Book Commentary: Computerized Workplace Writing

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Patricia Sullivan and Jennie Dautermann's *Electronic Literacies in the Workplace: Technologies of Writing* (1996) offers fourteen thought-provoking examinations and discussions of the interaction between electronic literacy, workplace environments, computing technology, and writing. In their introduction, the editors "contend that technology, especially when it networks writers to other writers, is more than a mere scribal tool" (vii). This claim is definitely supported by the collected works, where numerous examples are provided of the power of technology to influence workplace culture and the writing process. The electronically literate continue to dominate the workplace because technology has proven valuable in furthering industry's pursuit of efficiency and productivity. Recognizing the role of technology in the workplace leads to two very important observations for academia: (1) developing students' electronic literacy is vital to their success in the workplace and (2) the *only* way that the workplace will adopt the academy's goals of a socially open and egalitarian environment is if researchers can frame their benefits within the efficiency and productivity goals of the workplace.

In this review, I have attempted to present a representative response from the workplace to the academy. Given that all fourteen articles individually merit an in-depth review, I have tried to at least provide a summary of each. Additionally, I have included a discussion and commentary on the editor's sectional introductions. Sullivan and Dautermann use these introductions to position the articles around common themes and to highlight important questions. I found them very useful in establishing connections between the articles and framing my own analyses.

Writing in the Electronic Everyday

The first group of articles addresses how computers fit into "the everyday act of writing in some form of a computer environment" (xx). These articles serve to reveal how deeply computers and technology have been integrated into the workplace as they slowly become "transparent instruments of communication" (xx). Specific questions raised in this section include: how writing technology affects material conditions of writing, how innovations are adopted, and how access is provided, established, and enforced.

"Writing with Electronic Tools in Midwestern Businesses" Jennie Dautermann

Jennie Dautermann begins the section with an examination of how computers and other electronic tools benefit the workplace writing environment. Dautermann interviewed fifteen participants representing a variety of professions and a range of experience from entry-level to mid-career. Fourteen of the fifteen participants had access to their own computer for work and all considered it an office necessity. All of the participants responded that their writing strategies changed when they started using a computer. Most were composing on the computer because they felt it provided revision and proofreading advantages over composing on paper. Significantly, all of the writers were also producing their own texts rather than delegating the task to a typist. As a result, the writers reported that they often reused or revised older text to accommodate different situations. The ability to easily draw from older texts suggests some interesting effects of writing with a computer toward invention and revision activities.

Dautermann feels that her study produced mixed results on the effectiveness of the computer in facilitating collaboration. She writes, "if we discount editing, clerical involvement, and writing from templates, collaborative writing in its fullest sense...happened only occasionally in this sample" (10). However, I think Dautermann may be setting her ideals too high. The participants were professionals for whom writing is a *part* of their job—a

means to an end. They view the computer as one tool among a larger set of tools, and often mix it with typewriters, photocopiers, boilerplate, handwriting, and dictation. In addition, their writing is nearly completely event and task driven: "pressure to achieve a task seemed to be a frequent motivator" (19). For these reasons, the participants value the immediate efficiency brought on by limited collaboration. However, the participants' reuse of older texts might suggest that they are involved in timeseparated collaboration that is much fuller than it appears.

"Specialized Language as a Barrier to Automated Information Technologies"
Susan Jones

Susan Jones analyzes MIT's Athena computer network to explore how language, complexity, and metaphor can exclude new users. The Athena network is used to interconnect MIT's Macintosh, DOS, Windows, and UNIX computers to (eventually) create a "seamless, ubiquitously distributed environment" (27). The problem with Athena is that it has its own "language", a mixture of UNIX and classic Greek names. Through examples, Jones shows how Athena's jargon and complex metaphors build barriers to learning while elevating expert users.

Based on her experience with Athena, Jones poses three questions about interface design:

* should users be able to understand concepts immediately, or is it more rewarding to have to work a little?

* if a command or syntax is understandable and easy to use once it has been explained, is it good enough?

* is access a problem if users and developers have exceptionally different definitions of electronic literacy?

I think that the answer to these questions evolves from Jones' stated goal "to include rather than exclude" (40). Since the majority of users are only interested in accomplishing immediate tasks, complex metaphors can require much more conceptual learning than they are capable of or willing to invest. Therefore, the interface should be as approachable and easy to use as possible. Developing interfaces that are only understandable once explained also excludes isolated users.

Jones concludes with a discouraging comment to technical communicators: "we are very rarely sure that anyone is really paying attention to us. And even when there is progress, we can never be sure that we had anything to do with it" (40). Technical writers are ignored in the workplace because we do not prove our value to the product. Answering our questions and producing our documents *does* take time and money away from product development. However, research by Janice (Ginny) Redish and others has proven that useful documentation can significantly reduce support costs and increase customer satisfaction. As technical communicators, we must stop undervaluing our role and value in product development. We should not become a part of the development team to act as the 'user advocate'—the entire development team should be the users' advocate. Instead, we should become a part of the development team because we provide a part of the product that is essential to its success.

"Electronic Mail in Two Corporate Workplaces"
Brenda Sims

Brenda Sims examines how corporate environments affect employees' use of electronic mail. Sims draws her data from the electronic mail texts that are exchanged within two companies, Convex Computer, Inc. and Southwestern Bell. At Convex, Sims found that management encourages all employees to use electronic mail through a common mail system. For her analysis of e-mail use at Convex, Sims collected 687 messages from 31 participants during a 24-hour period. Southwestern Bell's management does not encourage use of electronic mail, and upper-level managers do not use it. Instead, e-mail use is a "grassroots" movement that is not supported by a common mail system. Not surprisingly, Sims saw less e-mail activity when compared to Convex: only 195 messages over five days from 18 participants.

Sims' research focuses on answering the following questions:

* What social cues, if any, did the writers use in their messages?

* What format cues, if any, could the readers use to differentiate messages from employees at different levels in the organization?

* Did the messages exhibit more characteristics of written or oral discourses?

Neither Southwestern Bell nor Convex messages allowed recipients to identify the writer's status or position in the company, which is consistent with most electronic mail systems. Since electronic mail systems also provide few dynamic and nonverbal cues, the communicator may feel a sense of anonymity and freedom that may lead to unregulated behavior. Sims found that the Southwestern Bell messages were generally more controlled than the Convex messages. They contained fewer punctuation and spelling errors and less frequent use of unconventional capitalization. Sims comments, "I attribute this difference to the corporate culture at Convex, which is untraditional, relaxed, and creative, while that at Southwestern Bell is highly structured, hierarchical, and controlled" (55). The Southwestern Bell employees feel more pressure to conform to the norms of written communication, and uncontrolled behavior occurs primarily between employees at the same level in the company.

To identify features of oral and written discourse, Sims reviewed the messages for instances of detachment from the reader, personal involvement, and integrated discourse. Both Southwestern Bell and Convex messages showed a higher percentage of personal involvement than detachment, which suggests that the messages were closer to oral discourse. However, the Convex messages showed a high level of integration, which leads Sims to conclude that Convex messages are closer to written than oral discourse. As Sims points out, this is surprising since Convex is a relaxed environment and its employees prefer electronic mail over verbal communication.

The hybrid nature of electronic communication can create interesting challenges in the workplace and classroom. Sims concludes that "electronic mail may one day replace most paper communication; therefore, our students need to understand electronic mail and its rich borrowings from oral and written discourse" (63). E-mail is a powerful tool that can lead to increased collaboration and drastically improve workplace efficiency. However, it brings special challenges to writers and readers that we should continue to explore and analyze.

"Writing Technologies at White Sands"
Powell Henderson

Powell Henderson concludes the first section with the results of a twenty-seven month ethnographic study of written communication in the White Sands

Missile Range. Henderson's objective was to identify ways that increased technology in the workplace might influence written communication. He collected and intensively analyzed several hundred documents—including handwritten documents, forms, memos, and e-mail—to form the basis for his study.

Henderson's study leads to the following conclusions:

- Most writing created within the workplace is event-driven.

- Most written communication is a by-product of a process.

- A considerable amount of written communication involves pre-printed forms.

- Some documents suffer from a worth/benefit imbalance.

- New technology tends to augment, not replace, old technology.

- Most written communication requires only simple technology.

Based on these features of workplace writing, Henderson offers some suggestions for how educators can prepare students for writing in the workplace. He recommends that assignments include more real world limitations such as too little time to prepare, outdated equipment, unavailable information, and changing requirements. As Henderson observes, "university instruction seems to celebrate the potential and to be oriented toward the future" (87). A vital role of academia is to teach ideals so that students can appreciate and strive for improvements in the workplace, where "the processes and paradigms of yesterday are firmly entrenched and must be accommodated" (87). Students must be prepared for the reality and challenge of the workplace. The existence of a technology, no matter how useful, does not guarantee that it has been accepted and implemented.

Redefining the Process and Products of Writing

The second section attempts to expand the traditional views of writing and authorship. The authors question how databases, hypertext, automation, online authoring and editing, and even current copy-

right laws are forcing us to reassess our definitions of writing activities. The articles in this section encourage the reader to assess how organizational resistance can combat new notions of reading and writing online, how much writing we can automate, and how electronic literacies influence concepts of intellectual property.

"Writing and Database Technology: Extending the Definition of Writing in the Workplace"
Barbara Mirel

Based on her observations of the workplace, Barbara Mirel presents the development of data tables and reports as skills that should be taught in professional writing classes. The author refutes notions of data reporting as "objective fact giving" (94). Instead, data reporting is established as a rhetorical art that requires an understanding of readers' concerns and questions.

Mirel shares the results of her interviews with twenty-five project administrators to "propose general approaches for teaching data reporting" (94). Successful data reporting requires a knowledge of user reading strategies to determine the appropriate scope, arrangement, and delivery. In addition, report writers need to possess a certain degree of competency with database applications. The importance of electronic literacy and tool competency is frequently cited in this volume . Mirel also recommends further research into how tools may constrain data report writing.

"After Automation: Hypertext and Corporate Structures"
Johndan Johnson-Eilola and Stuart A. Selber

Johndan Johnson-Eilola and Stuart A. Selber provide an insightful exploration into the relationships between hypertext, corporate structures, and technical communication. They conclude that although many researchers and theorists are committed to the revolutionary capabilities of the medium, current hypertexts developed in the workplace "tend toward automating and conserving traditional, hierarchical corporate structures and contracting the scope and importance of communication" (116). The authors

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see this limited application of the power of hypertext as resulting from the workplace's focus on profit and efficiency, a criticism that frequently appears in this collection.

Johnson-Eilola and Selber echo a common complaint: technical communicators are not valued in the workplace. However, the strength of their article is that they address *why* technical communication, and by extension, technical communicators are not valued. They write, "we are convinced that the low value placed on the act of reading and using technical documents in the 'automating' view of hypertext bears much of the burden for the parallel low status of the writers of such automatic texts" (116). Therefore, technical communicators must strive to change the perceived value of their texts. We should not provide hypertextual replicas of current print-based documents. This automation of "print-based activities" only reinforces current negative opinions of our field. Instead, we should use hypertexts to enable our audiences "to not only 'receive' information from the hypertext, but also to become full-fledged authors capable of adding their own links and nodes to texts" (130). Hypertext *can* be an equalizing medium, allowing everyone to access and potentially construct knowledge.

"Automating the Writing Process: Two Case Studies"
Douglas R. Wieringa, Marvin C. McCallum, Jennifer Morgan, Joseph Y. Yasutake, Hachiro Isoda, and Robert M. Schumacher, Jr.

In "Automating the Writing Process: Two Case Studies," Douglas R. Wieringa, Marvin C. McCallum, Jennifer Morgan, Joseph Y. Yasutake, Hachiro Isoda, and Robert M. Schumacher, Jr. summarize the results of two case studies to outline the potential benefits and costs of automation. Their first case study describes a "procedures software tool" for nuclear plant technical writers. The second examines how a telecommunications company planned to move their print documentation online. Based on these studies,

Wieringa et al. offer five factors to consider when evaluating automated writing processes and tools: addressing a genuine need, doing your homework, being sure that automation will solve the problem, keeping the system as simple as possible, and realizing that writers are customers. This article illustrates how technology can both help and complicate the writing process. Although automation has the potential to create a more efficient, productive, and enjoyable work environment, it requires wide-ranging changes that are often expensive and complex.

"Online Editing, Mark-up Models, and the Workplace Lives of Editors and Writers"
David K. Farkas and Steven E. Poltrock

David Farkas and Steven Poltrock combine an examination of the editing needs of both editors and writers with an analysis of how online markup models can affect the quality of edited material. Their interests in online editing stem from a belief that the computer has had a (positive) effect on every aspect of the writing and review process except editing and that "online editing will be prevalent, if not dominant" in the future (174). Their objective is to identify key features for online writing tools that are acceptable to both writers and editors.

The obvious question to ask is "Why edit online?". Farkas and Poltrock advocate online editing's version control and archiving capabilities and its ability to increase productivity while maintaining quality. However, online editing tools should also recognize and attempt to take advantage of the strengths of paper editing. These features would support traditional editing symbols, clear distinctions between the editor's comments and the draft, and the ability to make fairly extensive yet understandable changes.

The authors provide an interesting summary of the current online editing tool market and highlight each product groups' strengths and weaknesses. While none of the current tools appear to meet the needs of writers and editors, Farkas and Poltrock seem positive about future tools' capabilities. The authors also encourage more research into online editing to identify necessary and useful features.

"Who 'Owns' Electronic Texts"
Tharon Howard

Tharon Howard closes the section by providing a history of United States copyright law and scenarios

of potential copyright law infringement to explain how new information technologies affect basic concepts of ownership when applied to electronic texts. Most writers feel that they own their texts, have the right to expect payment for the use of their writing, and should have some control over the use of their text. However, Howard argues that "trends toward more collaborative writing projects in the workplace" and "computer technologies aimed at enhancing and promoting collaboration" are challenging these assumptions (178). A knowledge of copyright law is now becoming very important to the field.

Howard's summary of copyright law leads to an interesting observation: "authors are granted copyrights not because authors have a natural property right, but because such protection is in the public's best interests" (186). Through his scenarios, Howard explains what can constitute fair use and explores how the distinction between fair use and copyright infringement blurs with electronic texts. A knowledge of copyright law is becoming more vital to help us avoid copyright infringements and protect our own texts. As Howard comments, "given the enormous cost of litigation...knowing how to navigate through the intellectual property minefield is a tremendously valuable skill" (197).

Minimizing Differences between Academic and Workplace Writing

In this section, the authors provide cautious strategies for strengthening workplace-classroom interactions and integrating technology into the classroom environment. These strategies are based on observations of the different perspectives, uses, roles, and expectations of technology between the classroom and workplace. As a whole, the articles encourage the reader to consider how technology enforces hierarchies and how people achieve electronic literacy.

"Networking Technology in the Classroom: Whose Interests are We Serving?"
Craig T. Hansen

Craig Hansen advocates a cautious awareness of the positive and negative potentials of computer networks and attempts to highlight the fundamental differences between the views of academia and the workplace as to the role of the computer network. Academia and writing researchers specifically emphasize "the potential of computer networks for engaged, egalitarian communication" while indus-

try and government emphasize "computer networks as tools for employee productivity and managerial control" (201).

Hansen *does* value the computer network's ability to provide asynchronously collaborative environments that can reduce marginalization of participants. His concern arises from problems that might be encountered by writing students entering the workplace. Hansen advises instructors to "encourage not fear, but [rather] self-conscious, critical use" (212). The openness and trust that can be established in the classroom network environment should not be assumed to exist in the workplace.

The classroom and workplace are fundamentally different environments that have very different goals. As Hansen notes, "corporate management is not interested in sites for social construction, in postmodern dissolution of traditional authority, [or] in personal exploration through communication" (212). These comments are certainly true and valid. However, these benefits must be shown to further the workplace's goals of increased efficiency and productivity. Many companies have embraced non-traditional hierarchies through team building and empowerment because they have been proven to increase productivity, efficiency, and job satisfaction. Until the benefits of social constructionism and personal exploration are framed within the ideals of the workplace, they will not be accepted.

"Gaining Electronic Literacy: Workplace Simulations in the Classroom"
Nancy Allen

Nancy Allen begins the next article by noting that the workplace expects communicators to be electronically literate. Therefore, a key role of academia is to develop electronically literate students. But how can this be accomplished? Instructors are already overwhelmed in their attempts to cover vital information and instill essential skills. When we also consider, as many of the authors in this book suggest, that the classroom and workplace are fundamentally different, how can classroom learning even be applicable to workplace practice?

Answers to these questions can be provided by focusing on the strengths of the classroom. The classroom enables students to "learn to handle commonly used hardware and software in an atmosphere that allows them to explore possibilities, experiment with

new approaches, and question implications of the technology in ways that the constraints associated with a job can prevent" (218). Learning that occurs in the classroom is safe and less threatening than learning in the workplace: in the workplace the stakes of learning are often just too high. Learning in the classroom can focus on understanding rather than efficiency, so students can develop a "broader understanding of the potentials and limitations entailed in the use of technology" (235).

Allen suggests that school projects can mirror workplace assignments by requiring students to develop multiple projects at one time, work in groups, perform user observations, manage complex projects, divide and delegate subtasks, and critique others' work and their own. By teaching these skills educators can better prepare students for the challenges of the workplace in a simulated workplace environment. The goal is not realism, since a realistic workplace environment would include all of the problems with learning in the workplace. Instead, Allen encourages a focus on understanding, allowing students to make mistakes, to learn at a meaningful pace, and to "develop both professionally useful skills and a theoretically based understanding of communication" (220).

"Tales from the Crossing: Professional Communication Internships in the Electronic Workplace"
Robert R. Johnson

Robert R. Johnson explores how professional writing students interact with computers during internships to determine how professional communication programs can better prepare students for the workplace. He draws from a decade of internship reports that were completed as a requirement of the Miami University Master's of Technical and Scientific Communication Program. Johnson provides a qualitative, interpretive analysis of the reports to reveal "crucial problems with electronic literacy in the workplace for technical communicators" (241).

The focus of Johnson's investigation is how the interns write with, for, and through the computer. Given the impact of the computer on the workplace environment, problems and experiences of writing with the computer are frequently discussed in the reports. The interns relate how they were expected to learn new computer programs, often with limited access to appropriate software and hardware.

Many of the internships were also completed within the computer industry, so writing for the computer is a common theme. Johnson found that the internship reports addressed a "struggle for identity and power," most commonly in the context of user testing (244). He writes, "the role of the technical writer in the computer industry is constantly that of an underdog" (246). The challenge of learning new tools while struggling for identity and support is enlarged by the impact of writing in a new online medium. As we move into a new era of online communication, students will be expected to be proficient in developing and producing online texts.

Johnson recommends that professional communication programs should strengthen collaboration skills, develop connections with industry, and introduce theoretical and historical issues in their curricula. Students who are skilled at collaboration will be better equipped to handle workplace challenges such as limited resources, equipment, and time. By developing stronger connections with industry, communication programs can provide better access to technology and include "real world" projects that increase electronic literacy. To assist students in writing through the computer, Johnson encourages educators to draw on the history of technical communication as they explore and invent the new online medium.

Conducting Further Research

The final section explores how researchers can build upon the findings presented in this collection. By stressing how cultural contexts and methodologies can impact research and theory, the authors present a postmodernist research approach based on self-inclusive research frames.

"Theorizing E-mail for the Practice, Instruction, and Study of Literacy"
Cynthia L. Selfe

Cynthia Selfe outlines the promises and potentials of e-mail by theorizing that electronic mail is a social formation that has the "ability to democratize, equalize, and enrich communication" (255). Selfe presents educators' interests in developing online writing spaces that support more democratic, pluralistic, and egalitarian communication. To take advantage of the potential of online writing spaces, Selfe feels that students must be exposed to this new communication technology and educated about its cultural,

political, technological, and ideological landscapes. As she notes, "access to information—whether through computers or other means—does not ensure literacy or knowledge" (268). Students (and society as a whole) must learn how to appropriately take advantage of technology.

E-mail has the potential to greatly support literacy efforts. It provides "vigorous sites of literacy practice that focus on reading and writing as a forum of communication" (275). It offers incredible opportunities for both self-directed and teacher-supported literacy efforts. However, Selfe cautions that "the challenge for literacy educators who want to work with students' e-mail writing is to avoid turning the space of e-mail into the same artificial, teacher-centered, teacher-controlled environment that the traditional classroom has become" (281).

"Working across Methodological Interfaces: The Study of Computers and Writing in the Workplace"
James Porter and Patricia Sullivan

James Porter and Patricia Sullivan present the results of a case study and two workplace consulting projects to discuss the personal, disciplinary, and transdisciplinary assumptions that establish the framework and methodology of workplace research studies. In fact, given their aversion toward grounding studies by "simply announcing the method used—a 'case study', for example," I might better refer to their data sources as "research experiences" (295). Porter and Sullivan apply a multiple mapping strategy to their research to better identify researcher and research influences. Multiple mapping involves visually and spatially representing the researcher's standpoint relative to research sites and participants, promoting "researcher-situated reflexivity" (318). The authors comment, "the power of the mapping strategy is in showing that by mapping, you can get a better handle on a messy picture" (309). A map can therefore be judged on "what it allows, what it blocks, what else might be pictured, and how it freezes time" (297).

The authors' three research experiences provide real-world examples of how a multiple mapping strategy can be applied and evaluated. These maps are used to introduce a methodological frame that operates along a theory-practice continuum with four extremes: abstract theory, empirical reflection, situated theory, and empirical practice. In theory, the center

of the grid offers the most flexible position, but it is impossible to maintain. By plotting their own methodologies for different experiences, Porter and Sullivan illustrate how methodology itself is situated in relation to research studies and our own personal tendencies.

Conclusion: New Spaces, New Questions

This collection shines some well-placed light on a very dark and intimidating area: the intersection of academia with the workplace. The academy must remember that one of its obligations is to prepare students to enter the "real world" and function within its demands and limitations. As I stated in the introduction, the workplace is interested in productivity and efficiency. Employers expect graduates to be able to function on the job with a minimum of training—the basic workplace definition of electronic literacy. Mirel, Hansen, Johnson, and especially Allen express how important it is to "produce" electronically literate students. The question, then, is what skills do current students need as future workers? Electronically literate employees are comfortable with the computer, collaboration, and "satisficing." As a student, I can remember spending hours writing and rewriting, slowly perfecting each word, sentence, and paragraph. After spending hours creating one page of text, I was satisfied because I knew every sentence was "golden." In the workplace, the pursuit of excellence is valued, but the pursuit of perfection is often not. For normal writing tasks, perfection is not worth the effort. Therefore, students need to be prepared to develop the best possible solution within project constraints. Nancy Allen, Robert Johnson, and Powell Henderson suggest that educators include time, access, and resource limitations on class projects. I feel that teaching students how to work around obstacles is a invaluable yet neglected aspect of most curricula.

Educators must also capitalize on the advantages of the classroom and allow students to be students. The classroom provides the opportunity to focus on learn-

ing and practice; it gave me a chance to try to make "golden" sentences. This exposure to an open, learning environment allows students to not only become efficient and productive, it instills confidence that can help them challenge unnecessary restrictions and limitations in the workplace. The dissatisfactions of others and ourselves with our work (as expressed by Johnson-Eilola and Selber, and by Jones) arise from unrealistic attempts at perfection, overwhelmed misuses of automation, and inadequate applications of new media tools. We must merge realism with idealism and strive for "situational ideals" to truly be successful in the workplace.

In closing, I feel that Sullivan and Dautermann have done a commendable job in producing a collection that should generate invaluable further research into the very complex study of workplace writing. They acknowledge that their volume raises numerous questions for our field to explore and hopefully answer. However, the works collected here provide an essential foundation and introduce promising new research approaches. In their introduction, Sullivan and Dautermann comment, "our expectation is that readers of this collection will find, as we have, that observing the nature and extent of the computer's influence on workplace writing cultures can be, to varying degrees, complex, puzzling, or liberating" (xxvii). Having read and reread these articles over the last four months, I have continually felt both challenged and inspired by the fascinating potential of technology to reshape the processes and products of writing.

References

Sullivan, Patricia and Jennie Dautermann. (1996). *Electronic Literacies in the Workplace*: Technologies of Writing. Urbana, Illinois: National Council of Teachers of English, and Computers in Composition.