



**STRATEGIES
FOR
TECHNICAL
COMMUNICATION**

NANCY ROUNDY
with DAVID MAIR

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Preface: To the Teacher

We have designed this text to assist students with the process of composing various technical documents. Although we also present finished products, our emphasis is on the process by which those products are written rather than simply on the completed documents.

The content and organization of our text reflects this process orientation. Our overview chapter illustrates the composing process with a case study of an experienced writer at work. In Chapters 1 through 6 we then present five strategies necessary for successful writing: analyzing the communication context, gathering information, selecting and arranging content, planning style, and revising the draft. Although the first four strategies are traditionally prewriting tasks and the fifth is traditionally a rewriting task, we suggest introducing students to all five strategies *before* they compose entire documents, because the composing process is not linear: Students may begin to revise before finishing a first draft or may gather additional information and arrange it after completing that draft.

Despite the nonlinearity of the composing process, we also stress the fact that some use of the first four strategies should precede successful composing: Students should analyze the communication context of their documents, gather information, select and arrange that information, and make stylistic plans *before* writing to ensure a well-directed and efficient writing stage.

In Chapters 7 through 14, we apply these five strategies to composing various technical documents. We illustrate the process of composing with case studies: extended examples where we follow writers step-by-step through the operations they perform when producing the documents being discussed. These case studies introduce students to realistic situations when the documents might be written. The case

studies also show the dependence of particular writing decisions on context: audience, purpose, and situation. However, the studies do not limit the document being discussed to the particular example or discipline involved: The *process* of composing the document is the same, regardless of situation or discipline. We suggest this fact by using a variety of disciplines in our studies and by including additional samples of documents at the end of each chapter.

In general, the chapters proceed from easier documents to those that are more difficult to write because they are longer and involve more decisions. The chapters also proceed from types of writing that may form parts of documents (e.g., definitions) to those that are whole documents in themselves (e.g., proposals). In each case, however, the emphasis is on the steps by which the document is written rather than simply on the resulting product.

The samples at the end of each chapter continue our process orientation. A brief context analysis precedes each sample, giving the circumstances under which it was composed. In general, one sample is annotated to point out important writing decisions, while another is unannotated. The first sample may be used to extend the material in each chapter, while the second sample provides material for class discussion. Some exercises at the end of chapters, "Topics for Discussion," then encourage class participation and give practice in the individual steps necessary for composing the particular document. Other exercises, "Topics for Further Practice," ask students to produce a finished product.

In Chapters 15 through 17, we discuss three aspects of preparing a document for readers: visual aids, format, and report supplements. Here we indicate the conventions governing document preparation as well as ways to achieve effective visual aids, format, and supplements. We end the text with a Handbook of Style containing the rules of standard written English, for the students' use as a reference.

We hope this text will introduce your students to the complexities of composing. We also hope that our process approach will demystify these complexities and make the difficult act of writing a little easier.

The samples in this text are intended to illustrate various forms of writing rather than to convey information on technical subjects. We have attempted to ensure the accuracy of the source material: However, any inaccuracy would not reflect on the validity of the samples as forms of technical writing. In addition, the names of persons and firms in some of the samples have been changed to protect privacy. In these samples, no resemblance to existing persons or firms is intended.

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Preface:

To the Student

We have designed this text to assist you with writing the kinds of documents you will compose on the job. In our overview chapter, we introduce you to the process of writing by means of a case study picturing an experienced writer at work. These case studies continue throughout the text, as illustrations of the ways different documents are composed and as real-life examples of the types of writing you will encounter.

In Chapters 1 through 6, we discuss the steps you must perform in order to write effectively: analyzing the communication context, gathering information, selecting and arranging content, planning style, and revising the draft. In these chapters, we do not show you finished documents. Instead, we illustrate the particular step being discussed and give methods for carrying it out. The exercises in these chapters are also designed to give you practice in these steps.

In Chapters 7 through 15, we lead you through the process of writing various technical documents. The case studies in these chapters show writers composing these documents; the finished products are also presented. Our samples at the end of each chapter then illustrate the range of possibilities for a given technical form. Some exercises following the samples, “Topics for Discussion,” encourage class participation or give practice in specific techniques useful for writing the particular document. Other exercises, “Topics for Further Practice,” place you in situations where you would compose such a document and provide practice in the steps to follow.

In Chapters 15 through 17, we then discuss preparing documents for readers. Chapter 15 concerns visual aids, Chapter 16 format, and Chapter 17 report supplements. The exercises in these chapters focus on the skills necessary for effective document preparation.

We end the text with a Handbook of Style for your use as a reference tool. This handbook will assist you with the rules governing standard written English: capitalization, grammar, punctuation, spelling, and usage.

In conclusion, we hope you will find our text useful to you now, as a student involved in writing technical documents, and later, as a person who must write on the job. If the book makes the difficult task of composing a little easier, the text will have served its purpose.

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PART I

AN OVERVIEW

As a student in a technical discipline, you are familiar with processes — operations that take place, or are carried out, step by step over a period of time. Photosynthesis is one example of a process; distillation is another. However, you may not have thought of writing as a similar procedure, in which you perform a series of activities to arrive at an end.

These activities may be grouped into three divisions: prewriting, writing, and rewriting. Prewriting starts the moment you know you will be writing about a certain subject and involves planning your document. Writing involves composing your drafts. Rewriting includes all the changes you make when composing your drafts and turning the last draft into a finished document.

This idea of writing as process has two important implications. First, if you skip or do not complete an activity in the writing process, you may end up with an inferior product. If, as a biologist, you did not sterilize your equipment before trying to grow a culture of a single organism, you would probably obtain many organisms besides the one you wished to isolate. You would not obtain the desired results. The results of taking shortcuts in the composing process may not be so immediately apparent, but they will be just as damaging. Unless you are lucky, you will produce inadequate and poorly written reports.

Second, strategies or plans for action can assist with the process of composing. For instance, as a biologist, you would follow the scientific method when isolating your organism. This method is a strategy because it directs your experimental procedures. Five strategies direct the writing process: analyzing the communication context (audience, purpose, use), gathering information, selecting and arranging content, planning style, and revising the draft. These strategies help ensure successful reports.

Although composing is a process, it does differ in one important way from other processes with which you may be familiar. In most of these, you do not redo a step once you have completed it unless you have made a mistake or have decided to perform the process again. In writing, however, activities do not usually proceed in a straight line from prewriting through writing to rewriting. Instead, you may find yourself discovering and incorporating new ideas (a prewriting act) or changing sentences or words (a rewriting act) while composing your first draft (a writing act). This alternation between writing, prewriting, and rewriting is very common; the activities in the composing process overlap and blend.

In the next section, we illustrate this discussion of the composing process with a case study of Lee Blyler, a chemical engineer with Bell Laboratories in Murray Hill, New Jersey. Five years after joining Bell Labs, Lee was named supervisor of the applied research, properties, and processing group of the Plastics Research and Development Department, not only because he is a skilled researcher but also because he communicates well. In fact, he writes a great deal, anything from extensive technical papers and journal articles about his experimental work to letters and interoffice memos about his supervisory duties. All this writing, including his current project, is an integral part of his job.

THE COMPOSING PROCESS

Prewriting

Lee's writing project involves his research, a study of the deformation and flow of polymer melts and solids and the processing behavior of molten polymers.¹ Specifically, he is examining organic polymer coatings for fibers used in light-wave systems. These glass fibers carry signals in the form of light pulses. If the fibers are damaged in any way, their transmitting ability is reduced, so Lee has been investigating ways to coat the glass in order to protect it from abrasion and corrosion. He and his research team have developed a uniform coating and devised an application technique using a flexible die or feeding apparatus. Lee has been asked to write a brief report on this research for the *Bell Laboratories Record*, a journal produced and distributed internally.

Lee knows he must approach his communication task systematically, just as he did his technical work. He begins by analyzing the communication context of his report — his audience, and the purpose and use of his document — because he has found he writes documents differently, depending on who will read them and how readers will use them. He then uses this information about audience to select the content for his document, structure that content, and plan his style.

Lee often spends a great deal of time on these prewriting activities, because he has found that thorough planning is efficient. It aids him in the writing stage and reduces the time he must spend composing his first draft. Although he spends more time planning complex documents than brief letters or informal memorandums, he always reflects on audience, purpose and use, content, structure, and style before he writes.

Writing

Lee finds the transition from prewriting to writing the hardest step he takes. At this point, he relies on techniques that help him make this step and that continue to assist him as he writes. Although some of these may not work for you, we do stress one important point: Experienced writers *consciously* use a variety of techniques to help them compose.

First, Lee tries to find circumstances which will help him write. He sits down at his desk as soon as he arrives at work, because he has discovered that composing is easiest when he is fresh. Instead of beginning with the opening of a document, he frequently begins with the easier sections, because he finds that getting some words down helps him start the writing process. Second, Lee tries to write his first draft without extensive rereading or revising. He feels that, at this stage, simply getting his information on paper is the most important consideration. As he goes along, he may cross out words or phrases and substitute better ones that occur to him, for fear

¹Polymers are large molecules made up of long chains of simple chemical units repeated over and over.