

Reviews

"The Role of High Technology in Training," by Daniel Bissonnet in *T.H.E. Journal*, Vol. 17, No. 10, June 1990, pp. 51-53.

Bissonnet's article typifies the mixed attitudes trainers hold when discussing the role of high technology as a training tool. He advocates the use of high technology in training because it saves both time and money, yet recognizes its primary drawbacks—both time and money.

High technology training (HTT), Bissonnet argues, is cost effective. When groups need to receive the same type training but are dispersed or not ready for the training at the same time, a standardized, readily available training program is the solution. Training time also is reduced, as is preparation for multiple sessions, when high tech approaches are integrated into training programs.

Simulations by computers or video programming saves time and money and provides training without risks. A 1984 IBM study, Bissonnet reports, shows "interactive video to be about three times more effective at teaching than an instructor." He, however, recognizes problems in determining which type of training is best suited for interactive video and hopes an answer will be found in the 1990s.

One key benefit to HTT is its ability to expand training beyond a classroom. Private industry uses HTT to bring training into the plant. An example at Northrop and Martin Marietta demonstrates how an Apple computer is used to break a process into short bites for immediate on-site learning.

Rapidly changing techniques also can be demonstrated and taught through HTT. Bissonnet reports that 75 percent of the workers employed in 1988 would need retraining by 2000. Today's young workers may have four careers—two of them may not even exist today. That speaks loudly for a need for improved in-service training techniques.

One key complaint regarding high technology training is that it is only for the rich. The high cost can only be justified if many people are going to use the training or if simulators are the only realistic alternative because the real items are too expensive to use in teaching skills through traditional methods. Currently only the Government and Fortune 1000 companies are implementing HTT on any large scale.

Another stumbling block is the short life of hardware and courseware. Ignorance and a dearth of objective standards of evaluation, he says, allows some poorly designed programs to be marketed. Combined with potential compatibility problems, HTT faces massive adoption problems. "With all the different laser formats, transmission standards for data, and hardware differences, it is no wonder nothing works outside of a very narrow spectrum defined by the manufacturers."

As trainers, Bissonnet says, regardless of personal stands on adoption of HTT, the changes imposed on the role of training is intimidating.

"The fact remains," he said, "that high-tech communication products will be used in training. The important questions are how those products will

be used, what technologies are most effective for different subjects (not to mention different students with different learning styles), and what technologies will emerge as dominant."

Bissonnet's only prediction for the future is simply that the best technology and methods will rise to the top, and then hindsight will make everything crystal clear. Newer toys will always be vying for attention.

Bissonnet never unequivocally voices an opinion for or against HTT. He does, however, provide the reader with preliminary information. For those readers seeking support for implementing a training program integrating a mixture of technology tools, the article does present aspects on the cost and scope such a venture entails. But ACE readers will be disappointed that Bissonnet does not make the transition from industry to campus settings or offer even hypothetical campus examples.

Debrah Jefferson
University of Missouri-Columbia

"Beyond Wilderness," *Aperture*, No. 120, late summer 1990. Published by the Aperture Foundation Inc., 20 East 23d Street, New York, New York 10010.

From the post-Civil War geological surveys of the American West to the present, visual images have played a crucial role in the public debate over wilderness, land use, and natural resource policy in the United States. This issue of *Aperture*, a quarterly journal devoted to what its editors describe as "the most significant work in photography," explores how photographs—and more recently video—have communicated environmental concerns and influenced political decisions.

The power of the visual image is no surprise. The photographs of the USDA's Farm Security Administration photo project etched the economic and social consequences of the Depression in our national memory. Photographs were instrumental in the civil rights movement and Vietnam.

But this issue of *Aperture* holds special interest for land grant communicators because it deals with a subject close to our hearts: communicating about the land. Not so many years ago that primarily meant chronicling the wonders of ever increasing agricultural productivity. So, today, many of us are now having to respond to requests from our administrators, scientists and Extension staff for help in addressing environmental issues.

If nothing else, this collection of short essays and exquisitely reproduced photographs demonstrates the intertwining of photography and environmentalism. And it reminds us that environmental concerns didn't begin with Earth Day in the early 1970s, but rather have a relatively long history in the United States.

That history is admirably reviewed in "Land and Landscape," an essay by *Aperture* editor Charles Hagen. Hagen explores the influence of the publications issued by various environmental groups. The Sierra Club pioneered the "exhibit format" book, oversized and carefully printed books with inspiring wilderness photographs and poetic texts. *This is the American Earth* (1960) and *In Wildness Is the Preservation of the World* (1962) focused

on the beauty of the American landscape. Other books led the attack on specific conservation issues. *The Place No One Knew: Glen Canyon on the Colorado* (1963) alerted Americans to what had been lost to government dam building. *Time and the River Flowing: The Grand Canyon* contributed to the successful fight against two dams the Bureau of Reclamation proposed to build in the Grand Canyon.

Magazines published by environmental groups place heavy emphasis on photography. T.H. Watkins, editor of *Wilderness*, the monthly magazine of the Wilderness Society, says his magazine is using more photos now than ever before. "People can't save what they don't know, and photography is still the best medium for getting this across....Photography gives the magazine tremendous weight on the Hill and among TV and newspaper people."

In "A Growing Awareness: Environmental Groups and the Media," Joel Connelly, national correspondent for the *Seattle Post-Intelligencer*, explores how environmental groups have used the media. Referring to Mao's admonition that political power grows out of the barrel of a gun, Connelly says, "In the world of the 1990s, however, political and environmental change flow through the lens of a camera. Environmentalists learned this lesson long ago."

Connelly discusses examples of how such groups as the Sierra Club, Greenpeace, and the Natural Resources Defense Council have successfully carried their messages through the media. Says Brock Evans of the National Audubon Society, "Visual images are the key for us. They've kept ancient forests standing and oil rigs out of the Arctic Refuge."

This issue of *Aperture* is profusely illustrated with photographs by notables ranging from Barbara Bosworth to Alan Tibbetts. Of special note is a series of aerial photographs of the Kansas prairie taken by Terry Evans.

The title of this issue, "Beyond Wilderness," is the theme that unifies *Aperture's* essays and photos: It is time to turn public debate away from wilderness preservation and direct it instead toward developing a new, enlightened land ethic that applies to all land. The controversies over old growth forests and the fate of Columbia River salmon runs are an indication that the debate has already begun in the Pacific Northwest.

If we, as land grant communicators, are going to provide our scientists and Extension staff the best possible counsel, we must be aware of the history of land issues and the key role played by visual images. "Beyond Wilderness" is a good place to start.

Tom Gentle
Oregon State University

"Document Design from 1980 to 1989: Challenges That Remain," by Karen A. Schriver, *Technical Communication: Journal of the Society for Technical Communications*. Fourth Quarter 1989. Society for Technical Communication, 815 Fifteenth St. N.W., Washington, D.C. 20005, pp. 316-331.

Document design began in the 1930s, but much of its theory, research, and practice was between 1980-1989. This article provides a brief evolution

of document design and stresses the need to integrate theory and research with practice. From it, we get a feel of what to expect in the 1990s if we are to communicate successfully through our publications.

Document design is not the process of formatting text to make it visually appealing nor is it desktop publishing. The organization and format of a document may be just as important as its language.

Document designers are frequently hired to find creative solutions to a wide variety of ill defined communications problems facing business, industry, government, and education. Document designers are discovering that distinguishing the writing they do for novices, intermediates, and experts is becoming increasingly important.

Document design is the theory and practice of creating comprehensible, usable, and persuasive texts. Text in this article includes oral, written, visual, and verbal text. Document design draws on the theory and research about how people produce and use text, particularly how they read, write, understand, and are motivated by text. It is concerned with readers and writers and how writers can provide readers with texts they can use and understand. It emphasizes both verbal and visual dimensions.

Ten years ago document design highlighted the importance of composition, cognitive psychology, instructional design, readability, human factors, graphic design, and psycholinguistics.

The knowledge that a designer needs to draw on expanded rapidly during the past decade. Now, new factors include rhetoric, social psychology, reading comprehension, human and computer interaction, computer technologies, discourse analysis, and cultural studies.

Cognitive psychology tells us some of the key decisions people make as they read and write. Social psychology sheds light on how people form impressions of others and how they negotiate communication situations. Psycholinguistics looks at the complex interactions between readers and texts. Computing technologies makes us aware of innovative ways to deliver. A recent addition to the field is cultural studies which help us anticipate the assumptions, motivations, and reasons that people read and write as they do.

Key Clusters Of Research In Document Design

Document design is an emerging discipline. Most of the work up to now has clustered in five areas of research (1) writers, (2) readers, (3) text design, (4) text evaluation, and (5) communication technologies.

Cluster One: Research Focused on Writers—Research in the past 10 years focused on both writers' processes and writers' context. Researchers are studying the process of writing itself and looking at how context influences what writers do.

During the 1970s, attention was focused on written products; in the 1980s, on writing processes; and, in the 1990s, research includes processes and products in context.

Cluster Two: Research Focused on Readers—Research into readers' needs investigated the goals, expectations, information requirements, preferences, performance abilities, and learning strategies of readers with varying backgrounds.

One of the more interesting findings is that readers' ability to construct meaning from text is partly related to their ability to think about their own understanding as they read.

Cluster Three: Research Focused on Text Design—This research concerns the effects of various text designs on readers' comprehension, performance, and textual preferences. Researchers are trying to determine why some texts are easy to understand while others make readers struggle for understanding.

Cluster Four: Research Focused on Text Evaluation—This research develops, refines, and tests alternative methodologies for assessing the effectiveness of text. Today, most research is into persuasiveness, comprehensibility, memorability, and usability. This is playing an enormous role in education, the military, and industry. In education, researchers are investigating methods for assessing the effectiveness of textbooks used by children and adults. This is the most critical area of research. Experienced text evaluators are paying close attention to text problems caused by what is written and what is left out. They are sensitive to problems of commission such as faulty syntax and problems of omission such as missing examples.

Cluster Five: Research Focused on Communication Technologies—Major research thrusts include how people use the new media and how particular features influence human-machine interaction. New media includes online information, online help, natural-language interfaces, hypertext, video disk, CD-ROM, etc.

The old industry stereotype that "anybody who can speak can write" is proving grossly inadequate. When just "anybody" writes, they almost always fail. As the 1990s progress, companies around the world have or are planning to create departments dedicated to document design. Many colleges and universities are developing programs in document design. Managers of publications departments and writers are now expected to have master's or doctoral degrees in rhetoric, document design, or professional or technical communication.

Two problems persist to constrain document design research. They are the status of document design within the academy and the lack of funding.

Traditionally, nonacademic discourse has been viewed as an ugly stepsister of academic discourse and had the lowest political status in English departments. Today, the progressive departments have tenured rhetoric, document design, and technical communications faculty as well.

Since the U.S. government sponsored the Document Design Project (1978-1981), it has allocated no major funds for document design research. When companies fund document design, it is frequently to "put out fires." Because government and industry tend to fund "revisions of X" or "guidelines for Y," designers have generated a lot of excellent solutions to communication problems. By addressing global issues, document design will become a powerful and respected discipline.

Schraver feels optimistic that the next 10 years will mark a turning point in document design research internationally. She says it seems likely that governments and industries throughout the world will become more concerned with understanding the communications practices of other cultures. Such a realization may lead to collaborative efforts for funding research on problems common to communicators.

*Carol Sanders Reiner
University of Arkansas*