

BOOK REVIEWS*

REVIEW EDITOR

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Computers and Technical Communication: Pedagogical and Programmatic Perspectives, edited by Stuart A. Selber, Greenwich, CT: Ablex Publishing Corp., 1992.

The Foreword to *Computers and Technical Communication* identifies its audience as teachers and administrators and promises to deliver to them “an understanding of the complex issues—theoretical and pedagogical, practical and political—involved in the instructional and curricular integration of computers into programs of nonacademic writing” (ix). Does it accomplish this lofty goal? The short answer is, “Yes.” This compilation of essays ably covers a wide range of themes with articles written by scholars who have a critical and careful enthusiasm for technology, including Rebecca Burnett, Stephen Bernhardt, Ann Hill Duin, and James Porter.

The book’s best feature is its timeliness, Technological change is challenging departmental budgets, traditional ways of learning and ways of thinking about ourselves professionally. The articles in this volume offer insight into everything from practical solutions, to theoretical considerations, from grounding principles, to educated speculation. The book is helpfully arranged into four main topic areas: (1) Broadening Notions of Computer Literacy; (2) Exploring Pedagogical Frameworks; (3) Examining Computer-Supported Communication Facilities; and (4) Planning for Technological Changes in Technical

*Books for review should be sent directly to the review editor.

Communication. What follows is a review of the articles in these four major topic groupings. I will end by evaluating the book's claim to "provide understanding of complex issues."

BROADENING NOTIONS OF COMPUTER LITERACY

This section introduces the issues of ethics, visual literacy, and social change in a technological context. A common thread throughout this section (setting the tone for the book) is that technology is not neutral, but is deeply fraught with complexities of culture, economics, authority, and power. Porter tackles the thorny ethical and legal issues surrounding electronic texts, showing the conflicts between the free-wheeling culture of the electronic word as it meets the constraints of copyright, industry, and privacy. He asks important questions about linking, interface imitation, and responsibility for content, and concludes by offering six helpful pieces of "advice" for those writing in the electronic realm.

While Porter provides a broad overview of ethical and legal issues, Lee Brasseur gives a very direct and focused argument for strengthening the teaching of visual literacy in technical communication programs. She shows the cognitive and theoretical conflicts between tradition print landscapes and pedagogies and those of visual landscapes and pedagogies. She argues that teachers need to give students the opportunity to explore and critique this visual landscape.

Other articles in this section stress that we must view technology in ideological, political, and historical ways. Billie Wahlstrom focuses on community issues, while Johndan Johnson-Eilola and Stuart Selber produce theoretically heavy analyses of technology and education. While the three articles have some redundancy between them, they manage to be different enough in focus to be useful.

EXPLORING PEDAGOGICAL FRAMEWORKS FOR COMPUTERS AND TECHNICAL COMMUNICATION

The Pedagogical Framework section starts out strongly with an article from Ann Hill Duin and Ray Archee, who review three theoretical approaches to academic Website creation. Duin and Archee apply cognitive, dramaturgical, and social theory to Website creation in clever ways, providing interesting insights into how we can use the Web in distance learning efforts. The article gave me ideas about how to "use" the Web as tool rather than as a static repository for a course syllabus.

Another strong chapter in the section is by Rebecca Burnett and David Clark, who give an excellent overview of how collaboration and technology work together. The article discusses the limitations of current technology, including the loss of visual/verbal cues, the anxieties caused by using complex

technologies, and the limits of access to technology. The chapter is excellent reading for classes studying electronic collaboration.

The other two articles present insights about online learning by drawing primarily from specific teaching projects. Nancy Allen and Gregory Wickliff describes a distance learning class set up to imitate a company, and Melenbacher outlines the development of the Technical Communication Virtual Campus. Both articles interweave personal experience, research, and insight, but still turn out to be weaker than their section counterparts since many of the personal insights and situations don't lend themselves well to broader application.

EXAMINING COMPUTER-SUPPORTED COMMUNICATION FACILITIES FROM PEDAGOGICAL PERSPECTIVES

This section presents a very targeted look at how computerized learning facilities are designed, implemented and maintained. The opening chapter by Richard Selfe and Cynthia Selfe describes the struggles departments face when implementing computer classrooms, from funding battles, to resentment from some faculty, to administrative headaches. Those who work in academia will very likely see their department mirrored in the descriptions that Selfe and Selfe offer. The authors argue that recognizing the struggle, rather than solving it, will ultimately prove the most helpful since these sites will likely continue to be hotbeds of contention.

The next two articles, one from James Kalmbach and one from Bill Karis, use personal experience with teaching in and getting funding for computer classrooms as a background for discussing what they've learned. Kalmbach's article focuses on curricular change, and while he provides many important points, the article as a whole lacks depth. Each of the three main sections of Kalmbach's article deserves and perhaps needs its own treatment, hence the article serves best as a starting place.

In a similar vein, Karis's article is perhaps the most narrative in the book. He relates his experience with securing funding for technology assisted teaching and then uses the last page to give advice to others looking to start similar initiatives. Because of the long narrative, the payoff for reading the article will depend on the similarity of one's circumstances to those of Clarkson University, as he admits in his advice section. At the very least, however, Karis provides us with a heartening success story followed up with some good principles.

The last article of this section is the most practical and specialized of the book, though not overly so. Tharon Howard provides a detailed overview of the technological and logistic elements that go into building a good computer classroom. The extent of the complexities Howard presents are enough to either give the reader good direction on what to consider or convince someone not to get involved. I found the nuts and bolts nature of the article very appropriate (and

unique) to the volume, though some may have difficulty with some of the jargon. It's definitely useful to anyone designing a computer classroom.

PLANNING FOR TECHNOLOGICAL CHANGES IN TECHNICAL COMMUNICATION PROGRAMS

The last section, Planning for Technological Change, is the strongest in the book. Werner and Kaufer take on the tough question of how to keep technical communications programs "intellectually" based rather than "tool oriented," a theme carried through much of the book. As with other chapters, they use personal experience with their writing program as a case study, though they strike a good balance between describing what happened and conceptualizing how to keep up with change.

An issue that peppers the book finds its complete articulation in Bernhardt and Vickrey's article on supporting faculty development. As many of the other chapters allude to, the rise of writing technology requires faculty to acquire and maintain technological literacy. Bernhardt and Vickrey point out that technically literate faculty often find themselves overworked and undercompensated, while other faculty simply don't have time or desire to productively learn computer skills. The authors suggest ways departments can support faculty in keeping up with technology and include success stories from various institutions as examples.

Shirk's article looks at programmatic and pedagogical change as it relates to preparing budding technical communicators for the new roles they will take on in the face of new technologies. Some of the new roles Shirk describes are "Media Consultant," "Interpersonal Communication Advisors," and "Usability Specialists," among others. Shirk argues that teachers must keep up with current technologies in order to better serve their students, a thought echoed in Bernhardt and Vickrey. The role descriptions offered matched my own experience as a technical writer, and I found myself nodding my head in agreement throughout Shirk's argument.

The book ends with an article on how to form productive alliances with industry and argues that English departments need to "redefine themselves as technology-related or interdisciplinary entities." The authors, Ecker and Staples, acknowledge that corporate and academic partnerships may concern some who already feel the corporate sector has too much influence on the academy. However, their article argues smartly for the benefits of such partnerships both to departments, faculty, students, and industry. While those who want to see the academy kept pristine are not likely to be swayed by this article, Ecker and Staples still provide an ideal where the academy and industry can work together without the academy sacrificing its integrity.

CONCLUSION

So does this book provide an understanding of complex issues? I think so. The articles are diverse, well written, and provide excellent starting places for discussion and further research. While I was less impressed with some of the more narrative articles, others may find them useful since they articulate experiences that show positive programmatic and pedagogical results stemming from wise use of technology. Anyone teaching classes in electronic pedagogy, computers and writing, or program administration would find this a good buy. I would also recommend the book to heads of English departments who may be struggling to come to grips with technology and technical writing in a traditionally humanities-based discipline.

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Foundations for Teaching Technical Communication: Theory, Practice, and Program Design, edited by Katherine Staples and Cezar Ornatowski, Greenwich, CT: Ablex Publishing Corporation, 1997. 358 + xxi pp.

In a book claiming to provide “foundations” for the teaching of technical communication, I expected to see some sound guidelines, perhaps some new ideas, for improving how students learn our discipline. Several—but not all—of the essays in this volume deliver.

Staples and Ornatowski divided the essays into four categories—theoretical foundations, practical foundations, professional roles, and program design; however, the placement of some essays into their categories is questionable. As a former teacher of technical writing and a current industry consultant, I am perhaps too pragmatic in my own approach to theory, having never been satisfied with the development of theory for theory’s sake. To me, then, the theory and practice sections should have been combined, with more emphasis placed on how various theories inform and improve technical communication instruction, and stronger connections made “practical” teaching methods and the theoretical framework in which they operate. Redish’s essay, “Understanding People: The Relevance of Cognitive Psychology to Technical Communication” best accomplished the former suggestion. I also found it odd to categorize an essay such as Sanders (on ethics) in “Practical Foundations” when it so clearly echoes Harrison and Katz’s essay on organizational theory’s application—right down to the warnings concerning limiting student’s ability to make personal, ethical choices when teaching how to write successfully within societal/organizational contexts.

Overall, the theory section was not as balanced as I had hoped after reading Coney's overview of developments in the last decade. Harrison and Katz's "On Taking Organizations Seriously: Organizations as Social Contexts for Technical Communication" and Subbiah's "Social Construction Theory and Technical Communication" are almost too closely related to be in the same collection. However, Subbiah's essay provides a concise overview of how social constructionism differs from cognitive theory—it's good enough for a theory overview course reading. What Subbiah lacked in terms of guidelines for using social constructionist theory in the classroom, Harrison and Katz provided. Ornatowski's "Technical Communication and Rhetoric" is essentially an argument—and certainly not a new one—for the *place* of technical writing in the humanities. It offers little in terms of how rhetorical theory should be incorporated into teaching practices, except the rather vague assertion that "How one talks about rhetoric in a technical communication classroom both depends on and determines, to a large extent, how one talks about technical communication" (46). Redish's previously mentioned essay provides persuasive reasons, from a cognitive psychology perspective, to teach standards as audience analysis, active voice, and usability. She also recommends specific techniques for using cognitive theory to improve the method of delivering technical communication instruction that would be useful and perhaps innovative for many teachers.

In the "Practical Foundations" section, a few essays are definitely worth considering for use in constructing technical writing courses. Sanders' "Technical Communication and Ethics" provides a valuable assessment of postmodern and classical ethical models. An information-packed "Locating Collaboration: Reflections, Features, and Influences" has as its greatest strength is an interesting (but far too brief) overview of technology's current and potential impacts on collaboration. On the subject of technology, Shirk's "The Impact of New Technologies on Technical Communication" reviews the kinds of technical skills students should learn, but it misses the mark by discussing helping students deal with the "oversaturation of information" (187) and "the problems of network etiquette" (188) without mentioning the absolute necessity of teaching a critical, even skeptical, approach to on-line information.

In the "Professional Roles for Technical Communicators" section, Grice's "Professional Roles: Technical Writer" is particularly strong in that it serves as an accurate depiction of specific industry expectations. More importantly, the essay reiterates a common challenge from industry to technical communication teachers: break the mold of structured assignments and "right" answers (219) and graduates will be more prepared for a workplace in which neither exists. Rainey's "Visual Communication: The Expanding Role of Technical Communicators" might seem too forward-looking in its call for increasing visual communication education; however, industry standards for dissemination increasingly involve interactive technology, and technical writers with visual communication abilities are in high demand.

The final section on “Program Design” contains three interesting essays that overview how program design occurs (and should occur) for four-year, two-year, and certificate programs. Not much is surprising here except in terms of the importance given to theoretical knowledge across these three essays. In discussing bachelor’s programs, Geonetta, as expected, asserts that programs can respond to the ever-changing demands of industry by the inclusion of “A sound foundation in professionalism, characterized by an exposure to key thinkers about and key theories of communication” (257). Katherine Staples, in “Two-Year College Technical Communication Programs: Toward the Future” mentions a need for collaboration between academic programs to pursue “issues that underlie the balance of curriculum that educates—rather than trains—the future responsible technical communicator” (268). As Little argues in “Designing Certificate Programs in Technical Communication,” certificate curriculum designers must make efforts to incorporate what she calls “humanistic concerns” (282) into programs.

Overall, *Foundations for Teaching Technical Communication* contains solid, but sometimes redundant, treatises on various theories and practices in technical communication, and many of the essays conform to the editors’ goal of providing a basis from which to teach the discipline. While there’s not much in the way of new, fresh ideas, it’s a volume that will generally bring readers up to speed in areas they may not have previously explored.

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Reader Feedback in Text Design: Validity of the Plus-Minus Method for the Pretesting of Public Information Brochures, by Menno de Jong, Utrecht Studies in Language and Communication, Vol. 13, Amsterdam and Atlanta, GA: Rodopi, 1998.

In addition to involving the target readers in the process of designing documents by benefiting from their opinions and perspectives to improve the quality of documents, it is also necessary that reliable research methods be developed and validated for use in designing and improving effective documents. In several publications, Karen Schriver (most recently, in *Dynamics in Document Design*, 1997) extensively discussed the empirical research in the field of document design, but did not include research on specific tests or methods.

Menno de Jong’s *Reader Feedback in Text Design: Validity of the Plus-Minus Method for the Pretesting of Public Information Brochures* extends empirical research into methods used to design texts. Jong presents and analyzes research

intended to validate a specific research method used for the pre-testing of brief documents written for the Dutch public.

Reader feedback has often been pre-tested and gained in numerous ways, including through the use of think-aloud protocols, verbal self-reports, questionnaires, direct observation, and comprehension, performance, and physiological measures.

Jong's plus-minus method was designed to find and diagnose problems that target readers have with documents. The plus-minus method is used to indicate the problems that a document might have for its intended readers, so that these reader-specified problems can then be corrected or improved in a revision. Accordingly, the plus-minus method primarily has a troubleshooting function and is of value only when a revision is planned.

Jong's plus-minus method is actually a series of three procedures intended to gain reader feedback on problems readers might have with any document. The first procedure consists of the plus-minus judging method. The instructions are as follows:

Please read the entire brochure, including any parts you might skip 'in real life.' While reading, place pluses and minuses in the margin. . . . write down a plus anytime you judge something as positive—for example, if you find something in the brochure well-written, funny, interesting, clear, or important. . . . write down a minus anytime you judge something as negative—for example, if you find something . . . not interesting, unclear, or unimportant. You can write down pluses and minuses for any reason.

Decide for yourself which units of the brochure to mark with a plus or minus. . . . write down a plus or minus for a chapter, a paragraph, a sentence, a word, or a caption. You can also assign pluses and minuses to illustrations. . . . indicate which part of the brochure a plus or minus applies to. . . .

Please take your time. Read the brochure at your own speed. But do not think too long about pluses or minuses. Any plus or minus is okay, as long as it reflects how you judge a part of the brochure. We will use the pluses and minuses to improve the brochure.

After reading the document from cover to cover and placing pluses and minuses in the margins, the second procedure involves asking the participants to explain their pluses and minuses at an individual interview. Additionally, if the reader did not place any marks at all in a section, the reader is asked whether there is nonetheless something he or she would want to comment on in that section. During this time the researcher tries to diagnose the reader's problems with the document and to explore possible solutions. These interviews generate a list of the document's problems, and these problems are later evaluated and improved in a revision.

The third procedure involves the use of a short semi-structured questionnaire. After the whole document has been discussed, participants are asked several

questions about how they judged some of the general characteristics, the more or less global aspects of the document, such as the front page, macro-structural characteristics, the information selected, and the overall text features. The main goal of this questionnaire is to search for additional, potential problems.

Separating the task of indicating positive and negative experiences with the document from explaining why the experiences were one or the other, the plus-minus method allows the discovery of many diverse problems without unduly disrupting the reading process.

In each of the above procedures, there is a definite effort to attribute reader problems and judgments to specific text features, so that this method of collecting reader comments is pointedly based on and related to aspects of the actual document itself. No changes were made in any revision unless it was based on such reader feedback.

Jong's plus-minus method therefore consists of three procedures: 1) Mark pluses and minuses anywhere, 2) explain why you marked pluses and minuses (or might still do so), and 3) evaluate how you like the global characteristics of the document. It is thus a method of gaining reader feedback about reader problems from the reader's perspective of a document written expressly for the reader.

The purpose of the plus-minus method is to gain and provide feedback about problems that readers notice, so that these problems can be resolved to some degree in a revised document. If the use of this method results in an improved version of the document, the method can be considered effective. But the method can be considered effective, only if the improvements can be attributed to the use of the plus-minus method and not primarily to the work of the researchers administering the method. At some point in the development of revisions, however, those who administer the method had to make decisions concerning which reader problems to keep in and which to delete, as well as how to improve or resolve the reader problems. In this respect, the plus-minus method necessarily depends on, and hence essentially includes, the knowledge, decision-making ability, and the decisions of those who administer the method.

The great value of *Reader Feedback in Text Design* consists in the detail of its evaluation and explanation of the empirical research performed. Constructs are properly selected, the experimental design always includes a control group, and statistical tests fit the groups measured. Jong's goal is to determine whether the plus-minus method is, in fact, a valid (effective) method for accomplishing its purpose of gaining important reader feedback. Two kinds of validation research are carried out.

The first kind of validation concerns the assessment of the validity of the method with revision as an intermediate step. Does the plus-minus method lead to improved documents? That is, does a revision based on the results of the plus-minus method lead to significant improvements in the functional quality of

documents? This question was answered in terms of three specific research studies.

First, how many and what types of reader problems are detected in documents by means of the plus-minus method? Second, do readers from the target population prefer the revised version of the document over the original version? And third, are the revised versions of documents more effective than the original ones?

The second kind of validation research carried out uses experts to judge the problems detected using the three procedures of the plus-minus method. That is, how do experts rate the importance of the reader problems detected in the documents by means of the plus-minus method? More specifically, firstly, are there differences in importance between different types of problems? Secondly, are there differences in importance between the plus-minus judging results and the results gained by the semi-structured questionnaires? Thirdly, what is the relation between the frequency of the problems detected by the use of the (three procedures of the) plus-minus method and their importance as judged by the experts? And, fourthly, to what extent do the experts agree in their judgment of reader problems? (What is the inter-rater reliability of these experts?)

The above seven questions constitute the seven basic research questions on the validation and validity of the three procedures of the plus-minus method. All of the six documents used in the research were Dutch public information brochures written for targeted populations and concerned public health or government information. Three brochures were intended to be instructive and informational, and three were intended to be persuasive in their effect on readers.

The three instructive and informational brochures concerned rent subsidy (government financial support for housing rent), victim aid (financial aid to victims of crimes), and first job (internal revenue policies). The three persuasive brochures concerned narratively described health issues of drinking alcohol, FAQs about drinking alcohol, and safe sex. The persuasive brochures were designed to persuade readers to drink moderately and to practice safe sex. Each brochure was tested with a sample of the targeted population using the three procedures of the plus-minus method and then revised on the basis of the results of those procedures. The revised brochures were then compared to the original brochures by a different sample of the targeted population.

First Research Question: How many and what types of reader problems are detected in brochures by means of the plus-minus method? Readers found 151 problems in the rent subsidy brochure, 165 in the victim aid, and 157 in the first job brochures. For the persuasive brochures, readers found 52 problems in the narrative alcohol brochure, 67 in the FAQs alcohol, and 99 in the safe sex brochures.

These reader problems were categorized by those who administered the method into eight types of problems: graphic design (of layout or illustrations), correctness (of grammar, punctuation, etc.), structure (of headings, order of

information, etc.), comprehension (clarity, applicability, vocabulary), acceptance (credibility or reasonableness), appreciation, relevance, and completeness (of information or explanations).

Second Research Question: Do readers from the target population prefer the revised version of the brochures over the original version? Yes, in all cases. For the instructive and informational brochures on rent subsidy, victim aid, and first job, the revised version was found to be significantly better than the original versions. For the persuasive brochures on alcohol and safe sex, the revised versions were also found to be significantly better than the originals, although these persuasive brochures were also found to be less improved than the revised instructive and informational ones. It seems to be more difficult to improve persuasive brochures than instructive and informational ones by using primarily reader feedback.

Third Research Question: Are the revised versions of brochures more effective than the original ones? Rather than having the same persons from the target population compare the original and revised versions of brochures, the effectiveness (comprehensibility), overall assessment, and adequacy of the title of the brochures were determined by independent groups of persons from the target population. Half of the participants received the original brochure, and the other half received the revised version. All the participants were asked to read the entire brochure and to fill in several questionnaires in a fixed order, and the correctness of items was compared.

It was found that the effectiveness (comprehensibility) of the rent subsidy brochure was significantly improved, although the revised versions of the victim aid and first job brochures were not significantly improved. For the persuasive brochures, it was found that the effectiveness (comprehensibility) of the two alcohol brochures was not significantly improved in the revised versions, while the safe sex brochure was significantly improved.

It was also found that the overall assessment of the brochures was (significantly) reliably improved for the instructive and informational brochures, but not so for the persuasive brochures. Again, it seems to be difficult to improve persuasive brochures by using primarily reader feedback.

Only the victim aid and first job instructive and informational brochures were investigated to determine whether the adequacy of the titles were improved in the revised versions. The victim aid title was found to be significantly improved, while the first job title was not found to be improved by the revision.

The persuasiveness of the original and revised versions of the three persuasive brochures was measured by use of attitude tests. It was found that the revised version of the narratively presented alcohol drinking brochure was significantly more persuasive than the original version. The original and revised versions of the FAQs form of the alcohol drinking brochure did not significantly differ in persuasiveness, suggesting that attempts to persuade by using reader feedback to

improve FAQs is not easy, or that FAQ forms are not very effective in persuading target audiences anyway.

Fourth Research Question: Are there differences in importance between different types of problems? Differences in severity of reader problems was measured by ten experts rating on a five-point scale each of the total number of reader problems gained for the original rent subsidy (151), victim aid (165), FAQ alcohol (67), and safe sex (99) brochures. The ten experts rated 37% of the reader-specified problems to be important and 47% of them to be unimportant. Their relatively high overall agreement on this indicates both that reader feedback yields important results and that it is important to make a distinction between important and unimportant reader problems.

Moreover, the experts indicated that three types of problems were more important than others. Completeness, structure, and comprehension problem types were rated as significantly more important than the other five types (appreciation, acceptance, graphic design, correctness, and relevance).

Fifth Research Question: Are there differences in importance between the (two procedures of the) plus-minus results and the results gained by the semi-structured questionnaires? The results indicated that the problems detected with the two procedures of the plus-minus method were significantly more important than those found only through the questionnaire. Because the questionnaire also found additional, significant problems, however, it seems most accurate to consider them as complementary to each other.

Sixth Research Question: What is the relation between the frequency of the problems detected by the (three procedures of the) plus-minus method and their importance as judged by the experts? There was no significant correlation found between the frequency of the problems detected and their importance.

Seventh Research Question: To what extent do the experts agree in their judgment of reader problems? (What is the inter-rater reliability of these experts?) Very little correlation was found between the judgments of the experts as to the importance of reader problems. Clearly, individual experts appear to be a weak link in using reader feedback to improve brochures.

The above empirical research shows that the (full) plus-minus method is an effective means of gaining important reader feedback. Of course, so is the Rorschach (inkblot) test, as well as other projective procedures. These procedures all gain important information from subjects appropriately tested, but this testing often requires great skill. The skills required to utilize the plus-minus method would seem to have to include interpersonal listening and empathy skills, since the objective is to gain the feedback from the perspective of the reader and not from that of the sender.

Reader feedback, like inkblot interpretations, must also be properly interpreted and evaluated, however, so that its results can be used. Jong is aware that readers using the plus-minus method may not fully comprehend the material they are evaluating, and they may not apply it correctly. Since Jong's readers are

not required to actually use the information, no performance measure is available. The motivation of readers who do not plan to use the information may be different from that of actual users, and the experimental results of this method might be different for them. One can question whether readers can be good judges of their own comprehension of any text they read. Readers may say things in order to gain the approval of the test administrators. Others may be afraid to say things, for fear of appearing stupid. But such objections can be made against any test.

Because Jong does not have an performance measures, no actual criterion-related concept of validity is possible for the plus-minus method. According to most concepts of test validity (e.g., Anne Anastasi, *Psychological Testing*, 7th Edition, 1997), criterion-related validity indicates the effectiveness of a test in predicting an individual's behavior in specified situations. For this purpose, performance on a test is checked against a criterion, which is a direct and independent measure of that which the test was designed to predict. Jong has no independent measure to justify using this concept of criterion-related validity. Rather, Jong's plus-minus method has been empirically proven to be effective in gaining important reader feedback.

The value of the plus-minus method consists in the mass of feedback to be gained, as well as in the importance of much specific feedback. However, without the knowledge, decision-making ability, and decisions of those who administer the method, such feedback would not be useful, although it would be effective in first gaining it.

The effectiveness of the plus-minus method is therefore to be distinguished from its criterion-related validity. By itself, the plus-minus method does not have any strictly criterion-related validity. As a structured instrument administered by qualified persons, the plus-minus method is an excellent and effective method to do a thorough job of finding target reader problems in documents. Like any projective test, however, the quality of its results follow primarily from the qualities of those who administer it and diagnose the problems found.

Jong throughout presents justified interpretations of empirical data based on solid experimental design and appropriate statistical procedures. What is primarily proven is that Jong's method is effective in gaining much and important feedback. The plus-minus method is not by itself a complete means for revising documents, but it provides a very effective way to help one do so in the crucial formative stages of document revision.

Technical writers can learn a great deal about the empirical procedures required to design instruments for troubleshooting functions in the pre-testing phase of document design. Jong's *Reader Feedback in Text Design: Validity of the Plus-Minus Method for the Pretesting of Public Information Brochures* is a fine example of solid empirical research.

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The Practice of Technical and Scientific Communication: Writing in Professional Contexts, by Jean A. Lutz and C. Gilbert Storms. Volume 4 in ATTW Contemporary Studies in Technical Communication. Series Editor M. Jimmie Killingsworth. Stamford, CT: Ablex Publishing, 1998. 309 pp.

With this new volume in the Ablex series, Jean Lutz and Gil Storms offer us and our students tremendously useful and informative descriptions of twelve subfields of technical communication. In *The Practice of Technical and Scientific Communication: Writing in Professional Contexts*, the editors pull together a strong set of personal and professional portraits that show what it means to be a technical communicator, how one becomes one, what it feels like, and where to go for more information.

Most of the chapters are written by practicing professionals. Thus, Patricia Cornett, a practicing medical writer, reveals from personal experience the ins and outs of "Writing in Medical and Health Care Environments." She begins with a thumbnail sketch of the jobs, responsibilities, employment outlook and salary ranges, followed by straightforward discussion of who these people are, what kinds of publications they produce, and what the day-to-day challenges are. The chapter is full of resource information on professional societies, important journals and reference volumes, key skills and personality traits one needs to be successful, and a wealth of advice on job preparation and job hunting. Like most of the other chapters, there are several personal portraits of practicing medical communicators, one a woman who runs her own medical writing group, and another a woman who is a senior publications editor for a major medical school. These portraits go beyond describing the formal requirements of the job to reveal sources of personal satisfaction and the motivations that keep these individuals in the field.

The personal insights are extended to the appendix, where each of the contributing authors provides a self portrait, showing how they ended up in the field and why. The overall impact of reading the collection is a feeling of knowing the authors as individuals, people whose lives have led them on interesting paths toward satisfying and meaningful careers in technical and professional communication.

Other chapters will open students' eyes to unimagined career possibilities in scientific communication. Melinda Thiessen Spencer describes "Writing for the Environmental Sciences" and Ricki Lewis "Science Writing," while Joan Strawson Dollarhide describes "Writing in Hazardous Waste Management." These portraits make connections between federal policy initiatives in environmental management and the career opportunities open to people in, for instance, the Environmental Protection Agency, the Department of the Interior, and the Department of Energy. Both government and industry science writing positions are described, with details on more specialized roles such as public information officer, risk communication specialist, and environmental educator. As in all the

chapters of the collection, details are offered on employment outlook and salaries, with very specific advice on how to prepare for a career.

The range of the collection is very good. William J. Buchholz provides a nice overview of “Writing in Business and Manufacturing,” Marian G. Barchilon describes “Writing in Engineering Fields,” and R. John Brockmann and Christopher Velotta describe “Writing in the Computer Industry.” These are the “mega-fields” of our discipline, consuming most graduates and frequently dominating our attention. But in this collection, these fields, especially writing for the computer industry, take their place among other options: pharmaceutical, aerospace, government and nonprofits, and advertising. The book thus usually broadens our perspectives and offers students new ways to think about how they might best use their writing and communication skills. The book offers many suggestions to students on how to combine their communication skills with their intellectual interests in science, medicine, or technology.

A chapter of eminently sensible advice on “Freelancing or Consulting” is penned by David N. Dobrin, who offers sage and witty advice based on his own humbling experiences. As might be expected, this chapter is slightly out-of-step with the others, unconventional in presentation and advice. Dobrin provides a refreshing final chapter for those who fit no mold but are brave enough to seek a career of independent contracting.

Because each chapter follows a somewhat set outline, the reading starts to feel a bit repetitious, and the advice on courses to take and skills to cultivate sometimes feels a bit redundant. But these are small criticisms of what is overall an extremely useful volume, a work that will be of immense help to many of our students. In the last analysis, this collection is about imagination and vision. It tells students that we live in a world of many possibilities, where interesting work awaits those with strong communication skills and complementary scientific and technical interest. The collection validates technical and professional communication as a complex set of related fields. Lutz and Storms’ book demonstrates that bright, creative people can find satisfying and challenging careers by following any of a dozen paths. This book should be on our professional shelves, it should be in our libraries, and it should be in our students’ hands.

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Publishing Your Medical Research Paper: What They Don’t Teach in Medical School, by D. W. Bryne, Baltimore, MD: Williams & Wilkins, 1998.

Publishing Your Medical Research Paper offers 245 principles designed to help medical researchers avoid mistakes that frequently result in manuscripts being

rejected for publication. In the preface, the author David Bryne states that the book also is intended to help readers “critically assess new medical information” and to spare them the expense of hiring consultants in the fields of epidemiology and technical writing to conduct clinical research and publish the results. Bryne holds a faculty appointment at New York Medical College and works as an independent consultant, assisting researchers with protocol design, data collection and analysis, and technical writing. His advice to readers is based on the results of a survey he administered to peer reviewers and journal editors and on his rigorous analysis of peer review comments on manuscripts submitted for publication.

The content of *Publishing Your Medical Research Paper* overlaps considerably with earlier works on the subject, such as Edward J. Huth’s *How to Write and Publish Papers in the Medical Sciences* and Robert A. Day’s *How to Write and Publish a Scientific Paper*, both of which Bryne recommends. Overall, *Publishing Your Medical Research Paper* reinforces several key concepts: 1) careful planning pays off; 2) report research results accurately and honestly; 3) use tables and figures to summarize important data; 4) write concisely; and 5) know your target journal. Bryne’s text contains sections on Planning, Observing, Writing, Editing, and Revising (POWER), and each section is sub-divided into chapters. While the scope of Bryne’s book does not encompass as many genres of scientific writing as his colleagues’, his discussion of what information researchers should include in each section of the traditional, formal research report is generally more thorough than theirs. Given Bryne’s training as a biostatistician, it’s no surprise to discover that the chapters of the book devoted to clinical research methodology and data collection and analysis are clearly written and quite valuable.

In contrast to Day and Huth’s contributions, Bryne’s guide to publishing a medical research paper reflects society’s increasing reliance on technology to communicate. He encourages readers to use the Internet to conduct on-line literature reviews, publish electronically, and he compiled a “Medical Researcher’s Directory,” which includes the telephone numbers and Internet addresses of journals, granting agencies, pharmaceutical companies, etc. Bryne also mentions the possibility of utilizing technology to form “virtual research teams” that cross international boundaries, but he doesn’t discuss differences in international communication styles that can lead to misunderstandings.

The book’s design and layout is elaborate, thoughtful, and appealing. Important points are clearly discernible through the consistent use of bold, italics and labels. *Publishing Your Medical Research Paper* contains tables, figures and boxed text that highlights “Vital Points,” resources to consult “For More Information,” “Peer Reviewer Comments,” and “Comments from Survey Respondents.” The book also is supported by a table of contents, lists of tables and figures, appendixes, a bibliography, and an index. All of these features make that text easy to browse and locate information.

I'm not convinced that Bryne has given much thought to the general subject of audience analysis or his own target audience for that matter. Journal editors and peer reviewers note the importance of knowing one's audience, but Bryne offers no specific advice concerning how to analyze an audience, much less write an article designed to meet that audience's needs and expectations. This oversight may explain why I would recommend *Publishing Your Medical Research Paper* to individuals who have some experience designing and implementing clinical research projects and who have a firm grasp of the formal research paper: whereas, Bryne suggests his book would be a valuable tool for a novice researcher. In fact, he thinks a medical student embarking on his or her first independent or team research project would benefit from his guidance, but I would qualify that statement. I would argue that *Publishing Your Medical Research Paper* would be useful to that individual as a supplementary text—and only if he or she had access to many of the additional resource materials Bryne recommends. If a researcher requires definitions of key terms such as “case-control study” or “univariate analysis,” which Bryne provides much to his credit, he or she probably is not prepared to make sound decisions on protocol design or to identify and correct errors in statistical analysis.

Publishing Your Medical Research Paper does possess a few shortcomings. It's difficult to understand the logic that guided Bryne's selection of examples. In most cases, only one example, taken out of context, is provided to demonstrate a principle, and the example is usually accompanied by two or three sentences of explanatory material. For instance, Bryne writes:

Stating a problem is the first and most important step in the scientific method. The idea for a problem may come from anecdotal observations, the literature, on-going or previous research, conferences, or conversations with colleagues. Whatever the source of the idea, quality research requires a polished problem statement. You must be able to answer the question: “What is the main purpose of this study?”

This explanation is followed by ONE example: *Approximately 40% of patients with a spinal cord injury develop a pressure ulcer during the initial hospitalization. However, there is currently no method of quantifying this risk that is accurate for this population.* What specific features make the example above an exemplary problem statement? Would a statement defining a problem derived from a literature review be presented differently? Even the portions of the book which describe how to design effective tables and figures include very few examples. In contrast, Table (30-3) in the Editing section contains seven sentences, which show how to create a stronger sentence opening by eliminating “there” as the first word. This is not a stylistic point that requires such space and attention.

In some cases, no examples are provided. Bryne lists the titles of five “ideal” medical research articles, which should have been included as models in the appendix. Since most of the book discusses what not to do, it would have been wise to include portions of manuscripts that had been marked-up with marginal comments pointing out what not to do and revisions of those passages explaining how the problems were resolved. This kind of information would have been much more illuminating than the numerous tables and figures relating to Bryne’s survey data. While the sparse number of examples and distilled advice present a problem in *Publishing Your Medical Research Paper*, I don’t want to ignore the fact that the author identifies lots of other sources of medical research information readers can consult. However, it’s frustrating to be told constantly to search elsewhere to find the in-depth information one needs to understand and solve a problem.

The sections of the book on Editing and Revising are the least informative, which is perhaps justifiable, since Bryne’s survey results revealed that manuscripts are more likely to be rejected for problems related to study design and data analysis than poor writing. In addition to studying Orwell’s rules, Bryne recommends reading Hemingway and Strunk and White to improve one’s writing style, which does not seem like an efficient solution to the problem of verbosity. And again, no sample passages are provided to illustrate the point. Principle 202 states that writers should: “Use Simple Declarative Sentences,” but a twenty-five page article that consists of short, declarative sentences is bound to be utterly mind-numbing to a reader. Nearly all of the advice on editing and revising focuses on word-level errors. There are endless tables on the use of hyphens, numbers, plural forms of words, diphthongs, etc. The sections of the book on Editing and Revising do not revisit the larger issues related to a research paper’s content and structure, which Bryne introduces in his section on Writing.

In addition to addressing these shortcomings, I think Bryne’s book would be even more valuable if he expanded his discussion of electronic publishing, explained how to transform portions of a dissertation into publishable articles, and addressed the needs of non-native speakers and writers of English.

Finally, Bryne occasionally offers contradictory advice in *Publishing Your Medical Research Paper*. For example, Principle 10 reads: “Write Cautious, but Perceptive Conclusions,” but his directions tell the writer to “end with a bang!” As I mentioned previously, Bryne’s book is intended to “stretch the research dollar,” yet he encourages readers to consult experts in nearly every phase of the research and publication process, advice a reader would have to heed if relying exclusively on this book to produce a publishable medical research paper.

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