict harmoniously; the groups evaluate the work of not only themselves but also their peers; and the processes of effective or ineffective collaboration are discussed on an ongoing basis by the class as a whole.

Gearhart's design and execution of her collaborative writing project seems to be a good example of what Lundsford and Ede indirectly state as the way to teach collaborative writing in the classroom, particularly when the intention is to provide learning that is transferable to the workplace.

Further discussion of collaborative writing assignments drawn from various sources, including a more detailed description of Gearhart's collaborative writing project, is contained in Appendix A. Relationships between the classroom assignments presented and workplace collaborative writing are also discussed.
CHAPTER THREE
Collaborative Writing in the Workplace

Technical writing in the workplace is often accomplished by individuals, but more frequently individual writing is part of a larger effort by many individuals who collaborate to produce the final product. This collaboration may involve various forms of expository writing including: proposals and specifications; technical articles, papers, abstracts and reports (formal and informal); letters and memos; various user, maintenance, installation, instruction, operations, training, or sales manuals; documentation of functional tests; engineering or scientific reports or studies; and speeches and oral presentations.

In Worlds of Writing: Teaching and Learning in Discourse Communities of Work, Carolyn B. Matalene discusses the role of the writer in the context of professional writers where the “writer” is not one person but a group. She says that “when writers work together, the act of writing often serves important functions for the group well beyond that of producing a text. Working together to create a document may have more to do with reaching consensus, setting goals, inventing solutions, revising priorities, or establishing control than the finished pages reveal” (vi).
Matalene’s analysis of the dynamics of collaborative writing serves to illustrate that whether the writing is done by individuals who contribute to a group effort, or by a group who interfaces with each other to produce the text, the finished product may never reveal a group process was ever at work. This is the ultimate goal of collaborative writing—-to sound as if the writing comes from one voice, the kind of “singular texts/plural authors” concept mentioned by Ede and Lundsford in their research on collaborative writing.

Achieving this goal of one voice is a difficult task for those who do collaborative writing in the workplace. When this goal is not achieved it can have a significant effect on the reader. In “A Practical Approach for Managing Team Writing Projects,” Chuck Keller points out that “from a reader’s point of view, poor collaborative writing can make reading a difficult task” (695). He ties this statement to a quote from “Writing and Designing Manuals,” where Gretchen Holstein Schoff and Patricia Robinson, use an interesting analogy to illustrate some of the problems that collaborative writing teams face:

The camel is an animal designed by a committee is another saying. Too often, the team-written manual has camel-like lumps and bumps. Such manuals
move by fits and starts from one segment to another. They sometimes have ill-matched writing styles and formats. Users find these manuals very hard to use because of their redundancy, lack of cross-referencing and chaotic organization. In brief, the chief difficulty with a team-written manual is the coordination of several writers' work into a smooth manual that looks as if one person had written it. (695)

Andrea Lundsford and Lisa Ede explore many of the problems Schoff and Robinson mention, in their book Singular Texts/Plural Authors: Perspectives on Collaborative Writing, where they describe their research project on collaborative writing in the workplace. They designed and conducted a survey that was sent to 1400 randomly selected members from seven professional organizations (200 from each group). The groups included the American Institute of Chemists, the American Consulting Engineers Council, the International City Management Association, the Modern Language Association, the American Psychological Association, the Professional Services Management Association, and the Society for Technical Communication.

The goal of the initial survey was to "determine the frequency, types, and occasions of collaborative writing
among members of these associations" (8). Essentially this first stage of the research provided the "when" factor of collaborative writing. After analyzing the results of the initial survey, Ede and Lundsford developed a second questionnaire. This questionnaire provided the "what" and "how" factors of collaborative writing and dealt with issues such as the following:

The kinds of documents respondents most typically write as part of a group; the way in which respondents and fellow group members divide such writing activities as brainstorming, information gathering, and editing; their use of organizational patterns or set plans to assign duties for completing a project; the assignment of authorship or credit; and the advantages and disadvantages of collaborative writing. (8)

The third stage of their research provided Ede and Lundsford with the "who" aspect of collaborative writing. They conducted on-site interviews with at least one collaborative writer from each of the seven associations. These interviews allowed them to correlate the results of the first two surveys and discuss the problems and issues these surveys raised with those who actually participated in collaborative writing situations in the workplace.
The results of Ede and Lundsford’s research, although not conclusive, provide some interesting scenarios of when and how collaborative writing is accomplished in the workplace, what types of projects are written collaboratively and by whom they are written. Specific comments from several of the respondents show varied reactions to the advantages and disadvantages of working in collaborative writing situations. I found some of the comments from these interviews somewhat surprising because they reflected attitudes that might not necessarily be expected from those who write with others collaboratively.

One such instance involved Albert Bernstein, a clinical psychologist Ede and Lundsford interviewed, who was asked about "the pride of ownership he felt when writing alone versus writing together":

When I work with other people, one or two other people, I feel that I do a much better job than I would have done alone. I extend myself further and I think I have a clearer idea of what we are trying to do. It brings more out of me, so I think it is more mine. I don’t mind sharing the credit. (29)

Bernstein’s attitude toward “sharing the credit” is indicative of the kind of support most of the respondents gave to collaborative writing efforts.
There were of course difficulties associated with collaborative writing that were common to many of the respondents. One difficulty some respondents mentioned is the additional time many felt group writing requires. Ede and Lundsford noted, however, that "since time was also cited as an advantage by a number of respondents, who felt group writing helped them 'spread the workload,' and thus meet crucial deadlines, this emphasis on time as a disadvantage first seemed anomalous to us" (61). They offer possible reasons why so many believe collaborative writing takes longer: many group writing projects require a number of meetings to discuss the group's progress and exchange ideas, make decisions etc., and many of these projects are larger to begin with and are more time-consuming than projects on a smaller scale. The issue of time is one that Ede and Lundsford encountered during several interviews. Their interview with a chemist named George Irving provided them with a different outlook on how time affects collaborative writing efforts:

Collaborative writing he says, "is a slow way, a ponderous way," to get things done. In spite of this drawback, he says: "I don't know of a better way to tap the expertise in your organization. If you presume you know enough to answer all the questions, then you don't need an organization at
all. But if you have an organization you’d better use it, work through all the stages and all the people involved. I don’t know of any other way to tap all the information you have available in preparing a statement.” (33)

Irving’s understanding of why utilizing the help of others in the same organization is so important illustrates that despite the extra time often spent in collaborative situations, the benefits of being able to “tap” information from others can make the time well spent.

A technical writer from a construction equipment firm tells Ede and Lundsford that “any piece of technical discourse they produce results from a complex and highly collaborative process...” (31). This process he mentions involves first of all the decision of the company to produce a new product. Then research is done regarding what material must be created and what engineering has to be done. They use old drawings and look for similarities to other products they have produced and a new product advance information guide is written. The process of getting additional information begins with writing the draft of the manual for the product, rewriting, and verifying that the manual corresponds to the product’s use and maintenance. The manual is reviewed by engineering after the rewrite and verification,
and engineering's comments are incorporated. Throughout the cycling from one person or group to another, a text editor "monitors the language and syntax" of the manual. The writers also work with illustrators to create any graphics that are needed to illustrate the manual. After all the processes of writing and producing all the parts of the manual are accomplished, the manual is finalized for publication (32).

Eleanor Chiogioji, a senior research associate for the Office of Educational Research and Information discussed with Lundsford and Ede her role in coordinating a major research grants competition in reading and literacy. She began her discussion by noting "the important role that collaborative writing plays in all her division's activities: 'We could hardly get along here without any kind of collaborative writing. Everything we do here gets bounced back and forth—brainstorming, drafting, revisions. We're always working together'" (39). Like Albert Bernstein, Chiogioji also mentioned feeling "differently—[she] experience[d] less of a sense of ownership—about collaborative writing versus writing alone," This surprised Lundsford and Ede because originally she said she really hadn't thought about it: No, I can't honestly say that I do feel differently about work I write alone or with others. I'm just proud of what we produce together here. A lot of time that's a lot
richer because we have multiple perspectives” (40). This statement correlates with Chiogioji’s viewpoint on what makes an effective collaborative writer:

One of the challenges of collaborative writing is being able to listen so you can synthesize different viewpoints. You don’t always come to an agreement, but you have to be able to cooperate enough in that collaborative arrangement to be able to trust each other’s opinions and to be able to compromise. (41)

Chiogioji’s point seems to support what David L. Wallace, Mary Beth Debs, and Chuck Keller believe—that substantive conflict can be a useful and sometimes beneficial aspect of collaborative writing.

Despite having very positive responses to most of the collaborative writing situations she has dealt with, Chiogioji also pointed out a disadvantage that can occur in group writing—stylistic difficulties resulting when group members have varying styles and levels of writing ability. Lundsford and Ede found that Chiogioji’s situation was not an isolated one, because their research showed “disagreements about style occur frequently in collaborative writing projects” (60). This seems to be one of the most difficult obstacles to successful collaborative writing. The solution
to this problem, however, often lies in the way the group is organized and whether someone is given the responsibility to edit the work of the entire group, in order to create and maintain the "one voice" concept.

Ede and Lundsford found that the diversity as well as the similarities of many of the responses they received to their surveys and interviews suggested factors that "related to the degree of satisfaction experienced by those who typically write collaboratively" (63). These factors included:

The degree to which goals are clearly articulated and shared; the openness and mutual respect characteristics of group members; the degree of control the writers have over the text; the degree to which writers can respond to others who may modify the text; the way credit (either direct or indirect) is realized; an agreed upon procedure for resolving disputes among group members; the number and kind of bureaucratic constraints (deadlines, technical or legal requirements, etc.) imposed on the writers; and the status of the project within the organization. (65)

Of these factors, several deal specifically with the two distinct modes of collaboration Ede and Lundsford describe to classify the processes of collaborative writing. They use
the term "hierarchical mode of collaboration" to characterize the kind of collaboration that is "carefully, often rigidly, structured, driven by highly specific goals, and carried out by people playing clearly defined and delimited roles. These goals are often designated by someone outside of and hierarchically superior to the immediate collaborative group or by a senior member or leader of the group" (133). Mary Beth Debs, in "Recent Research on Collaborative Writing in Industry," points out that the hierarchical mode of collaborative writing is probably the one most often used in traditionally managed businesses and organizations which have a central department or unit that produces technical documentation. Many of the collaborative writing situations of the respondents in Ede and Lundsford’s research such as the construction equipment firm where development of new products prompted the writing of technical manuals, depict this hierarchical mode of collaboration. The collaboration, although cooperative and open, is structured and very goal-oriented.

Many of the respondents, however, came from organizations where a more loosely structured collaboration was used. Ede and Lundsford call this mode of collaboration, the dialogic mode. The dialogic mode is characterized by a more democratic group process where "one person may occupy
multiple or shifting roles as the project progresses" (133). Eleanor Chiogioji's role, as part of a collaborative effort, changed as the project progressed. She acted sometimes as a coordinator, sometimes as an administrator, and sometimes as a writer in the collaborative writing process. This collaboration relied upon shared ideas and group decision-making. Ede and Lundsford also characterize participants in dialogic collaboration as valuing the "creative tension inherent in multivoiced and multivalent ventures. What those involved in hierarchical collaboration see as a problem to be solved, these individuals view as a strength to capitalize on and to emphasize" (133). This statement correlates with words such as "cooperation," "trust," and "compromise" that Chiogioji mentions in relation to the challenge of writing collaboratively. (41)

The main difference between the two modes is often the matter of control both from within and from outside the group. In the hierarchical mode of collaboration, the control usually comes from outside the group or is maintained by a group leader whose function remains the same throughout the project. In the dialogic mode the control of the group is maintained by the members of the group themselves, who through group decisions and interaction with each other, achieve the goals of the group.
I have first-hand knowledge and experience with the hierarchical mode of collaboration. The technical publications department where I work at Lockheed Martin is a good example of this mode. We produce a portion of the published documentation for the company. There is a separate proposal writing group that is part of the marketing department, and engineering reports are written in the various engineering departments; however, manuals for customer use that accompany many of the aircraft we service and modify are produced in our technical publications department. Most of the manuals we write, as in many scientific or technologically based companies, involve providing knowledge that could affect the lives and safety of those who use them. Effective collaboration among writing group members, editors, and reviewers helps to ensure the accuracy and usefulness of the hundreds of manuals we produce every year.

The department is organized by project groups with each group headed by a lead writer. This structure establishes the hierarchical mode of collaboration and reflects the organizational structure of the company. This factor also illustrates the implications Meg Morgan makes in "Patterns of Composing: Connections Between Classroom and Workplace Collaborations," that often writers in the workplace do not have a choice in how they organize—"lines of authority are
clearly drawn": the organizational structure of the company or the department where they work, dictates the way writing groups organize and collaborate (542). Carol McGarry, in "An Overview of Collaborative Writing for the Publications Manager," mentions that "managerial style, projects and tasks, and resources available," also influence the approach writers take to collaborative writing. (29)

Despite being hierarchical in nature, how we divide the writing tasks and conduct research to produce manuals resembles, in part, the kind of group collaboration that James Reither and Douglas Vipond describe in "Writing as Collaboration," that their students do for their "collaborative investigations" assignment. Like the assignment given to Reither and Vipond’s students where the writing tasks are divided among members of a group, the writing tasks for the technical manuals we write, are also divided among group members. Members of the group must do the research and investigative work necessary to complete their individual parts of the writing project. By doing this research these writers, like Reither and Vipond’s students, "make knowledge" because they take knowledge that exists and apply it in new ways.

The similarities between how Reither and Vipond’s students write collaboratively in the classroom and how we
accomplish collaborative writing in my technical publications department illustrate how the need for effective collaboration in the workplace can be met with classroom collaborative activities that emulate collaborative writing in the workplace. For a more detailed look at my personal experience with collaborative writing in the workplace refer to Appendix B where I describe a typical collaborative writing project in the technical publications department at Lockheed Martin. In Appendix A, I describe classroom assignments and activities that correlate with how collaborative writing is accomplished in a workplace such as the one I describe in Appendix B.
CHAPTER FOUR

Transference Of Classroom Learning to the Workplace

Taking what is learned in the classroom and transferring that learning to some aspect of work done in the workplace is perhaps one of the ultimate goals most institutions of higher learning have for their students. This is not to say that colleges and universities must be places to train the country's future work force. What they must be, however, are partners with business and industry, striving to prepare students for the world of work, once they leave the security of academia to pursue careers.

When students bring to the workplace skills they have acquired in the classroom, they also bring to their work a sense of unity and cooperation with the academic institutions and their instructors, who helped prepare them to enter the workplace. This sense of unity and cooperation is not always easy to achieve and often difficult to maintain. This is why it is necessary to look for ways to keep what we teach relevant, useful, and transferable to the workplace. More must be done to help educators understand the needs of the workplace.

In *Rhetoric, Innovation, Technology, Case Studies of Technical Communication Technology Transfers*, Stephen Doheny-Farina points out that "most conclusions about the
disparities of the demands of the workplace and technical communication come from implicit comparisons of what we know about both environments. Very few have examined individuals crossing the boundaries from school to work in order to understand the demands of both” (223). Perhaps it is time such an examination be made to determine what is being done, or can be done, to make students more aware of what they can expect when they make the transition from the classroom to the workplace.

I believe one way to do this is to expand and support of the use of internships in professional settings to help bridge the gap between the classroom and the workplace. Many composition and technical communication departments have internship programs where students work with professional writers in business or industry to gain experience in doing the kind of work they plan to do, once they graduate. Internships programs in writing provide students with the opportunity to make what Doheny-Farina describes as “self-conscious analyses of writers’ roles in organizations, the ways the writers are socialized, the influences that sponsors and orientors have on writers, and the composing process of writers” (224). These are important aspects of the workplace that prospective employees must learn, so they can place themselves in a position of being able to gain the
best perspective on what the job they are going to be doing entails. They also need to know what additional skills they might need to learn in the classroom or on the job, to succeed in their chosen profession. Gaining this perspective is the first step in transferring what is learned in the classroom to the real-world of the workplace.

Doheny-Farina also provides his views on the education of technical writers for preparation to enter the workplace. Like Scanlon and Coon, he sees the role of the technical writer changing to the point where he believes technical communication departments must “develop a curriculum that prepares students for design and usability writers’ roles...” (215). He also feels that “future technical communicators must work with a variety of students in other major fields of study if they are to begin to learn how to collaborate effectively as they all practice to construct and reconstruct the technological worlds they will inherit” (215). What he alludes to in these statements is almost a writing across the curriculum approach to teaching those who might be involved in writing technical documentation whether they do it as technical writers, engineers, designers, or as others who work in fields other than technical writing. This idea takes the transference of knowledge from the classroom to the workplace one step further by having students learn
to collaborate with students from other disciplines. Through this collaboration they are preparing for collaboration with others, who represent disciplines other than technical writing in the workplace.

This aspect of interdisciplinary collaboration is very common in the workplace. Collaboration occurs not only within technical publications departments, but often involves other departments such as engineering, design, product assurance etc., who are brought together to produce documentation. It is this real-world application of collaboration that Doheny-Farina refers to when he proposes that students become involved in interdisciplinary collaboration.

Doheny-Farina also explores the aspect of viewing technical communication as praxis rather than seeing it as the execution of technical skills (techne) and information gathering. By "looking at technical communication as praxis," he states, "we can no longer view it as merely the skill or art of information transfer. We must view technical communication as epistemic, as creating knowledge, as action for the good or larger purpose..." (220). Like Reither and Vipond who encourage students in their composition classes to create knowledge, so must teachers of technical communication encourage their students to create knowledge within the classroom that relates to the world of work. Doheny-
Farina's contention is that if "students are to go on to play substantive roles in the creation of knowledge, then those who teach technical communication must understand praxis in business and industry" (220).

Doheny-Farina explains this techne versus praxis concept of creating knowledge by comparing these two concepts and illustrating how both can support transference of knowledge from the classroom into the community of the workplace:

Writing as techne is the production of texts; writing as praxis is the process of taking part in the discourse of the community. Courses on writing as techne teach how to write particular types of documents. Courses on writing as praxis try to socialize students to a community so that they may engage in the ongoing conversations of that community and eventually contribute to the evolution or change of a community. Learning to write as praxis means learning the boundaries, customs, and languages of a community, learning what counts as knowledge, learning what counts as appropriate forms, appropriate styles, and valid lines of reasoning, and deliberating on the means and goals of a community. Techne involves producing a clear document. Praxis involves living and contributing to an enterprise. (222)
Contributing to an enterprise and more specifically to the workplace as part of a larger community, underscores Doheny-Farina's concept of adapting knowledge learned in the classroom to the community of the workplace. This concept also includes developing the ability to differentiate what is important to classroom learning, versus what is important to the world of work. For instance, what may be an important skill to learn for success in school might be a skill that is not needed to succeed in the workplace and vice versa. Doheny-Farina sums up what he feels the university-industry relationship in terms of collaboration between them should be, by stating:

The potential for collaboration is large and should be approached with hope and caution. Universities are not merely training grounds for future employees. Yet at the same time universities must be places where students explore the inextricable relationships among rhetoric, innovation, and technology. (230)

Composition and technical communication programs in our universities have a unique opportunity to form coalitions with the world of work, by teaching and reinforcing the skills that are needed in the workplace and recognizing that classroom knowledge can be transferred to the workplace despite their differences in praxis.
Carolyn B. Matelene also expresses the need to form a coalition between the classroom and the workplace in the introduction to *Worlds of Writing: Teaching and Learning in Discourse Communities of Work*:

The connections writing teachers establish between English departments and the world of work are valuable to us as we teach our classes...they provide the bridge that enables the general public to understand and value the humanities through rhetoric. The rhetorical theories that writing teachers present to writers on the job---when they are relevant and effective---reveal to the educated public what the serious study of language involves and why it matters. (vii)

The serious study of language does matter because, as part of the information age, we cannot deny the power that language has and how it plays an important part in conducting business in this country. What we teach our students in their study of language may be an important factor in determining their success or failure when they enter the workplace. If we do not give them the necessary skills to succeed in the workplace because we are unaware of what is needed to succeed, we have indeed given them less than they deserve. Therefore, every effort we make to bridge
the gap between the classroom and the workplace is warranted and necessary.

I have illustrated in this paper through my discussion of teaching collaborative writing in the classroom and the methods for accomplishing collaborative writing in the workplace, how teaching students collaborative writing can prepare them to write collaboratively on the job. The field of technical writing in particular provides many job opportunities for those who can write (and work) in collaborative situations. Technical writing is a field where the test of applying classroom learning to the workplace is demonstrated every day in businesses and industries throughout the country. This demonstration also takes place in various other facets of business and industry where writing, both individually and collaboratively, is the basis for communicating information within the organization and to others outside the organization.

As we enter the next century the "information age" will continue to challenge the way we think and learn and apply what we learn to our everyday lives. Students leaving our universities and colleges will need to make real-world application of knowledge they have learned in the classroom to meet this challenge. Learning to write collaboratively will aid them in this effort and help them to make lasting connections between the classroom and the workplace.
Collaborative Writing Projects and Activities for Teachers of Composition and Technical Communication

To prepare college and university students for writing in the "real world" it is important that what they learn in either upper division composition or technical communication classes relates to how writing is accomplished in the workplace. To make this possible it is necessary to not only understand how writing is accomplished in the workplace, but if it can indeed be emulated in a classroom situation.

Andrea Lundsford and Lisa Ede in Singular Texts/Plural Authors: Perspectives on Collaborative Writing describe in some detail the characteristics they feel successful collaborative writing assignments share. The abridged summary of these characteristics listed in Chapter Two will be repeated here for reference. I will refer to these characteristics as I describe various projects and activities that have been developed to teach collaborative writing in the classroom (either composition or technical communication classes). These projects are just a few examples of activities designed to emulate workplace collaborative writing. Most seem to typify the characteristics Ede and Lundsford describe for good collaborative writing assignments and
build upon the goal of adding to students' knowledge of collaborative skills including group dynamics.

Summary of Shared Characteristics of Successful Collaborative Writing Assignments

- They allow time for group cohesion (but not necessarily consensus) to occur and for leadership to emerge.
- They call for or invite collaboration; students need to work together to complete the assignment together.
- They allow for the evolution of group norms and the negotiation of authority and responsibility.
- They allow for and encourage conflict and protect minority views.
- They allow for peer and self-evaluation during and after the assignment.
- They call on students to monitor and evaluate individual and group performance and reflect on the processes that made for effective or ineffective collaboration. (123)

I have chosen to describe the collaborative writing projects of Kyle Anne Gearhart, Tharon Howard, and Stephen Doheny-Farina. They represent the types of projects that
most instructors will find useful for adaptation to their own curriculums. These projects also provide opportunities for students to learn many of the skills necessary to write collaboratively in the workplace. I believe Gearhart, Howard, and Doheny-Farina share an ultimate goal in designing and using these collaborative writing projects---transference of classroom learning to the workplace. For other instructors of composition or technical communication classes, these projects may provide a means of sharing this goal.

Writing A Proposal: A Collaborative Writing Project Designed by Kyle Anne Gearhart

Kyle Ann Gearhart in "A Collaborative Writing Project in a Technical Communications Course," provides the basis for a learning experience that emulates the real-world experience as much as possible (refer to Chapter Two). What makes this experience of writing a proposal so useful is that Gearhart's students at the DeVry Institute of Technology are able to make a real-world application of their writing projects because they write proposals based on some need for change related to the school. After completing the assignment they submit their proposals to the Dean of Electronics Engineering Technology for consideration.
This assignment involves a collaborative writing project requiring audience analysis, oral communication, nonlibrary research, both long and short written papers, computer writing, and teamwork. A basic summary and outline of Gearhart’s proposal assignment is as follows:

1. Specific guidelines are given at the beginning of project which list specific due dates for the preproposal documents. Students also receive a “Request for Proposal” from the Dean of Electronics Engineering Technology.

2. Students form groups of four to six members (mock consulting firms) and choose a project manager.

3. Mock consulting firms decide on names and logos and begin steps toward writing the proposal.

4. Students are provided with information leading to discussion of audience analysis.

5. Students are required to complete interviews as a group to determine the needs and concerns of the possible audience(s) for their proposals. The groups then summarize this information on audience analysis.

6. Students evaluate their team members on the basis of written contribution, cooperation and work ethics, and technical expertise.
7. The groups conduct research by contacting professionals in the field and investigating physical resources for technical information they need to write the proposal.

8. Short reports are written throughout the project which include memos, letters, and progress reports. These are referred to as preproposal documents.

9. Students have the opportunity to compose directly on the computer since all assignments for the project must be done using word processing software which allows integration of various parts of the proposal as they are written.

10. Students are encouraged to learn how to construct graphs and spreadsheets using available software to enhance their proposals by adding tables and figures.

11. Team writing skills and practices are acquired by the students as they each contribute to the final document.

12. The group leader coordinates the integration of each individual’s writing into the final proposal document.

13. Evaluation and grading are based on the following grading structure:
   a) Preproposal documents (10%)
   b) Audience analysis information (10%)
Throughout this collaborative writing process Gearhart conducts lectures and encourages class and group discussions about the various aspects of proposal writing including audience analysis, document style and tone consistency, instructions, letters, memos, short reports, interpersonal communication skills, composing at the computer, and most important, collaborative writing.

She feels her success with this project is based on her students motivation to complete the project:

Students are motivated to do the project because they know that both the primary and secondary audiences are going to read and evaluate the proposal. The project is valuable because it is real to the students. They are investigating equipment upgrades, networking possibilities, and other projects that might be implemented during their stay at DeVry and, therefore have a direct impact on their education. (363)

The key element of her testimony to her success is the word "real." Making the experience in the classroom real helps to provide the students with a sense of what takes
place in workplace proposal writing projects. They organize and write their proposals in much the same way as proposal writers in business and industry do and therefore have "first-hand" knowledge of what proposal writing entails.

What makes this experience different, however, is the inclusion of instruction and class discussion. This is where the classroom experience is different from the workplace, but this difference provides the opportunity for students to learn from their mistakes and the mistakes of others without dire consequences. The students evaluate each other's work and learn ways to improve the process of collaborative writing. When they go into the workplace they will bring knowledge and understanding of the collaborative writing process that might otherwise take years to learn on the job.

In addition to providing a classroom experience that clearly relates to the workplace, Gearhart's collaborative writing project also correlates with Ede's and Lundsford's characteristics of successful collaborative writing assignments. The project is accomplished over a period of about ten weeks which allows for group cohesion and interaction. The writing task "invites" collaboration mainly because it is too large a task for one individual to handle. The groups have designated leadership but are encouraged to
challenge each others ideas. And finally, the groups evaluate their own work and the work of other groups as an ongoing activity of the collaborative writing process.

Gearhart warns that “what works well with one group doesn’t necessarily work well with another. Every term I have to make minor or major adjustments to the project itself” (365). She also admits that “it would be difficult to structure courses to meet the demands of all professional writing situations” (365). With writing assignments like Gearhart’s, however, we have a chance to emulate at least one kind of real-world writing.

Electronic Collaborative Writing Projects Designed by Tharon Howard

In “Four Designs for Electronic Writing Projects,” an article published “online,” Tharon Howard takes collaborative writing into the world of electronic publishing and the Internet. He describes and comments on four electronic writing projects he has been associated with and sets up scenarios for teaching collaborative writing that transcend normal classroom instruction. His reason for using collaborative writing projects in the classroom is based on his belief “that preparing students for writing in the workplace meant teaching collaborative writing skills” (Online, n. pag).
I have included a description of two of Howard’s projects and a brief summary of the other two. I believe the first two projects use methods of producing documents through electronic collaboration that can easily be adapted and used in the nonelectronic writing classroom as well.

It is of course becoming less of a novelty to use computers in the classroom. Gearhart uses computers with word processing programs in her collaboratively proposal writing project. Her students learn to compose on computers and to integrate the individual parts of a document to produce one final document. Howard and his colleagues, however, use computers not only for desktop publishing like Gearhart, but in more sophisticated ways that allow students in various locations or at the same location to collaborate on writing projects. These projects range from writing business plans, handbooks, and brochures, to setting up information sources designed primarily to be accessed and read electronically.

The first of Howard’s electronic writing projects, although designed for collaboration using computers, could easily be adapted for the noncomputer classroom environment. Howard, along with a colleague from another university, Bill Karis, developed a project they call “Electronic Pen-Pals.” The use of computer technology to
send e-mail messages between the two classes participating in the project is the primary basis for the collaboration. In addition, groups of students (at least two to a group) in each of the two classes work together in smaller collaborating groups.

One group of students from one of the two universities imagined they worked in a technical consulting firm which helped small entrepreneurial businesses to develop. The other group of students played the role of the entrepreneurs, who needed to get a loan from the Small Business Administration (SBA). They hired the consulting firm to assist them in writing a business plan and proposal to achieve this goal. Both groups of students had to conduct research: the "consulting firm" had to research how to write business proposals based on documentation from the SBA; and the "entrepreneurs" had to research businesses in their local area to find a type of small business that would fill a need not already satisfied by other area small businesses and write a proposal for the new business.

The groups used e-mail to send the proposal drafts and revisions back and forth to each other as part of the collaborative process. The use of e-mail, however, presented some logistical problems because of differences in schedules and lengths of school terms. In a noncomputer
classroom these problems would be less of a problem as long as the two collaborating groups were in the same school. It would be almost a nonexistent problem if the groups were in the same class.

One important concept Howard and Karis and their students learned from this project was "in order for students to successfully complete a collaborative writing project, each member of the project team needs to share an understanding of where the group is in the process, what tasks remain to be done, and who is responsible for completing the tasks by specific dates" (online, n.pag.). This would seem to be an important concept for all collaborative writing groups whether they collaborate electronically or face-to-face.

Although Howard concluded that the success of this project was less than he had expected, he made some interesting discoveries about the collaborative writing process. One discovery involved the sharing of information. When the students from the consulting firm group did not provide the entrepreneurs with adequate information to write their proposal and the results were less than satisfying, the entrepreneurs held the consulting firm accountable for not providing clear information and not responding to their needs. This eventually made the
consulting firm group realize the importance of audience in the collaboration process. They did not anticipate the needs of their “client” which included providing appropriate information for the intended audience, the SBA.

The interaction between the students although primarily triggered by the opinion of one group that the other group was not doing its job, promoted a learning situation that the instructors themselves could not have anticipated. Resolution to the problem resulted in better communication and more effective collaboration to produce the final document. This same type of interaction occurs in the real-world of collaborative writing. Groups from two (or more) companies are often asked to collaborate to write a proposal for a joint project. Differences in perceptions of how the collaboration should occur as well as differences in approaches to collaborative writing often spark disagreements among members of collaborating groups. What the students in Howard’s and Karin’s writing collaboration experienced is indicative of the type of conflict that can occur in collaborative writing situations in the workplace. Their participation in a collaborative writing project such as the “Electronic Pen-Pals” provided these students with an experience similar to what they might someday experience in real-world writing situations.
When compared with some of the shared characteristics of successful collaborative writing assignments as described by Ede and Lundsford, this first project fared well. It provided a need for the students to work together since the two groups depended upon each other to produce the final document. It allowed for conflict and conflict did arise out of both peer evaluations and evaluation of the end-product. And it also provided an opportunity for the students to become aware of the processes that made for effective, or in this case, ineffective collaboration. In addition, this project also allowed the students to understand the need to evaluate and respond to the intended audience for their writing, a factor that goes beyond the Ede and Lundsford criteria.

The second of the four projects involved e-mail transmissions as well, but with a different purpose for writing collaboratively. The two groups of students were on opposite sides of the ocean and were to collaborate on a manual written for American transfer students who would be living and studying in France. Although this project had the potential for an informative exchange of information and ideas it was not as successful as it could have been because the purpose for writing was not clearly defined for both groups. The French students were to write the
The problem arose when it was discovered the American group thought the manual would consist of a step-by-step set of procedures on how to find housing, how to exchange money, where to find good restaurants and so forth. What the French students actually wrote was a fictional narrative about a typical day in the life of a French student. This lack of knowing the exact nature and purpose for the "manual" made the collaborative writing experience lacking in its ability to unite two different cultures and be truly successful. This second project, like the first one, had similar potential for group interaction and cohesion but was flawed by a misunderstanding of the purpose for writing.

Rhetorical concerns such as audience in the case of the first project, and purpose for writing in the case of the second project, played a significant role in the success or failure of these collaborative writing projects. However, when these factors as well as those Ede and Lunsford describe are taken into consideration, both projects seem to have the potential to provide students with collaborative writing experiences similar to those found in the workplace.
The two other electronic collaborative writing projects involved computer technology to a greater extent and for the most part would not be as easily adapted to the noncomputer classroom. Both involved setting up an information "pool" online, one known as a "gopher-server," the other by the more common term "website." These kinds of collaborative writing projects require not only the knowledge of collaborative writing strategies and techniques, but extensive knowledge of computer technology. Since this appendix is intended to describe collaborative writing activities not specifically dependent on computer technology, I will not elaborate on these two writing projects but suggest that those who are interested in more sophisticated online collaborative writing projects should download Howard's article for future reference (refer to Works Cited).

Development of a New Product: A Collaborative Writing Project Designed by Stephen Doheny-Farina

Like Howard and Gearhart, Stephen Doheny-Farina has constructed a collaborative writing project that seeks to emulate how collaborative writing occurs in the workplace. In Rhetoric, Innovation, Technology, Case Studies of Technical Communication Technology Transfers Doheny-Farina
states that one way to "help technical communication students learn more about the relationship of rhetoric to technology is providing them with what will seem to some to be a very industry-specific task: participating in projects that simulate the development of new products" (231). This classroom simulation of workplace collaboration forms the basis for Doheny-Farina’s collaborative writing project and supports two assumptions he has about workplace collaborations: "(1) within organizations, there are many points of view that are competing to be heard and followed; (2) collaboration among representatives from differing divisions within a corporation is necessary to design new products" (232).

The project itself sets up a situation where the students assume the roles and points of view of representatives from different divisions within a corporation and must write a preliminary design document for a new product despite their differences in approach, expertise, and agendas regarding the new product development. Doheny-Farina believes this type of collaborative writing project depicts "the kinds of issues and obstacles that collaborative writers in industry must face and overcome in order to succeed" (234).
The students are put into groups of three and are each given a booklet that describes in detail the role each will play in the collaboration. One student represents finance, one represents production, and one represents marketing. The primary writing assignment for each group is to write a preliminary design document describing a new product or service. The booklets Doheny-Farina has designed for this project provide the students with the necessary information to collaboratively write this design document. The key to the success of this venture, however, is the ability of each of the group’s members to communicate the ideas of the person whose role they are playing in this collaboration. The students do not have access to each others booklets so they must use effective oral and written communication skills in order to make the collaboration successful.

In addition to the main group-written document, memos are also written to “management” where each student reports on progress made individually as well as collaboratively. This project is usually accomplished over a two-week time period to allow enough time for students to have group discussions that lead to writing the design document.

The overall impetus of the project is to set up a situation where students will challenge each other’s ideas and work to resolve issues that might impede the progress.
of the group. According to Doheny-Farina, the project "attempts to foster differing points of view among each member of a three-person documentation team. [It] attempts to stimulate substantial conflict among team members—conflict over goals, facts, and methods" (233).

Doheny-Farina also believes the project is designed to achieve the goals of good collaboration described by Ede and Lunsford. Comparing these goals with his collaborative writing project reveals that the project allows time for group cohesion since the time-span for completion is at least two weeks. It also invites collaboration since the three-person groups rely on information each of them brings to the discussion in order to complete the design document. It also allows for and encourages creative conflict since the project is built around the premise of conflict as the basis for resolution and agreement. As far as peer evaluation or self-evaluation is concerned, however, Doheny-Farina leaves the method of evaluating and grading the students and their documents to the individual instructor.

All three of the instructors whose collaborative writing projects I have described here have one important characteristic in common: they see the need to teach what is relevant to the workplace and provide students with the opportunity to participate in collaborative writing
projects that emulate workplace collaborations. These kinds of projects can lead to success in establishing and strengthening skills needed in collaborative writing situations outside the classroom. They also lead to a better understanding of what is involved in the writing processes that are used to effectively conduct business and produce products and services in businesses and industries throughout the country.
APPENDIX B

Description of a Typical Collaborative Writing Project in the Technical Publications Department at Lockheed Martin

Collaboration in the technical publications department where I work at Lockheed Martin depicts the hierarchical mode of collaboration as described by Lundsford and Ede in *Singular Texts/Plural Authors: Perspectives on Collaborative Writing* (refer to Chapter Two). This is primarily due to the top-down managerial structure of the company which is reflected in the organization structure of individual departments such as this one.

A department manager serves as the leader of the group and as the leader he divides the work among the members of the department by assigning specific projects to group leaders. These group leaders, in turn, divide the work among members of the group and supervise the project by coordinating the work done by individuals to achieve the overall goal of the writing project.

Despite the hierarchical structure that is in place, there are occasions when a more dialogic approach is taken. Members of collaborative writing groups are given the opportunity to interact with each other more freely and contribute to the decision-making process of the group. When this occurs the group transitions from the confines of the
hierarchical mode of collaboration to the more openness of the dialogic mode of collaboration. The results of the writing project can be greatly influenced by this transition because of the increase in interaction among the members of the collaborative writing groups.

To illustrate this transition and to better understand what goes on in real-world writing collaborations, I will describe a typical collaborative writing project from its inception to its completion. This description will provide the basis for comparing collaborative writing assignments and projects used in the classroom with how work is actually accomplished in the workplace. (Refer to Appendix A for descriptions of writing projects and activities that are being used in composition and technical communications classes to teach collaborative writing skills.)

A typical collaborative writing project in our technical publication department usually involves one of the following purposes for writing: (1) to write a new manual for a new system or piece of equipment; (2) to revise an existing manual to include new or changed information not included in the previous version of the manual; or, (3) to write changes to a manual in the form of change pages or a supplement to the manual. The project I will be describing is a revision to an aircraft maintenance manual that
involves changing, adding and/or deleting a large amount of material due to a major modification to the airplane.

The purpose for writing and the amount of material to be included in the writing effort determine how many people are needed to complete the project. In this case two writers, who will work with a lead writer, have been assigned to this project. The writing process begins when the lead writer divides some of the work between the two writers by assigning them specific sections of the manual, but reserves several sections, he himself will complete. After receiving their assignments the writers begin the needed research to determine what material is to be added, changed, or deleted from the sections each is working on. They do this by ordering copies of the new or revised blueprints that show what has changed as a result of the modification. Along with these blueprints they examine other technical manuals that deal with similar material. They also obtain information from various design, testing, and software engineers, and sometimes from users in the field who will eventually use the manuals or are already using similar ones.

The writers incorporate the information they obtain into the existing manual and add new material or delete unnecessary material by either marking up changes to a hard copy of the manual, or typing and inserting the changes into
an electronic file of the manual. The process of writing thus far, for the most part, involves each writer working on an individual basis.

Included in the research and development of each section of a manual is the procurement of illustrations that support the written material. Each writer is responsible for submitting requests for illustrations to the illustrators so the necessary diagrams, figures, and illustrations can be drawn manually or electronically and added to the text as part of each section.

The writers interact with the lead writer as their research progresses, and as they begin to write their sections. Lead writers are considered expert writers and are used as resources by the less experienced writers when questions arise about how something should be written, or where missing information can be obtained.

The lead writer also checks with the writers from time to time to see how they are progressing and whether they are meeting the schedule. Meeting scheduled due dates for review or publication is extremely important since adhering to the schedule is part of the contractual agreement with the customer. The lead writer also monitors the number of hours used to complete the project since hours are budgeted, and making profit depends on being under budget. In essence,
the writing effort is most often driven by two factors: making schedule, and being under budget. Both of these factors affect how collaborative writing is accomplished since the emphasis is on the most amount of work in the least amount of time. This emphasis often determines how and if, writers work collaboratively. Sometimes adding additional writers to a project as a means of getting the job done faster, also adds to the time it takes to complete the project. In this case, dividing the task among three people ---two writers and a lead writer---seems to be adequate to complete the manual in the allotted time.

Most manuals the size of this maintenance manual go through at least three cycles and possibly more if the contract calls for more. This one will go through the normal three cycles: draft, preliminary and final. Each cycle involves writing and rewriting as well as editing, proofreading, revising, and reviewing.

As the writers finish sections of the book for the draft cycle, they submit them for editing. The editor reads and edits each section of the manual and based on specific military specifications, format guidelines, style guidelines, and correct grammar, punctuation, and spelling, marks up the hard copy using standard editing and proofreading symbols. After completion of the edit the hard copy is
returned to the writer, who then incorporates the editor's "comments." After incorporation of the editing comments the document is proofread. If anything is missed, corrections are made by the writer and the corrections are again checked. Each section of the manual goes through the same process until each one is completed.

When all sections of the manual are complete, the editor performs an overall quality check of the document for correctness of format and inclusion of the appropriate front matter. Copies are then made, which are sent to engineering for review. Various engineers check the manual for its technical accuracy, and mark errors or add additional changes that may have been left out by the writers, since the writers do not always have access to the latest engineering prior to writing their drafts. The engineers also make comments on a review sheet which along with the marked up copy is returned to the writers.

The engineering changes are incorporated into the electronic files of the manual, and discrepancies found by engineering are discussed and resolved by the writer along with the lead writer when necessary.

Each section of the manual again goes through editing after incorporation of engineering comments, where the editor looks for inconsistencies in the new or changed material.
as preparation for the preliminary cycle where the manual is presented to the customer for review.

The editor marks any necessary changes and the writers again incorporate the editor’s comments. Occasionally a writer may challenge or question the editing comments. Conferences with the writer and the lead writer are used to resolve any differences of opinions. On other occasions when the editor has questions about the material, a meeting is set up with the individual writer to discuss these questions, so it can be ascertained that the editing comments do not alter the technical content of the material.

After all sections are revised and corrected by the writers, the editor conducts another general quality check as preparation for submitting the manual to a quality assurance person, who reviews the manual and writes up a report listing any errors or discrepancies found. These errors or discrepancies are reviewed by the writer, the editor, and the lead writer, and changes to the manual are made if necessary. Copies of the manual are then sent to the customer for review.

The customer, who includes various military personnel, reviews the manual and marks and/or writes comments on a review sheet, which along with the marked up copy is returned to technical publications. These comments are incorporated
in the same manner as the two previous cycles, and the manual is given a final quality check using a checklist as a guide (see figure 1). The manual is again presented to quality assurance for review and signoff.

Throughout the process of producing a manual for publication, each person does his or her work for the most part, as an individual; however they work in collaboration with others involved in the project through interaction in the form of discussions, conferences, or reviews. The lead writer guides the writers in the group through this collaborative process by overseeing and coordinating all aspects of a project from the beginning of the writing effort to publication of the finished manual.

Although those involved in this collaboration do not write "together" as such, the use of editing, peer reviews, and engineering and customer reviews, forms part of the collaborative process of writing the manual. Without any one of the people or groups mentioned, the manual might fall short of expectations, or not be completed on time. Working in collaboration with each other, everyone involved contributes to the overall effort to ensure the deliver quality manuals, and therefore they share in a job well done.

In some cases when large manuals such as the one described are written, the manual also goes through a peer
review before being sent to engineering, or to the customer. Peer review groups, who review the manual as a group, are made up of the following people: the writer who wrote the section of the manual being reviewed, the editor, an illustrator who has worked on the manual, the lead writer, a member of supervision, and the quality assurance person is also included.

During peer reviews, each page in every section of the manual is checked for format, technical accuracy, and consistency in presentation. A list of criteria to be reviewed is used to guide the reviewers (see figure 2), and discrepancies or errors are listed on a review sheet (see figure 3). The errors or discrepancies found during a peer review must be corrected and signed off before the manual is sent out for review or publication. These peer reviews often take many hours or even days to complete, but often the problems revealed by them might otherwise go unnoticed.

The inclusion of a peer review in the writing process depicts a shift or transition from the normal hierarchical mode of collaboration used in the department to a more dialogic approach, since the members of the peer review group share equal membership in the group, and no one member of the group controls the final outcome of the group's evaluation.
The collaboration process I have described here is only one of many methods used to accomplish writing in the workplace. This method is successful not only because of its systematic approach to a writing task, but also because it allows for individual work to contribute to a collaborative task as well as group collaboration to occur through writer-lead writer interaction, peer reviews, and reviews by engineering groups and the customer. It is this blending of individual and group effort that provides opportunities for writers to experience collaboration in more than one way.

Providing opportunities to experience collaborative writing in the classroom can introduce and later reinforce collaborative writing skills that can be used in a workplace setting such as the one I have described; however to provide these opportunities takes an approach to teaching writing that is not always conventional and uses assignments that are not necessarily what most students expect from a composition or technical communications course.

In Appendix A I describe a number of writing assignments and activities used by teachers in the field of composition and technical communication to teach collaborative writing in ways that imitate, and often emulate how collaborative writing is accomplished in a real-world workplace such as the one I have just described.
**PUBLICATION QUALITY CONTROL CHECKLIST**

<table>
<thead>
<tr>
<th>GENERAL ITEMS:</th>
<th>INITIAL or NA</th>
<th>DETAIL ITEMS:</th>
<th>INITIAL or NA</th>
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<td>Latest Engineering Incorporated</td>
<td>___________</td>
<td>TITLE PAGE:</td>
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<td>Meets requirements of:</td>
<td>___________</td>
<td>Publication No. and Title</td>
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<td>General Spec (__________)</td>
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<td>Contract Number</td>
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<td>Relaxed Format</td>
<td>___________</td>
<td>Distribution Statement (with Date of Determination)</td>
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<td>Format of Basic Publication</td>
<td>___________</td>
<td>Warning Notice</td>
<td>___________</td>
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<tr>
<td>Incorporates all customer comments and requests</td>
<td>___________</td>
<td>Handling and Destruction Notice</td>
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<tr>
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<td>___________</td>
<td>Supplemental Notice</td>
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<td>Replacement Notice</td>
<td>___________</td>
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<td>___________</td>
<td>Change Notice</td>
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</tr>
<tr>
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<td>___________</td>
<td>Classification:</td>
<td>___________</td>
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<tr>
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<td>___________</td>
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<td>LIST OF EFFECTIVE PAGES:</td>
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<td>___________</td>
<td>Page listings correct</td>
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<td>___________</td>
<td>Total page count correct (______)</td>
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<tr>
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<td>___________</td>
<td>Blank pages correctly noted</td>
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<td>___________</td>
<td>Only current change pages have asterisks</td>
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<tr>
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<td>___________</td>
<td>Change dates/numbers correct</td>
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<td>Flight Manuals: Abbreviated Checklist-affected/changed</td>
<td>___________</td>
<td>Applicable checklists noted (Flight Manuals only)</td>
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</table>

All items must be initialed (or marked NA) before package may be released for printing.

**QUALITY REVIEW COMPLETED BY** ___________________________ Date ___________

**LEAD WRITER APPROVAL** ___________________________ Date ___________

**QUALITY ASSURANCE APPROVAL** ___________________________ Date ___________

NOTE: Original to be retained in master project task file.

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**Figure 1. Publication Quality Control Checklist**

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Figure 2. Peer Review Criteria
Figure 3. Discrepancies and Errors Review Sheet


