SUMMARY

- **Presents an annotated list of 115 essential works on technical communication compiled from a list of over 600 titles from a wide variety of print, Internet, and professional sources**
- **Constitutes what might be called "essential literacy" in technical communication**

Essential Works on Technical Communication

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INTRODUCTION

When I began the task of developing a bibliography of "essential works on technical communication" for this special issue of *Technical communication*, I soon realized that no list of works or definition of *essential* could adequately represent the wide range of activities of those in technical communication. I concluded that what is essential could only be defined by practitioners, educators, researchers, and consultants who depend on such works.

Methodology

Fortunately, I could start with my research from *The St. Martin's bibliography of business and technical communication*, which included 376 works gathered from a wide variety of over 50 sources (Alred 1997). To those works, I added over 500 titles from 40 additional, more recent sources that included the following:

- Bibliographies and lists of selected works published after 1997 in *Technical communication* and elsewhere
- Recommended works published by professional organizations or posted on the Web, for example, at STC Web sites
- Lists of recent award-winning books and articles on technical communication
- Works selected for new and forthcoming collections of important articles on technical communication
- Multiple separate postings and collected lists of recommended works posted in the last seven years on two discussion groups: TECHWR-L (http://www.raycomm.com/techwhirl/) and ATTW-L (http://www.attw.org/ATTWEmailList.asp)
- Personal lists of recommended "essential works" from both new and experienced practitioners, educators, researchers, and consultants in the U.S. and abroad

As titles of works were gathered from various sources, each title was coded for every source in which it was listed. With this coding, then, I would know which and how many sources listed any particular title.

Next, I organized the titles into categories. In addition to their usefulness to readers in the final version, categories would help me sift and narrow the roughly 600 titles into the final list of 115 items. My primary goal as I created categories was to allow them to grow out of subject areas suggested by the works themselves, as opposed to creating categories according to any prior assumptions. The final result of categorizing produced the sections that follow:

- Landmark anthologies
- Philosophy, history, and ethics
- Research studies and methodology
- Education and professional development
- Writing and editing
- Documentation and usability
- Visual and graphic design
- Publication and information management

Although I hoped that the final categories would be reasonably balanced and clear cut, many works overlap several categories. For example, a number of works in "Documentation and usability" might arguably fit in the category "Writing and editing." For such a work, I considered its major emphasis or how readers might view that work.

My primary consideration for including a title was the number and diversity of sources listing that particular title. For example, when a title appeared in many diverse sources, I could be fairly certain that it could be considered "essential." To my pleasant surprise, a very large percentage of the decisions were obvious and relatively easy. But

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for works that seemed borderline, I considered the following additional criteria:

- Whether the work was a watershed or essential to the development of a subject area
- Whether a work provided leads for further information or other important works essential to subspecialties or newly developing areas
- Whether a work originated from highly selective listings, such as those from specialists particularly qualified to judge the work's importance
- Whether a work was so product specific (for example, software guides) or dated that it would be of marginal value to a significant portion of the broad readership of *Technical communication.*

Although I used all these strategies and appealed to colleagues for help in areas less familiar to me, ultimately, I remained the final arbiter.

General observations about this list

While all the works on this list are essential, not every work that is essential to specific practitioners, educators, and consultants appears on the list. Based on my review of many sources and the opinions of a wide variety of specialists, however, I believe this list does constitute essential literacy in contemporary technical communication.

Perspective on "essential works" In the process of developing this list, I concluded that the works included here are essential because they enable those who value them to do their work—but often for very different reasons. Some works, for example, are essential to the immediate needs of professional technical communicators who face specific and demanding workplace tasks under tight deadlines. Other works are crucial to educators who must be concerned with the long-range implications of research or theoretical insights as they prepare students for professional careers in technical communication.

As these examples and my own observations in the process of gathering these titles suggest, practitioners and educators often have very different perspectives about the works that are "essential." R. Stanley Dicks (2002) describes some of the reasons for these differing perspectives in an article titled "Cultural impediments to understanding: Are they surmountable?" Dicks, who has spent over 13 years in academia and 16 years as a practicing technical communicator in industry, concludes that the "cultural differences" between academic and workplace professionals are so pronounced that "operating in these two worlds can be like traveling between countries" (p. 23).

If Dicks is correct, some practicing technical communicators and academics may have difficulty understanding why specific works are listed here or why some works are not listed or why the question even matters. But the question does matter, as Dicks observes, "because academic programs and the practice of technical communication are mutually dependent [and] for both groups to succeed, they must communicate and collaborate effectively" (p. 23). Certainly, most academic programs depend on mutually beneficial relationships with technical communication professionals through such activities as internships, alumni programs, advisory boards, and workplace research projects. Further, as this bibliography also reflects, professionals in industry increasingly come from academic programs in technical communication.

The split that Dicks describes is evident in the composition of this list. For example, the first four categories contain works primarily aimed at academic audiences, and the final four categories include works generally addressed to practitioners. This division, as well as the selections themselves, grew out of the process described under "Methodology."

Appreciation of cultural differences As someone who has participated in academic-practitioner partnerships, I would suggest that the tensions embedded in the different perspectives of the professional and academic communities, while they create problems in understanding, also generate ideas and work toward the advancement of the field. As an educator, I would argue that in technical communication, theory, practice, research, and pedagogy are inevitably and vitally connected and interrelated. For example, many of the projects that academic researchers pursue have been stimulated by the needs and questions raised by workplace professionals. Likewise, many of the publications that professionals depend on for their daily work have been created by academic authors based on research, theory, and pedagogy. One of my students admitted recently that, as a workplace professional, he found it very difficult to appreciate "theory." However, after having taken a course in teaching technical communication, he now understands why theory as well as research are so vital to education. He also told me that an understanding of theory has even given him a wider perspective of his work outside the academy.

Nevertheless, as the works in this bibliography make clear, some undeniable differences in perspectives may never fully be accommodated. And perhaps they cannot, nor should not, be brushed aside. I would hope at least that this list might help foster understanding—that readers from both the academy and the workplace would gain an appreciation for why these works are *essential* to those outside their own culture.

LANDMARK ANTHOLOGIES

Many essential works on technical communication have been published in collections of articles. The anthologies

below as well as the articles highlighted have shaped the direction of the field and offer significant insights on the roles of technical communicators. Note: The abbreviation "Bib." in a citation indicates that the book contains a separate listing of sources for further information beyond the "references" cited in the text.

Anderson, Paul V., R. John Brockmann, and Carolyn R. Miller, eds. 1983. *New essays in technical and scientific communication: Research, theory, practice*. Baywood's Technical Communication Series, vol. 2. Farmingdale, NY: Baywood Publishing. 254 pp.

> The introduction to this anthology suggests some central characteristics of technical and scientific communication: its worthiness as an intellectual pursuit, its diversity and eclecticism, its value to the disciplines from which it borrows, and its need to be studied contextually. The importance of this collection is evident not only in the frequency with which its articles have been cited but also in the influence of many articles on the direction of research. Among the noteworthy articles in this collection are "Studying writing in non-academic settings" by Lee Odell, Dixie Goswami, Anne Herrington, and Doris Quick; "A cognitive approach to readability" by Thomas N. Huckin; "Revising functional documents: The scenario principle" by Linda Flower, John R. Hayes, and Heidi Swarts; "What constitutes a 'readable' technical style?" by Jack Selzer. The final part of the collection is "What's technical about technical writing?" by David N. Dobrin, which he later re-published in his book *Writing and technique* (listed under "Philosophy, History, and Ethics").

Bazerman, Charles, and James Paradis, ed. 1991. *Textual dynamics of the professions: Historical and contemporary studies of writing in professional communities*. Madison, WI: University of Wisconsin Press. Index. 390 pp.

> The editors of this collection assert that "by understanding texts within the professions, we understand how the professions constitute themselves and carry out their work through texts" (p. 3). Part One, "Textual construction of the professions," examines the rhetorics of the sciences, management, and literary criticism. Part Two, "The dynamics of discourse communities," examines how discourse communities are formed. Part Three, "The operational force of texts," includes studies of particular texts in context: "Text and action: The operator's manual in context and in court" by James Paradis; "Understanding failures in organizational discourse: The accident at Three Mile Island and the Shuttle *Challenger* disaster" by Carl G. Herndl, Barbara A. Fennell, and Carolyn R. Miller; and "Creating a text/creating a company: The role of a text in the rise and decline of a new organization" by Stephen Doheny-Farina.
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> The editors conclude that the world "cannot be reduced to the rhetorical domination of a powerful monolithic discourse of science and technology, as is sometimes feared" (p. 10). In fact, discourse communities "provide varied enough voices to maintain a robust rhetorical environment and keep the forces of reductionism at bay. And they provide enough of a rhetorical challenge to require our best efforts at understanding them" (p. 10).

Blyler, Nancy Roundy, and Charlotte Thralls, eds. 1993. *Professional communication: The social perspective*. Newbury Park, CA: Sage. Index. Bib. 292 pp.

> In his forward to this collection, Charles Bazerman suggests that "in the humanities we have a fear of the social. The humanities, we believe, constitute the place where the individual learns to express the self against compulsive society" (p. vii). The 14 essays present a diversity of issues that suggest the importance and value of the social perspective in embodying the "particularities that we live and to these particularities that we write" (p. x). In their preface, the editors cite earlier works that anticipated the importance of social and contextual studies and suggest that they should continue to be central to research and pedagogy in business and technical communication.
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> The collection is divided into two parts—Part I, "History, theory, and research," and Part II, "Pedagogy and practice." Hoping "to advance . . . conversations about a social paradigm in professional writing research and pedagogy" (p. xii), the editors include selections such as "The social perspective and professional communication: Diversity and directions in research" by Thralls and Blyler; "Ideology and the map: Toward a postmodern visual design practice" by Ben F. Barton and Marthalee S. Barton; "You are what you cite: Novelty and intertextuality in a biologist's experimental article" by Carol Berkenkotter and Thomas Huckin; "The role of law, policy, and ethics in corporate composing: Toward a practical ethics for professional writing" by James E. Porter; and "Conflict in collaborative decision-making" by Rebecca E. Burnett.

Duin, Ann Hill, and Craig J. Hansen, eds. 1996. *Nonacademic writing: Social theory and technology*. Mahwah, NJ: Erlbaum. Indexes. 376 pp.

> In the foreword to this collection of 14 essays, Marilyn M. Cooper defines nonacademic writing in part as

"writing that gets something done, as opposed to writing that serves an aesthetic, cognitive, or affective function" (p. x). In the preface, the editors suggest that each chapter challenges current theory, research, and pedagogy as well as provokes additional inquiry about nonacademic writing (p. xiv). The chapters cover a broad range of issues in such influential essays as "The computer culture, gender, and nonacademic writing: An interdisciplinary critique" by Mary M. Lay; "Writing as democratic social action in a technological world: Politicizing and inhabiting virtual landscapes" by Cynthia L. Selfe and Richard J. Selfe, Jr.; and "Nonacademic writing into the twenty-first century: Achieving and sustaining relevance in research and curricula" by Elizabeth Tebeaux.

Odell, Lee, and Dixie Goswami, eds. 1985. *Writing in nonacademic settings*. New York, NY: Guilford. Indexes. 553 pp.

This collection of 14 articles presents scholarship on writing in nonacademic settings and suggests "ways it might become the basis for teaching and for further research" (p. viii). The articles are divided into five parts. Part I is Paul V. Anderson's "What survey research tells us about writing at work." Part II includes "Perceiving structure in professional prose: A multiply determined experience" by Gregory G. Colomb and Joseph M. Williams and "Making information accessible to readers" by Janice C. Redish, Robbin M. Battison, and Edward S. Gold. Part III treats the influence of new technologies in articles by Jeanne W. Halpern and Denise E. Murray.

Part IV begins with "Nonacademic writing: The social perspective" by Lester Faigley and includes "Beyond the text: Relations between writing and social context" by Lee Odell; "Writing at Exxon ITD: Notes on the writing environment of an R&D organization" by James Paradis, David Dobrin, and Richard Miller; and "Special topics of argument in engineering reports" by Carolyn R. Miller and Jack Selzer. Part V includes "The writing teacher in the workplace: Some questions and answers about consulting" by Dwight W. Stevenson in addition to two articles on building a professional writing program and courses in collaboration with those outside the academy. Part VI includes "Survey methodology" by Paul V. Anderson and "Ethnographic research on writing: assumptions and methodology" by Stephen Doheny-Farina and Lee Odell.

Spilka, Rachel, ed. 1993. *Writing in the workplace: New research perspectives*. Carbondale, IL: Southern Illinois UP. Index. Bib. 332 pp.

"In many respects," according to the editor, "this book is a follow-up to the 1985 anthology *Writing in nonacademic settings*" (p. viii). After commenting on the subsequent progress in the field, Spilka suggests that "before the discipline can mature further, it needs to determine where it has been and where it needs to go next" (p. vii). Accordingly, the 19 articles are divided into two parts: "Part one: Research studies of writing in the workplace" and "Part two: Implications of recent research findings for theory, pedagogy and practice, and future research."

Part One begins with "Situational exigence: Composing processes on the job by writer's role and task value" in which Barbara Couture and Jone Rymer survey working professionals relative to writing processes, roles, and tasks. The nine other articles report studies of specific contexts, audiences, and genres, such as "Genre as community invention: A central bank's response to its executives' expectations as readers" by Graham Smart, "Discourse regulations and the production of knowledge" by Anthony Paré, and "Becoming a rhetor: Developing writing ability in a mature, writing-intensive organization" by Jamie MacKinnon.

Part Two begins with "Corporate authority: Sponsoring rhetorical practice" by Mary Beth Debs, who examines the concept of authorship in the workplace. Jack Selzer examines intertextuality and the writing process and Leslie Olsen explores research on discourse communities. Patricia Sullivan and James E. Porter examine research methodology and suggest it should take place "with these perspectives—theory, practice, method—in dialectic tension" (p. 237). Other contributors examine these various tensions, such as Rachel Spilka in "Influencing workplace practice: A challenge for professional writing specialists in academia" and Tyler Bouldin and Lee Odell, who use a "systems theory perspective" to view writing in the workplace.

PHILOSOPHY, HISTORY, AND ETHICS

The works listed below provide important philosophical insights on technical communication, including definitions of the field, historical perspectives, and ethical foundations of practice.

Allen, Lori, and Dan Voss. 1997. *Ethics in technical communication: Shades of gray*. New York, NY: John Wiley & Sons. Index. Bib. 410 pp.

This textbook is a comprehensive guide to ethical communication for both classes and technical communicators on the job. The authors liven the book with epigrams on ethics from diverse sources from Shakespeare to noted business executives.

Part I, "Setting the stage," has three chapters that define ethical behavior, value analysis, and professional codes of ethics. In the second part, the authors propose 10 basic values for analyzing ethical dilemmas: honesty, legality, privacy, quality, teamwork, conflict of interest, cultural sensitivity, social responsibility, professional growth, and professionalism. Chapters in Parts I and II include "application" exercises that review principles in the chapters and "exploration" exercises that assign writing projects.

Part III defines case studies and includes nine chapters that each present a case requiring analysis. The case study chapters begin with a description of the case situation followed by questions for small-group discussion, a role-playing exercise, and a suggestion for large-group discussion. Cases include such situations as sufficient safety warnings in manuals, plagiarism, and accurate reports.

Connors, Robert J. 1982. "The rise of technical writing instruction in America." *Journal of technical writing and communication* 12, no. 4:329–352.

As long as human beings "have used tools and have needed to communicate with each other about them," the author observes, "technical discourse has existed" (p. 329). Before tracing the history of technical writing instruction during the period 1900–1980, the author examines its origins in engineering education in the 19th Century. He describes the key figures and their texts during the early years (1895–1939): T. A. Rickard, Samuel Chandler Earle, J. Raleigh Nelson, Frank Aydelotte, Sada A. Harbarger, and others. Several controversies are evident from the field's beginnings: vocationalism vs. liberal arts, faculty status in English departments, and debates over the goals of courses. The author concludes "in general the prospect is excellent for both teachers and students of technical writing" (p. 349).

Dobrin, David N. 1989. "What's technical about technical writing?" Chapter 3 in *Writing and technique*. Urbana, IL: National Council of Teachers of English.

One of the most widely cited works in technical communication, Dobrin's "What is technical about technical writing?" first appeared as a chapter in Paul V. Anderson's 1983 collection *New essays in technical and scientific communication: Research, theory, practice* (listed earlier in this bibliography under "Landmark Anthologies"). Dobrin argues against definitions of technical writing that rely merely on identifying specific formats, scientific or technical content, or an "objective" style, or those definitions that assume a universal or transparent theory of language. Instead of technical writing as information transfer or the simple imparting of facts, Dobrin uses the philosophies of Wittgenstein and Quine as well as the speech act theory of John Searle and Hubert Dreyfus to define technical writing as "writing that accommodates technology to the user" (p. 54). As a result of this definition, Dobrin suggests that research in technical writing should extend beyond both the act of writing and the written product itself to encompass "the practices of groups the writer is writing to, writing for, and writing from, as well as the practices of groups in which the writer" is located (p. 58).

Faber, Brenton. 2002. "Professional identities: What is professional about professional communication?" *Journal of business and technical communication* 16, no. 3:306–337.

Surveying the use of the term *professional* in major technical and business communication journal articles between 1990 and 1999, Faber finds that many do not adequately distinguish professional writing from occupational writing considered more generally. Of those that do, Faber identifies three common themes that distinguish professional identity: professionals have a specific rather than general audience relationship, professionals have "responsibility as social advocates," and professionals "are ethically obligated to maintain their occupational distinctiveness and the social and economic power that comes from this elitism" (pp. 314–315). Building on these characteristics, Faber suggests that professional identities create possible points of conflict with values of professional communication instructors, such as a "contradiction between the elitism of professional powers and the egalitarianism supported by rhetorical scholars" (p. 320), as well as epistemological differences. Moreover, Faber argues that a variety of occupational and social forces are causing a decline in both the elite status and vital social role of professions. Teachers of professional communication should address this decline and help students "become better aware of the highly charged and changing occupational and social contexts that define professional work" (p. 331).

Johnson, Robert R. 1998. *User-centered technology: A rhetorical theory for computers and other mundane artifacts*. SUNY Series, Studies in Scientific and Technical Communication. Albany, NY: State University of New York Press. Index. Bib. 195 pp.

Johnson offers what he calls a "user-centered theory" of technology, which calls for users to become "active participants in the design, development, implementation, and maintenance of the technology" (p. 32). For

practitioners, this theory can help provide "a deeper, more conscious understanding . . . [of] the 'givens' that we take for granted concerning users and technology as we go about our everyday lives" (p. xiv) as well as applications of the user-centered approach. The first of three parts, "Situating technology," describes the important (but often overlooked) impact of technology in our everyday lives. Johnson also presents a theoretical model, the "user-centered rhetorical complex of technology," which places the user (rather than the designer or the technological system) at the center of the design and writing process. This model can be used by technical communicators as a device for audience analysis, as a heuristic for analyzing technologies themselves, or as a way to study how users "use, make, and/or even destroy technology" (p. 40).

The second part, "Complicating technology," provides the theoretical background for Johnson's user-centered approach, whereas the third part, "Communicating technology," offers applications of this approach. Chapter 6 focuses on nonacademic applications of the user-centered rhetorical complex. The user-centered perspective views users not just as readers of texts, but as involved in a complex, localized context. In this view, the design and writing process "is a collaborative, negotiated affair that is perpetually building the knowledge of users and their various contexts into the products being developed" (p. 135). Chapter 7 offers pedagogical and research applications of user-centered approach, arguing that researchers and students should be trained to become "technical rhetoricians," or "a technical communicator who is trained in the theory and practice of the arts of discourse, and who practices these arts as a responsible member of a greater social order" (p. 158).

Johnson-Eilola, Johndan. 1996. "Relocating the value of work: Technical communication in a post-industrial age." *Technical communication quarterly* 5, no. 3:245–270.

The author aims to "provide a more productive framework for technical communication by positioning current research and practice in technical communication within specific aspects of symbolic-analytic work" (p. 246). Drawing on the shift from industrial to post-industrial economies described by economist Robert Reich, Johnson-Eilola argues that technical communication can overcome its disempowering relegation to a service or support role by affirming the communication aspect of technical communication. Reich's symbolic-analytic category opens up possibilities for doing so by allowing technical communicators to locate value in process and contextualized information rather than only in product and de-contextualized technology. Johnson-Eilola provides four areas of focus that would allow technical communication to be rearticulated as symbolic-analytic work: experimentation, collaboration, abstraction, and system-thinking. He then describes five "key projects" for technical communication pedagogy that would "strengthen the symbolic analytic skills" (p. 263). Johnson-Eilola concludes: "By rearticulating technical communication as symbolic-analytic work, we might use our professional diversity and flexibility to empower ourselves and technology users" (p. 266).

Katz, Steven B. 1992. "The ethic of expediency: Classical rhetoric, technology, and the Holocaust." *College English* 54, no. 3:255–275.

The author begins this article by reproducing an actual memo requesting improvements for Nazi extermination vans. He writes, "Here, as in most technical writing and, I will argue, in most deliberative rhetoric, the focus is on expediency, on technical criteria as a means to an end" (p. 257). Katz contends that Aristotle's "ethic of expediency" was "rhetorically embraced by the Nazi regime and combined with science and technology to form the 'moral basis of the holocaust" (p. 258). Suggesting that Hitler justified mass extermination through a rhetoric of technology, the author cautions against "a rationality taken to such extremes that it becomes madness" (p. 267). He then discusses the use of propaganda and concludes that we should "question whether expediency should be the primary ethical standard in deliberative discourse, including scientific and technical communication" (p. 272).

Kuhn, Thomas S. 1996. *The structure of scientific revolutions.* 3rd ed. Chicago, IL: University of Chicago Press. Index. 212 pp.

Kuhn's book is often referred to as a landmark in intellectual history. It is a landmark because Kuhn effectively practices a meta-scientific inquiry that calls into question the very nature of scientific method. The object of greatest scrutiny for Kuhn is "normal science," which refers to a tradition of research sanctioned by a particular scientific community. To examine this inherently conservative (and unreflective) set of codes, Kuhn proposes the idea of "paradigms." For Kuhn, paradigms "provide models from which spring particular coherent traditions of scientific research" (p. 10). Normal science does not disclose its supervising paradigms, nor does it take seriously the anomalies that always crop up in scientific experiments. When these anomalies come to predominate, then,

Kuhn claims, a new paradigm is called for to make sense of them. This is how one tradition supplants another. Most of Kuhn's book is an examination of how and why scientific revolutions occur—why a paradigm shift happens at a certain point in the history of science. Far from being based on objective, foundational facts, this history is permeated by conventions, communities, and intuitions that make it difficult to predict the course of inquiry. Kuhn's book may itself be seen as occasioning a paradigm shift, as the scientific world undergoes another Copernican revolution by recognizing the historicity of its most cherished assumptions.

In an important Postscript (written seven years after the original 1962 publication), Kuhn addresses the criticism of his colleagues, especially regarding his sometimes ambiguous use of the term "paradigm."

Kynell, Teresa C. 2000. *Writing in a milieu of utility: The move to technical communication in American engineering programs, 1850–1950.* 2nd ed. ATTW Contemporary Studies in Technical Communication, vol. 12. Stamford, CT: Ablex Publishing. Indexes. 134 pp.

M. Jimmie Killingsworth states in the preface that this book "has been an essential text in the study of the history of technical communication" (p. xiii), and in the introduction, Elizabeth Tebeaux suggests that Kynell has provided "a clear link between the past and our own time" (p. xix).

In the book, Kynell uses archival research to describe the evolution of technical writing as a field focusing on practical utility in "the real world" and deeply rooted in engineering education. According to Kynell, "By examining the place of English in the curriculum of engineering students from the mid-19th century to 1950, I demonstrate how *technical writing* evolved and developed as a distinct English discipline in American engineering programs" (p. 2). In doing so, Kynell identifies the roots of many disciplinary and pedagogical struggles that continue today.

Kynell begins with a chapter reviewing the literature available on technical writing's roots in American engineering education. Chapters 2–7 each describes a separate decade and identifies an important influence on the development of the discipline, such as curricular change in engineering and, consequently, English; the need for practical utility of English and, therefore, a different kind of English class; questions of pedagogical jurisdiction, expertise, and teacher training; and the emergence of technical writing as a discipline following World War II. The book concludes with an epilogue "Technical Communication 1950–1998: Where Are We Now?" by Katherine Staples.

Lay, Mary M. 1991. "Feminist theory and the redefinition of technical communication." *Journal of business and technical communication* 5, no. 4:348–370.

The author addresses how technical communication "either directly or through its affiliation with these other disciplines [has] been affected by feminist theory and gender studies" (p. 348). The author then addresses this question by first discussing five characteristics of feminist theory: a celebration of difference, theory activating social change, acknowledgement of scholars' backgrounds and values, inclusion of women's experiences, and a study of gaps and silences in traditional scholarship. This foundation allows the author to call for a redefinition of technical communication through ethnographic research and collaborative writing that adheres to those five characteristics. Finally, the author concludes with a series of questions for future scholars to address that center around discovering the importance of such a redefinition, as well as the new avenues that will be able to be followed through that redefinition.

Mathes, J. C., and Dwight W. Stevenson. 1991. *Designing technical reports: Writing for audiences in organizations.* 2nd ed. New York, NY: Macmillan. Index. 506 pp.

Developed in part through the authors' summer institutes at the University of Michigan, the original version of this textbook (Bobbs-Merrill 1976) presented a systematic procedure with which engineers could "design" reports. The second edition addresses "a wider range of subject matters . . . drawn from business, banking, healthcare, social service, criminal justice, and insurance as well as engineering" (p. viii). One of the most notable elements in both editions is their "egocentric organization chart for audience analysis" as graphic representation of various layers of audiences at increasing distance from the writer (p. 33). This representation has contributed to a general understanding of complex, multiple audiences.

Miller, Carolyn R. 1984. "Genre as social action." *Quarterly journal of speech* 70 (May): 151–167.

The author proposes that "in rhetoric the term 'genre' be limited to a particular type of discourse classification, a classification based in rhetorical practice and consequently open rather than closed and organized around situated actions" (p. 155). Miller asserts, "To consider as potential genres such homely discourse as the letter of recommendation, the user manual, the progress report, the ransom note, the lecture, and the white paper, as well as the eulogy, the apologia, the inaugural, the

public proceeding, and the sermon, is not to trivialize the study of genres; it is to take seriously the rhetoric in which we are immersed and the situations in which we find ourselves" (p. 155). The article refines her thesis that genres can be seen as "typified rhetorical actions based in recurrent situations" (p. 159). After describing five typical features of the understanding of genre, she concludes, "genres can serve both as an index to cultural patterns and as tools for exploring the achievements of particular speakers and writers; for the student, genres serve as keys to understanding how to participate in the actions of a community" (p. 165).

Miller, Carolyn R. 1979. "A humanistic rationale for technical writing." *College English* 40, no. 6:610–617.

In perhaps the most often-cited article in technical writing, Miller argues that technical writing possesses significant humanistic value. What has worked against this view, she suggests, is the dominant positivist perspective of science and a "windowpane theory of language" (p. 611) that have essentially turned technical writing into a task of simple transmission of given information.

Viewing writing as participation in a community, she proposes, "We can improve the teaching and study of technical writing by trading our covert acceptance of positivism for an overt consensualist perspective" (p. 616). Further, by understanding that science is participation in a community, "Good technical writing becomes, rather than the revelation of absolute reality, a persuasive version of experience" (p. 616). Miller suggests that technical writing teachers revise their understanding of science to reconceptualize the discipline as a whole in more systematic terms, and she concludes, "If we do begin to talk about understanding, rather than only about skills, I believe we have a basis for considering technical writing a humanistic study" (p. 617).

Miller, Carolyn R. 1989. "What's practical about technical writing." In *Technical writing: Theory and practice*, ed. Bertie E. Fearing and W. Keats Sparrow. New York, NY: Modern Language Association, pp. 14–24.

The author begins with the observation that technical writing, with its focus on "the rhetoric of the 'world of work,' of commerce and production" is often viewed as a "practical" discipline, with the term "practical" often intended to suggest, in a pejorative sense, that technical communication is an applied, vocational field rather than one defined through a body of theoretical knowledge (p. 15). The author disputes this view, countering with the argument that technical writing is indeed "practical," but in the particular sense that it is a field characterized by *praxis* or the prudent application of theoretical knowledge in specific situations with the larger aim of enhancing the well-being of the community. She suggests that this re-conceptualization of technical communication as a field grounded in the rhetoric of *praxis* has much to offer pedagogy: "Understanding practical rhetoric as a matter of *conduct* rather than of production, as a matter of arguing in a prudent way toward the good of the community rather than of constructing texts, should offer some new perspectives for teachers of technical writing and developers of courses and programs in technical communication" (p. 23).

Ornatowski, Cezar M. 1992. "Between efficiency and politics: Rhetoric and ethics in technical writing." *Technical communication quarterly* 1, no. 1:91–103.

Ornatowski suggests that a central contradiction in the teaching and practice of ethical technical communication lies within textbooks' requirement that technical writing be effective, practical, and objective. The technical writer faces two incompatible goals: "to serve the interests that employ her effectively and efficiently while being objective, plain, factual, and so on" (p. 94). Thus, the author claims that technical writing in real-world contexts is much more political and rhetorical than textbooks make it out to be. The author asks his readers to accept that technical writing is rhetoric, and because of its "stylistic attributes of clarity, directness, factuality, objectivity, and neutrality, technical communication is well suited to serve as the rhetorical instrument of organizational bureaucratic rationality"(p. 101). This realization does not solve the contradiction, Ornatowski acknowledges, but does make the contradiction visible so that writers can "take the first step toward having the capacity to analyze the trade-offs and bargains that one makes" (p. 102).

Pirsig, Robert M. 1999. *Zen and the art of motorcycle maintenance: An inquiry into values*. 25th anniversary ed. New York, NY: William Morrow. 418 pp.

Pirsig's novel has become something more than a cult classic since its publication in 1974. This 25th anniversary edition includes a new introduction from the author who explains some of the faults of the original manuscript and reveals his interpretation of the conclusion. In the novel, Pirsig wishes to diagnose a tendency in western society to separate technological expertise from a more holistic, humanistic understanding of the world. The controlling metaphor for this analysis is the motorcycle, which for Pirsig represents a piece of technology one may tinker with in the same way one tinkers with

one's own beliefs and desires. Pirsig's main question in the novel is "What is Quality?" as he tries to move beyond the platitude of "What's new?" to the far more compelling question "What is best?" This question takes Pirsig back to Greek philosophy and encourages him to make a distinction between two modes of understanding: romantic and classic. Pirsig finds motorcycle riding romantic, whereas he sees motorcycle maintenance as classic. An editor and writer of technical manuals before writing his novel, Pirsig struggles to understand how technical writing became so far removed from a sense of caring about both the readers of these manuals and actual technological device being described. By introducing the Eastern concept of "Zen" into Western rationality, Pirsig hopes to suggest an alternate framework for making sense of our own technology.

Slack, Jennifer Daryl, David James Miller, and Jeffrey Doak. 1993. "The technical communicator as author: Meaning, power, authority." *Journal of business and technical communication* 7, no. 1:12–36.

In this article, the authors claim that technical communicators are viewed as transmitters of messages or translators of meaning instead of being considered "authors" who participate in articulating and rearticulating meanings. They explain that in each of these views "the place of the technical communicator—and of the technical discourse itself—shifts in different relations of power" (p. 14). Their conclusion is a call to "give up the faith that the goal of communication is always clarity and brevity" by claiming that technical communicators need to be sent out "armed" and prepared to take full responsibility for their work (p. 33). They explain that technical communicators can become armed by understanding their roles as writers through the articulation viewpoint; they argue that the articulation viewpoint will conceive the "technical communicator as author and [. . .] technical communication as a discourse that produces an author" (p. 12).

Tebeaux, Elizabeth. 1997. *The emergence of a tradition: Technical writing in the English Renaissance, 1475–1640.* Baywood's Technical Communication Series. Amityville, NY: Baywood Publishing. 246 pp.

Surveying a variety of English Renaissance technical manuals on topics such as gardening, medicine, animal husbandry, household management, and military science, Tebeaux argues that "early technical books allow modern readers to study the emergence of a genre, while providing new insight into the study of technical discourse as it reflects the intrinsic character of culture" (p. 30).

Chapters 3–6 provide numerous specific examples and page illustrations of Renaissance technical writing, arranged according to four major topics: document design and format, audience accommodation, the plain style, and the development of graphics for technical description. In Chapter 3, Tebeaux focuses on document format and design, arguing that a Ramist philosophy of classification heavily influenced the development of technical document design. Chapter 4 explores the ways English technical writers accommodated technical handbooks to a wide variety of audiences, focusing specifically on the use of Latin, Greek, and vernacular English. Tebeaux deals with the emergence of plain style in Chapter 5, suggesting that "too much emphasis has been given to both science and Bacon as the progenitors of this style" (p. 168). Tebeaux links plain style instead with the development of "an increasingly literate public that needed books written in spoken English for self-enhancement" (p. 169). Finally, Chapter 6 builds on Walter Ong's description of a shift from oral to textual communication by examining the increasing use of visual aids for technical description. The emergence of visual aids in Renaissance technical handbooks "illuminates the shift from orality to textuality in another form of written discourse besides narrative, the major focus of most orality studies" (p. 176).

RESEARCH STUDIES AND METHODOLOGY

The works below report the results of workplace studies, describe directions in research, and present underlying assumptions or principles of research.

Alred, Gerald J. 1997. *The St. Martin's bibliography of business and technical communication.* New York, NY: St. Martin's Press. Indexes. 179 pp.

This bibliography is intended as "a resource for . . . teachers, graduate students, program directors, and consultants . . . [especially] those who are new to this field" (p. v). The Introduction includes an essay on the workplace and academy, work and human communication, the interdisciplinary character of the field, and the relationship of theory, practice, and pedagogy. It also details the methodology used to gather and select the works included. The front matter includes sections listing professional associations, journals, conferences, and Internet discussion groups. The 376 works listed are annotated and divided into six main sections: Research and history; Theory and rhetoric; Profession and curriculum; Workplaces, genres, and language; Technology and visual theory; and Interdisciplinary connections. These sections are further divided into subsections, such as Bibliographic works, Computer documentation, and

Technology studies. The book concludes with author and subject indexes.

Anson, Chris M., and L. Lee Forsberg. 1990. "Moving beyond the academic community: Transitional stages in professional writing." *Written communication* 7, no 2:200–231.

Using qualitative research methodology (for example, journals, logs, taped interviews, workplace texts), the authors studied the transitions of six university seniors moving from academic to professional discourse communities. The students were enrolled in a special, 12-week writing internship course in which they discussed and analyzed the writing they were doing at corporations, small businesses, and public service agencies. The article describes the students' experiences through excerpts from their journals as well as interview statements and their own analyses.

The authors identify three stages in the student's transitions: expectation, disorientation, and transition and resolution (p. 208). In describing the students' disorientation, the authors observe, "Much of the disorientation expressed by the interns soon after they began writing on the job . . . originated not only from the disappointment of generally held expectations, but from collision of what they saw in their new reality and what they had learned from previous experience in other discourse settings" (p. 211). Among other findings, they observe, "Our study . . . suggests that the writer must first become a 'reader' of a context before he or she can be 'literate' within it" (p. 225). They conclude that in searching for answers to the questions this study raises, "we may well discover some useful ways in which to extend our current pedagogy of professional writing beyond its primarily textual or 'composing process' orientation and into the realms of territoriality, initiation and membership, ritual, and dialect—concepts that would seem to lie at the heart of writing as cultural adaptation" (p. 228).

Barabas, Christine. 1990. *Technical writing in a corporate culture: A study of the nature of information.* Norwood, NJ: Ablex Publishing. Indexes. 313 pp.

This study examines reports in an R&D organization. According to the author, the audience includes "those in academe who are interested in either studying or teaching technical writing and . . . those in R&D organizations who either write or read technical reports" (p. xxxix). The 12 chapters are divided into three parts: Part I is a general examination of academic versus "real-world" writing. Part II looks at scientific and technical writing in theoretical terms and lays a conceptual framework for the author's study. Part III describes the study, research methods, and the conclusions. Using surveys, interviews, and other methods, the author studied a single genre, the progress report, from a wide variety of perspectives in an R&D organization. This focus allows the author to examine in detail and with precision the writing process of writers and the context of the organization. Barabas suggests that "this study demonstrates how researchers can use a combination of methods to conduct integrative, context-based studies" (p. 286). As a result of her study, Barabas also recommends that teachers use real-world problems and samples of technical writing in the classroom, invite guest speakers from R&D organizations, provide students with first-hand experience through work-study arrangements, and treat topics of primary importance to real-world writers and readers (p. 281).

Bazerman, Charles. 1988. *Shaping written knowledge: The genre and activity of the experimental article in science.* Madison, WI: University of Wisconsin Press. Index. 356 pp.

As the author prepared to teach writing to students in a variety of disciplines, he found that he "could not understand what constituted an appropriate text in any discipline without considering the social and intellectual activity which the text was part of" (p. 4). This book is an effort to make such an evaluation and, in the process, trace the emergence of the experimental article in science. The author states, "In the attempt to understand what scientific language has become in practice, this book consists of a series of case studies" (p. 16). What this statement does not reflect is the author's important observations about the social and rhetorical nature of science as he examines these cases.

The 12 chapters of this book are divided into five parts. Part I includes an introductory chapter that defines the problem of assessing scientific texts and a chapter that examines three articles, two from the sciences, and one from literary studies. Part II reviews the emergence of the experimental article. Part III looks at the genre of the experimental article in physics, and Part IV examines the experimental report in the social sciences, including an analysis of the rhetoric of the APA *Publication manual.* The final part examines how language realizes the work of science and suggests some strategies for writers of science and their teachers.

Although scientists do not need to become expert rhetoricians, Bazerman concludes, one result of the author's study is a clear recognition that writing in the sciences is thoroughly rhetorical and merits further scholarly attention.

Berkenkotter, Carol, and Thomas N. Huckin. 1995. *Genre knowledge in disciplinary communication: Cognition/culture/power*. Hillsdale, NJ: Lawrence Erlbaum. Indexes. Bib. 190 pp.

This book explores the central role played by the genres of disciplinary writing—such as grant proposals, research reports, conference papers, journal articles, and monographs—in the development and communication of field-specific academic and professional knowledge. The authors outline a "sociocognitive theory of genre" comprising five "principles" for characterizing written discourse genres: dynamism, situatedness, form and content, duality of structure, and community ownership. The authors then present six case studies of written genres used in a range of academic and professional communities that "further develop and comment on [these] principles" (p. x). A key aim throughout the book is to explore how the concept of genre might be used to situate individual agents' rhetorical actions within the context of larger discursive systems. Consequently, while the authors seek to understand the nature and acquisition of the genre knowledge deployed by individuals in their work, they are also concerned with the ways in which a discourse community's genres reflect its collective "norms, epistemology, ideology, and social ontology" (p. 25). In the final chapter, the authors examine the pedagogical implications of the sociocognitive theory of genre developed in the book, focusing on the debate over the effectiveness of explicit instruction in helping children master school-based genres.

Blyler, Nancy. 1998. "Taking a political turn: The critical perspective and research in professional communication." *Technical communication quarterly* 7, no. 1:33–52.

As an alternative to the proliferation of professional communication scholarship that simply offers a descriptive, explanatory research focus, the author suggests a critical perspective. This perspective should rely on research that "attempts to contribute to the establishment of free and open communication situations in which societal, organizational, and individual interests can be mutually accomplished," and, more importantly, becomes "emancipatory [and] frees individuals from sources of domination and to effect social action" (pp. 37–39). The author suggests that professional communication research from a critical perspective model itself after feminist, radical educational, and participatory action research. Finally, the author concludes with a series of implications that the adoption of a critical perspective would require, including a "need to select alternative research sites, questions, and sources of funding" (p. 45).

Doheny-Farina, Stephen, ed. 1988. *Effective documentation: What we have learned from research*. MIT Press Series in Information Systems. Cambridge, MA: MIT Press. Index. 354 pp.

This collection of 16 essays provides a foundation of research-based "information for technical writers, document designers, managers of technical writing departments, technical communication researchers, and teachers and students of technical communication" (pp. 1–2). Some authors report on their own research projects, whereas others "review the implications of a wide variety of empirical research on a given topic or topics" (p. 2). Other essays "discuss how technical communicators may incorporate research activities within the documentation cycles of their organizations" (p. 2). In-depth discussion is provided on "Research into User Learning and Performance, Research into Format and Graphic Design, Research into the Management of Documentation Processes, and Analyses of Research Methods for Technical Communication" (p. 2). In the book's opening essay, Mary Beth Debs reviews "other publications that offer technical communication guidelines based on research" (p. 7).

Doheny-Farina, Stephen. 1986. "Writing in an emerging organization: An ethnographic study." *Written communication* 3, no. 2:158–185.

This study examines the collaborative writing processes of a group of computer software executives during a year-long process as they wrote a business plan. As the author investigated the social and organizational contexts that influenced the writing, a number of implications for theory building and pedagogy emerged. First, the author demonstrates how the writing of "a brief passage of the company's 1983 Business Plan involved a complex social process" (p. 178). Thus, among other observations, he suggests that the definition of writing in nonacademic settings should "include social interaction as a part of the process" (p. 179). More specifically, the author finds, "a reciprocal relationship between writing and the development of an organization" (p. 180). For example, the writing process itself played a role in the development of the organization or social group. He connects this finding to pedagogy by suggesting, "Teachers would do well to recognize this reciprocal relationship when integrating collaborative team projects into their technical, business, and professional writing courses" (p. 180). By providing an ethnographic view of the preparation of a single document, this study offers a rich view of the social process the author describes.

Driskill, Linda. 1989. "Understanding the writing context in organizations." In *Writing in the business professions*, edited by Myra Kogen. Urbana, IL: National Council of Teachers of English and Association for Business Communication, pp. 125–145.

> The article uses various examples, especially the space shuttle *Challenger* accident, to demonstrate how context and corporate culture affect writing in organizations. The author states, "The chief value of context is its usefulness in explaining the types of meanings writers attempt to express, and readers expect to interpret, in specific situations" (p. 125). She describes how and why three models of business communication neglect context and provides both text and visual examples to make her points. The article closes with implications for teaching: "Recognizing the force of culture, technology, and situations can enrich our production and use of cases in the classroom" (p. 142).

Geisler, Cheryl, Charles Bazerman, Stephen Doheny-Farina, Laura Gurak, Christina Haas, Johndan Johnson-Eilola, David S. Kaufer, Andrea Lunsford, Carolyn R. Miller, Dorothy Winsor, and JoAnne Yates. 2001. "IText: Future directions for research on the relationship between information technology and writing." *Journal of business and technical communication* 15, no. 3: 269–308.

> The authors, members of the IText working group, argue that the development of text-based technology, called information technology (IT, and thus, IText), is a relatively recent phenomenon, one that places technical communication specialists in a position to inform the study and design of IT. This article identifies core issues in IT and traditions of study that can inform these issues. These traditions include rhetorical theory, activity theory, literacy studies, genre theory, usability research, and workplace writing. The issues identified are effectiveness of ITexts, the interplay of visual and verbal information, credibility in ITexts, information overload, information retrieval, and IText as intellectual property. Finally, the authors state that "research on IText must . . . work to understand and direct IT development in a way that acknowledges the complexity of the meaning-making process, the historical forces that shape interactions with text, and the powerful impact literate interactions in these new electronic environments are having on society" (p. 297).

Rainey, Kenneth T. 1999. "Doctoral research in technical, scientific, and business communication, 1989–1998." *Technical communication* 46, no. 4:501–531.

> This article updates Kenneth Rainey and Rebecca Kelly's survey of doctoral research in professional communication for a 1992 issue of *Technical communication* (39, no. 4). The author continues to "focus on making known the wide variety of doctoral research in professional communication emanating from many academic institutions" and provides a survey of doctoral programs in technical communication (p. 501). Rainey uses this information to establish a framework for discussing research methods, concerns of the discipline, and avenues for further study. He concludes his analysis with a bibliography that lists and categorizes 178 dissertations completed between 1989 and 1998.

Rainey, Kenneth T., and Rebecca S. Kelly. 1992. "Doctoral research in technical communication, 1965–1990." *Technical communication* 39, no. 4:552–570.

> This article is based on a survey of technical communication programs, searches of electronic databases, and content analyses of dissertation abstracts. The authors summarize their findings concerning research at the doctoral level, examine the institutions conducting doctoral research, describe the methodologies used, and catalog the topics of dissertations. They conclude their analysis with a bibliography that lists 155 (of the 170) dissertations produced during 1965–1990.

Selzer, Jack. 1983. "The composing processes of an engineer." *College composition and communication* 34, no. 2:178–187.

> This article reports a landmark study of the composing process of a single engineer. The author discovers practices that run counter to research on composing when the article was published. For example, Selzer observes, "If for academic and professional writers revision is a messy, recursive matter of discovering and shaping what one wants to say, for Nelson [the engineer] revising is a rather clean matter of polishing a rough draft that already approximates his intentions" (p. 184). Selzer also observes that the engineer analyzes his audience's needs carefully when he wants to generate content, not when he is making stylistic choices later in his writing process (p. 180). Further, "Nelson relies on an impressive array of invention procedures—analyzing audiences, reading, consulting colleagues, brainstorming, and reviewing previously written documents" (p. 181). Based on these and other observations, Selzer concludes, "it may be appropriate to describe the writing process of engineers as more linear than recursive. It may also be appropriate in teaching prospective engineers to emphasize principles and techniques of ar-

rangement and, by contrast, to regard revision as the least important activity in the engineer's writing process" (p. 185).

Spilka, Rachel. 1990. "Orality and literacy in the workplace: Process- and text-based strategies for multiple-audience adaptation." *Journal of business and technical communication* 4, no. 1:44–67.

This qualitative study of seven engineers addresses two questions: "What is the role of orality in the composing processes of corporate writers?" and "How does orality relate to literacy in the evolution of corporate documents?" (p. 45). The author uses orality to mean the process of transmitting ideas via speech, including "written forms resembling speech" (p. 45). As a result of her study, the author observes that orality was the central means of analyzing multiple audiences, adapting discourse to multiple audiences, fulfilling rhetorical goals, and fulfilling social goals as well as building and sustaining the corporate culture (p. 45). During the process of evaluating the data, the author graphically presents "an audience-adaptation model" to illustrate the strategies used by five of the engineers in the study who were rhetorically successful (p. 53). Spilka concludes that we need to broaden our approach to multiple-audience analysis in the workplace in a way that considers the social features of a rhetorical situation. Further, we need to "develop a fuller appreciation of the multiple roles of orality in fulfilling rhetorical and social goals" (p. 66).

Winsor, Dorothy A. 1990. "The construction of knowledge in organizations: Asking the right questions about the *Challenger*." *Journal of business and technical communication* 4, no. 2:7–20.

The author states that previous research on the *Challenger* explosion tends "to ask why it happened that various people in the organizations involved knew about the faulty O-rings but failed to pass on the information to decision makers" (p. 7). Winsor sees this question as faulty because it assumes that knowledge exists apart from social forces and that we can simply "pass on" information: "The passing on of information is a misleading concept because it is part of what might be called the *conduit model of communication*" (p. 13).

She offers two questions that address the social context of communication. First she asks, "Given that there were two alternative views of the O-rings' safety available, what factors made one view more acceptable than the other?" (p. 16). She continues that while "it is a commonplace maxim that knowledge is power, it is also true that power is knowledge in the sense that people with power decide what counts as knowledge" (p. 16). Her second question is "How could the advocates of the view that the O-rings were not safe have affected communal knowledge so that this view became the more widely accepted of the two alternative views?" (p. 17). She suggests a pedagogical application: "we might also teach about the necessity for picking battles carefully, since a writer who is critical too often will create the ethos of being constantly at odds with the organization" (p. 17). For her concluding questions, she asks "What advice can we, as scholars of rhetoric, offer to those who struggle to construct knowledge so that we might lessen their chances of experiencing regret when the truth finally becomes known?" (p. 18).

Winsor, Dorothy A. 1996. *Writing like an engineer: A rhetorical education.* Mahwah, NJ: Lawrence Erlbaum. Indexes. 120 pp.

This longitudinal study examines the emerging rhetorical awareness of four engineering undergraduates as they participate in a five-year cooperative education program. Through interviews and document analysis, Winsor investigates the effects of "exposure to practicing engineers and to common engineering genres" (p. 17) on the students' writing, focusing especially on the students' assumptions of the "centrality of data"—the belief that "data can create knowledge apart from persuasion" (p. 32)—and their evolving understanding of audience. Following individual discussions of each student and his writing, Winsor examines the tension between joining a discourse community and "retaining some distance on a community's discourse to critique its inevitable limitations" (p. 105). The book's "Backtalk" sections include comments and reflection from the young engineers on their review of Winsor's manuscript.

Yates, JoAnne. 1989. *Control through communication: The rise of system in American management.* Baltimore, MD: Johns Hopkins University Press. Index. 339 pp.

This book examines the relationship of communication systems to managerial development during the period 1850 to 1920. The first three chapters discuss "Managerial methods and the functions of internal communication," "Communication technology and the growth of internal communication," and "Genres of internal communication." The remaining five chapters examine three specific organizations: the Illinois Central Railroad, Scovill Manufacturing Company, and E. I. du Pont de Nemours & Company. The book is richly illustrated with archival materials, such as organizational documents and photographs.

One of the author's findings is that "new communication genres developed as a product of organizational needs and available technologies. Circular letters, reports, and manuals were shaped by the demands of their production and use. Older customs of form and style gave way in the face of a new desire to make documents more efficient to create and to use. Thus, developments in managerial methods, communication technologies, and communication genres fed on one another in the evolution of the communication system" (p. xviii). This book not only provides historical insight but also offers a lens through which we might better understand the impact of modern communication technologies.

EDUCATION AND PROFESSIONAL DEVELOPMENT

Works in this section include significant resources for teachers, students, trainers, and professionals.

Barnum, Carol M. and Saul Carliner. 1993. *Techniques for technical communicators*. Boston, MA: Allyn and Bacon. Index. 368 pp.

This book is intended for "advanced students of technical, scientific, and professional communication programs, as well as working professionals and those interested in entering the field" (p. iii). Establishing an audience- and process-centered approach, the authors divide the book into four parts: planning, designing, editing, and verifying and protecting. A "collaborative effort between industry and academe," each section contains chapters written by educators and professionals working in technical communication (p. iii).

Part I on planning emphasizes the importance of readers as active users and interpreters of texts, effective drafting principles, and group project management. Part II focuses on designing information: using writing devices, applying graphic forms, choosing design features, and developing multimedia communication. Part III, on editing texts, takes an audience-centered approach to issues of grammar, consistency, and style conventions. Part IV covers verifying and protecting information—namely, usability and usability testing, copyright laws, and the ethical obligations that technical communicators face when composing texts.

Göpferich, Susanne. 1998. *Interkulturelles technical writing: Fachliches adressatengerecht vermitteln*. Tübingen, Germany: Gunter Narr Verlag. Index. 521 pp.

This book (English translation: "Intercultural technical writing: Technical knowledge training for target audiences: A text and workbook") presents the results of research from various fields on how to improve writing skills, especially in the field of technical documentation. The book includes chapters on communication theory and semiotics; visualization; typography and layout; professional genres; syntax from a communicative perspective (speech act theory, theme/rheme theory); terminology science and terminography; legibility, readability, and comprehensibility; cognitive processes involved in writing; cultural barriers and how to overcome them; legal aspects of technical documentation; as well as a survey of writing- and translation-related software. Each chapter ends with exercises; a key is provided at the end of the book.

Horton, William. 2000. *Designing Web-based training: How to teach anyone anything anywhere anytime*. New York, NY: John Wiley & Sons. Index. 607 pp.

The author defines Web-based training (WBT) as "Any purposeful, considered application of Web technologies to the task of educating a fellow human being" (p. 2). He notes that initial advantages of WBT over CBT (computer-based training from disks) are "access to Web-based resources, centralized storage and maintenance, [and] collaboration mechanisms" (p. 19). Horton stresses that "WBT does not change how humans learn, but . . . how we can teach them" (p. 6), and he argues that the shortage of trained technology workers creates an increasing need for WBT. Horton outlines the benefits and disadvantages to using WBT, providing solutions to the problems arising in WBT.

The book uses a structure that a trainer or teacher might follow: choosing an approach for a WBT course; building the course's framework, from explaining the course to gathering feedback and clearing hurdles; organizing the sequence of lessons; creating learning activities to enhance student interest; developing tests and exercises; and promoting collaboration among students. The final sections of the book examine teaching in a virtual classroom, motivating learners, expanding to a global focus, overcoming technical hurdles, and moving beyond the classroom to incorporate both real and virtual components, such as field trips and online libraries, to enhance the experience and abilities of students.

Keene, Michael L., ed. 1997. *Education in scientific and technical communication: Academic programs that work*. Arlington, VA: Society for Technical Communication. Index. Bib. 210 pp.

This book was funded by a grant from the Society for Technical Communication to provide a "comprehensive description of the key types of scientific and technical communication programs available in the United States

today" (p. xi) and ultimately to "*push* the process of quality improvement" (p. xii).

Following an introduction that describes the history of this project, eight chapters examine different types of programs: PhD, master of science, master of arts, bachelor of science, bachelor of arts, certificate, the minor, and two-year college programs. Although the chapters are written by different authors and use as an example specific programs, they share the same structure. The first part of each chapter presents a discussion of the "general characteristics shared by most programs of that chapter's particular type [and] the second part of the chapter focuses on one program as representing all the distinguishing characteristics (including not just characteristic strengths but also any tendency to a particular set of weaknesses) of this type of program" (p. xx). The book ends with "Conclusion: Issues of quality" by Keene which addresses the "nature of the profession of technical communication," "the nature of U.S. colleges and universities," and "the intersection of the first two" (p. 185). Among other recommendations, Keene concludes that "flexibility within programs and diversity across programs seem to be qualities to seek and to nurture" (p. 196).

Lutz, Jean A., and C. Gilbert Storms, eds. 1998. *The practice of technical and scientific communication: Writing in professional contexts.* ATTW Contemporary Studies in Technical Communication, vol. 4. Stamford, CT: Ablex Publishing. Index. 309 pp.

This book is for anyone who wishes "to explore this profession [technical communication] for its career potential" (p. vii). Each chapter describes what technical and scientific communicators do in 12 different professional areas—business and manufacturing, engineering, aerospace, computer science, environmental science, hazardous waste management, medicine, pharmaceuticals, general science, government and social services, technical advertising, freelancing, and consulting. Each chapter, written by contributors who are practitioners and/or teachers in one of the areas, tries to answer questions people entering the profession might have: What's it like to be a writer in a particular professional area? Where might I work? What special skills might I need? And how, exactly, should I prepare if I want to be a technical or scientific communicator? In addition, each chapter contains interviews with two practitioners about the details of their work.

Redish, Janice. 1995. "Adding value as a professional technical communicator." *Technical communication* 42, no. 1:26–39.

Redish argues that technical communicators must "consider it [their] role to show the value [they] add" (p. 38). To this end, Redish provides a series of concrete strategies for persuading managers that "even if quality work by professionals takes more resources up front, the return on that investment more than makes up for the costs" (p. 27). Using a wide variety of case studies from different industries, Redish provides techniques for measuring value added, such as outcome measures (for example, fewer support calls; lower support costs), satisfaction measures (for example, ratings by customers), and projections (for example, estimating avoidable costs). In addition to producing data, however, Redish suggests that technical communicators must be more assertive in taking credit for their positive contributions to organizations.

Savage, Gerald J., and Dale L. Sullivan. 2001. *Writing a professional life: Stories of technical communicators on and off the job.* Allyn and Bacon Series in Technical Communication. Boston, MA: Allyn and Bacon. Bib. 192 pp.

This collection includes 23 narratives written by practicing technical communicators that "both reinforce and challenge a number of the current 'truths' of the profession" (p. xxv). Although most of the stories are drawn from computer-related industries, a range of other industries are also represented: civil engineering, medical writing, marketing, freight industry safety, research and development. The book is organized in three sections, each reflecting one category of narrative. The first section includes stories about getting started in the field of technical communication. These stories "commonly reveal concerns about the transition from academia to professional workplaces" (pp. xxv–xxvi). The second section consists of stories about the technical communication process. These narratives emphasize some of the skills and principles typically taught in technical communication courses, but also "call attention to realities that are largely overlooked in the classroom": issues like consulting, interpersonal skills, networking and teamwork, working with subject matter experts, and maintaining professional standards (p. xxvi). The third section includes stories of "life beyond the job," stories which feature "issues of identity" and "the problem of balancing personal and professional commitments and interests" (p. xxvi). The collection ends with a list of suggestions for further reading on narrative and writing in the workplace.

Selber, Stuart A. 1994. "Beyond skill building: Challenges facing technical communication teachers in the computer age." *Technical communication quarterly* 3, no. 4:365–390.

This article examines pedagogical issues that accompany increased computer use in technical communication classrooms and the limits this causes in moving beyond skill building. The author argues that technical communication teachers should "encourage computer literacies . . . that consider the rhetorical, social, and political implications of computer-mediated communication and work" (p. 366). Through a survey of college and university course descriptions and Internet discussion groups, the author examines "common approaches to integrating computers in technical communication curricula and in what ways these approaches may or may not move beyond skill building to include broader literacy and humanistic issues" (p. 366). The author poses three challenges to move beyond skill building: "Balancing Technological with Literacy and Humanistic Concerns," "Re-Envisioning Our Computer-Related Curricula," and "Educating Teachers Who Use Computers in Their Classrooms."

Selfe, Cynthia L., and Gail E. Hawisher. 2002. "A historical look at electronic literacy: Implications for the education of technical communicators." *Journal of business and technical communication* 16, no. 3:231–276.

Selfe and Hawisher urge technical professionals and students to expand their definitions of digital literacy. From sample interviews, case studies, and survey information taken from the TECHWR-L listserv, the authors investigate how technical communicators gained electronic literacy from 1960–2000. They suggest that 21st century technical communicators must "read, write and navigate in technological contexts"(p. 260), that class and race must be understood as factors in the acquisition of digital literacy, that faculty and technical programs should include teaching "both emerging and fading literacy practices" (p. 265). Perhaps most central, "the digital divide characterizing the end of the twentieth century—and affecting the prospects of some technical communicators—will never be fully addressed until access to computers and to the acquisition and development of electronic literacy is understood as a vital, multidimensional part of a larger cultural ecology" (pp. 268–269). The authors conclude by urging the technical communication profession to "extend its thinking about what literacy now entails in digital environments and how new electronic literacy skills and values can be taught in pre-professional programs and in on-the-job contexts" (p. 270).

Staples, Katherine, and Cezar Ornatowski, eds. 1997. *Foundations for teaching technical communication: Theory, practice, and program design.* ATTW Contemporary Studies in Technical Communication, vol. 1. Greenwich, CT: Ablex Publishing. Indexes. 358 pp.

This collection of 22 essays, according to the editors, attempts to answer the question of where the discipline is today, "not to limit possibilities or define boundaries but to serve as a marker on the way, an orientation point, an invitation to the journey ahead'" (p. ix). The essays are divided into four parts: Theoretical foundations, Practical foundations, Professional roles for technical communicators, and Program design. This organization, the editors state, "reflects our belief that technical communication is at once founded in theory and oriented toward practice . . . and that these dual foundations are reflected in technical communication education and program design" (p. xii). The editors conclude their introduction to the essays by identifying four shifts in the discipline, including "a shift away from a view of technical communication as a transaction between writer and audience and toward a social or contextual view of technical communication" (p. xx). Because the essays, written by many leading scholars in the field, provide both an overview and starting points for further study of a wide range of topics, the collection has been used in courses designed to prepare students as teachers and researchers.

Zemke, Ron, and Thomas Kramlinger. 1982. *Figuring things out: A trainer's guide to needs and task analysis.* Reading, MA: Addison-Wesley. Index. Bib. 348 pp.

According to the authors, "this book is about the techniques and tactics we apply to the problem of figuring out what successful people do when they do something successfully" (p. 3). The book also examines techniques to use when someone suggests that an organization has a training problem but has not accurately pinpointed the causes of the situation or its appropriate solutions. The book's title is the authors' response to jargon terms such as "task analysis" or "needs analysis": "We decided to call what we do an FTO (Figuring Things Out) study. . . . [O]ur job is to identify the human factors or 'people parts' of important organizational problems and determine the cause or causes of those human performance problems . . . . In a nutshell, we Figure Things Out" (p. 5).

The 21 chapters are divided into seven sections plus three appendixes. The first section outlines the authors' approach to analyzing human performance problems and the factors that influence organizational performance. Sections II–V detail techniques and procedures for "figuring things out." The authors state that "at one

time or another we have used every one of these techniques in our own work" (p. 6). Section VI covers the techniques to apply to specific performance problems "to separate the political from the technical considerations" (p. 6). Section VII provides guidelines for communicating FTO results to management as well as some specific applications.

WRITING AND EDITING

This section lists references that technical communicators use for writing and editing both paper and electronic documents.

Alred, Gerald J., Charles T. Brusaw, and Walter E. Oliu. 2003. *Handbook of technical writing*. 7th ed. Boston, MA: Bedford/St. Martin's. Index. 645 pp.

The *Handbook* uses an encyclopedia format with alphabetically arranged entries that allow extensive cross-referencing throughout. Designed as a reference guide for both students and those on the job, the *Handbook* includes an introduction discussing the writing process; a topical key grouping entries in categories, such as "design and visuals"; entries on document types (for example, manuals and newsletters); usage items (for example, *affect/effect*); style items (for example, emphasis and tone); grammar issues (for example, verbs and tense); writing-related topics (for example, e-mail); and a full cross-referenced index. Entries provide samples of document types and cover a wide range of such topics as giving presentations, conducting meetings, and preparing for job interviews.

Baumert, Andreas. 1998. *Gestaltungsrichtlinien: Style guides planen, erstellen und pflegen*. Reutlingen, Germany: Doculine. Index. Bib. 119 pp.

This book (English translation: "Document design guide: Planning, implementing, and updating style guides") describes how to plan, develop, and maintain a company style guide. The author suggests the benefits, such as cost savings, as well as the "psychology of style guides." The author also discusses how both language and design can strengthen an organization's image while reducing costs for translation and localization. The author suggests that the well-designed style guide is also a valuable assistant in project management.

Bonura, Larry S. 1994. *The art of indexing*. Wiley Technical Communication Library Series. New York, NY: John Wiley & Sons. Index. Bib. 233 pp.

Bonura provides both an argument for the rhetorical complexity of indexing and detailed technical instruction for producing indexes. Indexing is not just "a simple clerical task or the focus of a large number cruncher," but rather "a creative activity" (p. 10). The importance of indexing, Bonura suggests, is especially clear in the case of technical manuals, for which the "index is used as the first entrance into the material" (p. 26). Bonura thus presents a user-centered guide for creating indexes, providing strategies for activities as abstract as choosing index topics and as concrete as deciding on font style, size and spacing. The book also supplies the mechanics of indexing with traditional index cards or using more advanced technology, and offers tips for calculating the time and cost of indexing. The extensive supplementary material includes a bibliography, a glossary, a style guide, and sample indexes.

Buehler, Mary Fran. 1981. "Defining terms in technical editing: The levels of edit as a model." *Technical communication* 28, no. 4:10–15.

In this landmark article, the author states that "when we—as technical editors—try to communicate clearly about technical editing, we find that we have not yet agreed on standard meanings for our own terms" (p. 10). After demonstrating the confusion over the term *copy editing* as an example, she describes the "levels-of-edit" concept, which was also described in a book she published by the Jet Propulsion Laboratory, *The levels of edit* (1980), with Robert Van Buren. Nine types of edit are performed with documents at JPL: "Coordination, Policy, Integrity, Screening, Copy Clarification, Format, Mechanical Style, Language, and Substantive" (p. 11). After brief descriptions of each edit, she suggests how these terms can be used to define other terms of editing, such as *copy editing*. "Whether we in technical communication use the terminology of the types and levels of edit or not," she concludes, "we must find some commonly understood terms with which we can communicate, if we are to prevent or remove our misunderstandings—unless we are content to struggle with misunderstandings for all our days" (p. 14).

Bush, Donald W., and Charles P. Campbell. 1995. *How to edit technical documents*. Phoenix, AZ: Oryx Press. Index. Bib. 186 pp.

The authors recognize that technical editors work in "isolation," are "mixed in with keyboarders," and often are engaged in "combative" relationships with writers (p. viii). Because technical editing is often perceived as an extension of "keyboarding," the authors attempt "to show how technical editing can improve itself" by using rhetoric, linguistics, semantics, and transformational

grammar (p. viii) to "upgrade the technical editing profession" (p. x) to a profession identified with communication. The book offers instructional chapters on technical editing strategies as well as an accompanying workbook for practicing these techniques. After defining technical editing as a career, the authors discuss specific tasks technical editors use: cutting copy, organizing documents, editing graphics, making word choices, using punctuation, and handling manuscripts. The authors also present the pros and cons of current practices and how technical editors can improve those practices. Appendixes cover editing specific technical document types, such as manuals and proposals.

Ede, Lisa, and Andrea Lunsford. 1990. *Singular texts/plural authors: Perspectives on collaborative writing*. Carbondale, IL: Southern Illinois University Press. Indexes. 284 pp.

Citing their own long-standing collaborative relationship, Ede and Lunsford challenge the idea of writing as a solitary act of authorship and explore historical and theoretical aspects of collaborative writing. The book contains five chapters. "Old beginnings" gives a background for this project. "Collaborative writers at work" describes in detail the collaborative practices of several writers in varied fields and presents survey results of seven major professional organizations' memberships regarding writing in the workplace. "The concept of authorship" reviews the history of "authorship" and discusses challenges to the traditional concept in contemporary literary criticism and in practices such as corporate authorship, honorary authorship in the sciences, and electronic media. "The pedagogy of collaboration" offers historical perspectives, provides a context for collaboration within composition studies, and suggests a pedagogy consistent with theories of plural authorship. "New beginnings" notes that "we have only begun to scratch the surface of what it means to describe writing as a social or collaborative process. Every aspect we have touched on—in the work world and in technological practices, in theory, in pedagogy—calls for further investigation, exploration, elaboration" (p. 141).

EEI Editorial Staff. 1996. *Stet again! More tricks of the trade for publications people: Selections from the Editorial Eye*. Alexandria, VA: EEI Press. Index. 354 pp.

This collection of excerpts from the pages of *The editorial eye*, a monthly newsletter on current editorial practices, is similar to the 1986 *Stet!* This revision retains the intent and tone of the original, providing authoritative opinions on a variety of editorial issues—from the distinctions among "*gamut/gantlet/gauntlet*" (p. 143) to advice on "managing collaborative writing projects" (p. 282). Excerpts are organized from the general to the specific, beginning with "The art of writing," moving through "Usage and grammar," and into "Design and typography." A distinctive feature of the original—small "Test yourself" sections with answers—reappears in this edition.

Hale, Constance, and Jessie Scanlon. 1999. *Wired style: Principles of English usage in the digital age*. Rev. ed. New York, NY: Broadway Books. Index. 198 pp.

Finding that "traditional style manuals [. . .] offer little help in writing fluently and colloquially about the digital world," the editors designed *Wired style* to "complement those guides by digging into questions writers and editors confront daily" (p. 2). The manual is made up of three sections. The first section presents ten principles for writing well in the digital age, five aimed at improving prose style and five aimed at updating copy-editing for current usage. The second section, which constitutes the bulk of the manual, is a glossary of terms and acronyms related to digital technologies, ranging from AFAIK ("as far as I know") to Yahoo! The final section provides answers to frequently asked questions about digital style topics, such as formatting e-mail addresses and treating long domain names. With advice such as "be irreverent," the manual intends to provide guidance on both technical and cultural transformations in language use.

Hargis, Gretchen, Ann Kilty Hernandez, Polly Hughes, Jim Ramaker, Shannon Rouiller, and Elizabeth Wilde. 1998. *Developing quality technical information: A handbook for writers and editors*. Upper Saddle River, NJ: Prentice Hall. Index. Bib. 311 pp.

The authors, members of the editing staff of the IBM Santa Teresa Laboratory in San Jose, CA, originally set out to identify, based on user comments and their own experience, the characteristics of high-quality IBM technical documentation. This book, based on two earlier editions published for IBM software developers, is aimed generally at technical writers, editors, and reviewers. The book is organized into chapters focusing on nine major quality attributes: task orientation, accuracy, completeness, clarity, concreteness, style, organization, retrievability, and visual effectiveness. A series of general statements on how to improve documents in each of these areas is illustrated with extensive before-and-after examples covering writing, illustration, lists, and tables. At the end of each chapter, the statements are collected into checklists; the checklists themselves are collected into a master checklist in an appendix.

Hoft, Nancy L. 1995. *International technical communication: How to export information about high technology*. Wiley Technical Communication Library Series. New York, NY: John Wiley & Sons. Index. 372 pp.

> Written for technical communicators who address international audiences, the book is intended as a practical guide to balancing two "often contradictory needs: economy (business needs) and cultural understanding (user needs)" (p. 2). Hoft reviews the benefits and problems of communication strategies such as localization, internationalization, and globalization, and suggests that "concurrence" (p. 28)—the corporate-level coordination of goals, processes, and data—is the most promising approach for the next generation of international technical communication. In addition to design, writing, graphics, translation, and online issues, the book discusses in detail some of the cultural variables and behavioral differences of international audiences, including models from Edward Hall, Geert Hofstede, and other theorists. The book's appendixes contain worksheets for organizing international projects, examples of user analyses, and a listing of resources useful to international technical communicators.

Judd, Karen. 2001. *Copyediting: A practical guide*. 3rd ed. Menlo Park, CA: Crisp Learning. Index. Bib. 304 pp.

> The author—a long-time managing editor, copy editor, and teacher of copyediting—wrote this book to answer such questions as "how to transpose two terms, what to do with artwork, and how to handle permissions . . . [and] how to deal physically with a manuscript" (p. vii). The 13 chapters, which are illustrated with numerous copymarked passages, offer detailed instructions on using copyediting and proofreading symbols, reviews of grammar and usage, guidance for coding manuscript, and advice on getting work as a copy editor. Although not specifically labeled as a textbook, each chapter contains exercises with answers as well as a summary of "key points" in the chapter. The final section ("No copy editor should be without . . . ") lists reference books and Web sites with annotations that give the author's view of their usefulness to copy editors.

Microsoft Corporation. 1998. *Microsoft® manual of style for technical publications*. 2nd ed. Redmond, WA: Microsoft Press. Index. 336 pp.

> Although intended for writers and editors of Microsoft print, Web, help, and software products, this style guide has become widely accepted by many practitioners both as a reference for using Microsoft Windows terminology (such as defining screen terms: "active window," "drop-down list," "dialog box," "check box," "group box," "list box," "button," etc.) as well as for advice on general topics (such as "Active voice vs. passive voice," "Bias-free communication," and "Dangling modifiers"). The manual is organized alphabetically by topic with index tabs for quick reference. Appendixes include a "List of acronyms and abbreviations" and a list of "Special characters." Included with the book is a CD with searchable HTML versions of this book and other Microsoft publications.

Redish, Janice C., and Jack Selzer. 1985. "The place of readability formulas in technical communication." *Technical communication* 32, no. 4:46–52.

> The authors identify serious problems with readability formulas: (1) They have been applied without valid research; (2) They are not valid predictors of how understandable technical material may be to adults; (3) Readability formulas value short words and sentences, which do not necessarily make documents easier to understand; (4) The underlying assumption of readability formulas that they work universally is not valid; and (5) They ignore many factors that are essential for people's understanding and ability to use documents. The best method, the authors explain, to determine the effectiveness of documents is through usability testing in which users perform tasks with documents to evaluate their effectiveness. The authors list reasons why such usability testing is cost-effective even though it may seem more expensive than using readability formulas.

Rubens, Philip, ed. 2001. *Science and technical writing: A manual of style*. 2nd ed. New York, NY: Routledge. Index. Bib. 427 pp.

> The editor states that this book's purpose is to help "writers and editors prepare useful documents" (p. xxxv). The book is composed of 13 chapters, 8 of which are authored by professional technical communicators: "Audience analysis and document planning"; "Writing for non-native audiences"; "Grammar, usage, and revising for publication"; "Punctuating scientific and technical prose"; "Using acceptable spelling"; "Incorporating specialized terminology"; "Using numbers and symbols"; "Using quotations, citations, and references"; "Creating indexes"; "Creating nontextual information"; "Creating usable data displays"; "Designing useful documents"; and "Bibliography." Each chapter begins with a summary of its contents and each paragraph in the chapter is numbered (for example, Chapter 2 paragraphs are numbered 2.1, 2.2, and so on), which facili-

tates cross referencing. The bibliography is divided into sections that correspond to the previous 12 chapters.

Rude, Carolyn D. 2002. *Technical editing.* 3rd ed. Allyn and Bacon Series in Technical Communication. New York, NY: Longman. Index. 470 pp.

This book is aimed at advanced students in technical communication and practicing editors. Part 1, "People and purposes," introduces the editor's role, reader response, and teamwork in technical communication projects. Part 2, "Methods and tools," contains three chapters on copymarking, including one written by David Dayton that provides an extensive treatment of electronic editing. Part 3, "Basic copyediting," covers punctuation, grammar, mechanics, and proofreading; Part 4, "Comprehensive editing" deals with style, organization, and visual design. Chapter 20, written by Bruce Maylath, focuses on preparing documents for international readers. Part 5, "Management and production," explains legal issues, printing and production, and managing document production. The chapters include style sheets, checklists, editing exercises, recommended readings, and illustrations of the editing process. A glossary of terms (for example, *dead copy*, *XML)* is included.

Sabin, William A. 2001. *Gregg reference manual.* 9th ed. New York, NY: Glencoe/McGraw Hill. 640 pp.

The author states that the ninth edition of this standard office guide "presents the *basic rules* that apply in virtually every piece of writing, as well as the *fine points* that occur less often but cause no less trouble when they do" (p. v). The book begins with six brief, relatively informal essays by the author about "points of style that cause great difficulty for those who work with words": the use of numbers, capitalization, commas, compound adjectives and hyphens, semicolons, and abbreviations. The book is then divided into three parts. Part 1: "Grammar, usage, and style" contains 11 sections on topics such as punctuation, abbreviations, spelling, and usage. Part 2: "Techniques and formats" contains 7 sections on such topics as proofreading, filing, letter forms, and manuscript preparation. Part 3: "References" includes 3 appendixes: a glossary of grammatical terms, a glossary of computer terms, and an alphabetical list offering appropriate pronunciation for words used in business, legal, and professional contexts.

Strunk, William, Jr., and E. B. White. 2000. *The elements of style.* 4th ed., with a foreword by Roger Angell. New York, NY: Longman. Index. 105 pp.

This style guide descends from a booklet William Strunk, Jr. privately printed and used in his classes at Cornell University over 80 years ago. In E. B. White's introduction to the 1979 edition, included here, he comments, "Will Strunk loved the clear, the brief, the bold" (p. xviii). These basic principles remain the foundation for this style guide.

Part I, "Elementary rules of usage," contains 11 punctuation and grammar rules, such as "Do not join independent clauses with a comma." Part II, "Elementary principles of composition," continues the numbering system with style rules 12 through 22, for example, "Use the active voice," and "Avoid a succession of loose sentences." Part III, "A few matters of form" discusses mechanics, for example, "Headings" and "Numerals." Part IV, "Words and expressions commonly misused," covers 123 items involving correct word usage, appropriate constructions, and revision of clichés. In Part V, "An approach to style," White discusses the intangible qualities of style and offers 21 style principles, including "Do not explain too much," and "Do not overwrite." This edition includes a glossary of grammatical terms.

In a foreword, Roger Angell, a stepson of E. B. White, explains modernizing updates in examples and says that e-mail is not covered because it is "conversation" (p. x). In an afterword, Charles Osgood comments that Strunk and White collaborated separately and across decades, with White taking Strunk's "little gem" and transforming it into "a classic" (p. 87).

Sun Technical Publications. 2003. *Read me first! A style guide for the computer industry.* 2nd ed. Upper Saddle River, NJ: Prentice Hall. Index. Bib. 356 pp.

The authors state that this book "provides everything you always wanted to know about documenting computer products, from writing about Web sites to legal guidelines, from writing for an international audience to developing a documentation department" (p. xix). *Read me first!* is organized into 14 chapters with four appendixes. Each chapter offers guidelines for the following: mechanics of writing; constructing text; writing style; online writing style; constructing links; writing tasks, procedures, and steps; writing for an international audience; legal guidelines; types of technical documents; working with an editor; working with illustrations; writing about Graphical User Interfaces; glossary guidelines; and indexing. Appendix A, "Developing a publications department," includes topics such as scheduling, roles and responsibilities, technical review, and printing and production. Appendix B, "Checklists and forms," contains sample checklists for documentation development, including manuscript tracking, request for editing, art

tracking, and a technical review cover letter. Appendix C is "Correct usage of terms" and Appendix D is "Recommended readings."

Tarutz, Judith A. 1992. *Technical editing: The practical guide for editors and writers*. Reading, MA: Addison-Wesley Publishing. Index. Bib. 454 pp.

This book is intended for technical editors or those planning to be editors. Part I, "The editor's role," provides a definition of technical editing and principles used by effective editors, including collaboration. Part II, "The editor's job," covers editorial reviews, common errors, levels of edit, rules, company style guides, style tips, and computer manuals. The chapters contain specific tips for tasks (for example, production edits, text heads) and for decision-making (for example, performing editing triage). Part III, "The editor's career," discusses desktop publishing, managing projects, the job search, and surviving new technology. Scattered throughout the 16 chapters are 26 exercises asking readers to identify a text problem or to rewrite some text.

Appendix A contains ten case studies that include a description of a problem and the author's analysis of it. The cases focus on negotiating teamwork and cooperation. Appendix B shows the tables of contents for three comprehensive style guides. Appendix C provides answers to the 26 exercises in the book. A glossary of technical terms (for example, user interface) and a bibliography of editing and style guides are also included.

U.S. Government Printing Office. 2000. *Style manual: 2000*. Washington, DC: U.S. Government Printing Office. Index. 326 pp.

The GPO *Style manual* is a standard guide for writers and editors in the federal government and for those who submit work to the federal government. It provides both general advice and specific format instructions for documents as well as guidance in the use of such elements as capitalization, spelling, abbreviations, signs and symbols, italics, tables, footnotes, and geographical and political divisions. The GPO Style Board states that "the manual is primarily a GPO printer's stylebook. Easy rules of grammar cannot be prescribed, for it is assumed that editors are versed in correct expression. [Further,] its rules cannot be regarded as rigid, for the printed word assumes many shapes and variations in type presentation" (p. IV). The *Style manual* is available in PDF form at the Government Printing Office Web site: http://www.access.gpo.gov/styleman/2000/style001.html.

University of Chicago Press. 1993. *The Chicago manual of style*. 14th ed. Chicago: University of Chicago Press. Index. Bib. 921 pp.

The first edition of this manual was published in 1906, and, over the following century, it has become a definitive editorial guide for writers, editors, proofreaders, copy editors, designers, and publishers. Part 1, "Bookmaking," contains four chapters on manuscript preparation and copyright and permissions. Part 2, "Style," contains 13 chapters covering such issues as "Tables" and "Mathematics in type," and a section ("Foreign languages in type") with extensive lists of type differences for Hebrew and other non-Roman alphabet languages. Part 3, "Production and printing," has two chapters on design and composition. The decimal-numbering system used throughout the manual makes it easy to use. A glossary of technical terms (for example, *flyleaf*, *kern*, *x-height*) is included as well as a bibliography listing other style and editing guides.

Williams, Joseph M. 2003. *Style: Ten lessons in clarity and grace*. 7th ed. New York, NY: Longman. Index. 270 pp.

In his preface, Williams provides the questions on which he bases the book: "What is in a sentence that makes readers judge writing as they do? How can we diagnose our own prose to anticipate their judgments? How can we revise a sentence so that readers will think better of it?" (p. ix). Rather than presenting rules, he offers his principles as ways to help predict how readers will read and judge our prose. He says, "these principles have little to do with how you write, much to do with how you revise" (p. x). Using his own knowledge of language and his experience teaching in organizations, Williams demonstrates in ten "lessons" various features of clarity and grace, such as cohesion, emphasis, elegance, and the ethics of prose. Williams includes exercises with "possible revisions" at the end of the book.

DOCUMENTATION AND USABILITY

Works in this section describe the development and usability of online and paper documentation.

Barker, Thomas T. 1998. *Writing software documentation: A task-oriented approach*. Allyn and Bacon Series in Technical Communication. Boston, MA: Allyn and Bacon. Index. 484 pp.

This book is a comprehensive guide for producing software documentation, that is, "documents . . . that help software users learn program features and use them to work productively" (p. xix) Throughout, the approach

taken by the author is that of "task orientation" based on the notion that the "software instructions, procedures, manuals, and help programs that users find useful in their work reflect the organization of the user's tasks" (p. xix). The book is divided into 15 chapters. The first chapter explains the concept of "task-oriented" software documentation. The next six chapters outline a step-by-step process for developing task-oriented documentation: analyzing the documentation's intended users, creating a task list, planning and writing documents, obtaining reviews of documents, conducting usability tests, and editing documents. The final eight chapters constitute a reference manual for documentation designers and cover such topics as laying out pages and screens; employing user-centered, task-oriented language; using graphics effectively; and designing indexes. At the same time, this final section of the book distinguishes between three modes of help for users—"writing to teach," "writing to guide," and "writing to support"—and their corresponding documentation types: tutorials, procedures, and reference texts.

Bias, Randolph G., and Deborah J. Mayhew, eds. 1994. *Cost-justifying usability*. Boston, MA: Academic Press. Index. 334 pp.

Aimed at interface designers, human factors professionals and educators, and those in related areas, this book's chapters are written by 17 usability experts, primarily from major high tech or consulting firms. The editors' goal in "gathering contributions to this book . . . was to empower usability champions of any background with the awareness, the tools, the methods, and the language to compete for . . . development resources—to compete based not on the intangible benefits and the inherent rightness of usability, . . . but on equal ground with the other areas . . . that have a solid history and tradition of demonstrating their dollar value" (p. xiv). The 14 chapters cover such topics as demonstrating the cost-benefit of user-centered design, case studies that demonstrate the value of usability, and organizational "inhibitors and facilitators" to usability. Among the specific examples in the book are a detailed budget for setting up a usability lab and mathematical tools for estimating the cost-benefits associated with adopting particular human factors or usability measures. Each chapter includes an introduction, a concluding summary, and references for further information.

Brockmann, R. John. 1990. *Writing better computer user documentation: From paper to hypertext, version 2.0*. New York, NY: John Wiley & Sons. Index. Bib. 365 pp.

According to its author, this book, written in the format of a software user's manual, "is designed to help you write accurate, clear computer documentation for users–documentation beyond systems and programming documentation. This book presents a systematic approach to writing paper and online documents, and follows the process of creating materials from the inception of the documentation project to updating after publication" (p. 1). The author further states, "This book assumes no prior knowledge of either software or documentation" (p. 5). Its intended audience includes technical communicators, human factors engineers, documentation specialists, programmers, students, systems analysts, and managers of information services.

The book is divided into two parts. In Part one, "The documentation problem," the author "describes the problems of user documentation, what the possible consequences of inadequate documentation may be, and why these problems have occurred" (p. 6). Problems, both on paper and online, are addressed. In Part two, "The standard documentation process," the author "outlines a solution to user documentation problems—the Standard Documentation Process (SDP)" (p. 6). Each of the nine chapters in Part two cover one step in the process from "Developing the document specifications" to "Maintaining the document." The book includes an extensive bibliography, glossary, and index.

Carroll, John M. 1990. *The Nurnberg funnel: Designing minimalist instruction for practical computer skill*. Cambridge, MA: MIT Press. Index. Bib. 340 pp.

The *Nurnberg funnel* refers to a legendary funnel, into which someone might pour knowledge to make people wise very quickly. "The very idea of 'pouring' material into the mind seems ill-conceived," the author states, yet in trying to make instruction efficient, "designers have frequently lapsed into trying to pour information into the learner's mind" (p. 10). This book gathers together "two dozen or so separate empirical projects and theoretical discussions" (p. xviii) about the way "people learn to use computer application systems by self-instruction, that is, in the absence of human coaches or teachers" (p. xvii), which were published over the preceding decade by the author, Robert Mack, and Clayton Lewis. The author says that their "analysis of specific learner problems exposed fundamental flaws in the standard systems approach to instruction and suggested an alternate instructional model, which [they] call the minimalist model" (p. xvii). In the final chapter of the book, the author examines implications and further challenges for minimalist instruction. Although Carroll

has published other works since this book, the *Nurnberg funnel* defined his approach.

Coe, Marlana. 1996. *Human factors for technical communicators.* Wiley Technical Communication Library Series. New York, NY: John Wiley & Sons. Index. 350 pp.

The author focuses on the "cognitive-psychological point of view" of technical communication (p. xiii). As the author notes, the text is not a "how-to" book; rather, it is a book on how users' learn and use information based on technical communication mediums, styles, and products. The author suggests readers can "use this book sequentially or in a random-access fashion" (p. xiv). Using examples and scenarios, both good and bad, the author explores the psychological and physical sensory and perceptual process users engage when processing information. Individual chapters on memory, sensation and perception, learning, and problem solving describe ways users learn information. After developing a framework for human factors in technical communication, the author discusses ways to produce strong, user-centered technical communications. From choosing medium types to presentation of information, the author details how technical communicators can use this information successfully. The book covers the use of color, placement of text, and designing and developing content for native and non-native English speakers. Each chapter ends with a summary and a detailed reading list. An appendix provides an extensive list of resources, which identifies societies, newsgroups, and Internet sites; a glossary defines terms used in human factor studies.

Dumas, Joseph S., and Janice C. Redish. 1999. *A practical guide to usability testing.* Rev. ed. Portland, OR: Intellect Books. Indexes. Bib. 404 pp.

Dumas and Redish begin by defining usability, articulating usability methods, and reviewing several possibilities for assessing and assuring usability. Among the many usability principles they present, some of the more noteworthy ones include "involving users throughout the design process" and "allowing usability and users' needs to drive design processes" (p. 6). The authors guide readers through the planning and execution of usability tests, placing a strong emphasis on ways that test results can help designers modify both products and processes. Recognizing that usability testing is central throughout the development process, the authors also emphasize that usability designers must understand users' performance goals because "people consider a product easy to learn and use in terms of the time it takes to do what they want, the steps they go through, and the success they have in predicting the right action to take" (p. 5). Ultimately, the authors stress that usability testing requires a specific purpose. To reinforce this task-specific approach, they offer guidelines on determining the purpose of particular tests, designing tests, developing tests with task-directed objectives, soliciting and debriefing users, and collecting and analyzing data.

Farkas, David K., and Jean B. Farkas. 2002. *Principles of Web design.* Allyn and Bacon Series in Technical Communication. New York, NY: Longman. Index. Bib. 378 pp.

This textbook introduces basic Web design concepts. Believing that "those who gain an in-depth, coherent understanding of Web design become the best designers" (p. xxi), the authors focus on terms, theories and principles of Web design (for example, navigation, information structure, interface design, and project management) rather than specific Web technologies (for example, HTML, XML, or JavaScript). The text includes 13 chapters on topics like project planning, hypertext theory, Web site structures, the navigational interface, content types, writing for the Web, and graphic design. Although the book focuses mostly on information structures and interfaces, the authors also include an introduction to the history and background of the Web and a chapter on societal and ethical implications of Web technologies. Four appendixes include "Twenty-five guidelines for getting started," "An introduction to copyright law," "Project reports," and "Implementation resources," a short list of books and Web sites for further reading on graphics; animation, video, and audio; and authoring, programming and scripting.

Hackos, JoAnn T., and Janice C. Redish. 1998. *User and task analysis for interface design.* New York, NY: John Wiley & Sons. Index. Bib. 488 pp.

This book focuses on the process of gathering information on user and task analysis through field studies, on-site visits, and listening to and talking with people. Hackos and Redish introduce readers to the rationale behind user and task analysis by first demonstrating its role in the design process and then by demonstrating how multiple disciplines contribute to the overall benefits drawn from such analysis. The authors introduce techniques and variations, such as conducting interviews, using scenarios to analyze data, and developing prototypes, to allow readers easy adaptation to their specific projects and knowledge levels. After extensive discussion of the basics, the authors walk the reader through setting up a client visit. The authors outline

handling the site visit as well as understanding the user's goals and tasks as they relate to individual projects. The final chapter explains how to make the transition from analysis to design. One appendix lists resources for audio and video equipment.

Horton, William. 1994. *Designing and writing online documentation: Hypermedia for self-supporting products*. 2nd ed. Wiley Technical Communication Library Series. New York, NY: John Wiley & Sons. Index. Bib. 439 pp.

The author states that online documentation "requires a rapid and convenient way of retrieving and displaying that information" and this book "explains how to design and write such documents" (p. iii). He calls this book a "style guide," which "tells what to do, but does not present system-specific details of how to do it" (p. iii). The fourteen chapters are divided into eight categories: overview, managing, access, architecture, user-interface, media, specific forms, and conclusion. These categories are framed by a number of questions, such as "Why should I put my document online?" "How do I plan and manage an online documentation project?" "How do I make information accessible?" "How do I design documents to help users at work?" and "How will online documentation change my job?" (pp. iv–v).

Krug, Steve. 2000. *Don't make me think! A common sense approach to Web usability*. Indianapolis, IN: New Riders Publishing. Index. Bib. 195 pp.

Krug wrote the book because "Suddenly a lot of people with little or no previous experience have been made responsible for big-budget projects that may determine the future of their companies, and they're looking for people to tell them that they're doing it right" (p. 4). He provides a holistic, practical view of Web usability aimed at, according to the back cover, a broad range of people in the workplace: "the designers, the programmers, the webmasters, the project managers, the marketing people, and the folks who sign the checks." The book's three sections deal with general principles for designing Web pages, for designing navigation and home pages, and for conducting usability tests. Because a Web site, like any workplace project, can become a political battleground, Krug gives readers tips on focusing Web site discussions on the user's experience and away from more contestable areas like programming and artistic design. The author provides illustrations from real Web sites to support his points. He also includes a brief annotated list of suggested sources relating to Web design, usability, creativity, and decision-making.

Laurel, Brenda, ed. 1990. *The art of human-computer interface design*. Boston, MA: Addison-Wesley. Indexes. Bib. 523 pp.

The introduction states that this collection of articles "was originally proposed by [S.] Joy Mountford as part of an interface training course sponsored by the Human Interface Group at Apple Computer" (p. xiii). It soon blossomed into a text for educational and professional uses outside Apple. The book is divided into five major sections—Creativity and Design, Users and Contexts, Sermons, Technique and Technology, and New Directions. This eclectic and hope-filled mix of theory, technology, and vision that appeared several years before the Worldwide Web contains some surprising contributions, including a chapter on how Koko the gorilla uses the human-computer interface and "sermons" written by Dr. Timothy Leary, famous more for psychedelics than for interfaces, and others. One reason for Apple's heavy commitment to the issues of the human-computer interface at the time was that its Macintosh, although not the only system to support a graphical user interface (GUI), was certainly the predominant GUI system then in use. From the current perspective of more than a decade of experience with subsequent generations of Macs and Microsoft's Windows, the theoretical underpinnings are still valid and so this book has outlived Laurel's expectations of obsolescence in five years (p. 482).

Laurel, Brenda. 1991. *Computers as theatre*. Reading, MA: Addison-Wesley Publishing. Index. 211 pp.

The author, who was a student of theatre before she became a designer of electronic games and computer interfaces, proposes an ideal she calls designed experience which "emphasizes the intrinsically interdisciplinary nature of design by blurring the edges between application and interface and by incorporating insights and techniques from artistic disciplines, especially drama and theatre" (p. xvii). Although the book is organized into seven chapters, the author views it largely as having two halves. The first half (chapters 1–4) develops a general theory of human-computer activity, she calls poetics (based largely on Aristotle). The second half (primarily chapters 5 and 6) illustrates how the general theory can be applied to new design approaches by combining dramatic theory with ideas drawn from some of the leading experts on application and interface design. "My goal in writing this book," she says, "is to improve the quality of human-computer experiences" (p. xviii). In a reprint edition (1993), the author adds a chapter titled "Post-Virtual Reality: After the Hype Is Over," in which she concludes by bridging

technology and art through passion in design: "As an artifact and amplifier of thought, technology is not exclusively about rationality; content is not exclusively about information. [. . .] As we ponder our collective evolution, we see that passion is the prosody of intelligence" (p. 214).

Nielsen, Jakob. 2000. *Designing Web usability: The practice of simplicity.* Indianapolis, IN: New Riders Publishing. Index. Bib. 419 pp.

Nielsen, well known for his Web site (www.useit.com), explains that he wrote this book because he wants "to change your behavior" so that you can "provide better service to your users" (p. 13). For Nielsen, Web usability makes good business sense: "Usability rules the Web. Simply stated, if the customer can't find the product, then he or she will not buy it" (p. 9). Nielsen discusses page design, content design, and site design. Simply put, simplicity should be the goal of page design, pages should provide quality content, and users should be able to discern the overall structure of a site to find specific pages and needed information. Nielsen also devotes chapters to intranet design, Web accessibility for users with disabilities, and usability concerns for international audiences. To help facilitate the learning of concepts, Nielsen provides examples of real Web sites throughout the book.

Nielsen, Jakob. 1993. *Usability engineering.* San Diego: Academic Press. Indexes. Bib. 362 pp.

Nielsen states that his main goal in writing this book is "to provide concrete advice and methods that can be systematically employed to ensure a high degree of usability in the final user interface" (p. ix). In the book, Nielsen largely deals with the interfaces of computer systems, but the "methods can be used for the development of interfaces to any kind of interactive system" (p. xi). The book opens by detailing the cost savings of usability testing, some common slogans about usability engineering, and discount usability engineering. The book contains chapters on defining usability, on the usability engineering lifecycle, and on usability heuristics. He focuses on a discussion of usability testing and usability assessment methods, including observations, interviews, questionnaires, and focus groups. Nielsen concludes the book with a discussion of usability concerns for international user interfaces and future developments. Appendixes include an exercise section as well as a 23-page annotated bibliography of resources.

Price, Jonathan, and Henry Korman. 1993. *How to communicate technical information: A handbook of software and hardware documentation.* Redwood City, CA: Benjamin/Cummings. Index. Bib. 402 pp.

The authors' goal with this book is to show technical writers how to create "convivial" software or hardware manuals, manuals that "empower people to do what they want" (p. viii). In Part 1, "Planning," the authors move the reader through the pre-writing stage. The reader learns how to study the subject and audience, and plan what documents to write, schedule, and budget. In Part 2, "Writing," some of the topics discussed are tables of contents and introductions, tutorials, computer-based training, reference materials, indexes and glossaries, and online help. Part 3, "Revising," covers the process of revision and includes advice on getting feedback, rewriting, refining style, updating manuals, and reviewing other manuals. This book is a revision of Jonathan Price's earlier book, *How to write a computer manual* (1984), which dealt specifically with software documentation.

Price, Jonathan, and Lisa Price. 2002. *Hot text: Web writing that works.* Indianapolis, IN: New Riders. Index. Bib. 507 pp.

In this book, the authors give their "personal take on what works best when writing on the Web" (p. xv). Because writing for the Web "transforms our old ideas of audience, structure, and style, . . . concepts that we have inherited from years of writing on paper begin to dissolve" (p. xiii). They focus on the text rather than on design as evidenced by their chapter titles which include "Who am I writing for, and incidentally, who am I?" "What will the Web do to my text?" "Make text scannable," "Write menus that mean something," "Creating customer assistance that actually helps," and "Persuading niche markets, individuals, and the press." In addition, the authors offer tips for becoming a Web writer or editor, and they provide an extensive list of references and online Web sites, including the authors' Web site at (http://www.WebWritingThatWorks.com). The site contains supplementary materials and exercises based on the book to assist teachers and students.

Rubin, Jeffrey. 1994. *Handbook of usability testing: How to plan, design, and conduct effective tests.* Wiley Technical Communication Library Series. New York, NY: John Wiley & Sons. Index. 330 pp.

This book is intended for those "with little or no formal training in human factors or usability engineering, and with limited resources and facilities for conducting usability testing" or for "the more experienced human

factors or usability specialist who may be new to the discipline of usability testing" (p. xvii). Written in plain language, the book aims to teach "everything you need to know to plan, design, conduct, and analyze the results of a usability test" (p. xviii). Part I covers the reasons for the proliferation of unusable systems, provides an overview of usability testing, and explains four types of usability tests. Part II describes how to prepare for usability testing while Part III explains the six stages for conducting a test. Finally, Part IV discusses the "strategies and tactics for establishing a usability program within your own organization" (p. xviii). The appendix reprints Article IV of "Human Factors and Ergonomics Society Code of Ethics," which explains the principles testers should follow to treat human and animal subjects fairly.

Shneiderman, Ben. 1998. *Designing the user interface: Strategies for effective human-computer interaction*. 3rd ed. Reading, MA: Addison-Wesley Longman. Indexes. 639 pp.

This book is "intended primarily for designers, managers, and evaluators of interactive systems . . . [and secondarily for researchers] who are interested in human performance with interactive systems" (p. iii). The author states that "my goals are to encourage greater attention to the user-interface and to help develop a rigorous science of user-interface design" (p. iii). This wide-ranging book covers topics such as managing design processes, interaction devices, presentation styles, information search and visualization, usability testing, and accommodating for human diversity.

Weiss, Edmond H. 1991. *How to write usable user documentation*. 2nd ed. Phoenix, AZ: Oryx Press. Index. Bib. 267 pp.

The author states, "The purpose of this book is to enhance the power and professionalism of everyone who plans, designs, or writes user documentation" (p. viii). This book, a revision of Weiss's *How to write a usable user manual*, is divided into three parts. Part 1, "Toward a science of user documentation," provides an overview of user documentation, explains ways user documentation succeeds and fails, and discusses the criterion of usability in user documentation. Part 2, "A structured approach to user documentation," moves the reader through the "life cycle" of user documentation: analysis, outline, storyboard, assembly, editing, testing, and maintenance. Part 3, "Online documentation and internal support," covers "User documentation without books," "Strategies for online documentation," and, in an afterword, looks "Into the next century." Appendixes include "Excerpt from the user support plan," "Illustrative modular outlines for user manuals," "Illustrative module specs," "Illustrative 2-page modules," "Glossary of selected terms," and "Books and periodicals for documentors."

VISUAL AND GRAPHIC DESIGN

This section includes works that deal with the conceptual and practical aspects of visual design and graphic elements.

Bernhardt, Stephen A. 1993. "The shape of text to come: The texture of print on screens." *College composition and communication* 44, no. 2:151–175.

The author examines the evolution of texts—and readers' interactions with texts—that is occurring as computer technologies become increasingly central to social discourse. The article aims to identify differences between print texts produced for distribution on paper and electronic texts created for the screen, and more specifically, to develop "a framework for understanding dimensions of variation in texts across the two media" (p. 151). The author proposes an analytic framework of "nine dimensions of variation that help map the differences between paper and on-screen text" (p. 151); namely, on-screen texts tend to be more "situationally embedded, interactive, functionally mapped, modular, navigable, hierarchically embedded, spacious, graphically rich, and customizable and publishable." The author predicts that as computer technologies become even more prominent in our world, we will see new forms of interplay between print and electronic texts and develop new strategies for reading and writing.

Felker, Daniel B., Francis Pickering, Veda R. Charrow, V. Melissa Holland, and Janice C. Redish. 1981. *Guidelines for document designers*. Washington, DC: American Institutes for Research. 117 pp.

Described on its title page as "a product of the Document Design Project funded by the National Institutes of Education," this publication was a landmark in the direct application of research to provide guidance for using both visual and written elements in the development of documents. Chapter I is a five-page introduction that describes the publication's scope and method as well as the authors' purpose "to improve the quality of public documents [because] they frequently affect our well-being in many ways" (p. 1). Chapter II (102 pages) contains 25 "guidelines" covering principles of organizing text, writing sentences, employing typography, and using graphics. Each numbered guideline section (such

as "A-3. Use informative headings" or "C-5. Use ragged right margins") presents relevant principles with examples as well as a section titled "What the research says," which summarizes and cites research studies on the topic. Chapter III (8 pages) lists 193 research studies, divided into categories that match the guideline sections.

Horton, William. 1991. *Illustrating computer documentation: The art of presenting information graphically on paper and online*. New York, NY: John Wiley & Sons. Index. Bib. 313 pp.

Horton suggests that illustrations in technical documentation are generally too minimally used, or are the wrong illustrations, or they are merely aesthetic, or they are "clumsy and crude" (p. vi). Rather than providing a how-to book for correcting these problems, Horton "provides a conceptual understanding from which you can deduce rules and on which you can base design decisions" (p. vii). Horton describes the role of graphics in technical communication, explores concepts such as color and organization, and explains the difference between print and online graphics. He provides chapters based on the different functions of graphics ("Showing what things look like," "Labeling with icons and visual symbols") as well as chapters on the emotional effects of graphics and on overall page design. Horton maintains that tools and technologies may change, yet the same goal exists: "convey[ing] understanding from one human mind to another" (p. 283).

Kostelnick, Charles, and David D. Roberts. 1998. *Designing visual language: Strategies for professional communicators*. Allyn and Bacon Series in Technical Communication. Boston, MA: Allyn & Bacon. Index. 455 pp.

Intended for students, practitioners, and teachers of technical communication, the authors "outline a systematic approach" based on the central premise that effective visual design "depends on the rhetorical situation—audience, purpose, and context" (p. 41). Instead of providing rules or "how-to" advice, this book encourages the reader to develop a "more comprehensive framework for thinking about and practicing design" (p. xviii). The first part, "Integrated Communication," presents fundamental rhetorical concepts, principles of perception and design, and tools for visual analysis. The remaining three parts apply these rhetorical and visual principles to three levels of design: text, graphics, and "design elements encompassing the whole document and strategies for shaping these elements to enhance usability" (p. xx). Each of the ten chapters ends with notes and references, exercises, and assignments. Although the book focuses primarily on paper documents, the authors suggest that the principles outlined in the book can also be applied to hypertext, Web sites, and online communication. The book concludes with a glossary of rhetorical and visual terms.

Norman, Donald A. 2002. Reprint. *The design of everyday things*. New York, NY: Basic Books. Original edition, 1988. *The psychology of everyday things*. New York, NY: Basic Books. Index. Bib. 257 pp.

Norman's purpose is to make issues of good and bad design "visible" in their influence on quality of life. The author's technique is first to map the processes by which humans make decisions about objects, and then to show the ways in which the design of these objects helps or hinders these decision-making processes. In the new preface, the author explains that the 1988 version was often filed in the psychology sections of bookstores and libraries, and indeed the book's discussions of faulty causal reasoning, models of short- and long-term memory, and patterns of error clearly show the reasoning behind the original title. Of particular interest are the author's theories about the ubiquity of poor design, which include observations that, for consumers, "usability is often not thought of as a criterion during the purchasing process," and that, after all, "designers are not typical users" (pp. 78, 155). Norman asks that designers avoid thinking of "a simple dichotomy between errors and correct behavior"; rather, "the entire interaction should be treated as a cooperative endeavor between person and machine, one in which misconceptions can arise on either side" (p. 140).

Schriver, Karen A. 1997. *Dynamics in document design*. New York, NY: John Wiley & Sons. Indexes. Bib. 559 pp.

According to the author, the book has three broad aims: "(1) to describe how document design has evolved, (2) to characterize how readers think and feel about documents, and (3) to demonstrate the practical advantages of taking the reader's needs seriously" (p. xxv). These three aims are reflected in the structure of the book. Part One, "Situating document design," defines document design in two ways: as an activity—"the act of bringing together prose, graphics (including illustration and photography), and typography for purposes of instruction, information, or persuasion" (p. 10)—and as a discipline—"the field is concerned with creating texts (broadly defined) that integrate words and pictures in ways that help people to achieve their specific goals for using texts" (p. 10). The author then provides a history

of how practitioners, teachers, and researchers in various countries have contributed to the development of this field over the period from 1900–1995. Part Two, "Observing readers in action," presents a research-based account of how readers' knowledge, beliefs, thoughts, feelings, and aesthetic responses come into play as readers interpret and use documents in accomplishing particular tasks. This part examines a broad range of subjects, including three different approaches to audience analysis; the textual interplay of words, typography, space, and graphics; and problems that readers face in attempting to deal with poorly designed documents. Part Three, "Responding to readers' needs," uses empirical research to explain "how document designers can translate readers' feedback into textual action" (p. xxviii).

Tufte, Edward R. 1990. *Envisioning information*. Cheshire, CT: Graphics Press. Index. 126 pp.

"The world is complex, dynamic, multidimensional; the paper is static, flat. How are we to represent the rich visual world of experience and measurement on mere flatland?" (p. 9). To help answer that question, the author presents principles "that have specific visual consequences, governing the design, editing, analysis, and critique of data representations. These principles help to identify and to explain design excellence—why some displays are better than others" (p. 9). This book itself is lavishly designed with many full-color illustrations. Chapter 1, "Escaping flatland," presents a variety of design strategies to reproduce dimensions and "data density" (richness). Chapter 2, "Micro/macro readings," treats the reduction of clutter and the revision of illustrations that contain too many details. Chapters 3 through 6 treat "Layering and separation," "Small multiples," "Color and information," and "Narrative of space and time." Much like a "studio" course, the author's theory is communicated as much through an appreciation of the examples as through his words.

Tufte, Edward R. 1983. *The visual display of quantitative information*. Cheshire, CT: Graphics Press. Index. 197 pp.

While stressing the integrity of data, the author treats the display of quantitative information as much as a visual enterprise as a mathematical or mechanical exercise. In Part I, "Graphical practice," Tufte provides nine principles for graphic display, including that graphical displays should "induce the viewer to think about the substance rather than about methodology, graphic design, the technology of graphic production, or something else" (p. 13). But they should also "avoid distorting what the data have to say" and "be closely integrated with the statistical and verbal descriptions" (p. 13). Part II, "Theory of data graphics," containing six chapters, "provides a language for discussing graphics and a practical theory of data graphics. Applying to most visual displays of quantitative information, the theory leads to changes and improvements in design, suggests why some graphics might be better than others, and generates new types of graphics" (p. 10). While his verbal explanations are useful, his examples are far more effective in their ability to teach the reader.

Tufte, Edward R. 1997. *Visual explanations: Images and quantities, evidence and narrative*. Cheshire, CT: Graphics Press. Index. 156 pp.

As the author explains, while his first two books on information design address "pictures of numbers" and "pictures of nouns," this book is about "pictures of verbs" (p. 10). In an exploration of the crucial role of John Snow's graphical displays in understanding the source of an 1854 cholera epidemic—one of two extended analyses that comprise the first half of his book—Tufte argues that visual explanations should demonstrate causality, because convincing demonstrations of cause enable us to "intervene, to govern the cause so as to govern the effect" (p. 28). The second analysis reviews primary sources leading up to the decision to launch *Challenger*, concluding that the "chartmakers . . . had the correct theory, and were thinking causally, but they were not *displaying* causally" (p. 44). The second half of this book offers an eclectic array of attempts to "document and explain a process, *to make verbs visible*" (p. 55). Tufte singles out characteristics of "smallest effective difference," "parallelism," and "multiples in space and time"; the book ends with a chapter on "visual confections," a graphical "assembly of many visual events" (p. 121).

White, Jan V. 1988. *Graphic design for the electronic age*. New York, NY: Watson-Guptill Publications. Index. 211 pp.

Jan White, author of standard works on print design, states "Let's remember the fundamental truth: it is not the technology that matters, but the message" (p. ix). Recipients of communication want information "fast, to the point, easy to understand, easy to absorb, easy to use" (p. ix). The book models those precepts: it is printed in an 8½ x 11″ size and richly illustrated with useful examples and intriguing historical reproductions. The book is divided into five chapters: "Using type"; "Type options: Practical pointers"; "Type facts"; "Page

ingredients"; and "Constructing publications." The appendixes cover paper, binding, measuring equivalents (for example, converting U.S. points to European Didot points), and printing nomenclature in six languages. The writing style throughout is informal, even as the author presents such technical terminology as "quadding." He suggests that understanding such language as well as publishing history is not only important if you discuss a project with production professionals, but the "deeper need . . . [to] know the words to understand the concepts they represent" (p. 51).

Williams, Robin. 1994. *The non-designer's design book: Design and typographic principles for the visual novice.* Berkeley, CA: Peachpit Press. Index. Bib. 144 pp.

Structured for and focused on the inexperienced document designer, Williams' book uses extensive visuals and explanations to evaluate useful document design with examples ranging from nametags to party invitations to résumés and advertisements. The principles Williams presents—contrast, repetition, alignment, and proximity (CRAP)—apply to any type of print-document design (p. 14). Williams moves through these principles in reverse order in the chapters of the book, allowing the reader to design a page logically by placing similar types of information together, laying out that information on the page so that elements connect, using repeated design elements consistently to create a "cohesive look and feel" (p. 43), and then applying contrast to "add visual interest . . . and to create an organizational hierarchy among different elements" (p. 53). The last three chapters discuss designing with type, based on her four principles; Williams then offers an "extras" section, including re-design exercises, quizzes with answers, and a list of type fonts.

PUBLICATION AND INFORMATION MANAGEMENT

This section includes works that describe the management and organization of people, information, and documentation.

Albers, Michael J., and Beth Conney Lisberg. 2000. "Information design: A bibliography." *Technical communication* 47, no. 2:170–176.

Aiming to "identify books that should be on any information designer's shelf" (p. 170), Albers and Lisberg have compiled a list of 17 books voted most important by InfoDesign list participants. Albers, an assistant professor of professional writing at the University of Memphis, annotates each of the seventeen, which range from classic visual theory to current how-to's in Web design. Lisberg, a technical communicator and owner of an information design consulting firm, provides an additional 101 titles suggested by herself and InfoDesign voters. The 101 additional texts are categorized under the headings Creativity, critical thinking; Visual thinking; Graphic design; Infographics; Information design; Instructional design; Interface design; Design—other disciplines, theory; Linguistics; Online information, multimedia; Print information, document design; and Typography.

Allen, O. Jane, and Lynn H. Deming, eds. 1994. *Publications management: Essays for professional communicators.* Baywood's Technical Communication Series. Amityville, NY: Baywood Publishing. Index. 251 pp.

The editors state, "We have collected these essays for students in academic programs in technical and professional communication and for communication professionals in the workplace" (p. ix). The focus of the 18 separately authored chapters is on managing projects, people, and technical communication programs. Part I, "Communication and the manager," includes three articles on the process of project management, personnel issues, and meetings. Part II, "Management and supervision," includes four articles concerning such issues as hiring freelancers and managing internships. Part III, "Project management and the information development cycle," contains six articles on such topics as developing timetables, document standards, and estimating costs. Part IV, "Legal and ethical issues," contains two articles and Part V, "Pedagogy," includes three articles in program and course development for professional communicators. Many of the articles include both references and selected readings.

Applehans, Wayne, Alden Globe, and Greg Laugero. 1999. *Managing knowledge: A Practical Web-based approach.* Addison-Wesley Information Technology Series. Reading, MA: Addison-Wesley Longman. Index. 115 pp.

The authors assume their audience is convinced of the value of knowledge management, so instead of convincing readers they *should* do knowledge management, the authors want to convince readers that they *can* do it (p. 10). In the introduction, the authors define knowledge management as "delivering the information and data people need to be effective in their jobs" (p. 18). Companies incorporate knowledge management for three reasons: ease of partnering, managing expertise turnover, and decentralizing decision-making (p. 17). The first part of the book details the audit, the content portfolio, knowledge architecture, profiling people, and return on investment. Part Two shows how to envision the

company, "not as an organizational hierarchy, but as a collection of cooperative 'content centers'" (p. 23). Part Three explains how to bring it all together into a unified knowledge architecture. Finally, Part Four provides a checklist to ensure a successful knowledge management initiative.

Boiko, Bob. 2002. *Content management Bible*. New York, NY: Hungry Minds. Index. 966 pp.

The author states that to appreciate this book "you need to have felt the pain of too much content and not enough system to handle it" (p. xi). The book is a comprehensive reference guide for handling large-scale content management system projects.

The five parts define content and content management; outline requirements for a content management project; provide instructions for creating a logical design; and provide information about building and implementing a content management system. The book is aimed at such readers as managers, developers, editors, and those who need general familiarity with content management. Parts of the book (such as "Analyzing Audiences") are of interest to marketing, publishing, and communication experts both in the workplace and the academy. The companion Web site (http://www.metatorial.com/) offers audio commentaries by the author, sample databases, and other features accessible only to owners of the book.

Gery, Gloria J. 1991. *Electronic performance support systems: How and why to remake the workplace through the strategic application of technology*. Boston, MA: Weingarten Publications. Index. Bib. 302 pp.

The book offers solutions to personnel training challenges every organization faces. Gery, an acknowledged expert in computer training, maintains that "people are applying new technology to old models rather than re-orienting themselves to the possibilities and alternatives that new technologies will permit" (p. 28). Gery proposes a new paradigm she calls "electronic performance support system" (or EPSS), a flexible conceptual framework within which organizations can generate specific electronic models of personnel performance and training. To make the EPSS concept more tangible for her readers, the book describes its application in ten organizations as well as in chapters on such issues as justification, strategy, philosophy and politics. The author's emphasis on human reactions in a social environment, rather than on merely technical factors in the model's application, makes the EPSS concept of enduring interest to communication professionals.

Hackos, JoAnn T. 1994. *Managing your documentation projects*. Wiley Technical Communication Library Series. New York, NY: John Wiley & Sons. Index. Bib. 629 pp.

The author states, "Few books or training programs exist that deal with the specific requirements of publications-project management" (p. xvii). This landmark book is intended not only for publications-project managers and independent project contributors but also for instructors of future technical communicators and publications-project managers. The 29 chapters are divided into six parts: "Managing for quality—An introduction to publications project management," "Starting the project—The information-planning phase," "Establishing the specifics—The content-specification phase," "Keeping the project running—The implementation phase," "Managing the production phase," and "Ending the project—The evaluation phase." Five appendixes provide various checklists and guides intended to help managers maintain quality technical publications.

Jacobson, Robert, ed. 1999. *Information design*. Cambridge: MIT Press. 357 pp.

In the introductory chapter, "Why information design matters," the editor maintains that because we constantly produce and consume information, all of us are information designers. He suggests that the principles of edification (personal enlightenment) and commutativity (mutual change) are central to the book's discussion of information design. The purpose of the book is "to show us how to be both cautionary and hopeful, to offer us visions of how information design can be practiced diligently and ethically for the benefit of consumers and producers alike" (p. 2). Contributors to the book "run the gamut, from those who deny that there is such a thing as information design to those who believe they have been practicing it for a lifetime" (p. 3). If information design is not yet a true profession, it is in the process of becoming one (p. 6). Part I provides theoretical foundations of information design, Part II provides examples of information design practice, and Part III focuses on designing for the technologies of information. According to Jacobson, "Information design, whatever its label, will enhance our society's ability to collect, process, and disseminate information and to produce understanding" (p. 10).

Redish, Janice C. 2000. "What is information design?" *Technical communication* 47, no. 2:163–166.

Redish offers two meanings of information design: "the overall process of developing a successful document"

and "the way the information is presented on the page or screen" (p. 163). In either case, Redish observes, the objective is "to develop a document (or communication) that works for its users" through considering the users' needs, their ability to understand what they find, and their capacity to use their findings (p. 163). The author indicates four vital concerns in information design: planning questions and front-end analysis; iterative evaluation; the interaction and equal importance of writing and presentation; and planning question-based guidelines for design purposes (p. 163). The two critical trends in technical communication Redish indicates are the Web and single sourcing; the visual aspects of the former and the multiple uses of the latter constrain information design, and communicators must consider the "whole"—process and product, writing and design—to create successful documents.

Rosenfeld, Louis, and Peter Morville. 2002. *Information architecture for the World Wide Web*. 2nd ed. Sebastopol, CA: O'Reilly & Associates. Index. Bib. 461 pp.

Rosenfeld and Morville hope to reach "anyone who's interested in information architecture and maybe a few who aren't" (p. xix). Part I provides an overview of information architecture, including a definition of the profession, qualities and skills essential to the profession, and techniques for identifying how people access information through technology. Part II details the fundamental components of information architecture, including organization, labeling, and navigation systems. Part III focuses on the process and methodology behind information architecture. Part IV is a "series of short essays that provide practical tips and philosophical advice for those doing the work of information architecture" (p. xviii). Throughout the book, the authors include examples, both good and bad, that the reader can access and study via the Internet. The authors provide a detailed list of additional resources, such as discussion lists, directories, books, formal education programs, conferences, and tools.

Wick, Corey. 2000. "Knowledge management and leadership opportunities for technical communicators." *Technical communication 47*, no. 4:515–529.

Because technical communication and knowledge management share three core competencies, the author believes technical communicators are well positioned to take a leadership role instead of a supportive role within businesses. The author defines four knowledge management perspectives—document-centered, technological, socio-organizational, and knowledge organization—and demonstrates how a technical communicator's skill set fits into the "recent and projected growth" of project management (p. 523). The author suggests that technical communicators leverage their skill sets to become "legitimate contenders" in knowledge management (p. 527). In addition, the author proposes that technical communicators broaden their competencies by studying the technologies used in knowledge management, which will help convince some professionals of the value technical communicators add to business and help technical communicators earn the "visibility, respect, and compensation [they] have sought for so long" (p. 528).

Wurman, Richard Saul. 2001. *Information anxiety 2*. Indianapolis, IN: Que. Index. 308 pp.

This book is a revision of Wurman's much discussed *Information anxiety* (New York, NY: Doubleday, 1989) "with additional research and writing by Loring Leifer and David Sume." Trained as an architect of buildings, Wurman uses this book not only to suggest structures that help humans cope with the information explosion but also for reflection: "When I came up with the concept of information architecture in 1975, I thought everybody would join in and call themselves information architects. But nobody did—until now. Suddenly, it's become an ubiquitous term. Of course, as is the case with any ubiquitous label, there are some information architects who legitimately meet the definition of the term, but there are lots who don't" (p. v).

As in the earlier edition, Wurman uses a 22-page table of contents as not only a window on the book but also a readable text by itself. In the chapters, Wurman and his collaborators present a philosophy built on an understanding of how people function and react to information. One prominent example is the use of instructions, understood broadly. Wurman observes that "In a world run by ideas, people are the resources" (p. 230); in that case, instructions in the workplace "require a higher caliber of communications" (p. 229). The book is illustrated with maps, diagrams, cartoons, and drawings that reflect the informality and humor in the writing. Ultimately, Wurman and his colleagues encourage us to understand our limited capacity to process all the information around us and, through this recognition, consider alternative ways to make sense of this information. T**C**

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