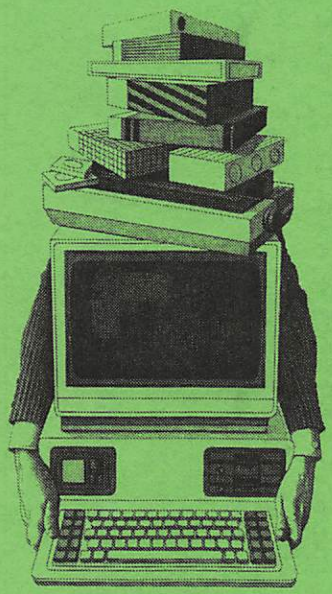
PROCEEDINGS

FACING A DECADE OF CHANGE

ASSOCIATION FOR BUSINESS COMMUNICATION

MIDWEST CONFERENCE



APRIL 3 - 5, 1991

AKRON, OHIO

PROCEEDINGS

"Facing a Decade of Change"

Association for Business Communication

Midwest Conference

1991

Akron, Ohio

April 3-5, 1991

Editors

Joseph F. Ceccio
Diana C. Reep

University of Akron

PREFACE

Publication of the refereed Proceedings of the 1991 Association for Business Communication Midwest Conference marks the final event of a stimulating and challenging three-day meeting. The theme of the 1991 Midwest Conference--Facing a Decade of Change--inspired thought-provoking papers on a variety of topics, ranging from the problem of writing anxiety to the latest communication technology. This volume presents a selection of these papers.

Of the twenty-seven very strong papers submitted for inclusion, the thirteen published here were selected by the outside referees and the editors after rigorous review. The papers cover topics of paramount interest to ABC members and are organized into four sections:

1. Corporate Communication
2. Document Design
3. Communication Barriers
4. Publishing

The section on "Corporate Communication" begins with John D. Ong's "Principles of Effective Business Communication." This paper, given as the luncheon address, was enthusiastically received by the meeting participants; some listeners believed it to be the best such address they had heard at any ABC meeting. Ong discusses three specific communication problems faced by the BFGoodrich Company and explains how management dealt with them.

Bruce McComiskey's "Multi-Perspectival Problemsolving in Business Writing" describes a four-stage process for analyzing corporate problems and explains how students can use the process to write effective business documents. Vincent J. Brown in "Authors and Audiences in R&D Writing" reports how authors in one nonacademic setting handled audience, collaboration, and document cycling while engaged in writing a response to federal government regulations changing the performance requirements of a consumer product.

The second section, "Document Design," opens with a paper by William O. Coggin and Lynnette R. Porter. In "Designs on the '90s: Creating a New Order of Information Design for Business and Technical Communication," Coggin and Porter discuss the movement to electronic-based communication in the 1990's and suggest that new formats will be needed for such communication. Greg Wickliff, Janice Tovey, and James E. Porter in "A Rhetorical and Document Design-Based Approach to Hypertext" also discuss the increasing

importance of electronic communication and explore hypertext, its uses and challenges. In "Desktop Publishing: Technical Problems in Teaching a Metatechnology," Michael Dobberstein discusses the problems of teaching a course in desktop publishing and cautions that one course alone cannot fully cover the available technology. Marjorie Rush Hovde focuses on "Improving Professional Writing Through Visual Thinking." Finally, in this section, Alan L. Plastow's "Reality Orientation in the Business Communications Classroom: Use of Computer Assisted Writing Techniques" argues for a technologically modern communications classroom.

The third section in this volume is "Communication Barriers." Charles A. Lubbers and Brenda S. Fergen present their research findings in "The Influence of Communication Apprehension in the Business and Professional Communication Course" relative to student success in communication courses. In "Instructional Techniques to Reduce Writing Apprehension and Test Anxiety in Business Communication," Sandra J. Nelson and Douglas C. Smith discuss ways to help students master their anxieties and relax when facing a writing task. Mary Vielhaber Hermon in "Communication Strategies of Psychological Types" presents the Myers-Briggs Type Indicator, a measure of psychological types, and discusses how communication differences can result from psychological differences between writer and reader.

The fourth section, "Publishing," offers a fresh perspective on this familiar yet important subject. Gerald J. Alred's "Are Textbooks Contributions to Scholarship?" persuasively argues that a textbook should be regarded as a complex publication with a theoretical framework that reflects current research. Finally, Diana C. Reep's "Response to Gerald J. Alred" points out the many obstacles encountered by a textbook writer during the publication process and suggests that these hinder an author from presenting a complete theoretical framework in a textbook.

Joseph F. Ceccio
Diana C. Reep
Editors
University of Akron

Our appreciation goes to the 11 reviewers for their efforts in carefully evaluating the papers submitted for consideration to the Proceedings.

Ronald Dulek
University of Alabama

Susan Feinberg
Illinois Institute of Technology

Sam C. Geonetta
University of Cincinnati

Laurie S. Hayes
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FACING A DECADE OF CHANGE

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PRINCIPLES OF EFFECTIVE BUSINESS COMMUNICATION
A CASE STUDY APPROACH

John D. Ong
Chairman and Chief Executive Officer, The BFGoodrich Company

I'm delighted to join you today--but I must admit that I was a bit surpised--even puzzled--by your invitation.

You see, my communications people at BFGoodrich continually remind me that lawyers are the bane of their existence--in fact, the bane of communications professionals generally.

Some 20 years have passed since I actually practiced law, however, So I guess the stigma of lawyering has faded enough for me to actually be welcomed by a group of communicators.

Certainly during my 12 years as as a CEO, I've had the opportunity to make just about every mistake that can be made in the area of communication--and I'm more than happy to share that experience with you.

I can tell you from first-hand experience that communicating effectively is difficult. It takes planning and perseverance. As the eminent philosopher Yogi Berra once said, "You've got to be very careful if you don't know where you are going because you might not get there."

We're all familiar with the basic principles of effective communication:

Have a clearly defined message.
Identify your target audience.
Plan your strategy.
Be clear, concise, and creative
Above all, be honest and forthcoming.

That all sounds simple enough. In fact, nobody argues about what we should do to communicate effectively. The problem is doing it. Too often--in the heat of a crisis, or due to the press of day-to-day business--managers fail to put these principles into practice.

So what guidelines can we give managers to help them through the maze of communication planning and execution? I've developed three--you may have others.

My guidelines are short and to the point:

One--be honest, open, and accessible.
Two--be prepared.
Three--be flexible.

To illustrate how I developed this list, I'm going to outline three--let's call them communication "challenges"--involving BFGoodrich. Perhaps you can glean something from our experience.

This first involves an occupational health issue. It came to our attention in 1974, but this issue itself is as fresh as any day's headlines.

Early that year, we learned that several workers at one of our chemical plants had developed angiosarcoma, a rare form of liver cancer. Three had, in fact, died of the disease. All had worked for 20 or more years in environments where they inhaled air containing relatively high levels of vinyl chloride monomer, which is the main raw material for one of our major products--polyvinyl chloride.

This was the first indication--anywhere in the world--of a link between vinyl chloride and human cancer.

As a manager, what do you do when your organization faces a crisis like this?

Do you choose a strategy that says "head for the hills and cover your flank"?

Do you try to stall--hoping that the problem will just go away? Do you claim insufficient evidence--and sit on your hands while the scientific community comes up with the dirt to really nail you? Or if the bad news does come to light, do you claim you can't say anything because the matter might lead to litigation?

Or do you do what seems so easy in the textbooks--voluntarily tell the truth, the whole truth, and nothing but the truth?

I can tell you from experience that it's not always easy to make the right decision. Not that you won't get plenty of advice--most of it conflicting. The sales and marketing people worry about customers and market share. The human resources folks are concerned about employee morale. The investor relations people see the stock price spiraling down. And then there are the lawyers--and, well, lawyers are lawyers.

Nobody wants you to lie. Nobody wants you to continue an unsafe operation--if, in fact, one exists. But nobody in this type of situation is enthusiastic about having to stand up in front of the world and say, "We may have a big problem."

I'm happy to report to you that we did indeed make the right decision. We told the world--and we did it quickly, without hesitation. We immediately released all available information to the appropriate federal and state health agencies. We told our employees. We contacted local and national news media --and our customers and competitors. Most important, we launched a massive research and engineering program to reduce vinyl chloride levels and worker exposure in all of our plants as quickly as possible.

Over the next several years, we continued to communicate regularly on this subject with employees, people in our plant communities, government officials, and customers. We released all the available information as additional angiosarcoma cases were discovered and various studies were completed. We also reported our progress in reducing vinyl chloride levels in our plants. In December 1975 we held a major news conference in New York City. We unveiled the new technology that we had developed to reduce residual vinyl chloride in our vinyl products and to reduce significantly worker exposure to vinyl chloride.

I might add that this technology would have given BFG a significant advantage in the PVC market. The company opted, however, to make it available to all other producers.

Having said all that, I don't want to leave you with the impression that anyone was showering kudos on us for having made a clean breast of things. Nothing could be further from the truth. We took a great deal of criticism at the time--not for how we were communicating the bad news, but for the news itself.

However, I could not begin to describe just how negative the reaction would have been if we had not been proactive in our communication of this issue. In fact, I'm convinced that the vinyl industry--including BFGoodrich--would not exist today in this country if we had tried to keep this quiet. Or, if we did survive, our credibility would be so low that simply doing business would be almost impossible.

That's lesson number one: be honest, open, and accessible.

Lesson number two: be prepared.

One Sunday evening in February 1989 a freight train derailed as it passed behind BFG's chemical plant here in Akron.

Perhaps you remember the Rowan and Martin "Laugh-In" television program. The show had a regular segment where Artie Johnson would be riding a tricycle--and it would just topple over, unexpectedly. That's pretty much what happened to this freight train--right behind our plant. Only nobody was laughing.

This is one of those things that makes you look up and say, "Why me, God?" You did absolute nothing to deserve this. This wasn't your train. It wasn't heading to your plant or from your plant. It just happened to be in the neighborhood. And it fell over.

It also happened to be carrying butane, and one car exploded, creating an enormous shock wave and sending flames hundreds of feet into the air. Two other cars quickly caught fire. The burning cars were positioned about 50 feet or so from one of our manufacturing buildings. The plant, which is a seven-day operation, immediately was shut down and evaluated--as was the entire neighborhood.

It probably won't surprise you to be told that this is the type of situation that will have the news media beating the proverbial path to your door.

Fortunately--and this may surprise you--we were prepared. We had in place a comprehensive emergency operations plan that included a plan for full and timely communications as a key element. Equally important, we had been working for some time to build contacts with the various safety agencies in Akron--particularly the fire department. When the crisis occurred, safety officials and the community looked to BFGoodrich for help. We were not viewed as a cause of the problem--but as a resource to help community agencies solve it.

Additionally, the key managers at the plan had received training in working with the news media in a crisis situation, and less than six months before the accident, the plant had held a full-scale mock emergency drill involving a train derailment. I'm not sure we could have been better prepared--although we've been very cautious about the kinds of accidents we've included in the drills we've held since!

A crisis situation probably is the toughest communication challenge a manager faces. You live in the hope that nothing nasty will ever happen to your organization. So you tend to adopt the ostrich approach to management--standing with your head firmly buried in the sand--hoping that if there is a problem you'll never know about it. This posture, I might add, tends to leave another part of the anatomy exposed--and vulnerable to a swift kick.

We've taken the opposite approach--and since the accident we've stepped up our communications efforts at the Akron plant even more. We established a 24-hour-a-day community phone hotline; we've hosted several meetings and tours for community groups and local officials; and we've started programs with neighborhood schools. And it's paying off. We have activist groups like Ohio Citizen Action pointing to the plant as a good example of what the chemical industry should be doing in the environmental area. At a recent community meeting at the plant, the mayor of Akron was glowing in his praise both for our response during the derailment emergency and our ongoing outreach programs.

So that's lesson two--preparation--it's essential.

Lesson three: be flexible.

So much for the history lesson. For my final example I want to tell you about an ongoing communications challenge we've been facing at BFGoodrich--and one that has little chance of going away in the near future.

Let me pause for a minute and ask for a little audience participation. Think about the first word that pops into you mind when I say "BFGoodrich."

Raise your hand if that word was "tires."

Just as I thought--most of you automatically think of tires when BFGoodrich is mentioned. It will probably surprise you then to learn that it has been almost three years since BFG sold its last remaining interest in the tire business. Quite simply, we no longer make tires. What we also sold, however, was the right for another company to continue to use the BFGoodrich brand name on tires. So you continue to see the BFGoodrich name on signs at tire dealerships, in newspaper ads, and in television commercials.

Confused? You're not alone. I certainly can't fault anyone for making the seemingly reasonable assumption that those BFGoodrich tires are made by The BFGoodrich Company. Our challenge, however, is to convince at least some people that BFGoodrich is not a tire company--and I'm sure you can appreciate just how difficult that task is.

Before I go on, for the benefit of those of you who are scratching your head and wondering just what it is that BFGoodrich does make, let me tell you just a little bit about the company today.

BFGoodrich today has three major businesses. Our largest business is the production of polyvinyl chloride, which you probably know by the more familiar term "vinyl." It's used in everything from sewer pipe to house siding, appliance parts, computer casings, wallcovering, auto parts--the list goes on and on.

Then we have two other businesses that are about equal in size. One is what we call speciality chemicals. For instance, the toothpaste you used this morning didn't drip off the brush because of a BFG chemical additive that makes it stick together. Last, we have a very successful aerospace business. If you're flying home after this conference ends, chance are good that the plane you're on will be equipped with at least one of our products--maybe wheels and brakes or evacuation systems or avionics equipment.

That, in a nutshell, is what BFGoodrich is today. Nary a tire--or any other rubber product, for that matter--in sight.

A logical question might be--Why not just change the name of the company? Eliminate the confusion.

We've debated this time and again--and we always end up back at the same place. While it's true that BFGoodrich has long been associated with tires, it has an association in our other markets that is almost as long and just as strong. We've been making aircraft components since 1909. We literally invented the vinyl industry in the 1920s. Our specialty chemicals business is the world leader in many of its market niches.

Our name has a great deal of value in the marketplace--too much, we feel, to simply throw it away. And we've seen too many other companies try--with less-than-satisfactory results. What is a Unisys anyway? Or a Navistar? And remember the Allegis disaster at United Airlines?

So, for now--and remember, I am talking about being flexible--we're sticking with the name. This means that as long as another company is making and selling BFGoodrich tires, the confusion will exist. At the same time, we have to let people know that we are a chemical and aerospace company. We can't just shrug our shoulders and say the confusion doesn't matter. It does.

Let me tell you about some of the things that we have done to try to address the problem--and how we've had to refine our strategy over time.

We started out in 1988 with a fairly broad approach directed at re-educating the business community in general. Our first objective was to get the

business media to stop labeling us as a "major tire company" or a "leading tire producer." We wanted Fortune and Business Week and the others to put us in the proper category when they publish those endless lists.

Our first attempt was through direct mail--or, more accurately, direct delivery. We delivered pies--actual apple pies--to key editors at The New York Times, The Wall Street Journal, Business Week, and other publications. The pies were cut into segments representing BFG's businesses--with tires notably absent. Then we followed up with a postcard to about a thousand editors and reporters across the country.

The postcard recalled a highly successful advertising campaign that we ran back in the 1970s to differentiate ourselves from Goodyear. You know--the company with the blimp. We were "The Other Guys"--the ones without the blimp.

The postcard we sent to editors and reporters showed a photo of a cloud-filled, but otherwise empty, sky and was labeled "The Last Photo of the Goodrich Blimp." I'll comment in a moment about just how effective all of this was.

Then we decided that our financial performance had improved to the point where we could consider advertising. In October 1988 we launched the first phase of what turned out to be a 16-month advertising program. Phase one included a series of three ads that focused on the "no tires" message. We used slogans like "We gave up the highway for the runway" and "We're out of inner tubes and into test tubes."

In phase two, we moved on to a series of ads that focused on what we are--not what we're not. These ads ran through 1989 and early 1990 in all the major business magazines, as well as The Wall Street Journal, The New York Times, and Barron's.

Before we started advertising, we did some statistical research and had focus group sessions. We asked business people what they knew about BFGoodrich and how they perceived the company.

These sessions confirmed what we intuitively knew: people viewed us as a tire company. We were well known, but for a product we no longer made. Because of this perception, we weren't viewed as a very exciting company. And because tire companies in general are not viewed as high-return stocks, we certainly were not at the top of anyone's list of hot investments.

This is the point in my speech where I should be telling you that we repeated the focus group sessions after 16 months of advertising, and, lo and behold, now everybody views us as that up-and-coming chemical aerospace company, with loads of investment potential.

However, since honesty is one of the principles of effective communication, I can't do that. I wish I could, but I can't tell you we were successful. We did indeed repeat the focus groups last spring, and to our chagrin we found out that we really hadn't moved the needle. People still viewed us as a tire company.

What happened? Several things, I think.

First, the name BFGoodrich is so strongly associated with tires that the audience reading our ads simply did not believe the message. Or they saw the name BFGoodrich, thought it was an ad for tires, and didn't even read it. They just weren't interested.

Second, we were spending about $2 million a year, not an insignificant amount for us. But shortly after we began our campaign, that other company that now makes BFGoodrich tires decided to advertise as well. And they began spending about twenty-six million dollars a year to promote--you guessed it--BFGoodrich-brand tires.

Not only were we caught in an avalanche, we didn't have a snowball's chance in hell.

Unfortunately, this isn't the kind of situation where you can ask for your money back. We simply had to regroup, reassess, and move on.

We started by taking another look at our target audience. Who were we really interested in reaching? Our efforts up to that point had been directed at a rather broad group that we defined as "the business community." But did we really care if the vice president of a publishing company in New Jersey or an appliance distributor in the Midwest knew whether we made tires or not?

Not really. As an industrial company--with no connection to the consumer market--it isn't all that important to us that the general public understand who we are. The confusion is more of a nuisance than a genuine problem.

The audience we really want to reach is the investment community--the relatively small group of men and women who make decisions affecting our stock. Our real goal is to convince people that our company and its current businesses have more value than BFG had as a tire company. And given the consolidation of stock holdings into the hands of institutions, the number of people we're talking about is fairly small. And for the most part, they are geographically concentrated in New York City. They are, of course, sophisticated in business and financial analysis and, in order to make that analysis as valid as possible, they want an almost unlimited amount of information about a company--not that they always get it, but that's what they want.

Ads in Fortune or Forbes or Business Week are not the way to reach this audience. In effect, we had been using saturation bombing when hand-to-hand combat was called for. We hadn't done any harm--except to our bank account--but we weren't giving our most important audience what they needed.

I might insert at this point that the effort to reach the business media with our no-tires message has had mixed results. Just several days ago, The Wall Street Journal referred to us as "tire maker BFGoodrich." It took The New York Times over two years to stop referring to us as a tire producer--and then only because one of our public relations staffers wrote to the copy editor and implied that she would lose her job at BFG if they didn't get it right.

The conclusion that we've reached is that this has to be a more focused effort. It's one editor, one writer, one stock analyst, one investor at a time.

It's regular calls by our communications and investor relations people to the key contacts in the media and financial communities. It's expanded quarterly meetings for analysts where we provide detailed information about our strategies for our current businesses. It's using the regular mailings of investor documents such as quarterly and annual reports as opportunities--and writing and designing those reports to reinforce the message. It's pouncing on anybody, anywhere, anytime who refers to us as a tire company.

One hapless news announcer at a radio station here in Akron got a taste of this a couple of months ago. In reporting our earnings for 1990, he referred to us on the air as a you-know-what. One of our communications people heard it on his car radio. By the time he got home a half hour or so later and called the announcer, the guy was saying, "All right already, I know, I know!" He already had had eight or ten calls on the subject from other BFG employees.

So where are we now? I'm not sure that I can tell you how much progress we've made. I think we have made <u>some</u>, but we realize that this will be an ongoing--and probably never-ending--effort. We continue to fight the effects of the multi-million-dollar BFGoodrich tire ad campaign--although we <u>are</u> thankful that they focus on quality and high-performance--not bargain-basement pricing.

We know there always will be confusion, but as long as we keep ourselves focused on the audiences that truly matter to us, we believe we can change perceptions about BFGoodrich. And we won't be shy about further refining the strategy if necessary.

That's my point of view on effective business communication. Be honest and open. Be prepared. Be flexible.

There's also one other fundamental lesson to be learned from all of this--and that is that communication is basic to the effective functioning of every facet of a business's operations. Our success as an enterprise is based on many things--but not least of those is our ability to communicate our mission to our employees, our customers, our shareholders, and the people who live in the communities where we operate. Communication should not be a peripheral part of the plan, but a key element of any business strategy.

Thank you for allowing me to share these thoughts with you today.

MULTI-PERSPECTIVAL PROBLEMSOLVING IN BUSINESS WRITING

Bruce McComiskey, Purdue University

Business writing documents address corporate problems. But few business writing students are able to state effectively the corporate problems which their documents address--their problem statements are frequently egocentric and sometimes even offensive to their intended audiences. Few writers, regardless of expertise, can write effective documents based on these self-centered problem statements. This essay explores the uses of multi-perspectival problemsolving techniques (to be defined shortly) in improving business writing students' abilities to state corporate problems effectively.

Most problemsolving techniques take the form of heuristics--sets of open-ended questions designed to guide (not limit) inquiry. But different kinds of problemsolving require different cognitive operations, different heuristics. For example, mathematical problemsolving deals with numerical media in specific and significant visual organizations. Rhetorical problemsolving works with verbally expressed ideas tied together by genre-based logics, such as narrative, description, and argumentation, all of which may be present in the same discourse. And there is also corporate problemsolving, which addresses issues of corporate hierarchy, process efficiency and effectiveness, and geographic design (both large- and small-scale) in business settings. While all of these different kinds of problemsolving take place within every corporate culture, the problemsovling skills with which I am concerned in this essay are those specifically dealing with corporate problems.

Effectively stating and defining corporate problems is the key to success with many different kinds of business writing documents. Yet it is also a difficult task; and, unfortunately, many students compose their documents without ever adequately defining the problems about which they write. In response to these difficulties with corporate problem definitions which I have observed in my own students' business writing documents, I would like to propose a four-stage process for corporate problemsolving. The stages progress as follows:

1) discover, state, and define the problem
2) explore and analyze the problem--writer's perspective
3) explore and analyze the problem--other perspectives
4) re-state and re-define the problem

My business writing students begin the four-stage process of corporate problemsolving by writing a statement about (or description of) a corporate problem with which they have had first-hand experience. I give them general guidelines about the nature of problems that can arise in corporate settings: process problems, such as poor inventory control or ineffective filing systems; geographic design problems, such as office/store floor-plan or assembly-line design; corporate hierarchy/personnel problems, such as high employee turnover or tension between employees (wage/salary, full-time/part-time, student/professional, etc.). Other kinds of problems relating specifically to "management" issues (assembly-line rotation, for example) or ethical/legal issues (government waste-disposal regulations or safety laws, for example) are not easily categorized, but

are certainly corporate problems. We must also remember that any problem may fall simultaneously under any number of these categorizations.

As I will explain in the next section, these guidelines help students find and articulate the problems they will address in their assignments, but they do not solve any of the troubles we often find in our students' initial egocentric problem statements.

THE PROBLEM WITH THE PROBLEM

Most of our students state their problems in egocentric terms; that is, they do not consider the knowledge, attitudes, and perspectives of their audience members as they define the problems they have chosen to write about. They describe their problems from their own perspectives within the corporate culture, ignoring the existence, even prevalence of other perspectives--let alone those of their audience members. I term this egocentric form of problemsolving "mono-perspectival." Following are three examples of mono-perspectival problem statements, and a discussion of their nature and implications for composing documents based on them. (All three example problem statements were written in response to a research proposal assignment. Identifiable markers have been removed upon request.)

Problem Statement 1

Sheila: "The Financial Aid Office at State University has a problem: I don't have a computer to help me do my job well. I process Financial Aid Transcripts (FATs) part-time. To do this, I need to enter data from student applications into a computer. But my boss and I have to share the same computer. So when both of us need to use the computer at the same time, I always have to run around to find one that isn't being used. Otherwise, the FATs would never get processed."

Problem Statement 2

Mark: "While working at Video Rentals Shop, I have noticed a problem with the management. The three managers who run the store are lazy; they make the part-time workers do a lot of the jobs they are supposed to do themselves, like ordering stock. But most of us don't know how to order stock, so our inventory is depleting. Also, the managers don't advertise enough, so we never get much business."

Problem Statement 3

Donna: "The Campus Newspaper does not have a fax machine. Whenever our salespeople want to contact their clients, they have to either call them on the phone, write them a letter, or use the fax at a nearby copy shop--all at their own expense. The Campus Newspaper won't cover the cost of anything like that. Since writing letters takes too long, and lengthy phone calls are expensive, not having a fax machine in the Campus Newspaper advertising office is a major problem."

Discussion

Problem statement 1 (Shiela's) is excessively individualized. Documents which address corporate problems must focus on the corporation, not just the complaints of one single employee--in this case, Shiela. The management's solution may well be to fire the ungrateful employee and hire one who appreciates the position more. Statements defining corporate problems should demonstrate a corporate need in order to be effective.

Problem statement 2 (Mark's) is offensive to its intended audience. The managers of Video Rentals Shop are the only members of the company who have the power to solve the problems Mark describes. Although his problem statement demonstrates a corporate need, it also immediately closes the minds of his audience. Effective statements of corporate problems are written with the concerns of the audience in mind.

Problem statement 3 (Donna's) reveals the desired solution within the problem statement, which may be troublesome if the audience is initially against the solution. If Donna's audience is frugal with corporate funds, the immediate request for a fax machine may seem irresponsible. Solutions need to be revealed only after a corporate need has been sufficiently demonstrated to the audience. Only then can the cost (in money, time, energy, etc.) of the solution be justified adequately.

Egocentric, mono-perspectival problem statements, such as the three examples provided above, will close an audience's mind to the arguments to come in any document. And an audience which is against the writer from the very start is not likely to see much validity in any of the document's arguments.

A good problem statement, then, demonstrates that the phenomenon being described is a problem for the audience, for the author of the document, and also for the corporation as a whole. And systematically considering different corporate perspectives can lead to strong, multi-perspectival problem statements.

MULTI-PERSPECTIVAL PROBLEMSOLVING

In this section, I will discuss one particular problemsolving technique, and how it can be adapted to allow for a multi-perspectival shift. The heuristic is Kenneth Burke's pentad of terms (agent, act, agency, purpose, and scene). I have supplemented each term with a set of corresponding questions which help students explore and analyze their corporate problems in a systematic, though not limiting, way.

Burke's pentadic terms, with their corresponding heuristic questions, should be used both for stage two and stage three in the process of effective corporate problemsolving proposed here. In stage two, the business writing students should explore and analyze their corporate problems from their own perspectives using Burke's pentad. Then, using the same pentadic terms in stage three, the students should respond to the questions and prompts as though they themselves were the audience.

Stage 2: Mono-Perspectival Problemsolving

Burke's pentadic terms, with their corresponding heuristic questions adapted for business writing, follow:

AGENT:
- Who are the most responsible for causing the problem?
- Why are they responsible, specifically?
- Who are most affected by the problem?
- In what ways are they affected?

ACT:
- What action is causing the problem?
- Describe the entire process under question (not just the problematic area).
- Describe in detail the problematic part of the process.

AGENCY:
- What tools are being used which may be contributing to the problem?

PURPOSE:
- What factors outside of the corporation contribute to the problem?
- What is the motive for the present problematic situation? (economy, ignorance, apathy, etc.)
- Have alternatives to the problem been considered in the past? If "yes," what? If "no," why not?

SCENE:
- Describe the general arrangement of the problematic area.
- Describe in detail the specific area which is causing the problem.
- Specifically, what about the arrangement of the scene is problematic?

From the nature of the questions corresponding to each of Burke's pentadic terms, it is easy to see that some problems will require more attention in certain areas than in others. For example, corporate hierarchy/personnel problems will yield in-depth responses to the questions and prompts under "agent," but very little under "scene." Also, geographic design problems will result in elaborate analyses in response to the questions under "scene," but probably not under "agent" or "purpose." Students should feel free to focus their energies anywhere in the heuristic that they feel will help them learn the most about the problem they wish to state or define.

Stage 3: Multi-Perspectival Problemsolving

After completing stage two of the four-stage process of corporate problemsolving, the students then, using the same heuristic they used for stage two, explore and analyze the same problem from the perspective(s) of their audience(s). One, two, or even three different perspective shifts will help business writing students understand the perspectives they will need to incorporate into their problem statements in order to make them effective.

When the audience is one person, and there are no legitimate secondary audiences, the business writer may execute only one multi-perspectival exploration--from that audience's perspective. But if there are secondary audiences, then a second (or even third) multi-perspectival exploration is recommended in order to incorporate as many perspectives as possible into the eventual problem statement. Additional multi-perspectival analyses may also be performed from the perspectives of groups affected by the corporate problem, but which are not part of the eventual document's intended audience.

Burke's terms, multi-perspectivally presented, follow:

1) • What is the audience's knowledge about the
-agent -purpose
-act -scene
-agency
involved in the problem itself?

2) • What is the audience's attitude toward (or relationship with) the
-agent -purpose
-act -scene
-agency
involved in the problem itself?
• How important does your audience think it is to solve this problem?

The degree and quality of the audiences' knowledge of the problem to be addressed and their attitudes toward those problems are the key issues to be concerned with in this problemsolving perspective shift. And once again, in stage three of the four-stage process of corporate problemsolving proposed here, business writers should focus their energies in the areas of the

heuristic which seem most helpful to them for discovering and generating information about the corporate problem which they wish to state or address.
The business writing students' multi-perspectival explorations in stage three will be less detailed than those in stage two because the students will be on less sure ground. They will be role-playing, engaging in educated guesses. Even when they are not sure how their audiences would respond to some of the questions, they should be encouraged to try. However, when the information under question is crucial enough that a blatantly wrong answer would result in an ineffective document, then the business writing students should skip the question. For most students, however, this situation never arises. In most cases, an educated guess is better than no guess at all.

In the next section, I would like to look at the multi-perspectival problemsolving explorations and revised problem statements which Shiela, Mark, and Donna wrote for their research proposal assignments.

PROBLEM STATEMENTS 1, 2, AND 3, REVISITED

Having finished the multi-perspectival shift in stage three of the corporate problemsolving process proposed here, my business writing students were then able to revise their egocentric problem statements into multi-perspectivally presented problem statements; that is, they revised them into problem statements which are corporately oriented, audience-centered, and aware of the need to withhold solutions until the later stages of the finished document.

The following sections show the revisions which Shiela, Mark, and Donna made in their problem statements after progressing through the first three stages in the corporate problemsolving process proposed here.

Problem Statement 1: Multi-Perspectivally Revised

After initially writing a troublesome problem statement, Shiela explored and analyzed her corporate problem from her own perspective, and then from her boss' perspective, since her boss would be the most important audience for her proposal.

During stage three of her problemsolving activities, Shiela observed: "The thing that would most directly affect Lisa Simmons [Director of Financial Aid Services] would be the reputation of the Financial Aid Office. A bad reputation in the FAO would cause or contribute to the State University's reputation as an inefficient university, with a Financial Aid Office that doesn't really help students like it is supposed to. And if this happens, she would be blamed for more things than just the problems in the FAO. I don't think she would like that."

With this new conscious knowledge of Lisa Simmons' corporate perspective on issues affecting the Financial Aid Office, Shiela revised her problem statement to read like this: "The Financial Aid Office at State University has a problem: Financial Aid Transcripts (FATs) are not being processed on time. As a result of delays in data entry, FATs are usually mailed two to three weeks after most of the deadlines set by the government and private financial institutions. Thus, students from State University have to register late for classes and go months without health insurance, since they do not have the money to pay their university bills."

Problem Statement 2: Multi-Perspectivally Revised

Mark's initial problem statement placed primary blame on the very managers to whom he wanted to direct his proposal. Before Mark engaged in multi-perspectival problemsolving, one of his

classmates asked him how he thought his audience would respond to his statement of the problem. Mark said with a smile, "They'd probably fire me." I think he was right. Thus, Mark knew even before he began his multi-perspectival shift in problemsolving that he needed a new approach to his corporate problem.

Mark's perspective shift revealed to him the possibility that the managers at Video Rentals Shop may not even know that they themselves are causing the problem. He wrote, "If they don't know that the part-timers don't know how to order stuff or set up effective advertisements, then I should just point out the problem without blaming them directly. . . . Hopefully, they'll see for themselves that they're the causes of these problems."

With this realization in mind, Mark revised his problem statement to read as follows: "Video Rentals Shop has made encouraging profits over the last six years of its existence. But last year, our profits went down a little, and it looks like they may be down again this year [cites interview]. I believe that two factors are contributing to our recently reducing profit margin: 1) a decline in the volume of new purchase orders, and 2) a decline in expenditures on in-store and out-of-store advertising."

Problem Statement 3: Multi-Perspectivally Revised

In her original problem statement, Donna revealed her solution too early. But her multi-perspectival explorations and analyses of the problem revealed to her one important reason why she should save her solutions until the end of the proposal.

During her explorations of other perspectives on the communication problem at the Campus Newspaper, Donna wrote: "The Campus Newspaper operates under certain strict budget limits. The government isn't giving as much money to colleges as it used to, so we can't spend money on things we just want. So saying that the Campus Newspaper needs a fax during the problem statement might make the managers of the paper [to whom Donna has chosen to direct her proposal] decide they don't have the money for one before they even get to read my arguments for why we do need one. I guess it might bias them against my solution before they even get to page 2."

Donna's realization that money might be a factor in how her arguments would be received inspired her to revise her problem statement. The revision read like this: "In the last few years, many national advertisers have realized the importance of college markets. [Here Donna lists some of the advertisers and cites a source.] With so many national advertisers looking for college markets, we should see our advertising sales rise dramatically. But they have not. In fact, they have gone down slightly over the last two years [cites interview]. The problem is that national advertisers need advanced notice before committing to a certain amount of purchased page space. But the advertising representatives at Campus Newspaper have no way to communicate quickly enough with potential clients to sell as much advertising space as they would like to. Profits would increase if we had quicker ways to communicate with our clients."

Discussion

It is clear from these three students' revisions of their initial problem statements that the multi-perspectival shift in problemsolving helped them write more effective corporate problem statements. Shiela's revised problem statement would now be accepted as a corporate problem, and her audience would be likely to take the resulting document more seriously than they would have had she written it based on her first description of the problem. Mark's multi-perspectival problem statement represents a radical shift from an offensive definition of the problem to one which would be considered a "nice gesture" from Mark (to use his own words). It is also interesting to note that neither Shiela nor Mark increased the length of their problem statements as a

result of the revisions they made. They were able to state their corporate problems multi-perspectivally just as briefly as they did their mono-perspectival problem statements. Finally, Donna's revised problem statement considers the concerns that her audience may have for frugality, and as a result, her multi-perspectival problem statement would be a better base for the eventual document proposing the acquisition of a fax machine in the Campus Newspaper advertising office.

CONCLUSION

Egocentric, mono-perspectival problem statements lead to ineffective business writing documents. Multi-perspectival problemsolving helps students view their corporate problems from a variety of perspectives generated by a variety of intra-corporate cultures. The resulting multi-perspectival knowledge of the corporate problem which the students gain from this multi-perspectival problemsolving helps them write effective problem statements and definitions. And finally, these multi-perspectival problem statements result in better, more effective business writing documents

AUTHORS AND AUDIENCES IN R&D WRITING

Vincent J. Brown, The Ohio State University

Three important factors in any analysis of the writing process, especially in nonacademic settings, are audience, collaborative writing, and document cycling. All of these factors, as subjects of empirical study, reflect an increasing sense that composing is a social act, shaped and defined in large measure by those who motivate, review, and read the resulting discourse. Faigley (1985) and Odell (1985) among others have addressed written discourse from this social perspective.

The case study reported in this paper is an attempt to supply information on how authors in one nonacademic setting managed audience, collaboration, and document cycling while completing a writing task.[1] This paper provides a firsthand look at the writing processes of one team of engineers who drafted and revised a brief technical report in an independent contract research and development (R&D) laboratory in the Midwestern U.S.

SETTING AND ACCESS

For the three years prior to my case study, I worked as a full-time technical writer/editor at a contract R&D laboratory.[2] Contract R&D laboratories are in the business of providing independent scientific, engineering, and technological services. This laboratory, which I will call Dresler, offers a full range of R&D services in areas such as environmental science, manufacturing, mechanical engineering, and electronics.

My role on this R&D report, as discussed below, was that of participant-observer, with more emphasis on observation than on participation. This case

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[1] This research project was supported in part by an Academic Challenge Grant from the Department of English at The Ohio State University. The work is part of my doctoral research in English rhetoric and composition at Ohio State. I gratefully acknowledge the guidance of Dr. Kitty O. Locker, my dissertation adviser.

[2] The laboratory and I reached a research agreement preventing me from revealing the identity of the laboratory, its staff members, its clients, or any of the technologies related to this project. All names and other specific identifiers have been altered. The name "Dresler" and all other organization names are fictitious and are not intended to imply an association or relationship to an existing company or organization.

study was a natural outgrowth of my usual role at Dresler. As a writer/editor, prior to my research study, I often worked closely with R&D authors, attending collaborative writing sessions and interviewing authors to gather information on projects. Thus, the data-gathering for this case study had much in common with my normal activities at the laboratory. To look for answers to my research questions, I asked authors many of the same kinds of questions I normally ask when writing and editing an R&D document.

DEFINITIONS

"Audience" is usually defined as the readership (singular or collective) that an author has in mind when he or she writes a document. This audience can be wide and varied in the R&D setting, including fellow authors; internal technical, managerial, and editorial reviewers; and staff members of the organization that funded the research (project monitors, technical experts, and contracts officers).

Collaborative writing, or cooperation among a document's authors, is important at an R&D laboratory because most projects are complex enough to require collaborative research. It is common for authors to divide the reporting responsibilities and then pool their inputs into a full report draft. Cycling, or the review of a document by those other than the authors, is likewise necessary to the technical integrity of R&D reports. Allen et al. (1987) found that authors perceive their reviewers to act as a "first-line audience" for their draft documents. Similarly, participants in my research study at Dresler indicated the importance of document cycling; when reviewers contribute to a report, authors feel that the report is more likely to be complete, relevant, and usable.

RESEARCH QUESTIONS

My primary research question was: **How does "audience" matter to the authors of one R&D report?** Specific sub-questions included the following:

1. How do audience considerations appear in the discussions of one team of R&D authors working on a report?

   - Which audiences seem most important to the authors?

2. In what ways do audience considerations affect the text of an R&D report?

   - What are the relationships among audience-based review comments (spoken or written) and the revisions authors make?

I also hoped to answer the following:

1. To what extent do these R&D authors view a contradiction between informative and persuasive writing in their reports? Do they see their reports as more one than the other?

2. Do researchers at a contract R&D laboratory feel more loyal toward their readers or the subject matter of their reports, or do they even think in those terms?

3. Are written reports the main way information is transmitted to the client or are reports more often post facto archival records with little rhetorical purpose? What value do reports have at the laboratory?

METHODS

This study employed case study and ethnographic-style methods during and after the report writing phase of one contract R&D project. My regular responsibilities as a full-time employee of the laboratory limited the amount of time I spent actually gathering data (approximately 35 hours). On the other hand, because I had extensive experience with the language customs in this discourse community, my approach to the data benefitted from some of the richness and context-awareness of ethnography. No matter what label best fits the study, my goal was to add to the store of knowledge about rhetoric, composition, and technical and scientific writing by bringing, in the words of Brodkey (1987), "stories not yet heard to the attention of the academy" (48).

The basic methods included participant-observation in the drafting and revision of the R&D report, taking field notes, collecting and analyzing copies of all drafts and markups of the report, conducting retrospective and discourse-based interviews with engineers involved in the reporting project, and conducting background interviews with other lab staff not involved in the reporting project. Participants were not compensated for their involvement in the study.

THE WRITING PROCESS

To find participants, I informally asked several engineers with whom I had worked to stay on the lookout for any writing projects that were to involve several authors and that were to occur during late 1990. Fortunately, one engineer told me of such a project.

The client for this R&D project was the Industry Support Foundation (ISF). ISF and its constituents in a manufacturing and supply industry needed research services from Dresler in the form of information to send to an agency of the federal government. The government had proposed new regulations to change the performance requirements of a consumer product in which ISF had an

interest. The government agency had asked for public comment, and ISF wanted to ensure that the agency made an informed decision.

The department chosen to write the initial response was a strong one at Dresler, known for steady, stable relationships with its clients. For the most part, the project engineers were highly experienced and esteemed at Dresler. The three main authors of the response represented nearly 60 years of combined experience at Dresler (Frank, 33 years; Gary, 9 years; Rich, 17 years).

The written response was interesting rhetorically, in part because it was to have multiple audiences. The government agency was the most important audience in terms of decision-making power. In Mathes and Stevenson's terms (1976), the primary audiences would have included the government agency, ISF (the client), and certain members of an ISF advisory council. The advisory council was important because it was made up of industry representatives who recommended funding and emphases for ISF's contract research. Secondary audiences included other regulatory agencies and interested industrial manufacturers. Internal Dresler readers, such as the authors' fellow engineers and their managers, constituted both secondary and "immediate" or transmitting audiences for the response.

The writing of the response was atypical in its short time frame. This collaborative report, containing information on some sensitive technical issues, was drafted, reviewed internally at Dresler, reviewed by experts outside Dresler (twice), and revised into its final form within 7 days. For a document of this kind (12 pages of space-and-a-half text), 4 to 6 weeks would be a more typical length of time from the initial writing assignment to the final draft.

The draft went through seven major versions between composition and delivery. The three main authors began the process by drafting portions of the response. The authors merged their sections and distributed copies of the full draft to four internal reviewers. This was essentially the only internal review; after this review the two authors and I were the only Dresler staff to make substantive changes to the response. Once the changes from this review had been consolidated and the draft updated, it was sent via facsimile and overnight mail to eight external reviewers in the industry, including two staff members at ISF, the client.

The next day several external reviewers phoned their comments to two of the authors, Frank and Gary. The authors took notes from the phone calls and then met for a five-hour weekend session to combine all of the comments. I attended this meeting, observing, consulting on some editorial questions, and tape recording the entire meeting. Transcripts and field notes from this meeting, combined with a complete set of copies of all versions of the draft and final response, formed the bulk of documentary evidence for my study. When the changes from the five-hour meeting were all "rolled" into one massive markup, a secretary revised the text, and a clean version was faxed to the same set of external reviewers.

This second external review, on the day the response was due to be sent to ISF, involved fewer changes, but those that did come in were made, and the response was printed out. Hard copies and a computer diskette version were

sent to ISF, in case anyone there wanted to make final revisions before forwarding the response to the agency. No one did, which I took to be one signal that the response was satisfactory to Dresler's client. As of this writing (several months afterward), neither ISF nor Dresler had received feedback from the government agency.

This study resulted in a large amount of anecdotal and ethnographic-style data. Tape recordings of the five-hour weekend meeting (plus one earlier, 40-minute meeting involving Frank, Gary, and me) were later transcribed in their entirety. Printed out, the collaborative meeting transcript amounted to 79 pages of single-spaced text, which proved to be a rich source of information on the speech of these two authors as they settled on the form and content of the response. The transcript also offered much evidence about the pressures the authors faced in their discourse community.

AUDIENCES FOR THE DOCUMENT

To gain a rough quantitative picture of the kinds of audiences these authors considered as they collaborated, I devised a coding scheme to capture information about (1) characteristics of the audiences to whom the authors referred (e.g., individual versus collective reference), (2) audience action (past versus future, positive versus negative), and (3) main themes in the transcript. In three coding passes through the transcript I marked codes and other notes in the margin adjacent to each audience reference. The basic findings from the quantitative analysis were as follows:

- The authors appeared to be highly aware of their audiences. All but seven of the 79 transcript pages had some kind of audience reference.
- When the authors mentioned actions that their audiences had taken or might take in reaction to documents (including the agency response), the references for the most part dealt with avoiding negative consequences in the future. Audience-based revisions were much more likely to spring from a wish to avoid a negative reaction than from a wish to elicit a positive reaction.
- ISF, the organization that was funding Dresler's research on this response, was unusually absent from the discussions. Out of 139 audience references, only 14 references were to ISF or its staff members.
- Internal Dresler reviewers were also unusually absent from the transcript. Only seven of the comments referred to internal readers, such as managers or fellow engineers.
- One external reviewer, Vic Morlin, was the most important. He sat on an ISF-sponsored advisory group made up of influential industry representatives, and he was really the driving force behind Dresler's assignment to write the response. Morlin, although not employed by either the agency or ISF, was still a major player in the eyes of these two authors.

- The authors referred to the agency collectively, using group references, while almost all references to the reviewers contained a personal name.

THEMES IN THIS COLLABORATIVE R&D WRITING CASE

Three main themes appeared in the transcripts: objectivity and credibility, clarity, and tact. Each of these themes shows part of the social and professional climate in which these R&D authors were working.

Objectivity and Credibility

Having observed Frank, Gary, and the other Dresler participants at work, and having interviewed a handful of engineers after the response went out, I learned that the laboratory lives by its objectivity and credibility as perceived in the scientific/technological community. Objectivity and credibility, which are audience-based constructs, point directly toward the social bases of scientific knowledge. Engineers, like practitioners in all the sciences, must establish themselves as credible and objective (or free from obvious scientific faults and biases) before they can join the vital conversations of their discipline. This need to speak from a position of objectivity and credibility applies to whole laboratories as well as individuals, and it appeared in this case during both the collaborative writing and the retrospective interviews.

The drive for scientific objectivity and credibility came out most clearly when Frank and Gary focused on the ways their readers might interpret the agency response. The authors spoke of the opinions of the reviewers, the scientific or technical soundness of the wordings in the draft response, and the image of Dresler the response would project. In several cases, Frank and Gary elected to revise or delete what they saw as overstatements or oversimplifications in the draft, leaving the revised text more accurate and technically defensible.

The authors technically tightened or strengthened the draft throughout the collaborative writing process, with the apparent goal of helping to ensure that Dresler's findings would be accepted and valued. In one example, Frank and Gary pondered an introductory paragraph that rather bluntly explained Dresler's involvement in the proposed rulemaking. The paragraph indicated that Dresler had in the past done contract research for a number of industrial clients. Frank and Gary concluded that the paragraph went too far in identifying Dresler with the commercial interests of the industry, and that Dresler's response would in fact benefit from an authorial "voice" or stance that was more independent of the industry.

The choice to keep or delete the paragraph pointed toward a critical conundrum these authors faced: the very research experience that makes a laboratory smart also tends to taint its perceived objectivity. Put another way, how can Dresler claim to have expertise in a given scientific or engineering area without having direct contact with the significant organizations working in that area?

During a retrospective interview, Frank, who had deleted the paragraph, discussed some of the issues involved:

F: Now in this case, you see, the intent was. . . to establish our credentials, and it did that, but it looked like it had some other side effects that people might get upset by.
V: How upset? What do you mean by upset?
F: People. . . . "Dresler has had a number of clients. . . ." OK. . . Translated by the cynical that says, "People have *paid* Dresler to work in this area." "As such, we have a direct interest in the performance requirements." Cynical interpretation is that they paid us to have this direct interest.

Frank went on in the interview to describe the reasons why Dresler (as opposed to an industrial company or one of the industry-owned laboratories) was chosen to make the response. Dresler's independence had helped it gain and maintain a reputation for objectivity and credibility.

Clarity

At several places, the authors spoke in the language of mainstream reader-centered writing theory. They expressed a close identification with their audience, often couching their comments as role-playing, in which they voiced what they imagined their readers would say about a given passage.

Tact

For Dresler's research results to have any influence at the agency, the authors felt it important to maintain the goodwill of the agency staff. At the same time, Dresler's response was in part motivated by a widespread opinion in the industry that an earlier agency rulemaking had gone too far. Many in the industry thought that the earlier rulemaking had been based on incomplete information. The authors wanted to point this out to the readers at the agency, but without angering them.

ENGINEERS DISCUSS R&D WRITING

Although my analysis of the transcripts from the four hours of retrospective and discourse-based interviews is not complete, the following brief generalizations will outline some of what the engineers said about audience in R&D writing. Several participants felt that R&D reports should be first of all informative, and that persuasion of an audience was outside the proper role for an engineer. Several said that, while it is common for research reports to make recommendations, the recommendation section is usually clearly separate from the main research findings. My impression was that the engineers don't want to intrude too far into the policy-making end of the client's business. This suggests that the engineers impose on themselves clear limits as to what they can say in an R&D report. They try to stop short of pushing the client toward a specific course of action.

One of my research questions was prompted by Ede (1984, 150) and by Ede and Lunsford (1984, 159), who asked if an author's attention to audience concerns might divert needed attention away from subject matter. I asked participants if they felt greater loyalty to the reader or to the subject matter when they write reports. Several participants found the question perplexing, indicating that they are not often asked to think in those terms about their writing. When pressed, most leaned toward subject matter. Several said, however, that the question was really a non-question, because what the reader wants is the author's close attention to subject matter. In this engineering discourse community at least, it was difficult and ultimately beside the point to try to separate the two loyalties.

Another point on which most participants agreed was that information travels from the laboratory to the client in many ways besides formal written reports. The consensus was that, when a project is over, the final report had better not surprise the client, or the engineer has not done a very good job. More common and important means of communication are phone calls and oral presentations. One engineer said most clients nowadays don't want to wait for a final report to come out. Instead they want the results right away, even though the results are in a relatively "unprocessed" form.

Aligned with this finding was the sense that to these engineers and managers, R&D reports served more as "mere documentation" than as living, rhetorical, influential pieces of discourse. While all said that reports were important, almost all of the engineers quickly qualified their answers with suggestions that some clients are not very interested in final reports. As engineers, the R&D authors get the impression that some reports are never very widely read.

CONCLUSIONS AND IMPLICATIONS

Far from writing sterile, distant, abstract technical discourse, these R&D authors addressed their readers explicitly in their written discourse and talked a great deal about their readers as they collaborated. Kinneavy (1971) suggests that scientific or referential discourse is more subject-centered than audience-centered, and he goes on to claim that audience "intrudes only rarely" in referential discourse (88). To the contrary, the authors of this 12-page report discussed the text from their readers' points of view, and changed the text in a number of places to avoid possible negative reactions from their readers. The final version of the report contained 22 explicit and implicit references to the agency, showing that the Dresler authors recognized the agency as their true audience.

Surprisingly, the collaborators referred less often to the client who was funding the research than to the agency and the external reviewers who had commented on early drafts. One leading suspicion: the Dresler authors were so skilled at serving their client, ISF, that they "wrote past" ISF directly to the agency and the industry at large. The authors directed their message right through their own clients and on toward *ISF's* clients. Frank and Gary may have perceived that what ISF really wanted was a response tailored solely for the agency, keeping the client at arm's length or, in a sense, "out of it."

The authors attended to how their audiences would accept and value the report. They tried to word the report objectively, credibly, clearly, and tactfully. The authors guarded their image of objectivity as perceived by the engineering community, recognizing objectivity and credibility as the laboratory's stock in trade. They seemed to know from experience that any hint of bias, vested interest, or rash overstatement could be seized by their readers and used to the detriment of the laboratory.

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DOCUMENT DESIGN

DESIGNS ON THE '90S: CREATING A NEW ORDER OF INFORMATION DESIGN FOR BUSINESS AND TECHNICAL COMMUNICATION

William O. Coggin, Bowling Green State University
Lynnette R. Porter, The University of Findlay

Throughout the '80s, writers and editors thought in terms of paper documents, many of which were created with word processors or desktop publishing software, but were designed to be read primarily as printed documents. The highly touted benefits of word processing included the ease of reproducing documents in print form and the ability to see on the screen what would be printed on paper. Although these benefits are worthwhile, and although many pieces of business and technical communication still continue to appear only in print form to their primary readers, as communicators we need to look toward the communication of the '90s: online/onscreen information.

In the late '80s, we began using mail messages and short online forms to send in-house communication. In classrooms, we started expecting our students to use the university's network of computers to retrieve, create, and send information. But although we expected to use the computer in our daily communication activities, we really didn't change the format and design of our communication. The reports, letters, memoranda, notes, and mail messages, as well as training information, reference guides, and longer business documents, still looked the same, whether they appeared on computer screens or as printed works. The medium was different, but the output looked as similar as it could.

In the '90s, we assume we're going to use computers daily, and managers, writers, editors, clients, and students will not only have access to those computers but will use them "naturally." However, if we have those assumptions, we have to look at newer designs for our business and technical communication. We need to practice, and teach, what we've theorized, that we have so many new opportunities for communication now that computer networks are common and computer technology is an expectation in the workplace and classroom.

Therefore, we have two objectives for this paper: First, we offer our analysis of where business and technical communication is going in the '90s. Second, we discuss how the changes in the '90s will be from paper-based to electronic-based communication. By paper-based communication, we mean information that is designed to be used as a printed document, following the conventions of printed documents and meeting the expectations of readers who understand how to read hardcopy text. Electronic-based communication, on the other hand, is designed to be used only on screen, following the conventions of online information and meeting the expectations of users who will interact with the information only on the screen.

WHERE WE ARE NOW--PAPER-BASED COMMUNICATION

Currently we work primarily with paper-based communication; our information appears most often in words that are printed on pages, one after the other, to create documents. That means that we as writers, and our audience as readers, have the following "securities" when we work with paper documents:

• Format

We meet our readers' expectation that the information will look like a document, with elements like numbered pages, headings, lines of text, and special pages like a Table of Contents, an Index, or a Glossary. Each page has a top and a bottom, left and right, with margins, lines of information, and cues like page numbers that tell readers where they are in the document.

• Organization

The document has a beginning, a middle, and an end, and the way the information is arranged in sections and on pages indicates the linear organization of the information. The writer determines this organizational pattern and gives the reader cues, such as headings, paragraph indentations, and page numbers to indicate the linear organization of ideas. Transitional phrases such as "next," "on the following page," "in Figure 3," "above," and "in the next chapter" help readers find the information they want and get a context for the information they're currently reading. Readers already know how to use these cues to understand the organization of the whole document.

• Language base

Our ideas are expressed most often in words, and we expect our readers to be familiar with reading information and feeling comfortable with using the conventions of written language. We also tend to write to our own culture's expectations for an appropriate style and tone for our words. We may write in standard American English, for example, using the structure and style readers in the United States will understand and expect to see in printed documents.

• Familiar rhetorical tools

When we write information for printed documents, we build our ideas in very structured ways. We create sentences that flow together to create unified paragraphs, following the premise that each paragraph should be based on one idea. We use transitions to tie together paragraphs and build a structure of paragraphs that develop a theme. We use headings to indicate that a new idea will be developed in the next section. We can write several paragraphs, or several sections, to develop ideas, and we theoretically have an unlimited number of pages in which to build on our ideas.

• Familiar physical tools

The document is a familiar physical object. When readers see the document, they have a sense of how many pages make up the document. The document has a cover, a title page, Table of Contents, and other familiar tools that help readers find the information they need.

Our readers know how to use the document to find the information they need.

These characteristics of printed documents are familiar to writers and readers; they make us all feel secure that we know how to approach creating and using the information. As business and technical communicators, we write and teach to these traditions for paper-based communication.

WHERE WE'RE HEADED--ELECTRONIC-BASED COMMUNICATION

When we design information to be used only on the computer screen, we are faced with several changes in our communication. We can't (or at least shouldn't) design screens as if they were pages of information, because the conventions of the screen differ from the conventions of the printed page. As we create information for the screen, we can expect these changes:

• The format changes because the communication must fit on one small screen.

Most computer screens can contain less information than a printed page, and each screen is a separate entity because only one screen can be viewed at a time. Readers may choose to read only one screen, or they may move from one screen to another in random order, selecting only those screens that provide the information they need to know. Therefore, each screen must contain a chunk of information that presents a complete idea. Transitions between screens are visual links, such as menu listings or icons, not sentences or phrases, and as writers, we have no idea of how readers will want to link the information. We thus provide users with as many links between and among screens as possible, so that users can determine their own order for the information. The linear document no longer exists; individual screens that can be used in any order form the basis of the online communication.

• Tone and style refer not just to language, but to multiple dimensions and multiple senses.

Electronic-based communication may use words, but the communication is not limited to written language. Although paper-based communication may include graphics, the graphics are limited to a page or pages. However, the graphics used in electronic-based communication may be multi-dimensional and engage many senses. For example, information designed as hypermedia may involve moving graphics with sound, color, and special effects. The information may be interactive; at any time users may stop or start the "online video" or modify the images appearing on the screen. The information may include text only, text and stationary graphics, moving graphics, and/or music and aural information. Users may need to respond to that information by "talking back" to the computer (voice recognition), pressing a key or keys, using a light pen to highlight options on the screen, and/or touching the screen. The communication itself may have multiple layers of information (e.g., menus or windows) or multiple forms (e.g., a text and a graphic to represent the same concept), and users may have several options for interacting with and responding to the information.

• The communication is dynamic because it's temporal and can be immediately accessed.

When we as writers create communication to be used online, and our audience has the ability to access that information immediately, our information becomes dynamic. If we write an online "memo," for example, and our audience can immediately access that information without printing it, the communication takes on an immediacy lacking in printed communication. Users may choose to read the information but not to store it or otherwise "keep" it; they use the screen of information, possibly respond to it, and then move on to other information. The "memo" has met an immediate need for information, but that communication is temporal. It won't be printed or saved; its usefulness is temporary. Also, because users have options for interacting with the information, they are actively involved with the communication and are not just passive readers.

These changes to our communication have created insecurities for writers and users in the early '90s. When we create a screen of information rather than a page, we lose the context for that information. Because users may be working with only one screen of information, or they may choose several screens in a random order that writers can't anticipate, the information lacks a context. There is no "previous page" or "following page" to give readers a context for the idea on the current page. The screen contains an independent chunk of information which can be randomly accessed; it's an independent unit of information.

A related insecurity comes from the limited number of words we can write for a screen. We may have to condense the expression of our idea to fit the screen; the number of words may be limited by space. That means that the way we structure our ideas changes, as we write in independent chunks consisting of only a few words.

As well, we have new options for format that we didn't have with printed pages. Sound, special effects, music, color, movement, and interaction with the information are possible in electronic-based communication. Our communication may consist of text, graphics, or multi-media presentations, and users may have several options for working with the information. They may read, press keys, touch screens, speak to the screen, or respond in any combination of ways. Voice recognition and artificial intelligence are capabilities we as communicators may soon need to incorporate into our communication; hypertext, hypermedia, and text-based screen formats are already options for our formats. Although these options are exciting and should be explored, right now they're a source of concern as we learn to use all the options available for our communication.

Finally, because we've primarily considered information as "documents," we don't really have labels for electronic-based communication. "Information design" is replacing "document design" or "page format," and "chunks" and "links" equate to "pages" and "transitions," but we haven't yet developed the vocabulary to deal with electronic communication, much less explored all the options for creating information to be used electronically.

These changes currently have created "insecurities" for writers and users alike. We're not certain how to use electronic media fully to create information designed purely for those media. As we begin designing information to be used only online, and as users develop confidence in using computers to access information and communicate with others, our insecurities will shift to "securities," and we'll develop new traditions for our writing and teaching.

WHERE WE SHOULD BE HEADED

We're committed to electronic-based communication, yet we have curiously tried to make electronic communication look like paper communication, and that hasn't worked well. Instead of trying to make the screen look like a page, we should be designing new formats that are effective for the screen. We should take advantage of the computer's capabilities for producing information in many formats and allowing users to interact with the information. Most important, we should make the computer technology meet our needs for using electronic media to communicate effectively, not try to fit our communication to fit the computer's capabilities. For example, we should work with designers and programmers to create computer systems that let us design the best electronic communication possible, instead of trying to design communication that fits existing systems. We have a unique opportunity to help design the tools that let us communicate effectively with electronic media, and we should have a say in what is necessary to present information most effectively in multiple formats using multiple levels of interaction with the screen.

If we begin to plan communication that meets our users' needs and provides them more options for accessing information, we can creatively design online information. The following example suggests electronic-based communication we might design to present a proposal.

When the user first sees the screen, he or she has three options for the format in which the proposal can be presented:

• Text and graphics

The information appears in chunks of text or graphics that can be accessed randomly, so that the user may read only key screens, such as a screen of recommendations or a screen describing the problem, or all available screens.

• Hypermedia presentation

The information appears in graphic form with sound, music, and movement. Users can stop or start the presentation at any time and can interact with the visual and aural information.

• Aural presentation

Users can listen to the information, like an "oral presentation." Graphics may be separately accessed to supplement the information presented aurally.

The audience may be prompted to make a selection through an aural prompt, icon visible on screen, or text visible on screen. The users may also have several ways to select a proposal format. They may touch the area on the screen that illustrates their choice, tell the computer which option they want to access, or press a key to select the format they wish to use. The basic information contained in the proposal is similar among formats, but the style of the proposal is directed to meet individual users' preferences.

As business and technical communicators, then, we need to learn to work with electronic media and consider electronic-based communication as "different" from paper-based communication. We should be moving from paper-based to electronic-based communication.

Electronic-based communication can transcend cultures or be responsive to users who may be able to work with the information only in certain ways. If we're designing information to be used in translation, icons and graphics may be more important than words. If we're designing information for audiences who may have difficulty seeing, hearing, or speaking, or who may have limited mobility, we have more options for creating several ways for users to get the information they need and easily respond to information.

We should use electronic media fully to create new forms of communication, communication that's responsive to the needs of our audience and allows them the freedom to access information at any time, in several different ways. As communicators, we're challenged to help computer programmers and designers create electronic media that help us create, store, and disseminate information more effectively, and we must then meet the challenge of using electronic media to create the best communication possible.

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A RHETORICAL AND DOCUMENT DESIGN-BASED APPROACH TO HYPERTEXT

Greg Wickliff, Janice Tovey, James E. Porter -- Purdue University

This paper was one of three in a panel session entitled "Reconceptualizing CAI: The Role of Computer in Business and Professional Writing." The purpose of the panel was to reexamine our conventional understandings of "computer-aided instruction" (or CAI) in a way that goes beyond word processing or using the computer for drill and practice. In fact, the panel argued that the wide array of computer technology available for aiding document production is changing our notions of the "writer," "text," and "audience."

More narrowly, we suggest that writing in business and industry will become, increasingly, electronic writing, as memoranda become e-mail messages, as computer manuals move on-line, and as training texts become electronic. Increasingly, instructional texts will become hypertext -- i. e., non-linear texts. This paper will consider the unique nature of hypertext, that is, its particular rhetorical qualities and the challenges it presents to the teacher and student alike.

Hypertext is unlike conventional written text because it does not present prose information in a fixed or linear order. Instead, Hypertext consists of "nodes" (information sites), but it does not connect those nodes in a single fixed way. Hypertext, by definition, provides alternative paths or routes for reading through multiple "linkages." The order in which the nodes are read is determined at least in part by the reader, not entirely by the writer. Also, hypertext may be interactive, allowing the reader to respond to information or even to alter entries, and it may include visuals, sound, or even animation. Understanding the distinctive rhetorical character of hypertext is essential to understanding when and how to use it (Slatin, 1990).

This paper introduces what we term a "rhetorical and document design-based approach" to teaching and composing hypertext. This approach is based on the premise that user/reader needs (not only the technology) should drive document design. In the pages that follow we outline rhetorical and document design considerations that should drive the planning and composition of a hypertext document. A glossary of hypertext terms is included, along with selected references, and one student group's hypertext stack structure for an on-line document of "job search information." More specifically, students in our class worked in groups of three or four students to produce a HyperCard stack about employment information in their majors.

PLANNING A DOCUMENT

The purpose of our students' assignment was to produce a HyperCard stack which contained employment information. Since many of the students in the class were professional writing majors, they needed a list of jobs, internships, and potential employers in the field. In their preliminary research, students needed to discover specific information about employers: names, locations, contact people, job descriptions, and perhaps even names of or comments from alumni who had worked for the organization.

All this information for each employment position then needed to be organized so it could be accessed quickly by readers with similar employment goals. We suggested to the students that different users of the list would prefer to access the information in different ways, for example, by the type of employment position, by the geographical region, or by internship vs. permanent employment. In practice, the students sorted the information by salary, company size, and several other ways as well as those we suggested.

The next step for the students was to design a document which would be easily accessed for each type of search. Of course, we were suggesting that a HyperCard stack would be a good choice, but we wanted the students to consider its clear advantages for sorting and presenting large quantities of prose information. A HyperCard stack would make the information quite accessible to a great number of users if it were available on-line. A HyperCard stack could easily allow for updating or changing the stack. In addition, a HyperCard stack is inexpensive to create and distribute, if the technology and personnel to maintain it are readily available.

Once our students agreed that a HyperCard stack would be a good medium for their purposes, they needed to address the questions of stack structure and card design.

COMPOSING HYPERTEXT

In our computer-aided publishing course, we consistently asked to students to plan their documents before drafting. For the HyperCard stack, this meant taking a blank sheet of paper and sketching out the structure of the stack, that is, drawing each proposed node or card of the stack and adding lines which represented each proposed link. We asked students to design each stack so that it could be searched in at least three ways, but required that they only produce and link cards for one of the three methods. This was merely a concession to a time constraint.

Once the entire stack was sketched, we made suggestions, and the students turned to the task of designing the individual cards. They found themselves addressing questions about the importance of information types, and about the size and placement of fields (blocks) of prose information and of each linked button. The buttons needed accompanying icons and/or names as well, and so the students had to decide how they might visually represent such abstract concepts as job title, location, or internship.

Once a consistent and complete design for each card was drafted, the students exchanged drafts and user-tested HyperCard stacks. As stack users, they wrote peer editing memos to stack authors, pointing out the strengths and weaknesses they found in stack and card design. As authors, they had to read and evaluate the comments of their editors and alter the stack structure and card design as they saw fit.

Finally, the students in their groups wrote project assessment memos explaining their design decisions and outlining plans for the production of the entire stack. We asked that these include a plan for maintaining the stack, and that they identify who would be responsibile for verifying entries and updating cards on a regular basis.

RESULTS

As the stack structure reproduced at the end of this paper attests, the results of the students' HyperCard efforts were mixed. The attached sample was produced by a group of Communications majors for jobs with Public Relations Agencies. On the positive side, the sample

cards are consistently designed, contain detailed, useful information on the job cards themselves, and include an attempt at a visual interface for the company name buttons. But the sample also includes a number of representative novice problems with stack and card design. Not all the cards are linked to a stack "home" card, and so it is difficult to change the search mode quickly. On their stack home card, they have used a scrolling field where one is not called for. A nomenclature problem persists with the search mode by "Gross Income." A sizing problem exists with the microscopic dot which was intended to indicate the company location on the U.S. maps. And finally, no obvious and easy method exists for quitting the HyperCard stack.

So in summary, the Hypertext assignment was a limited success for us. The stacks the student groups produced were partial and contained a number of small design flaws. But we did succeed in getting groups of primarily uninitiated students to create HyperCard stack structures and consider card design for particular rhetorical situations.

A rhetorical and document design-based approach to hypertext

- **GENERAL NEED**

  To facilitate their job and internship searches, professional writing majors need a list of (and information about) potential employers in professional writing.

- **SPECIFIC GOALS & SPECIFIC USER NEEDS**

  Goal #1: Produce a list of potential employers in professional writing which would include information such as
  - name, location, and description of company
  - contact persons
  - number and frequency of job opportunities; salary & benefits info
  - job descriptions and requirements
  - internship possibilities (including descriptions)
  - names of Purdue majors who have worked there and their comments

  Goal #2: Organize list so that it can be accessed according to
  - type of position
  - geographic region
  - internship vs. permanent employment

- **DOCUMENT DESIGN**

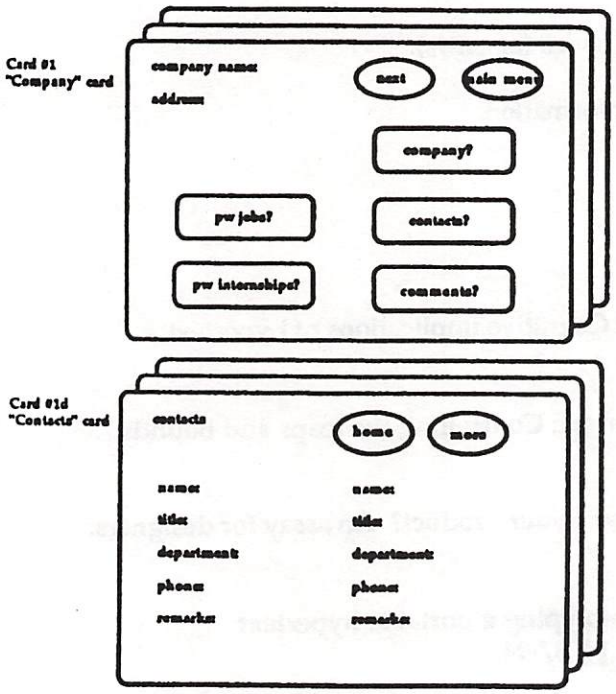
  Q1: Should we use hypertext?
  - Is hypertext the best medium for meeting our goals?
    - -What medium/document(s) would make the information most accessible/useful to the most users?
    - -What approach would best allow for updating/changing information?
    - -What approach is feasible given constraints of time, cost, technology, and personnel resources?
  - What are the advantages/disadvantages of hypertext?

  Q2: How should we design the hypertext?
  - Questions of stack structure and card design--answers based on goals, user needs, available resources, and information to be included.

Composing hypertext

- PLAN
  - -What kinds of information should be included? Who is going to use the information? For what purposes? How do we find this information? Research sources? (e.g., direct contact of companies, professional writing placement coordinator) How do we assure the accuracy of the information?
- DESIGN--CONSTRUCT STACK/CARD STRUCTURE & DESIGN
  - •Draw some sketches to represent stack structure and card design (see below)
    - -What is the most/least important information?
    - -What arrangements/orders/linkages are most desirable?
  - •Select structures and designs suitable to situation
  - •Construct prototype card(s) for review
- CREATE AND TEST SOME SAMPLE CARDS
- REVISE STACK STRUCTURE & CARD DESIGN
- GO INTO PRODUCTION
  - •Create entire card stack
  - •Develop plan for maintaining card stack
    - -who's responsible for checking/verifying entries; updating and adding cards?
    - -how frequently updated?

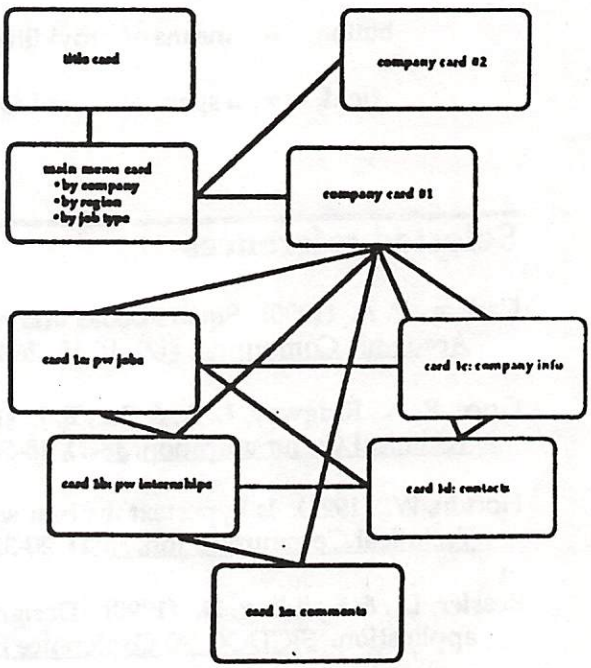
Planning card design: a sample



Issues

- •hierarchy and configuration of information?
- •charting a course for the user?
- •imagining user needs/likely use of information?
- •access and orientation?

Planning stack structure: a sample



Issues

- •linkages?
- •navigation routes?
  - -paths the user might want to follow?
  - -paths the writer might want the user to follow?

Vocabulary

hypertext = any non-linear, on-line (i.e., computer-mediated) document. It is "non-linear" insofar as it provides alternative paths or routes thru multiple "linkages," which allow users to navigate through the document in a variety of ways. Hypertext nodes can be printed out--but hypertext exists in pure form only on-line, because the linkages (which establish the routes a user may follow--in effect, the transitional possibilities) cannot be printed out.

hypermedia = hypertext which uses more than one medium in its presentation--for instance, text plus sound or animation, videodisc technology, etc.

HyperCard = the Apple hypertext program that comes free with the Mac II. It includes existing stacks as well as the means for creating new stacks.

stack = collection of "cards" on a given topic. Stacks may have links to other stacks, or to cards in other stacks.

card = a "node," sometimes comparable to a "screen" (though a single screen may hold several nodes). Looks like a 3" x 5" card.

button = means of providing linkages to nodes (or cards).

field = a space on a card for inserting information.

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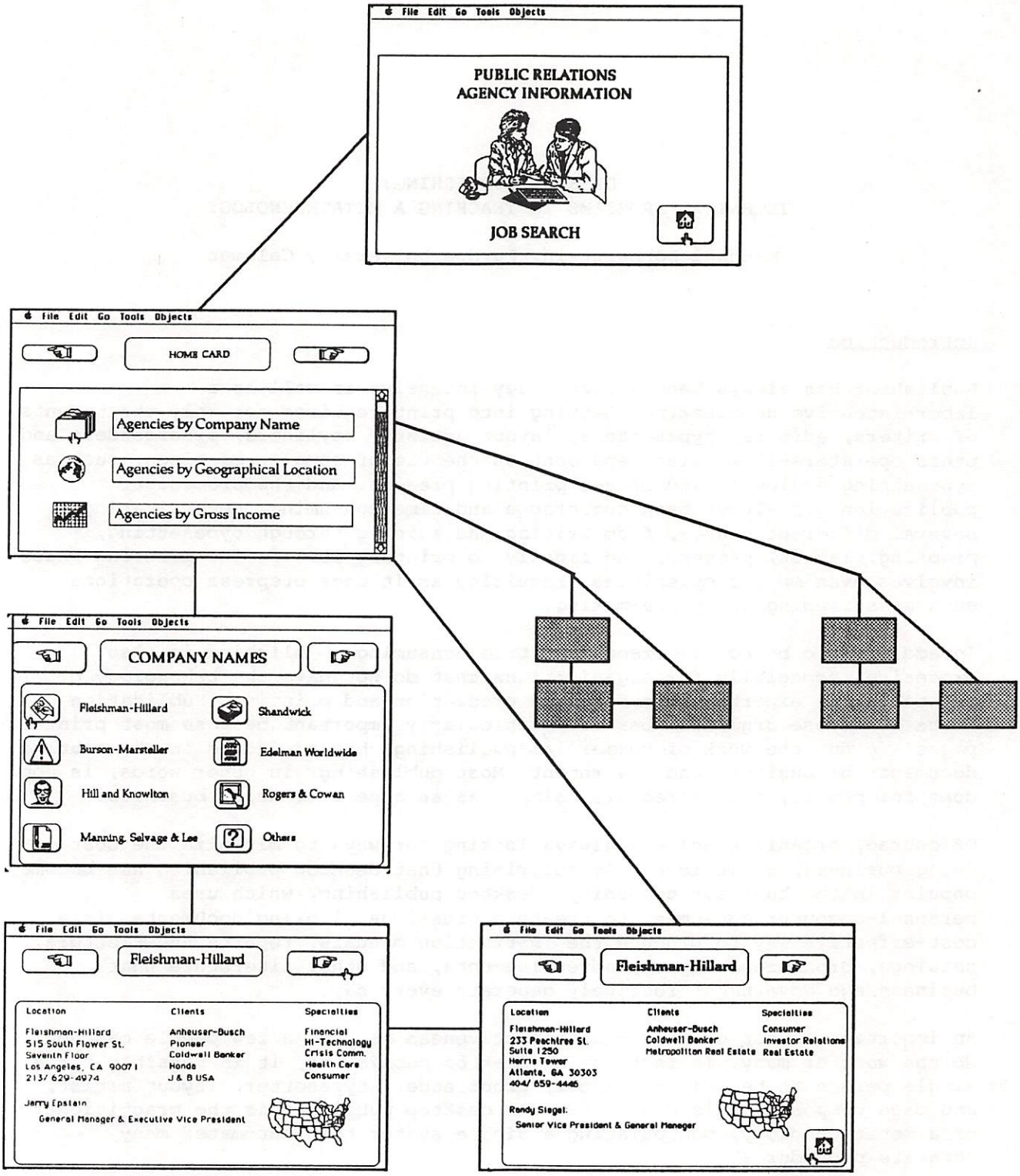

A diagram of a Hypercard stack for "Job Information" created by a group of 3 - 4 upperclass students. Students were required to design the entire stack, but produced and linked cards for only a portion of it.

DESKTOP PUBLISHING:
TECHNICAL PROBLEMS IN TEACHING A METATECHNOLOGY

Michael Dobberstein, Purdue University Calumet

Introduction

Publishing has always been a technology-intensive as well as a labor-intensive undertaking. Getting into print requires not only the talents of writers, editors, typesetters, layout artists, keyliners, proofreaders and press operators—it is also dependent on the use of complex machines, such as typesetting equipment and offset printing presses. And the process of publication has always been cumbersome and time-consuming, necessitating several different phases, from writing and editing through typesetting, proofing, layout, pasteup, and finally to printing itself. The printing phase involves even more complexities, requiring as it does prepress operations such as stripping and plate-making.

In addition to being cumbersome and time-consuming, publishing is also expensive, especially for organizations that do not have the technology or the technical expertise for document production and printing. Publication costs for these organizations are particularly important because most printed pages are not the work of commercial publishing, but are found in the routine documents of business and government. Most publishing, in other words, is not done for profit, but is required simply as an aspect of doing business.

Of course, organizations are always looking for ways to minimize the cost of doing business, so it is hardly surprising that desktop publishing has become popular in the business community. Desktop publishing, which uses personal-computer equipment to create professional-looking documents, is a cost-effective way to produce the instruction manuals, reports, newsletters, catalogs, brochures, flyers, advertisements, and other literature that business and government routinely generate every day.

An important aspect of this cost-effectiveness is that a few people can now do the work of many. In fact, using desktop publishing, it is possible for a single person to be writer, editor, proofreader, typesetter, layout artist, and page composer. This means that the desktop publisher is the practitioner of a metatechnology, manipulating a single system that automates many separate procedures.

The advantages of desktop publishing to business are obvious. But what about the advantages to students? Such a metatechnology can serve many purposes in the professional writing curriculum. A course in desktop publishing acquaints students with the publishing process; allows hands-on experience in typography, page makeup, and publications design; teaches important computer skills; and builds confidence in creative abilities. And very importantly for many of our students, it teaches a marketable skill.

However, this technological richness creates problems for both teachers and students of desktop publishing, especially if the course uses IBM- or compatible personal computers. Desktop publishing requires knowledge not only of publications design and desktop-publishing software, but also requires some technical understanding of personal computers, printers, monitors, and other equipment. Even in a course that tries to balance creativity and technology, desktop publishing can become a grim exercise in learning computer arcana for some students.

Some Technical Problems

In order to examine some of the technical problems in teaching desktop publishing, some further definitions are in order. Earlier I said that desktop publishing meant the production of professional-looking documents using personal computer equipment, and though this is true, it is the broadest possible definition. Some word-processing programs, such as recent versions of Wordstar and Microsoft Word, claim desktop publishing capabilities. Because these programs can include graphics with text, and because they can print with a laser printer, these word processors can certainly produce documents that look professional.

However, true desktop publishing programs have capabilities beyond those of word processors. Hall & Layman (1989) cite Jonathan Seybold, a desktop publishing consultant, who offers these four criteria for evaluating desktop-publishing functionality:

1. The ability to allow text composition that is close to professional typesetting;

2. The ability to include and print graphics along with text;

3. The capability to interactively edit and compose text;

4. The ability to print with a laser printer that allows near-typeset quality (p. 74).

And to these four items we should add an important fifth:

5. A desktop publishing program should allow the user to see, and to work with on the screen, text and images that are very close to what will be printed. This capability is referred to as "what-you-see-is-what-you-get."

Only a few programs offer all of these features, among them Ventura Publisher from Xerox Corporation, Pagemaker from Aldus Corporation, and Quark Express from Quark Incorporated. However, the issue is further complicated by the recent introduction of several low-end, inexpensive desktop publishing programs such as Express Publisher from Power-Up Software Corporation, and Finesse from Logitech. Though these programs, unlike word processors, are designed primarily to accomplish layout and typographic tasks, they do not have the extensive functionality of Ventura or Pagemaker. Because of their advanced features, Ventura and Pagemaker continue to be favorites among business users.

But what are the specific problems encountered by students in learning a desktop-publishing program as advanced as, say, Ventura Publisher or

Pagemaker? Many students come to the desktop publishing course with little training in personal computers beyond word processing. But the complexities of desktop-publishing software go beyond those of word processors. Because desktop publishing programs exploit PC technology in a far more sophisticated way than word processing does, the desktop publisher must be more knowledgeable about personal computers than the average word-processing user. Studying desktop publishing means not only learning the principles of publication and page design, typography, and a particular page-layout program. It also means learning more personal computer concepts and technology than most students have probably been exposed to in any other class, even one in computer literacy.

For students learning desktop publishing on IBM and compatible computers, problems begin with the operating system. Unlike Apple's Macintosh, IBM-compatible PCs were not designed primarily for the non-technical user. Instead, the operating system of the PC, MS-DOS (or PC-DOS on IBM computers), was designed to allow programmers maximum freedom in developing applications. The consequences of this for those of us who are not programmers is a bewildering command language that looks like just what it is: a secret code. Mastery of at least some of this code is necessary for routine operations such as copying and deleting files, and examining the contents of a disk.

In addition to its cryptic command language, MS-DOS's file-naming conventions frustrate common sense. Only 8 characters are allowed for each filename, with the addition of a 3-character extension. As if this weren't cramping enough, many programs, including desktop- publishing programs, supply their own extensions to each filename, meaning that the user is restricted to only 8 characters in naming a file. Of course, the user must also memorize that program's peculiar filename extensions and their meanings.

Aside from coping with MS-DOS, students must gain some general information about personal-computer technology. They must understand that word processing and graphics files used by desktop-publishing programs are created with a wide variety of incompatible encoding formats. They must gain some understanding of how computers create and store images, which means confronting computerese such as "bit-mapped graphics" and "object-oriented art." They must learn something of the principles of laser printing and of its limitations. They should understand how text and images can be scanned into computer files, and they should pay special attention to the limitations encountered in scanning text.

Of course, students must learn the desktop-publishing software itself even as they are digesting information about the operating system and personal computer technology. And to learn the software, they must come to grips with the procedures of document production, such as layout and typesetting, that the software was designed to automate. This means learning concepts and vocabulary, even a new system of measurement using picas and points, that is quite unfamiliar to most students.

Typesetting features, in fact, particularly distinguish high-end desktop-publishing programs from word processors and inexpensive desktop-publishing software. By typesetting, I mean the ability to control the formatting of text in a variety of ways, such as changing font, line spacing, or alignment. Ventura Publisher, an example of a high-end program, can assign over 100 different typographic attributes to text, including

adjustments for such sophisticated features as kerning, tracking, and rotation (Assadi & Gruman, 1990). Learning such complex typesetting operations is a formidable challenge for many students, particularly since they are struggling with the concepts of typography at the same time.

As a brief footnote to this discussion of technical material, I should point out that student difficulties are not confined to cognitive issues alone. Since most desktop publishing programs require a mouse, students must develop new motor skills in using this device to closely position elements on the screen. The frustrations encountered by the inexperienced in using a mouse should not be underestimated.

What the Metatechnology Means in the Classroom

All of this technical matter creates genuine obstacles to learning for many students. Of course, better preparation may be the answer. The ideal student of desktop publishing would have at least enough background in personal-computer technology not to be mystified by the operating system. He or she would also understand the basics of document production, and have some appreciation for the concepts and fine-detail work involved in typesetting. In universities that have a computer-literacy requirement, and in professional writing programs that require a basic course in publications design, perhaps such students can be found. But those students unprepared in the basics of computers and publications will continue to struggle.

But consider for a moment some important facts: since printing technology was invented half a millennium ago, document production has required the ministrations of many different specialists using a variety of complex machines. These specialists, at first the printers, then the typesetters, then the layout artists and keyliners, the strippers and camera operators and offset- press operators and many others, have over the centuries developed exacting methodologies and standards that required long practice to learn.

The promise of a metatechnology like desktop publishing is that several specializations, with their attendant methodologies and standards, can be concentrated into the hands of a single individual. But this does not mean that skilled application of those specializations will happen without a period, perhaps even a prolonged period, of apprenticeship and practice. For 500 years, the production work of publishing has been performed by members of a guild. Because desktop publishing is an off-the-shelf technology available to all, it may signal the end of the guild, but it does not signal the end of personal application, study, and practice.

What does all this mean to our students? It means that a single course in desktop publishing will not yield experts completely ready to take on the task of producing a company's documentation. It means that a single course in desktop publishing can only be an introduction to a rich field of knowledge in printing and publications design that has matured over centuries. And it means that one course can form only the barest prelude to learning about the brand-new field of computer publishing.

Conclusion

So how can we avoid turning the desktop publishing course into an onerous drill-and-practice workout in computerese? The truth is we can't, completely.

For some students, such a course may be one of the hardest they've taken in college. For some, it will also be one of the most rewarding. I've taught desktop publishing using Ventura Publisher for a year, and have had reactions from both extremes. The key for students seems to be perseverance. After an initial period of painful frustration, students begin to feel a sense of accomplishment not often felt in other classes. At the end of one semester a student told me that the course was the best she'd taken in college. Another gave it that supreme accolade, "awesome."

The key for teachers is to realize that not everything can be taught in a single desktop- publishing course. If students can learn a new way to see text in relation to white space, which is necessary for typesetting; if they can learn to visualize different possibilities for the integration of text and graphics, which is necessary for design, a lot has been accomplished. But even these basic goals can't be realized without a commitment to teaching the technology that forms the foundation of desktop-publishing creativity.

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IMPROVING PROFESSIONAL WRITING THROUGH VISUAL THINKING

Marjorie Rush Hovde, Purdue University

In professional writing theory and pedagogy, more research and thinking has been done on visual aspects of communication than one might expect from a field which has a large percentage of verbally trained people. (See Barton and Barton, 1989.) The majority of such writings seem to deal primarily with using visuals to present information to the reader, either for the purpose of informing or persuading the reader. However, one concern for me is how we can help students learn to generate those visuals for communication. In addition, an even more interesting concern is how we can help people to think and conceive of ideas in visual ways, whether those visuals find their way into a product designed for the eyes of others or not. Many thinkers agree that until students learn to think better visually, their "presentational" work, both visual and verbal, will suffer. In this paper, I will discuss briefly issues surrounding presentation visuals, a possible relationship between presentational and inventional visuals, theories of the role and nature of visual language, how one learns to think visually, visual thinking's role in professional writing classes, and possible directions for future work in visual thinking.

Presentational visuals

Concerning the visual nature of a text, Bernhardt (1986) deals only with analyzing visually presented information so that students may learn to present their own messages in more visually effective ways. Bernhardt recommends that students learn that messages presented in ways that "represent meaningful groups of information" are more effective than the standard essay format instructors often expect in introductory writing classes. However, Bernhardt's ideas would be more useful for my project if he discussed how students could learn to generate and plan for these visual aspects of their own papers, not simply analyze others'.

Hashimoto (1983) does give tips on helping students to "sort and display their information," which implies his concern with invention as well as presentation. He argues that students may solve certain kinds of problems using words alone. However, for more complex problems, students may need visuals to allow them to think. Hashimoto gives examples of situations and varying kinds of diagrams with which students may begin to explore those situations. He presents useful options such as continua, schematic drawings, and flow charts as models for students to represent abstract concepts.

One question Hashimoto doesn't answer is how to teach students to break out of their usual verbal thought patterns in order to use the visual structures he has provided. Another unanswered question is how well these diagrams work in situations not fitted to those Hashimoto discusses. In addition, I wonder if most college-age students can abstract well enough to choose an appropriate diagram for a situation which they may encounter without an instructor present. Hashimoto also presents no data on how his students respond to his schemes nor insights on how visual invention may relate to presentation. His work is somewhat useful, but a need still exists for a greater understanding of visual thinking.

A possible role for presentational visuals

Even though visual presentation is not the main concern here, I do not wish to dismiss the work that is being done in presentational visuals. As Miller and Selzer (1985) argue, presentation is integrated socially with invention. Although their work doesn't discuss visual thinking and communicating, it does deal with the intertwined nature of *topoi* for invention and *topoi* for presentation and analysis. According to Miller and Selzer's understanding, "If topics operate in invention prospectively, as conceptual places where a rhetor can find sources for arguments, they operate in analysis retrospectively, as places where the audience can find the sources of the persuasiveness of those arguments." They advocate educating people using topics because "[B]y learning a mechanical system of pigeonholes, one masters patterns of thought that then become habitual and spontaneous." I argue that invention and presentation exist in a cyclical relationship to each other, as illustrated in Figure 1.

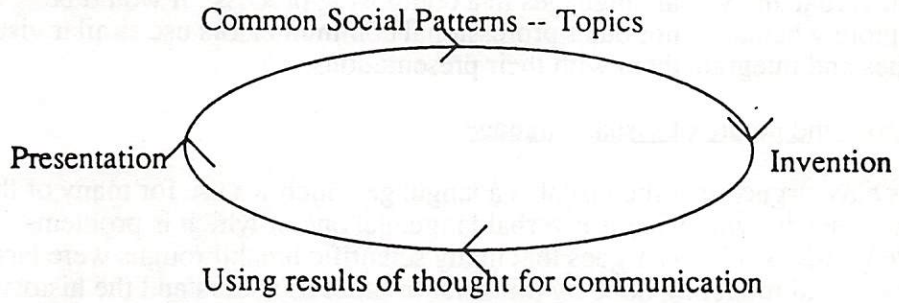


FIGURE 1 -- MODEL OF THE RELATIONSHIP BETWEEN PRESENTATION AND INVENTION

In this model, both invention and presentation are moments in an ongoing process. In invention, one often uses the common patterns of a given language, verbal or otherwise. An individual learns these patterns, probably unconsciously, through exposure to them as seen in other's presentations. Then while inventing for oneself, one also may contribute idiosyncrasies that the audience may not share. Some of the materials which were invented for the self may be appropriate for presentation to others. Other products of invention will be used by the inventor and then discarded before a presentation is made to others.

In this scheme, considering the self as audience aids in invention. However, merely considering the self is not all there is to invention. Considering others as audience may lead to invention that couldn't have happened had one considered only the self as audience. (It also seems that even when inventing with others in mind, we are often inventing for ourselves, too.) To divide invention which helps one understand for oneself from invention for purposes of getting others to understand is an artificial distinction, but one that may need to be made temporarily for our purposes here. "Presentational" visuals and the theories behind them can't be ignored if we are to work with visual thinking, but we also can't assume that only analysis of others' visuals will necessarily teach students to think visually or to generate their own "presentational" visuals.

One illustration from a non-academic setting of connections between visual thinking and presenting is Agnew's (1986) experience with making visual models foundational for the work in his communications company. He describes a project in which a task force had researched and created a fragmented plan for an integrated information system, a plan written in reports which were intelligible only to other technical people. Agnew's company was called in to create a way to communicate this information to top and mid-level managers. Agnew's group began by reviewing the technical reports, but rather than editing

them to make the wording more accessible to the managerial audience, the group created an "axonometric diagram which represented all the system's components in the context of three typical floors of an office building."

Agnew's team presented this diagram to the original technical people only to check it for accuracy but discovered that the diagram enabled the technical people to conceive of the system as a whole for the first time, thus finding a few problems with the plan which they were able to fix. The revised diagram then became the organizing plan for Agnew's group as they wrote reports to present to management. In fact, the diagram was repeated on several of the pages of that report. One of the advantages to early visualization drawings for Agnew is that, "It's much easier to write about a subject when you have a coherent, visible conception of it in front of you." Agnew recommends this approach over the typical one, in which one writes first and then creates the illustrations and diagrams later. His is a useful example of not only the relation between presentation and invention, but also of the relation between verbal and visual languages in a composing process. It would be intriguing to explore whether or not other professional communicators use similar visual thinking strategies and integrate them with their presentations.

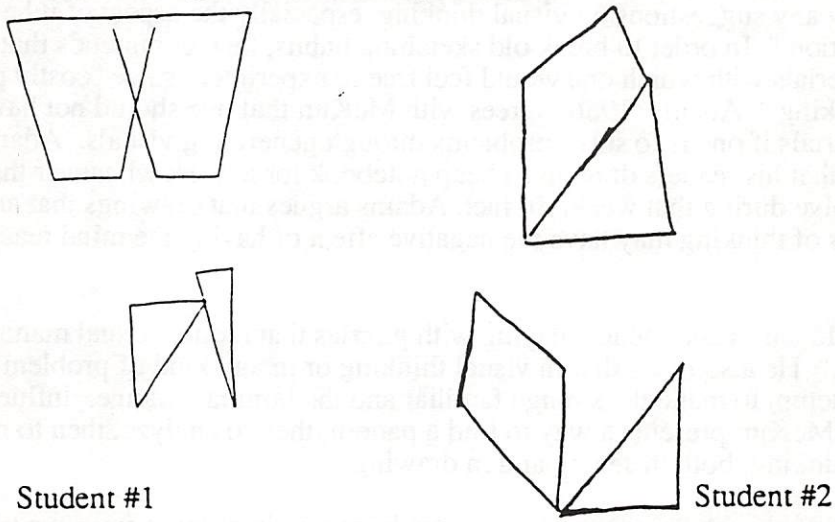
Theories of the role and nature of visual language

Several thinkers have argued that the visual is a language which we use for many of the same general purposes for which we use verbal language, one of which is problem-solving. MacDonald-Ross (1979) argues that many scientific breakthroughs were largely dependent on the visual modeling done by thinkers. In order to understand the history of science, we have to understand the role of not only of verbal and mathematical thinking, but also of diagrams as a way of thinking and generating hypotheses. Adams (1986) also states that while mathematics is useful for solving quantitative problems, visual thinking is useful for other kinds of problems. He claims, "[visualization] is one of the most basic of all thinking modes and one that is *invaluable* in problem solving" (italics his).

McKim (1980), an advocate of visualization as a powerful alternative mode for problem-solving and thinking, argues, "People who find themselves bogged down in the verbal patterns of their profession will find visual thinking to be an invigorating and liberating antidote." Even within the visual modes of thinking there may be more than one kind. McKim claims that the advantage of this diversity is that, "Thinkers who have a broad command of graphic language not only can find more complete expression for their thinking but also can recenter their thinking by moving from one graphic language to another." Such changes give one the advantage of more "mental operations" than less multi-modal thinkers. If the visual realm is a language, and if we ignore visual invention in our teaching, then we are denying students an education in a valuable mode of thinking.

Although not many professional writing scholars have paid attention to visual thinking, among people interested in problem-solving visual thinking has a strong place. Wileman (1980) argues, "Visualization can be a new way to look at things we normally see and take for granted. Visualization may be a new way to conceptualize an idea that heretofore had only been talked about." He discusses how to prepare visually interesting educational materials which is certainly relevant to our professional writing students who will want to inform and educate their audiences. However, he doesn't deal a lot with problem-solving through sketching. His work frequently implies that the content is given and all one has to do is think of a clever way to present it visually. Wileman also seems to think that information is rhetorically neutral -- it's not clear what the implications of his method are for those preparing persuasive communications. Nonetheless, his continuum of items ranging from the verbal to the visual may be useful for teaching students about possibilities for visual topics.

While some thinkers devote a great deal of time to creating representational or mimetic visuals, I was also interested in how one can come to explore and manipulate abstract concepts, as many of our professional writing students will need to do in order to solve problems. Arnheim (1969), in attempting to see if abstract concepts could be visualized, invited students to create drawings on themes such as "good marriage/bad marriage" (Figure 2). (Most of the people whom I have asked can identify which drawing represents the good and which the bad. To me this adds support to the claim that shared social conventions affect how we generate and interpret visuals.)



Student #1 Student #2

FIGURE 2 -- ARNHEIM'S STUDENTS' REPRESENTATIONS OF "GOOD MARRIAGE AND BAD MARRIAGE"

In these, one can see influences from visual social codes, but one can also see fresh ways of conceptualizing. Drawings about abstract concepts don't necessarily lead to a visual presentation, but may help problem-solvers see abstract relationships which may or may not lead directly to a verbal presentation. One interesting contrast between Arnheim's work and Wileman's strategy is that Arnheim didn't provide formal training in or models of possible ways to represent ideas visually. This difference in approach may have implications for teaching visual thinking, one that deserves further study.

Arnheim disagrees with those who claim that thinking without verbal language is impossible. In some instances, he claims that words are inferior to visual images for thought. Arnold argues that language often leads to linear thinking, which isn't useful for all situations. He also claims that in creating scientific models, sight makes one want to go to the simplest forms possible. For him, the visual needs to do more than supplement the verbal. For Arnheim, the visual can help reunite sense and reason. If this is true, again we are expanding our students' capabilities to think by educating them in visual thinking.

Learning to think visually

Many thinkers believe that visual thinking is not a mysterious faculty given to a lucky few at birth. They insist it can be taught and learned. Most of the authors I encountered dealt only briefly with theory, but included plentiful exercises designed to get the reader to move gradually into developing and using dormant visual thinking skills. Professional writing teachers can find in these many ideas for learning to enhance students' (and their own) visual thinking

Upton and Samson (1963) attempt to teach visual thinking by giving readers charts and diagrams to fill with given material. Although many of these exercises imply that there is only one correct way to fill in the diagram, after completing those, readers find other problems with no diagrams given. For these, the readers will need to create their own diagrams in order to solve the problems. Upton and Samson also provide ways in which visual thinking can help one analyze a whole and then recall it later. Such graduated exercises may be an option for the visual education of professional writing students.

Arguing that "mental manipulation improves with practice," McKim (1980) presents readers with many suggestions on visual thinking, especially the aspect of it he calls "graphic ideation." In order to break old sketching habits, he recommends that one should try using materials with which one would feel free to experiment since "costly paper tends to inhibit thinking." Adams (1986) agrees with McKim that one should not have expensive drawing materials if one is to solve problems through generating visuals. Adams recommends that his readers draw in a cheap notebook for a week whenever they have problem to solve during that week. In fact, Adams argues that drawings that are too good in early stages of thinking may have the negative effect of having the mind reach closure too soon.

In addition, McKim recommends playing with puzzles that require visual manipulation for their solution." He also notes that in visual thinking or in any kind of problem-solving, one should attempt to make the strange familiar and the familiar strange. Influenced by *gestalt* ideas, McKim presents a way to find a pattern, then to analyze, then to re-pattern with visual thinking, both in seeing and in drawing.

Wileman (1980) also presents exercises for readers to do in order to improve visual thinking. He shows examples of ways to represent certain kinds of information; then he provides exercises asking the reader to perform a similar task for a specific audience. This approach might have one of two consequences: It could tend to help people come up with ideas, or it may inhibit them by implying that there are boundaries beyond which it is not acceptable to go.

Implications for professional writing classes

In attempting to discern uses of visual thinking in a professional writing classroom, Mackenzie (1987) studied students in two sections of a technical writing class. In one section, students were trained in using visualization drawing in the early stages of projects. Mackenzie found that visualization did not affect the students' written products significantly, but that students reported that visualization drawing did help them with invention, especially when they used mapping and sketching. She recommends further research on this, and I agree that it needs to be done. However, I found it promising that students reported that visual thinking does help them with invention.

In my own Writing for the Computer Industry course at Purdue which includes approximately equal numbers of professional-writing majors and computer-related majors, I have attempted to include possibilities for visual thinking, especially in the early stages of students' projects. In a recent project, creating a HyperCard stack, after students had done the initial brainstorming about problems or needs which a HyperCard stack could solve, I presented them with examples of visual thinking and representation. I explained briefly possible ways in which visual thinking could work. I then asked them to continue brainstorming about their project, except this time drawing pictures in their project logs about where the stack could fit into a larger context, or a model of how their intended users would use the stack. As I expected, I got many quizzical looks from students unaccustomed to doing visual thinking, but they did try it.

A few days later, I asked them to draw tentative maps of their stacks and the connections between the various nodes. I encouraged them to experiment with several maps, and many of them did so. I asked them to include their sketches in the logs which they kept throughout the project.

After they had submitted the HyperCard stack, I asked them to write about visual thinking for the "Opinion Board," an on-line, informal discussion forum we have on our classroom network. I asked them:

1) What use did you make of visual thinking in this project?
2) How useful was it to you? Why?
3) In future projects, how useful do you think visual thinking will be for you? Why?

From their responses, I concluded that visual thinking was more positively received than I thought it would be. I found a few negative responses, a few cautious responses, and more enthusiastic ones than I expected. I present the excerpts below which I found most thought-provoking.

Negative responses: "Although I did create visual, handwritten copies of my cards before entering them in HyperCard, I though about them first and decided what I wanted them to look like before I put anything on paper....For some people, I believe that this type of format has very great potential, but for others -- myself included -- it is not a format which comes very naturally. It feels awkward. I prefer to think things over; to mull them over in my mind for a good while, then just go in and do it. I'm not a very visual person."

"I made little or no use of visual thinking, I found it to be more of a waste of time than productive....I found it confusing, time-consuming, and waste of valuable time that could have been used for project 3 development."

Cautious responses: "[Visual thinking] was only useful to me when I was designing my map. This was the only time I actually made 'test drawings' of my screen. For the rest of them, I simply made them up as I went along"

"[Visual thinking] was useful to a point. By sketching the cards, I had a head start when I sat down in front of the computer. It also helped me to decide on the best way to design the cards and to link them...I might use visual thinking in the future to help organize my projects, but I think the uses for it are limited."

"I do [visual thinking] often in designing my computer projects but not very often for writing projects, so I don't know how useful it will be in the future."

"I thought visual thinking was fairly useful because if I had not mapped out my plan for the project, I would have just started without knowing where I was going. If I didn't know where I was going in the stack, then it would be very hard for the user to figure out where they were going."

"Unless I use a HyperCard stack or a document that uses many graphics packages, I probably won't use [visual thinking] that often. Outlining works better for me in standard writing or documentation. Visual thinking is always used in a system, however, it is usually (in my case) kept to thumbnails of specific appendix graphics."

"Visual thinking will probably be useful in my future, although I'm not sure how, since I don't know what I will do in the future. I am torn between professional writing (in which

visual thinking is very logical, and difficult for me) and creative writing (in which visual thinking is sort of disorderly, which I can handle.)"

Enthusiastic responses: "[Visual thinking] was very useful to me because the structure of my stack is very difficult to represent in other formats as efficiently."

"...when I had to logically think everything out so that there would be some sense of order, I had to make a decision as to what was important and not so important....I will keep in mind that what the reader first sees is often what he/she makes their opinion on. This is very important, as well as keeping the reader's interest visually."

"Using visual thinking allowed me to 'see' the associations between cards. I tend to always use visual thinking for organization. It has always been better for me to 'see' what I am doing."

"Since the map was created first, it was much easier to attack the entire project since it was already laid out for me."

"...I think the mapping helped a great deal. It really helped me to be able to refer to the map throughout the project to trace the progress I was making."

"Without writing down my ideas, there would have been no organization to the thing....It gave me a sense of where everything went, and how it fell into place overall....[F]or assignments such as creating actual computer documentation, I can see where it would be very useful. I will probably use it for my next assignment to give myself a general layout plan for organizational purposes. Visual thinking also helps me to find a layout that is most suitable and useful for my audience that is appealing as well."

"Visual [thinking] is very appealing to the eyes and makes good use of imagination. I found it interesting and had fun with it."

"If I did not have visual layout, I would have had problems organizing the stack. If I did not have the layout planned before-hand, I would have wasted time creating and erasing useless cards."

"Visual thinking....let me consider options that I might not have thought to include which in turn brought other ideas to mind.....I continued to use it to decide what to include in the [stack]....In future projects, I will know not to limit my ideas because of holding a preconceived notion of what I should be thinking about. Instead, I will consider all points and possibilities and let them work into other, more useful ideas."

I found it interesting that many of the students agree with the insights of the proponents of visual thinking which I mentioned above. In addition, I noted that the students made their own connections between visual thinking/problem-solving and using visuals for communicating with users. It is something I hope to continue to explore. In addition, most of my students agree with Mackenzie that visual thinking is useful in invention and problem-solving. As for those who reported negative experiences, I am not disheartened. Visual thinking should not be forced on our students, only offered as a problem-solving, liberatory alternative.

Possible directions for future work

My work is still preliminary, but I hope to continue to explore ways in which to incorporate visual thinking into my teaching. It would be interesting to see how students respond to

visual thinking used in a project that does not involve creating a HyperCard stack. In addition, I hope to explore whether or not students' majors affect how well they react to and use visual thinking.

I also would like to explore how to integrate ideas about visual invention into on-the-job educational courses Also, the relationship between visual invention and visual presentation presents us with many unanswered questions which would be valuable and intriguing to explore.

Even though much research is needed on how visual thinking can affect professional problem-solving and communication, I believe we can aid our students by offering them education, both theoretical and practical, in visual thinking.

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Reality Orientation in the Business Communications Classroom: Use of Computer Assisted Writing Techniques

Alan L. Plastow,
University of Akron * Kent State University

The concept of orienting students to the techniques of "real world" writing encompasses many facets of the traditional writing process as well as several relatively new techniques. Simply teaching students to write differs dramatically from teaching them to write for business. Although many of the approaches remain the same, in the business world individuals must write quickly and efficiently. They have little time for extensive revision and drawn-out review of their work. They are paid to produce targeted copy then move on to the next assignment. In the active classroom this translates into a revised teaching style which better prepares students to function within the modern work place.

The Business Communications classroom of the future (Now!) is becoming electronically oriented. Each student has use of a Personal Computer (PC) which is electronically linked to others in the class. Students are able to communicate with one another over this Networked System in the same manner as many corporate personnel. The classroom functions as a modern office system in which the supervisor conveys requests and the employees produce well-targeted and concise products.

This presentation focuses on the design and use of the modern communications classroom as well as addresses the instructional techniques (Including hardware and software) currently used by the author. Topics include: The arrangement of the physical and psychological classroom to facilitate business writing. Computer hardware and software configurations which keep the course moving as well as techniques for training students in their use. The concept of "letter frameworks" which can be modified for use with multiple audiences and assignments.

In the real business world, "Time is Money." In the modern business communications classroom, students come face to face with the techniques to function efficiently within that framework.

COMPUTER ASSISTED WRITING CLASSROOM

What effect will a Computer Assisted Writing Classroom (CAWC) have on the written communications of students? What is the most efficient design of the classroom: In terms of hardware? Software? How does the faculty member actually teach within the structure of computer writing?

Too often students in the Business Communication classroom spend the majority of their semester reviewing techniques for writing which are immediately forgotten the day after finals. Many skills, though possibly useful in the future, are totally irrelevant in the students' present lives.

How can the faculty of the Business Communication course impart a specific "mind/skills set" which students will find of value in all their writing up to and including their future careers?

The ideal design of a CAWC permits students to work in modules (groups) of three PC Workstations. These stations are networked, or electronically linked, to take advantage of potentials for PC to PC communication (Electronic Mail). Each workstation, in addition to being a segment of the Networked system, contains a hard drive to eliminate potential down time. Printers are designated one to each group of three workstations and are NOT networked (linked to the computers through the file server).

Workstation Modules

The individual PCs within the classroom are grouped in threes allowing for efficient collaborative work sessions. In such designated assignments groups of three are ideal because the dynamics involved tend to include each member in the process, while larger groupings tend to isolate less aggressive individuals.

In non-group activities, the module design allows each individual easy access to other students who lend advice and support. As a result, students develop a teamwork approach to projects even though they may be developing a personal assignment.

Networking

Networking involves linking all computers in the lab to a central computer designated as the "File Server." The workstation PCs are literally wired to this file server which then maintains specific program files (software). Students writing at individual workstations access the file server which "serves" them the selected software. With this configuration faculty can assure that each student is "on line" and prepared to function and communicate electronically.

Electronic Mail (E-Mail) is utilized by students to send memos and messages from one computer to another. Group meetings of the entire class can be held through E-Mail which enables each student to perform as an individual within a common assignment.

This mail service functions as a microcosm of the modern corporate office which maintains a formal Electronic Mail system in place of hard copy paper messages. In addition, electronic meetings are becoming the norm as multiple office members within the corporate structure access group project materials, provide their input, then replace the materials on the network for others to develop further.

Individual Workstation Programming

Many Computer Assisted Writing Centers on campus make the mistake of purchasing dual disk drive workstations. While this is a sound purchasing maneuver, it can quickly become a catastrophe in terms of actual class functions.

Networks can, and do, break down bringing the CAWC to a complete standstill. However, if each workstation is provided with a Hard Drive as well as a floppy, students merely change over to the same program which has been installed on that hard drive in case of a downed network. While the class loses the potential for group linking, it maintains the ability to write and function. Although the addition of a hard drive to each workstation can increase expense, the configuration will vastly increase quality instruction time; virtually no class time is lost.

Printers

Printers are a vital part of the CAWC operation. The students print out their materials continually throughout the class as they develop revisions. There are two methods of configuring printers: either through the network file server or as stand-alone printers linked to designated workstations.

Networking the printers is, once again, very cost effective, but it can also quickly become a time-consuming liability. The networked printers, by design, require every student to stand in an "electronic line" to get materials printed. This method involves a great deal of "wait time," therefore time wasted, in the average classroom.

Stand-alone printing is most efficient. Each module of three workstations has its own printer on which papers can be immediately produced with little, or no, time lost or paper wasted.

Software Selection

The selection of software (programs) is only marginally less important than the style of hardware (computers). There are dozens of software packages available which are specifically designed for the college writer. Each package has its positive and negative points, but selection committees must ask themselves what their true goal is in terms of their instruction. The honest answer to that question will determine the package purchased.

If the purpose of the writing program in general, and business communications in particular, is to teach students to communicate in the real world then the software should be of immediate use to a student entering that real world.

A vast majority of businesses utilize IBM compatible PCs as their hardware and WordPerfect (WP) as their writing software. While WP is not a simple program to learn, it is probably the most powerful as well as relevant one. Most other writing software will be left behind as soon as the student leaves college and enters the corporate world.

Rarely do businesses use grammar and style checkers, but they are very useful in the classroom; if they are used correctly. The grammar and style checker currently used by the author is Grammatik III (or IV). Faculty can actually set this software to flag specific targeted items in a student's work. When in use, the software will scan a paper and mark such items as "passive style," "sexist language," "homonym use," and dozens of others. Keep in mind that these programs are counters and markers; they are not always correct in their judgements.

Training Techniques

Techniques for training students for the CAW Classroom are actually very simple: Teach the students only the skills they need to do the assignments. While this may seem to oversimplify a complex system, the reality is that students require only nine WordPerfect commands to produce nearly all assignments. Faculty can teach these commands, along with the necessary DOS (Disk Operating System) commands, in only two class periods. Address additional skills only when needed.

It is a simple matter for faculty to develop a short training manual for the students to use in the CAWC. The manual explains in simple terms the commands needed to complete assignments. It can be loaded onto the network where it is accessible to students electronically (or as a print out), or it can be purchased by the students. The manual currently used by the author is available to students for $1.85 from a local printer.

Letter Frameworks

Letter frameworks are simply form letters (and segments thereof) which students can access electronically to use in selected situations. They can be developed in several ways.

The business community has very well targeted letter frameworks which are purchased on disk. A good example of this service in action is the legal field. There are dozens of prewritten legal formats available for WordPerfect which have been tested for clarity and effect. Professionals merely access the format they desire, add pertinent information, then print out the final copy.

In the classroom students can create their own formats which they use in writing assignments. Faculty can work with each class to develop their own packages or use materials from previous classes as models to be critiqued, modified, then used.

The modified data base is an additional use of the letter framework which students will find useful throughout their time in college as well as after they graduate. In the data base, as used by the author, students assemble their resume-related information in an access file. They then draw information from this data base to assemble a targeted resume. The system allows students to experiment efficiently with multiple resume styles in a short instructional time.

Students also utilize the letter framework to develop the formal report. This assignment begins with an "I search" letter report which students then access and expand into a formal report. If time permits, students return to the material electronically and rewrite it for a different audience (audiences range from peers to CEOs).

COMPUTER ASSISTED WRITING CLASSROOM

The networked CAWC becomes, for student and faculty alike, an action-oriented writing experience. Writing assignments take on a floating form which students can manipulate into targeted products with the touch of a key. Changing the audience or the approach no longer requires a time-consuming revision and retyping process. Students identify their audience/approach and set their message to impact accordingly. The written word becomes the raw material which students custom mold to their needs. The use of prewritten formats and data files allows students to assemble specific messages and documents quickly and efficiently.

Faculty members become teaching guides who seemingly evolve styles and skills alongside students. The classroom becomes student and assignment centered and time-on-task is increased

dramatically. Teaching becomes an action-oriented experience as students discover the immediacy of their work. Course materials are neatly and efficiently presented -- electronically -- and become infinitely revisable. The ability to set scenarios is enhanced by the computer medium. Grading time is reduced as a result of the increased quality of student papers.

Students develop an orientation toward writing which they express as "useful." They are often found in the computer center composing papers for other classes, and the observer will note that they are constantly upgrading/revising their assignments until they have a truly finished product. Their sense of audience increases as a direct result of their ability to use the computer to quickly and efficiently revise. Students develop a better concept of teamwork as they experience the dynamics involved in working formally and informally within the group. Their sense of purpose builds throughout the semester as they comprehend that they are actually perfecting a skill which will serve them in their schooling as well as in their future careers.

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COMMUNICATION BARRIERS

THE INFLUENCE OF COMMUNICATION APPREHENSION IN THE BUSINESS AND PROFESSIONAL COMMUNICATION COURSE

Charles A. Lubbers, Kansas State University
Brenda S. Fergen, Kansas State University

A course entitled "Business Communication" or "Business and Professional Communication" has become a key ingredient in most post-secondary offerings in recent years. These courses offer students in a growing number of majors an opportunity to increase their understanding of and skills for using a variety of communication practices. In addition to the types of written communication which are generally discussed in these courses, many instructors are including major assignments involving oral communication. This study looks closely at one variable which may influence a student's success with the oral communication assignments: communication apprehension (CA).

COMMUNICATION APPREHENSION

One way to understand the importance of CA is to examine its impact. The prevalence of CA has been the topic of numerous investigations. As early as 1970, McCroskey argued that fifteen to twenty percent of all students enrolled in basic communication courses may be highly apprehensive about communicating with others. Bowers (1986) reported that of 402 University of Iowa students interviewed over the telephone in the spring semester of 1985, seventy percent indicated that classroom communication apprehension happens to them. Even more significant is that 38% of those who experience the classroom communication apprehension, experience it at least weekly.

With the prevalence of college students who suffer from CA one would think that efforts would be taken to alleviate the problem. However, Hoffman and Sprague (1982) indicated that only about six percent of the colleges and universities responding to their questionnaire on CA were operating some form of treatment program. CA is clearly a significant occurrence in our society.

DEFINITION OF COMMUNICATION APPREHENSION

The most commonly used definition of CA is McCroskey's (1977, 78) "an individual's level of fear or anxiety about real or anticipated communication with another person or persons." Additionally, CA can be seen as a component of two more general terms: reticence and unwillingness to communicate.

Reticence was originally advanced by Phillips (1968), and a reticent individual was defined as one ". . . for whom anxiety about participation in oral communication outweighs his projection of gain from the situation." Reticence characterized the communication situation in terms of a cost/benefit

analysis. If the predicted cost was greater than the expected benefit, then one was less likely to communicate.

Unwillingness to communicate (Burgoon, 1976) is similar to reticence, but it encompasses a broader view of communication malfunction. Unwillingness to communicate is seen as a global attitude discouraging communication.

Aside from understanding the nature of CA, it is also important to briefly differentiate between trait and state apprehension (for example, Watson & Dodd, 1984). State apprehension is the type that the average individual experiences. This apprehension is associated with particular types of communication situations and occurs occasionally. State apprehension then is generally seen as a normal response to certain communicative situations. Trait apprehension, on the other hand, is seen as atypical. An individual suffering from trait apprehension suffers anxiety in a wide variety of communication situations. In essence, trait apprehension is more global and devastating than state apprehension.

CONSEQUENCES OF COMMUNICATION APPREHENSION

The influence of CA pervades a wide variety of daily activities. CA influences reactions to proxemic violations (Buller, 1987) and reactions to opposite-sex touch (Anderson, Anderson & Lustig, 1987). Previous research has found that CA significantly effects the academic achievement of elementary and secondary students (Comadena & Prusank, 1988; Davis & Scott, 1978; McCroskey, Andersen, Richmond & Wheeless, 1981).

High CA has deleterious effects on a student's academic achievement (Scott & Wheeless, 1977). Some examples of the deleterious effects include lower scores on standardized tests, as well as lower grade point averages (McCroskey & Andersen, 1976). After reviewing the literature related to CA and academic achievement, Powers and Smythe (1980, 146) argue that ". . . high levels of communication apprehension yield negative academic outcomes." These negative outcomes undoubtedly result from ". . . a high degree of communication apprehension [that] can be a serious learning disability" (Scott, Wheeless, Yates & Randolph, 1977, 543).

Because of the negative effects on academic achievement, researchers have attempted to determine how CA effects an individual's academic performance. In his critique of the "Communication Anxiety School" Page (1980) notes that research generally agrees that those who appear anxious tend to be judged as less effective communicators than those who appear more calm. Thus, overt behaviors that are seen as evidence of CA will lead evaluators to judge the individual as being a less competent communicator. Since the course used for this investigation includes public speaking (oral reports) assignments, one could argue that those who exhibit high CA will receive lower grades for the public speaking assignments than will those who have moderate or low CA. Rubin and Graham (1988) also noted that perceptions of communication competence were tied to CA. They argued that those exhibiting high CA were judged to be less competent communicators.

One example of changes in behavior due to self-perceived high CA is in the selection of the type of instruction. McCroskey and Anderson (1976) found that those students who report a high level of CA prefer to take larger, mass-

lecture classes because it is a communication restricted environment. Those students who perceive themselves as highly apprehensive will undoubtedly avoid the classrooms with greater opportunities for communication because of either real or imagined negative experiences associated with classroom communication.

Another explanation for the apparent connection between high CA and poor academic performance is the cyclical nature of CA. Pelias and Pelias (1988) argue that some students have the ability to channel the nervous energy associated with high CA into a superior performance. However, others cannot channel the nervousness to their advantage and the performance experience is negative as a result. These negative experiences may either lead to or reinforce unfavorable attitudes toward school (Scott & Wheeless, 1977).

The negative experiences and unfavorable attitudes are likely to create an environment in which the student's motivation level is low. Past research suggests that CA has its greatest effect on communication when the motivation level of the student is low (Beatty, Forst & Steward, 1986). Thus, a perpetuating cycle exists in which the student's high CA contributes to unfavorable attitudes toward education, low motivation, and poor academic performance. Of course the poor performance, attitudes and motivation will, in turn, reinforce the CA. Thus, a debilitating cycle is created and perpetuated.

CA is particularly important in the proposed investigation because previous studies have demonstrated individual students' apprehension levels effect their performance in post-secondary communication courses. Powers and Smythe (1980) studied the role of CA on achievement in the lecture-lab format for the basic communication course. Powers and Smythe's research, ". . . supports the thesis that low CA students are evaluated significantly higher than their high CA counterparts" (150). Comadena and Prusank (1988) argue that, "While a substantial amount of research has examined the relationship between CA and AA [Academic Achievement], there is the need for additional research in this area" (276). Thus, CA is important to a students' achievement. The review presented in this section leads to one undeniable conclusion: while CA influences a large number of student behaviors in an educational setting, the end result is a negative effect on most students' academic performance. This research project was designed to answer several research questions:

1. How prevalent is CA in business and professional communication students?
2. Is a student's CA level significantly related to his/her gender or age?
3. To what extent does CA influence a student's academic achievement?

METHODS

SUBJECTS

The subjects in this investigation were enrolled in six sections of a business and professional communication course. The course was offered at a small state-supported college in the midwest with an enrollment of approximately 5,000 students. A total of 154 (71 men and 83 women) students of the 165 (93.3%) students who attended the first day of class completed the instrument described below and agreed to participate in the research. The subject ages' ranged from 17 to 50 with a mean of 23.

The course chosen for this study has an oral communication focus. Business students are required to take an additional business communication course which is devoted primarily to written communication. The course under investigation contains several oral communication assignments involving public speaking in an "oral report" format.

DATA COLLECTION

Values for the independent variable (communication apprehension) were determined using McCroskey's (1978) 25-item Personal Report of Communication Apprehension (PRCA-25). The scale was administered during the first class period of the semester and was set aside for analysis after the semester was finished. In 1978 Daly reported that there were at least 25 self-report measures of CA. The PRCA-25 was chosen because of its applicability to the variables proposed for analysis, its excellent development over the last two decades, and its consistently strong reliability and validity.

McCroskey, Beatty, Kearney and Plax (1985) note that "The Personal Report of Communication Apprehension (PRCA) has evolved as the dominant instrument employed by both researchers and practitioners for measuring trait-like communication apprehension" (165). The dominant position of the PRCA as a diagnostic and research tool is due, in part, to its extensive development. The PRCA-25 was found to have internal reliability estimates ranging from .92 to .96 and a test-retest reliability over a seven-week period of .82 (McCroskey, 1978). Powers and Smythe (1980) report internal reliability estimates (split-half) for the 25-item PRCA at .93. The reported reliability ratings were clearly acceptable, and the predictive validity of this instrument has been established in numerous studies (McCroskey, 1978).

This research uses the PRCA-25 because the measure of academic performance involves grades for public speaking (oral report) assignments and there is no measure for interpersonal communication. Thus, the PRCA-25 was deemed the most appropriate for the stimuli under investigation. A student's CA score was:

> . . . categorized into high, moderate, and low levels based upon the standard deviation criterion. Those subjects scoring beyond a standard deviation above the mean were classified as high; those within a standard deviation above or below the mean, as moderate; and those beyond a standard deviation below the mean, as low. (Scott, Wheeless, Yates & Randolph, 1977, 549)

Two measures of academic achievement are included to determine both cognitive and behavioral performance: the final course grade and the percent of points earned by the student on all of the oral communication assignments. The final grade variable used the standard "A" through "F," but an additional designation of "W" was included for those students who withdrew from the course. Insufficient students fell into the "A" and "F" categories to maintain a minimum expected cell frequency of 5. Thus, for statistical analysis the "A" category was combined with the "B" category and the "F" category was combined with the "D" category. Collapsing the categories in this manner maintains as much of the original data as possible, while still meeting the demands of the statistical tests. To maintain consistency in grading, all the grading and scoring of oral presentation was conducted by the same individual.

The subject's gender and age was also collected with the PRCA-25 information. This information was necessary to answer research question number 2. Subject ages were condensed into four categories to ease analysis: (1) 17 to 19; (2) 20 to 24; (3) 25 to 35; and (4) 36 to 50. Collapsing into four categories was necessary to allow for statistical interpretation.

ANALYSIS OF DATA

Two statistical measures were used. First, crosstabulations of the various relationships were conducted and a Chi Square test was used to look for significant differences in the cell frequencies. In addition, one-way Analysis Of VAriance's (ANOVA) were used to look for significant differences in means. A standard confidence level of .05 was adopted for this research. All tests were conducted using the SPSS/PC+ software package.

RESULTS

RESEARCH QUESTION 1: Scores on the PRCA-25 ranged from a low of 29 to a high of 115. The overall mean was 76.3, and the standard deviation was 17.1. Thus, the low CA scores ranged from 29 to 59; moderate CA from 60 to 93; and high CA from 94 to 115. Using the standard deviation criterion described earlier, the scores were placed into these categories: low (n=31, 20.1%), moderate (n=73, 47.4%), and high (n=50, 32.5%).

Table 1: CROSSTABULATION OF GENDER AND CA LEVEL

	GENDER		
CA LEVEL	MALE (Row%)	FEMALE (Row%)	ROW TOTALS
LOW	17 (54.8%)	14 (45.2%)	31 (20.1%)
MODERATE	33 (45.2%)	40 (54.8%)	73 (47.4%)
HIGH	21 (42.0%)	29 (58.0%)	50 (32.5%)
	71 (46.1%)	83 (53.9%)	154 (100%)

Chi-Square= 1.31 D.F.= 2 p= .52 (NS)

RESEARCH QUESTION 2: Chi-square tests on crosstabulations were used for data analysis. CA was crosstabulated with the student's gender (Table 1) and age (Table 2). The results are presented below. The crosstabulation with the student gender indicates that there is little difference between the cells on the table. The row percentages in the low CA level show the greatest difference from the row percentages for the column totals. However, the chi-square value obtained is not statistically significant.

Table 2: CROSSTABULATION OF AGE AND CA LEVEL

	STUDENT AGE				
CA LEVEL	17-19	20-24	25-34	35-50	ROW TOTALS
LOW	15 (48.4)	10 (32.2)	3 (9.7)	3 (9.7)	31 (20.1%)
MODERATE	31 (42.5)	21 (28.8)	11 (15.1)	10 (13.7)	73 (47.4%)
HIGH	25 (50.0)	15 (30.0)	7 (14.0)	3 (6.0)	50 (32.5%)
	71 (46.1)	46 (29.9)	21 (13.6)	16 (10.4)	154 (100.0)

Chi-Square= 2.68 D.F.= 6 p= .85 (NS)

The crosstabulation for student age (Table 2) indicates that the results for the various CA levels and ages do not significantly differ from what would be expected. Insufficient difference from what is expected is reflected in the low Chi-square value of 2.68 and the resulting significance level of .85.

RESEARCH QUESTION 3: Academic achievement is measured in two ways: final course grade and percentage of points on oral report assignments which the student earned. Each of these relationships was tested in two ways. Both were tested using Chi-square to look for differences between observed and expected frequencies. A one-way ANOVA was conducted to determine total variance. Table 3 presents the crosstabulation of PRCA-25 and final grades.

Table 3: CROSSTABULATION OF FINAL GRADES AND CA LEVEL

	STUDENT FINAL GRADES				
CA LEVEL	A & B	C	D & F	W	ROW TOTALS
LOW	8 (25.8)	9 (29.0)	6 (19.4)	8 (25.8)	31 (20.1%)
MODERATE	30 (41.1)	18 (24.6)	12 (16.4)	13 (17.8)	73 (47.4%)
HIGH	23 (46.0)	12 (24.0)	8 (16.0)	7 (14.0)	50 (32.5%)
	61 (39.6)	39 (25.3)	26 (16.9)	28 (18.2)	154 (100.0)

Chi-Square= 3.88 D.F.= 6 p= .69 (NS)

One-way ANOVA - F Ratio = 1.7147 F Probability = .18 (NS)

Table 4 presents the comparison of PRCA-25 with the percentage of oral communication points. At the end of the two previous tables you will find the results for the two statistical tests. The results indicate that whether the test is looking for differences in observed and expected frequencies or variance within and between groups, there is no significant difference present.

Table 4: CROSSTABULATION OF ORAL PRESENTATION % AND CA LEVEL

	ORAL COMMUNICATION %			
CA LEVEL	1-74%(Row%)	75-85%(Row%)	86-100%(Row%)	ROW TOTALS
LOW	4 (17.4%)	14 (60.9%)	5 (21.7%)	23 (18.3%)
MODERATE	9 (15.0%)	37 (61.7%)	14 (23.3%)	60 (47.6%)
HIGH	11 (25.6%)	23 (53.5%)	9 (20.9%)	43 (34.1%)
	24 (19.0%)	74 (58.7%)	28 (22.2%)	126 (100%)

Chi-Square= 1.89 D.F.= 4 p= .76 (NS)

One-way ANOVA - F Ratio = .5095 F Probability = .6021 (NS)

DISCUSSION

The results of this investigation indicate that nearly one-third (32.5%) of the subjects reported high CA. While the definition of "high" CA is not consistent in all research projects, the standard deviation criterion used in this investigation is in no way a liberal approach. Previous investigations have found only 15 to 20% of the subject sample in the high CA category (McCroskey, 1970). These self-reports of CA require instructors, trainers, superiors, etc., to deal with the individual's perception of apprehension.

The results of statistical tests developed to answer research question number two make it clear that levels of CA do not differ based on the categories of age and gender. Thus, while the instructor and practitioner may have to deal with those individuals suffering from high CA, it appears that these students are no less likely to appear in one sex or age group. These results conflict with previous research which has outlined the importance of student sex (Daly, 1978) and age (Comadena and Prusank, 1988) as an influence on levels of CA.

While there is clearly a significant number of students with high CA within the subject pool, the remainder of the investigation indicates that the apprehension may not be as important to academic performance as previously reported. The literature review indicated that CA has been found to significantly influence academic performance. However, there was no evidence in this investigation that CA has a significant impact on the student's final grade or performance on oral reports.

Two possible explanations for these results are immediately evident. First, the CA assessment instrument chosen is oriented toward apprehension in oral presentations. This focus on one anxiety state may have limited the measurement of apprehension. Second, a larger subject sample would allow for the use of more discrete categories. Smaller, discrete categories might increase the sensitivity of the statistical tests conducted.

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INSTRUCTIONAL TECHNIQUES TO REDUCE WRITING APPREHENSION AND TEST ANXIETY IN BUSINESS COMMUNICATION

Sandra J. Nelson, Indiana State University
Douglas C. Smith, University of Kentucky

Business communication instructors recognize that some students are writing apprehensive and/or test anxious. Students who are highly apprehensive about writing may avoid situations where writing is a necessity and may feel anxious when forced to write (Daly & Miller, 1975a) or may approach writing with a defeatist attitude (Fox, 1980) Similarly, students who are test anxious may have a negative attitude toward test taking and may worry excessively when faced with a test. These anxieties are threats to the academic well being of business communication students and may inhibit the learning climate in the classroom. Business communication instructors can help students develop a more positive attitude toward writing and testing situations by identifying the students who are writing and test anxious, explaining career and academic influences of these anxieties, discussing characteristics of anxious individuals, and providing self-intervention coping techniques in their instruction.

IDENTIFY WRITING APPREHENSIVE AND TEST ANXIOUS STUDENTS

The Writing Apprehension Test and the Achievement Anxiety Test may be used to identify writing apprehensive and test anxious students.

Writing Apprehension Test

Daly and Miller (1975b) developed the Writing Apprehension Test to assist in the identification of writing anxious students and to measure the degree of writing apprehension in classes. This instrument has been used frequently in research projects. The Writing Apprehension Test (WAT) is a 26-item scale which is composed of 13 statements which reflect high anxiety about writing and 13 statements which reflect low anxiety toward writing, and subjects respond on a Likert-type scale of strongly agree, agree, uncertain, disagree, and strongly disagree. Daly and Miller (1975b) obtained a split-half reliability of .94 for the WAT. The WAT is a valid measure of apprehension toward writing (Richmond & Dickson-Markman, 1985), but recent studies suggest that the WAT may be more appropriately described as a measure of self-confidence in writing ability rather than a measure of anxiety during writing situations (Reed & Keeley, 1986).

Achievement Anxiety Test

Alpert and Haber (1960) developed the Achievement Anxiety Test to measure the presence or absence of anxiety in testing situation and to measure whether the presence of anxiety facilitates or debilitates test performance. The scale contains nine statements designed to measure facilitating test anxiety and ten statements designed to measure debilitating test anxiety. In addition, neutral buffer items were included in the original version of the scale. The test-retest reliabilities of the original test were calculated at .83 and .87 (Alpert & Haber, 1960). As originally developed, the facilitating and debilitating sections of the scale are randomly combined into one instrument, and subjects respond on a five-point, Likert-type scale.

EXPLAIN INFLUENCES OF WRITING APPREHENSION AND TEST ANXIETY

Writing apprehension tends to influence career and academic choices. Individuals with high writing apprehension, when compared with individuals with low writing apprehension, selected employment positions which required fewer writing projects, fewer time constraints in writing projects, and fewer types of required writing projects (Bennett & Rhodes, 1988). Furthermore, students with high writing apprehension considered perceived writing requirements when selecting collegiate majors (Daly & Shamo, 1978). The individual who is highly test anxious may take a more cautious approach to problem solving and may interpret many situations as evaluative and react with concern and lower performance (Sarason, 1980).

DISCUSS WRITING APPREHENSION AND TEST ANXIETY CHARACTERISTICS

Classroom research results indicate that differences exist between high and low writing apprehensive individuals in relation to gender, performance on tests of writing skills, willingness to take additional composition classes, and expectations from teachers. Instructors may discuss these characteristics with classes or with those students identified as writing and/or test anxious to help students understand the influences of these anxieties. Males tend to be more writing apprehensive than females (Daly & Miller, 1975b). Individuals measured as highly apprehensive about writing, when compared to individuals classified as low in writing apprehension, are less willing to take more composition courses (Daly & Miller, 1975b) and are rated at a lower level of achievement on tests of writing skills (Daly, 1978). Also, the highly apprehensive student tends to be evaluated less positively by instructors, considered less likely to succeed in the future, and perceived as less likely to receive favorable instructor recommendations (Daly, 1979).

To further the understanding of test anxiety, instructors may refer to research results which provide a profile of individuals exhibiting test anxiety. Students with debilitating test anxiety in mathematics courses tend to be older, to be less confident about the course, to have lower opinions of their abilities, and to be female (Watson, 1988). Consistently, females have been found to be more test anxious than males (Best & Stanford, 1983; Payne, Smith, & Payne, 1983). Furthermore, test anxious students performed at a lower rate than students who did not exhibit test anxiety (Duval, 1989).

PROVIDE INSTRUCTION IN SELF-INTERVENTION COPING STRATEGIES

Research results indicate that writing apprehension and test anxiety can be alleviated and that focusing student attention on self-treatment techniques may encourage students to manage these anxious feelings. While many research studies have been conducted to determine effective test-anxiety interventions, comparatively little research has been specifically directed to treatment of writing apprehension. However, in a clinical setting, relaxation techniques and coping self-statements combined with a role-reversal technique alleviated writing apprehension (Johnson, Shenoy, & Gilmore, 1982). Positive self-talk statements, test-taking strategies, task-focused attention, and relaxation techniques have been found to be effective strategies for relieving test anxiety (Barrow, 1982; Bruch, Pearl, & Giordano, 1986; Lent, Lopez, & Romano, 1983; Wine, 1971). Therefore, anxieties experienced in writing and/or testing situations may be reduced using a combination of strategies involving improving skills and changing cognition.

This combination of strategies can be included in the process of instruction in business communication. The strategies may be presented as self-intervention techniques for students to use either when they have been identified through instrumentation as writing and/or test anxious or when they simply perceive themselves as stressed by a writing or testing situation. The following instructional behaviors are intended to facilitate the anxious student's ability to focus attention on the task; use positive, self-talk; use relaxation techniques, and acquire strengthened skills to approach the task.

Provide Demonstration on How to Focus Attention on the Task

Highly anxious individuals are concerned with self-evaluation and self-deprecatory thoughts in a testing situation while low test-anxious persons focus on performing the task (Wine, 1971). Students who are faced with a writing or testing situation and have appraised that situation as stressful may indulge in negative self-evaluation and self-deprecatory thoughts. A class discussion on the coping strategy of focusing attention on the task may encourage students to make more positive and productive use of time by directing thoughts away from self-evaluation and self-deprecatory thoughts and toward concrete action.

The concrete action involves conscious questioning about the writing or testing task. For example, the student can be provided a sample writing assignment and a list of focus questions addressing such issues from the assignment as determination of the central topic, the inherent questions posed, and the expectations of the instructor. With a test, a student can be shown how to focus on the topics covered, type of questioning employed on the test, and expected levels of competency.

Illustrate the Use of Positive, Task-Directed, Self-Talk Statements

Positive self-talk (for example, "I can do this") is an effective strategy to cope with anxieties (Crowley, Crowley, & Clodfelter, 1986; Harris & Johnson, 1983; Meichenbaum, 1972). Also, positive self-talk used in combination with relaxation techniques reduces feelings of anxiety (Johnson, Shenoy, & Gilmore, 1982; Smith & Nye, 1989).

Therefore, after attention is directed to the writing or testing task, the anxious student may find positive, task-directed, self-talk statements helpful. For example, the following self-talk statements, adapted from Meichenbaum and Deffenbacher (1988) may be shared with students as a technique to focus their thoughts positively:

I can relax.
Stop worrying. Worry is unproductive.
I am doing my best.
I know this material. Why fuss and fret?
I've solved similar problems before, and I can find a way to complete this project.
I'll make a plan, and I'll complete one step at a time.
I can do the first step in my plan.
The first step is complete. I can do this!

Train Students in the Use of Progressive Relaxation Techniques and Deep Breathing

A combination of positive self-statements, relaxation techniques, and strengthened study skills is an effective technique to manage stress (Barrow, 1982; Lent, Lopez, & Romano, 1983). In conjunction with directing attention to the task and using positive self-talk, students may use relaxation techniques to relieve anxiety feelings. In addition, slow, deep breathing used with progressive muscle-relaxation exercises is effective in handling stress (Meichenbaum, 1972).

Progressive muscle-relaxation techniques are based on the premise that muscle tension is associated with anxiety and that anxiety will decrease if tense muscles are relaxed (Rimm & Masters, 1974). In progressive relaxation exercises, the individual relaxes the main muscle groups of the body by tensing and relaxing voluntary muscles.

While some students may benefit from professional counseling on the use of relaxation techniques, the business communication instructor may provide basic training in the use of the following relaxation suggestions which are adapted from Rimm & Masters (1974), Wolpe and Lazarus (1966), and Meichenbaum (1972):

Sit comfortably in a chair or reclining chair, and let yourself relax as much as you can.
Take slow, deep breathes.
Concentrate on progressively tensing and relaxing each muscle group focusing on the tension and the subsequent feeling of relaxation (for example, clench your right fist; clench tighter and tighter; study the tension in your fist, hand, and arm; relax your hand; concentrate on your feelings of relaxation).
Concentrate on taking slow, deep breathes and feeling the relaxation.

Progressive relaxation exercises can be used to relax the entire body (eyes, neck, shoulders, arms, hands, trunk, legs, and feet) by tensing and relaxing muscle groups, and by taking deep breathes. Instructors can lead students through a short routine involving a limited number of muscle groups in a matter of minutes.

Prepare Students to Use Test-taking Strategies

High test scores are dependent upon content knowledge, and knowing the subject content of the test should relieve anxiety feelings. Anxious students, however, may not have enough confidence in their degree of knowledge to prevent debilitating test anxiety. Combining their content knowledge with general test-taking ability may enhance their confidence for testing situations. Test-taking ability, known as test-wiseness, is an interaction of the test-taker's cognitive skills and the characteristics of a test to gain a higher score, and is separate from knowing the content of the test. When knowledge and reasoning do not yield the answer, students may benefit from test-taking strategies.

General principles of test-wiseness include how to use time, avoid errors, guess, and use deductive reasoning. Specific test-wiseness principles focus on how to adapt test-taking strategies to particular content and how to correct response cues. The following general test-taking suggestions, adapted from How to Take Tests by Jason Millman and Walter Pauk (1969), should assist students in developing improved test-taking techniques:

Set a time pace for the test.
Use the entire time allotted for the test.
Read the directions carefully, and look over the entire test before starting the test.
Attempt every question. Omit or guess difficult items, and come back to these items later.
Focus first on items which yield the most points.
Ask for clarification of an item.

Prepare Students for the Writing Assignment

Many business communication instructors have developed pre-writing techniques to guide students in preparing assignments. These techniques should help students plan assignments and, at the same time, reduce feelings of anxiety. Encouraging students to ask questions until the assignment is understood, be realistic about preparation time, set priorities, prepare a work schedule, maintain a flexible work schedule, create an environment conducive to work or study, prepare an outline, and write a rough first draft may help students approach the task better prepared and reduce writing apprehension. While many of these skills may be already developed, instructors may provide direct assignment-specific guidance. For example, an instructor might provide an estimated time requirement or suggested priorities for the assignment. Reminders of instructor availability for outline and rough draft assistance may also encourage earlier initiation of outlines and rough drafts, resulting in an enhanced sense of preparation.

The process of helping writing and/or test anxious students in business communication starts with the identification of affected students. The Writing Apprehension Test and the Achievement Anxiety Test serve that purpose. The possible influences of these anxieties on course selection and career selection should be explained to these identified students. An explanation of the characteristics of writing and test anxious students will help these students recognize these characteristics in themselves. Self-intervention strategies to equip students to cope with writing and test anxiety can then be

included in instruction. Through instructional leadership, writing and test anxious students can be trained to focus on the writing or testing task, to use positive self-talk, and to relax during the writing or testing situation. In addition, general test-taking knowledge and organization in pre-writing planning can be developed to reduce the writing and test anxiety of students.

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COMMUNICATION STRATEGIES OF PSYCHOLOGICAL TYPES

Mary Vielhaber Hermon, Eastern Michigan University

Those who study and those who practice the art of communication have long recognized the variety of strategies and techniques used by successful communicators. At the same time, psychologists have focused our attention on the variety of personality variables and types found in people. These differences in communication styles and psychological types help to explain the rich diversity found among people in organizations and their approaches to communication. In recent years researchers and practitioners have argued that individual types seem to have preferred communication strategies in common. Jean Kummerow, author of "Talking in Type" (1987) has identified various communication strategies used by individuals who share the same psychological type. Kummerow's approach, while intuitively appealing, has not been validated with research.

The purpose of this study was to determine if different psychological preferences lead to predictable communication strategies. The analysis begins with a brief explanation of the Myers-Briggs Type Indicator which was used as a way to measure psychological type. Relevant research focusing on communication strategies and psychological type is also discussed. A description of the study conducted to validate communication strategies of psychological types and the results are also presented. Finally, conclusions and research implications are examined.

WHAT IS THE MYERS-BRIGGS TYPE INDICATOR?

The Myers-Briggs Type Indicator (MBTI) is an instrument developed by Katherine Briggs and Isabel Briggs Myers to measure psychological types of individuals and is based on Carl Jung's theory of psychological types.

The MBTI is used widely in organizations today to help people understand their own psychological preferences and to learn to deal with others who are different. A 1986 Fortune magazine article estimated that over 1.5 million people took the MBTI in American businesses during 1986. Consulting Psychologists Press, the publisher of the MBTI, sold two million copies last year and claimed that the MBTI is the most widely used personality measurement (Consulting Psychologists Press, 1991).

Essentially, the instrument measures the strength of one's psychological preferences on four scales: extraversion-introversion, sensing-intuition, thinking-feeling, and judging-perceiving. The following description of the eight preferences is based on the explanation provided in Brownsword's It Takes All Types (1987).

Extraversion and introversion are defined as ways of relating to the external world. Extraverts focus attention and energy on the world outside themselves, while introverts focus attention and energy on the world inside themselves. Extraverts are energized when they are with others; are good at meeting new people; are likely to speak first, and think later; are generally easy to get to know; and may be unaware of what's going on inside of them. Introverts value time alone; must exert an effort to meet new people; are likely to suffer from the "Why didn't I think to say . . ." syndrome; are introspective -- very aware of inner reactions; and generally difficult to get to know.

The second set of preferences, sensing and intuition, are defined as two ways of collecting and generating information. These preferences deal with our ways of perceiving the world. Sensing types perceive through their five senses and focus on details. Intuitives rely on a sixth sense for perceiving and emphasize meanings, possibilities, and relationships among ideas. Sensing types are quick to grasp details; are realistic; can be quick to see solutions to practical, concrete problems; and may have trouble seeing solutions to complicated, theoretical or abstract problems. Intuitives, on the other hand, are imaginative; are quick to see the 'big picture'; enjoy theory and abstraction; and are likely to be impatient with or ignore practical, concrete problems.

Thinking and feeling are two ways of making decisions. Thinking types use logic to make decisions, while feeling types rely on their values to make decisions. It is important to note that feeling types do not make emotional decisions, rather they decide on the basis of what is important to them. Thinking types focus on logical, impersonal constructs; emphasize the content involved in a decision; screen out their own emotions and the emotions of others in decision making; need to know that they have been treated fairly; and are good at exploring logical, impersonal consequences of actions or decisions. Feeling types find it difficult to focus on the content of a decision; are more people oriented in their decisions; are good at assessing human impact of actions or decisions; and sort out and apply their own values as well as the values of people or institutions that matter to them in making decisions.

The final set of preferences, which were added to the original Jungian classification by Briggs and Myers, are judging and perceiving. These preferences describe life style orientations. Judging types relate to the world in an organized and orderly manner, while perceiving types relate to the world in a flexible

and spontaneous way. Judging types prefer to make decisions, while perceiving types tend to prefer gathering in more information. Judging types work best when they can plan their work and stick to a plan; like to get things settled and finished; may decide things too quickly; want to get right to the point; and are time and deadline oriented. Perceiving types adapt well to changing situations; want all available data; do not mind leaving things open for alterations; may have trouble making decisions; and tend to think there is plenty of time.

The MBTI is a forced choice questionnaire that indicates which of the opposite preferences a person uses and which of the four preferences is dominant. It is important to note that everyone has the ability to use all eight of the preferences, but according to Jung and to Myers and Briggs, we tend to have and develop one preference over another.

COMMUNICATION AND PSYCHOLOGICAL TYPE

Communication differences have long been a concern of those who study psychological type. In a keynote address to the First National Conference on the Users of the Myers-Briggs Indicator, Isabel Myers talked about the problems with communicating to other types: "You must have noticed that some people are much easier for you to communicate with than others. It's rather a shock to find occasionally, by accident, that a communication you thought you made did not arrive at the other person's ears or brain in anything like the form it left you. This difficulty can be dealt with in part if you have a workable notion of what the other person's type is" (Myers, 1977).

This idea of adapting one's communication to another's type has been acknowledged to be one of the key uses of the MBTI. In the MBTI Manual, Myers and McCaulley (1985, p. 50) suggest that the MBTI is being used "to learn approaches that are most likely to earn agreement and cooperation from each type; and to increase understanding by 'talking the language' of different types in the group." This statement clearly suggests that different types use different communication strategies and that the effectiveness of our communication may depend on our understanding what communication strategies are preferred by the various types.

In Gifts Differing (Myers, 1980, p. 210), Isabel Briggs Myers provides suggestions for using understanding of type to enhance communication between thinking and feeling types and between sensing and intuitive types. She urges communicators to make use of the preferences they notice in others, while also being true to the communication preferences of one's own type.

Please Understand Me by Kiersey and Bates (1978), Type Talk by Kroeger and Thuesen (1988), and Life Type (1989) by Hirsh and Kummerow all describe typical problems which occur when different

types communicate. For example, Kroeger and Thuesen depict a typical communication gap between extroverts and introverts.

> A true-blue extrovert can walk into the room, present a situation, ask for an opinion, arrive at his own conclusion, thank anyone who happens to be in the room, and walk out, while never interrupting his own thought process. . . . An introvert reverses the thought process -- he works inwardly, explores a number of possible scenarios, reaches some kind of conclusion about them, and never says a word to anyone. (p. 36)

With such contrasting communication styles, it is not surprising that these individuals with opposite preferences would have difficulty working together to solve a problem.

These descriptive approaches to communication interaction promoted by MBTI authors and consultants are often translated into prescriptive recommendations for communicating with opposite types. To date, little empirical research has been conducted to validate these communication recommendations. The following study was designed to analyze whether psychological type determines communication strategies.

METHOD

Questionnaire

A questionnaire was designed to measure communication strategies. Since communication strategies and preferences may depend on situational characteristics or constraints, questions were written so that respondents assessed preferences regarding their supervisor's communication strategies in situations involving organizational changes. This approach assumes that the respondents' choices regarding supervisory communication strategy will give us insight into their own preferred strategies.

"Talking in Type" developed by Kummerow (1985) was used to identify common communication strategies of various types. Similar strategies were paired by preference scales so that respondents made a choice between a communication strategy based on the four preference scales. For example, one question asked respondents to choose a preference for a supervisor who had either a logical, rational communication style (thinking) or a friendly, personable style (feeling). Four questions were based on extrovert-introvert strategies; four questions for sensing-intuition strategies; four questions for thinking-feeling strategies; and four questions for judging-perceiving strategies.

Subjects

Data was collected from a sample of employees from a construction

department in a midwestern company. While the sample was primarily composed of construction workers and technicians, several first-line supervisors also participated in the study. Participants were given Form G of the MBTI and were asked to complete the brief questionnaire designed to test their communication strategies. The total number of cases used in the statistical analysis was 108.

Data Analysis

A chi-square analysis was used to determine whether there were significant differences among communication strategies preferred by the types in the sample. Table 1, at the end of the paper, displays the results of the analysis.

RESULTS

Several significant results were obtained. There were two significant differences found on the sensing-intuition scale. Sensing types clearly prefer a supervisor "who seems practical and realistic about changes at work," while intuitives prefer a supervisor "who seems imaginative and creative about changes at work" ($x^2 = 10.14$, df =1, $p < .001$). Sensing types also prefer supervisors "who emphasizes well-thought-out, detailed plans for changes at work," while intuitives prefer a supervisor "who emphasizes the challenges and possibilities for the future related to changes at work" ($x^2 = 8.50$, df = 1, $p < .05$).

There were also three significant differences on the judging-perceiving scale. Judging types prefer a supervisor "who doesn't surprise them with changes at work and who gives advance notices of changes when possible," while perceiving types prefer a supervisor who "is willing to be spontaneous about bringing in new information and implementing changes at work" ($x^2 = 18.13$, df = 1, $p < .001$). Judging types also prefer a supervisor who "makes detailed action plans with time tables for changes at work," while perceiving types prefer a supervisor "who allows plans for changes at work to be spontaneous and flexible" ($x^2 = 17.43$, df = 1, $p < .001$). Another similar question also produced significant differences. Judging types prefer supervisors who "focus on completing planned projects involving changes at work," while perceiving types prefer supervisors who "are flexible about projects involving changes at work and who encourage modifications in the plans" ($x^2 = 4.53$, df = 1, $p < .05$).

One additional difference was found on the extroversion-introversion scale. Extroverts prefer supervisors who "seem focused on the people involved with changes at work," while introverts prefer supervisors who "seem focused on the new ideas related to changes at work" ($x^2 = 4.56$, df = 1 $p < .05$).

Although no significant difference was found on the thinking-feeling scale, there are several possible explanations. First, since the sample was dominated by thinking types (83 thinking, 25 feeling), the likelihood of discovering a significant statistical difference between thinking and feeling types was minimized. Also, since the work environment was clearly oriented to the thinking function with a reliance on following systematic procedures for construction projects, the possibility of feeling communication strategies to be predominant was lessened.

CONCLUSIONS

Several key conclusions can be drawn from this study. First, there are significant communication differences between judging and perceiving types. As a result, communicators should be aware of their type preference on this scale and monitor its effect on the receivers with whom they communicate. In addition, communicators also can use strategies that allow both types to talk comfortably about change, its plans and timetables. For example, during the initial planning process, judging types should withhold their tendency to reach closure and allow the perceiving types to bring up additional facts and ideas that can contribute to the final project. Once the plan for change is agreed to, perceiving types need to understand the judging types' desire for clear expectations for completing the steps outlined in the timetable. With some adaptation on both the judging and perceiving types' part, greater understanding and commitment to a project is possible.

Sensing-intuitive communication differences are also important for communicators to consider. Incorporating the needs of the sensing types for specific details and a practical approach while still allowing room for the intuitive's need for creativity and future possibilities will result in more satisfactory communications for both types. Perhaps, the way to accomplish all this is to begin with an opportunity to discuss possibilities and then to focus in on issues of practicality and specifics.

Finally, this study suggests a need for further testing of the prescriptive approaches advocated in the psychological type literature. While this study has shown that communication differences do exist, further research with a more diverse sample may provide further insight into how communication strategies are related to the psychological type of individuals.

TABLE 1
COMMUNICATION STRATEGIES AND PSYCHOLOGICAL PREFERENCES

Communication Strategies	N	x^2	p
Extroverted (E) /Introverted (I)			
E = "Focus on people and change"	52	4.56	<.05
I = "Focus on new ideas and change"	56		
Sensing (S) / Intuition (N)			
S = "Practical, realistic messages"	68	10.14	<.001
N = "Imaginative, creative messages	40		
Sensing (S) / Intuition (N)			
S = "Well-thought-out, detailed plans"	68	8.50	<.05
N = "Challenges & possibilities"	40		
Judging (J) / Perceiving (P)			
J = "Advanced notice of changes"	73	18.13	<.001
P = "Spontaneous about changes"	35		
Judging (J) / Perceiving (P)			
J = "Detailed action plans"	73	17.43	<.001
P = "Flexible plans for change"	35		
Judging (J) / Perceiving (P)			
J = "Completes planned projects"	73	4.53	<.05
P = "Flexible about projects"	35		

Degrees of freedom = 1
N = number of individuals

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PUBLISHING

ARE TEXTBOOKS CONTRIBUTIONS TO SCHOLARSHIP?

Gerald J. Alred, University of Wisconsin-Milwaukee

> "Some innovative textbooks . . . represent primary means of communicating the results of extensive research. Such means of conducting research and formulating theory require considerable investments of time, imagination, expertise, and energy. When they meet appropriate standards of scholarship, therefore, they should carry appropriate credit in tenure and promotion review."
>
> Scholarship in Composition: Guidelines for Faculty, Deans, and Department Chairs.
> Conference on College Composition and Communication

For many within and outside the academic community, the answer to the question I've posed is easy: No. Recently, I heard an administrator describe textbooks as "bathetic exercises that rob time from professors who should be performing 'real work.'" For some publishers too, textbooks are simply "product." One publisher, mocking this view, quipped that he was in the business of "selling paper." Even a thoughtful critic like Kathleen Welch (1987) implies that textbooks can be thought of as commodities: "Of the hundreds of pounds of freshman writing books produced each year," Welch begins her article, "few are constructed with any overt indication that composition theory has ever existed" (p. 269). I have myself complained about the endless march of "clones" and new editions that are published to compete with the massive used book operations.

Often the scorn heaped upon textbooks seems disproportionate to its object. Moreover, to the casual observer, references that dehumanize the production of textbooks make it difficult to envision a flesh and blood writer as "author," whose product is after all a result of the writing process that we often celebrate.[1]

Audience Addressed, Audience Constructed

One reason many people find it so easy to reject textbooks as scholarship is an assumption that students (not "scholars") are the textbook's primary audience. Such an assumption is

understandable as I consider the audience addressed by the design of textbooks on my shelf. Many of them are flashy and colorful, presumably designed to appeal to the student audience. The "scholarly works" on my shelf are more conservative in design, presumably addressed to the serious scholar who is not impressed by flashiness.[2] But more than the design, the language, the pedagogical devices, and the exercises in textbooks seem addressed only to the student reader.

However, most textbook authors and publishers have long understood that while the audience directly addressed in textbooks is the student, the instructor is the primary audience. It is the faculty for whom textbooks are constructed because they adopt textbooks, not students. It is for the profession that publishers construct their booths at conventions, not students. Because students must read the textbooks faculty select, of course, the challenge for authors is to balance the need to make theory clear for students while allowing teachers room to maneuver in the classroom.

Perhaps a more subtle challenge for authors is knowing that their textbook will construct much of the students' image of instructors and their work. Thomas Kuhn (1970) also notes this power in science textbooks which are, he says, sources of authority from which not only students, but even "other scientists and laymen take much of their image of creative scientific activity" (p. 136).

Textbooks and the Evolution of Theory

The deeper problem of textbooks originates from their function in many disciplines. Thomas Kuhn (1970), for example, points out that science textbooks merely "expound the body of accepted theory, illustrate many or all of its successful applications, and compare these applications with exemplary observations and experiments" (p. 10). Robert Connors concurs but illustrates how textbooks on writing, unlike texts in science and many other disciplines, historically have not only embodied the theoretical paradigm for the discipline but formed it as well: "During the eighteenth, nineteenth, and early twentieth centuries, composition theory and pedagogy were overwhelmingly shaped by one great force: textbooks" (p. 178).

For example, S. C. Earle (1911) complains in his book Theory and Practice of Technical Writing that the few current texts show only "the finished product but do not indicate to the bewildered writer how he may produce the best results" (p. vi). Determined to change the paradigm, Earle provides a fascinating definition of technical writing that suggests both the social construction of language and the composing process of the engineer that anticipates Jack Selzer's conclusions in "The Composing

Processes of an Engineer" (1983), written 72 years later.

But even more recently, writing texts have created theoretical paradigms as well as helped them gain acceptance. In 1954, Gordon Mills and John Walter's Technical Writing presented new forms of (technical) discourse, or "special techniques of technical writing," which were based on the authors' study of hundreds of technical documents. Mills and Walter's paradigm became the basis of much research and theory for a generation of technical writing instructors and scholars who both supported and attempted to replace it. Even though many of their findings were reported in a research report, it was their textbook that established the paradigm.[3]

In 1976, Mathes and Stevenson attempted to displace the current paradigms, asserting in their textbook, Designing Technical Reports, that it "differs substantially from most technical writing texts, which usually begin with questions of report format, technical style, sentence structure, or mechanics . . ." (p. xvi). Mathes and Stevenson summarize their theory in an "egocentric organization chart" (p. 15) which, as its title suggests, shifts the technical writing paradigm from "techniques" to the view of the writer's relation to and awareness of multiple audiences.

Most recently, Paul Anderson's 1987 textbook, Technical Writing: A Reader-Centered Approach, attempts to shift the paradigm again, focusing on the reader's process. Paul Anderson goes so far as to acknowledge his own indebtedness to previous textbooks:

> "Many of the insights that underlie this book come from [James W. Southers and Myron White's] classes and from [Souther's] book (coauthored by [White] in the second edition): Technical Report Writing. . . ."
> Three other technical writing textbooks have also taught me a great deal about what and how to teach; people familiar with these books will see their influence in the pages that follow" (p. vii). (my italics added)

He then lists Houp and Peasall's Reporting Technical Information (1968), Mills and Walter's Technical Writing (1970), and Mathes and Stevenson's Designing Technical Reports (1976).

While some textbooks by themselves create new theoretical pardigms, other textbooks (like many articles) published in the interim may nonetheless be contributions that refine theory. Such textbooks, in fact, provide a way to test theories or modify them to accommodate practice and pedagogy in inventive ways that create new theory. For some publishers, the textbook review process is part of a rigorous, persistent, and inventive dialog. Far from unique, such dialog that creates new concepts

has been typical for many of the textbook projects in which I have participated as a reviewer and as an author.

Textbooks, Common Wisdom, and Paradigms

I have heard for many years a common wisdom that most writing textbooks which are contributions to scholarship and the discipline have not been adopted widely. This common wisdom is partly based on a historiography that links the lack of professional training for teachers with unsophisticated textbooks. Robert Conners (1986) states, for example, that in the early Nineteenth Century the "less skilled and less highly trained teachers" turned to "question-answer textbooks like Greene's abridgment of Blair and the mass-produced stereotyped editions of Blair that featured the mindless catechetical questions of Abraham Mills" (p. 183). As recently as 1978, Donald Stewart suggested that theoretically outmoded composition textbooks flourish because teachers are not professionally trained, thus not up to date. Considering the rapid development of professionalism in all areas of writing during the last 25 years and that major adoption decisions are now usually made by experienced faculty and writing directors, to hold such a view today seems rather anachronistic.

The common wisdom that texts on the theoretical cutting edge fail may also be based on a belief that true scholarship must be esoteric, remote, and inaccessible--all features that guarantee commercial failure. Thomas Kuhn (1970) proposes another scenario for science textbooks: "If I am right that each scientific revolution alters the historical perspective of the community that experiences it, then that change of perspective should affect the structure of postrevolutionary textbooks and research publications" (p. ix). If Kuhn is correct, the fact that new theories are not reflected in writing textbooks may be more an indictment of the persuasive power of the theories than it is an indictment of the textbooks. That is, if a new theory is elegant and persuasive, some textbook authors will use it to construct their textbooks. If those textbooks are skillfully written, instructors (both up-to-date and not so up-to-date) will be persuaded to adopt those texts because of the power of both the writing and theory. As the theory's success is reported at meetings, more textbooks will be published that embody the new theory--and so on, until the new theory is the basis of most textbooks.

In the creation of new theory over the last 50 years, Robert Conners (1986) sees "a struggle for epistemological primacy between journals and textbooks, and textbooks are changing because they have begun, for the first time, to lose the battle" (p. 191). I would like to reject Connors' military metaphor. I do not see battle lines; rather, I see lines of influence

between and among textbooks and articles. Furthermore, writing textbooks create new theory not because someone has drawn a line in the sand--rather, because they are essentially and inevitably theoretical.

Mike Rose (1983) suggests this view in "Speculations on Process Knowledge and the Textbook's Static Page":

> "Now, as I've tried to suggest, composition texts hold knowledge of a kind different from that found in history or literature or biology or astronomy texts. It is process knowledge for solving complex open-ended problems. This makes the composition text a rare kind of text, indeed" (p. 211).

That is why, as Rose also suggests (1981), students do not easily or frequently learn to write from writing textbooks. I would go further: students cannot learn to write from a writing textbook alone because learning to write is a fluid process that takes place outside the textbook and often outside the classroom. Textbooks are, in essence, theoretical frameworks for both teachers and students in this special kind of learning process. It is precisely because textbooks are theoretical that Kathleen Welch (1987) observes that, even when texts do not acknowledge their theoretical asumptions, they are nonetheless based on this unconscious theory" (p. 269).

Writing textbooks also play a more significant role in creating theory than texts in other disciplines because for writing--especially business and technical writing--theory, practice, and pedagogy are not easily divisible. In technical and business writing, for example, theory organizes and validates common sense, intuition, and individual experience; however, practice in the workplace tests, fulfills, and reforms theory. Because their context is the workplace and their theory both rhetorical and functional, technical and business writing textbooks may most fully embody the synergism of theory, practice, and pedagogy.

Conclusions and a Modest Proposal

Are textbooks contributions to scholarship? If we accept the easy answer ("no"), we will certainly produce a self-fulfilling prophesy. If we consider them as commodities and disregard their theoretical nature, their power to create and modify theory, and their multiple audiences, we will get the sophisticated, ineffective books Mike Rose (1981) describes. On the other hand, if we consider textbooks as important, complex publications which are equal to all other works as potential contributions to scholarship, we will take the textbook writing process more seriously and research them with the scrutiny they deserve. Consider one small result.

Publishers now often determine (contractually) the content of a preface because they define it as a "marketing device." The result is that many prefaces are vague and do not reveal the author's writing process or theoretical assumptions. Kuhn (1970) complained similarly that science textbooks are "persuasive and pedagogic," but "a concept of science drawn from them is no more likely to fit the enterprise that produced them than an image of a national culture drawn from a tourist brochure or a language text" (p. 1). If, however, we consider writing texts as potential scholarly contributions, authors must then use prefaces to make major statements about their theoretical assumptions and research methods as well as reveal their own writing process. Textbook prefaces, written in this way, will become meta-theoretical documents by revealing the author's underpinning theory and intentions.

As shown earlier, the prefaces of writing textbooks in the past have come close to serving that function--and, despite corporate pressures, some have in recent times. Paul Anderson (1987), for example, uses his "Acknowledgments" section to state: "While writing this book, one of my major goals has been to devise a framework that will help us as teachers to integrate our instruction in the standard forms of technical communication with the rhetorical and process-oriented approach that many of us take" (p. vii). Anderson goes on to list books and articles seminal to his work, including E. D. Hirsh, Jr.'s Philosophy of Composition (1977), Steven Toulmin, Richard Rieke, and Allan Janik's An Introduction to Reasoning (1984), Richard E. Young, Alton L. Becker, and Kenneth L. Pike's Rhetoric: Discovery and Change (1970).

By expecting that prefaces of texts will make such statements, tenure and promotion committees will be able to "read" them to determine the nature of the book's contributions. In addition to their contributions to theory building, such prefaces would reveal precisely how the book's theoretical framework substantially differs from previous texts. Such prefaces should explain how the book contributes to the discipline, describe the nature of the author's research, and cite relevant sources.

Such prefaces would obviously be longer than most of those in current textbooks, but they would be of great value. They would help committees judge if the book is internally consistent, allowing a comparison of the theoretical framework described in the preface with what is communicated to the students and instructors in the chapters. Detailed prefaces would likewise help journal reviewers assess the place of the text within the discipline. Such prefaces would, obviously, make the text selection process easier by helping teachers know if the book is compatible with their own theory, whether that is egocentric,

reader-centered, current-traditional, process based, or "none of the above."

Perhaps if textbooks are considered as scholarship, we can ensure that they are the products of scholars, not disposable commodities produced by some textbook assembly line. Some may even become "bright, lively, and creative" books and "make important theoretical statements that change the nature of the discipline" as Winterowd (1989, p. 150) says they can be. And, if we consider textbooks as scholarship, they will not only be "real work" as they are now--they will be our work.[4]

Footnotes

1. For an excellent analysis of authors' personal experiences, see both de Beaugrande and Winterowd.

2. This difference in design is relatively recent. Textbooks published before World War II generally use designs identical to traditionally "scholarly" books of the day. (Alred, Reep, & Limaye, 1981)

3. The impact Mills and Walter's report, The Theory of Technical Writing (University of Texas, 1953), was negligible compared to their textbook, Technical Writing (1991), now in its fifth edition.

4. I wish to thank Erik Thelen for invaluable advice while reviewing many drafts of this paper. I must also thank Charles Schuster, Donna Gorrell, Katherine Wikoff, Mohan Limaye, Joyce Hinnefeld, and many other colleagues for their helpful discussions in the preparation of this paper.

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RESPONSE TO GERALD J. ALRED

Diana C. Reep, The University of Akron

Professor Alred points out, and quite rightly, that the audience for a textbook is not primarily students, but fellow professors. Yet, I believe we need to consider that the very fact that other professors are involved in the process, from the first idea to the last edited page, actually may diminish--if not entirely negate--the possibility of a textbook standing as an author's scholarly contribution to professional writing.

A textbook is the most rigorously reviewed publication any author-professor is likely to write. The author's proposal for a textbook is sent by the potential publisher to four or five professors in the field--often other textbook authors--and thoroughly evaluated for its potential in the marketplace. If the proposal brings the author a contract, every page of the textbook then is reviewed and rereviewed during the writing process. This reviewing system is more thorough, more persistent, and often more debilitating than any review process for a scholarly article or a scholarly book. As a result of these reviews, the author's original concept/theory/plan for the textbook is altered--or even scuttled. Since the reviewers, who are all riding their own hobbyhorses, inevitably contradict each other, the textbook author must find a way to appease them and blend the conflicting advice.

And these professor-reviewers are not the only influence on the final form of a textbook. Professor Alred notes that editors now often control the content of a preface. They do more. They ask for a textbook that is "different" and "unique" but also "just like the others on the market." Editors also burden the textbook author with such "theoretical" guidelines as "make sure the book is under 480 pages" or "put in lots of checklists."

As Professor Alred suggests, the theory framing a textbook may certainly be new or an intriguing blend of several theoretical approaches, but that theory is crafted at least partially by reviewers and editors, so the textbook reaches its public--still other professors in other places--not as a scholarly article would, presenting the author's own construct, but as an amalgamation of theories, only portions of which represent the author's original intent. Thus, a textbook represents an author's labor but not entirely the author's theoretical stance.

The review process is only one barrier to a textbook achieving a scholarly level. Another is the current three-year schedule for new editions. If a textbook is successful, we can be fairly confident that there will be a new edition in three years. But can we seriously say that a textbook's theoretical framework and pedagogical approach has been adequately disseminated, tested, or even digested in that three-year span? No. We know

that the textbook is unlikely to need revision in three years because the theory and pedagogy have been tested and need revision. The marketplace demands a new edition--primarily because of the used book crisis.

We have all seen the shadowy textbook buyer lurking in the academic halls, clutching a wad of bills and buying--for a few dollars--the "free" textbooks that professors have received from publishers. Currently, the publishing industry is losing millions of dollars a year because of the flood of examination copies entering the used book market. Not only does the normal turnover of used books create pressure for a three-year new edition cycle in textbooks, but the used book buyer accelerates the rush to new editions. This rapid revision schedule works against current textbooks reaching the scholarly level we would like to see. Most important, the three-year revision cycle merely increases the influence of the outside reviewers and editors and decreases the influence of the author.

Finally, a recent barrier to textbooks reaching a scholarly level is the latest innovation of textbook production: a publisher offers a selection of chapters or units covering specific topics, such as paragraph organization. The individual instructor at a school chooses a number of topics--rather like picking items from a cafeteria menu--and later "customized" textbooks arrive for a business writing class on campus. The instructor in the next office can choose different topics from the publisher so that different textbooks arrive for that instructor's business writing class. This "production"--I don't want to call it publishing--effectively destroys any theoretical concept or pedagogical framework that might support a textbook.

If textbooks are to be contributions to scholarly inquiry, authors need to regain control over their writing, as Professor Alred suggests. The rush to please reviewers with diverging views, the need to revise regularly, the pressure from the used book market, and the rather frightening possibility that publishers might eliminate completely the controlling author must all be resisted, both by current and future textbook authors and by those professors who make up the audience for the textbooks--the teachers in the classroom. Textbooks must be created by scholars who are free to develop theory and pedagogy as they see fit, even if those concepts require more than 480 pages.

CONVENTION PROGRAM

Association for Business Communication

Midwest Regional Meeting 1991

Akron Quaker Square Hilton Hotel
Akron, Ohio

Conference Chair: **Thomas Dukes,**
The University of Akron

Program Chairs: **Joseph F. Ceccio and Diana C. Reep,**
The University of Akron

Book Exhibits and Fund Raising: **Alice MacDonald,**
The University of Akron

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Wednesday, April 3

7:00 - 9:00 pm Cocktail Party—Conference Room B

Sponsored in part by HarperCollins Publishers

Thursday, April 4

8:30 - 9:00 am **Opening Session—Ballroom B**

Thomas Dukes
The University of Akron
Kitty O. Locker
Ohio State University
Bernadine P. Branchaw
Western Michigan University

9:00 - 9:50 **Session A—Conference Room A**

Gary F. Kohut (Session Chair)
University of North Carolina—Charlotte

John G. Bryan
University of Cincinnati
— Graphic Violence; or Distortion in the Design of Charts and Graphs

Robert R. Johnson
Jennie Dautermann
Miami University
— Team Teaching, Group Writing and Computers: Collaboration in the Electronic Professional Communication Classroom

Session B—Ballroom B

Gary Beason (Session Chair)
Purdue University

Kim Ballard
Purdue University
— Tales of Variance: Exploring Effects of Students' Professional Writing Experience in a Business Writing Class.

Linda Yost
Purdue University
— Helping International Students Communicate on the Job: Strategies that Internationalize Business Writing Courses

Gail Porter
Purdue University
— Training Peer Tutors for Business Writing: A Way to Meet Student Needs in the University Writing Center

9:00 - 9:50 **Session C—Conference Room B**

Debbie A. Renshaw
(Session Chair)
Western Michigan University

Charles A. Lubbers
Misssouri Western State College
Brenda S. Fergen
Charles, Charles and Associates

The Influence of Communication Apprehension in the Business and Professional Communication Course

COFFEE PROVIDED BY SOUTHWESTERN PUBLISHING

10:00 - 10:50 **Session A—Conference Room A**

Jules Harcourt (Session Chair)
Murray State University

A. L. Plastow
The University of Akron

Reality Orientation in the Business Communication Classroom: Use of Computer-Assisted Writing Techniques

Gary F. Kohut
University of North Carolina—Charlotte

Computer-Based Business Communication Instruction: Directions and Applications

Session B—Ballroom B

Deborah Van Hoewyk
(Session Chair)
University of Michigan

Michael Downey
Purdue University—Calumet

White-Collar Promotion: Inequality in Real Estate, Financial, and Corporate Organizations

Gladys DeVane
Laura F. Smith
Indiana University

Multicultural Involvement: An Ethical Issue for American Business

10:00 - 10:50 **Session C—Conference Room B**

Linda G. Brown (Session Chair)
Ohio State University

Gayle R. Cratty
Cleveland State University
— A Classroom Corporation

Elizabeth Lariviere
The University of Akron
— The Writing of "Critical" Letters

11:00 - 11:50 **Session A—Conference Room A**

Karen Nantz (Session Chair)
Eastern Illinois University

Debbie A. Renshaw
Joel P. Bowman
Western Michigan University
— The Impact of Document Production on Readers

Diane Albanese
University of Illinois—Chicago
— The Relationship Between Dynamism and Perceived Instructor Effectiveness

Session B—Ballroom B

James E. Porter (Session Chair)
Purdue University

James E. Porter
Purdue University
— Introduction: Computer Technology and the Expanding Role of the Business Writer

Tharon Howard
Purdue University
— Wide-Area Computer-Mediated Communication in Business Writing

Janice Tovey
Greg Wickliff
Purdue University
— Desktop Publishing: Writer as Designer

James E. Porter
Janice Tovey
Greg Wickliff
Purdue University
— A Rhetorical and Document-Based Approach to Hypertext

Session C—Conference Room B

William Coggin (Session Chair)
Bowling Green State University

11:00 - 11:50	Richard Fiordo *Pennsylvania State University*	A Semiotic Appraisal of Instructional Films for Business Communication: A Focus on *Doing Business in Japan* and *The Non-verbal Agenda.*
	Kitty O. Locker *Ohio State University*	Participating in Videoteleconferences
12:30 - 2:00	**Lunch – Ballroom C** Present Ticket at Entrance Speaker: John D. Ong, CEO, *B. F. Goodrich*	
2:15 - 3:05	**Session A – Conference Room A** Judy Boli (Session Chair) *The University of Akron*	
	Bill Houston *ABB Process Automation*	An Analysis of the Organization of Several Technical Communications
	Deborah Van Hoewyk *University of Michigan*	Communicating for Change
	Session B – Ballroom B Paula Pomerenke (Session Chair) *Illinois State University*	
	Linda G. Brown *Ohio State University*	Clustering as Brainstorming Technique in the Business Writing Classroom: Positives and Pitfalls
	Sandra J. Nelson *Indiana State University* Douglas C. Smith *University of Kentucky*	Instructional Techniques to Reduce Writing Apprehension and Test Anxiety in Business Communication

2:15 - 3:05 **Session C—Conference Room B**

Thomas Dukes (Session Chair)
The University of Akron

Karen S. Nantz
Eastern Illinois University

Using Computer Software and Other Media to Improve the Teaching and Evaluation of Basic English Skills in Business Communication Classes

William O. Coggin
Bowling Green State University
Linnette R. Porter
University of Findley

Designs on the '90s: Creating a New Order of Information Design for Business and Technical Communication

3:15 - 4:05 **Session A—Conference Room A**

Judy Boli (Session Chair)
The University of Akron

Daryl L. Kerr
University of North Carolina—Charlotte

Buying a Resume? Ask the Dealer What Optional Features are Available

T. F. Carney
University of Windsor

The Short Proposal as the Means of Securing a Job Interview and Job Contract

Session B—Ballroom B

James Hullinger (Session Chair)
University of Nebraska at Kearney

Marjorie Rush
Purdue University

Improving Professional Writing Through Visual Thinking

Elizabeth Sanders
Purdue University

The Influence of Computer Technology on Teaching Design in Professional Writing

Janice Tovey
Purdue University

The Role of Design in the Creation of Resumes

3:15 - 4:05 **Session C—Conference Room B**

Ginny Richerson (Session Chair)
Murray State University

Mary A. Hall
University of Pittsburgh
Goals and Restraints Affecting Business Communications

Craig Newburger
Jerry Butler
University of Arkansas—Little Rock
"Fast-Tracking": Ain't No Golden Parachute, So Don't Slide Off the Rainbow

4:15 - 5:05 **Session A—Conference Room A**

Douglas Smith (Session Chair)
University of Kentucky

Michael Dobberstein
Purdue University—Calumet
Desktop Publishing: Technical Problems in Teaching a Metatechnology

Paula Pomerenke
Illinois State University
Using Rightwriter 3.1 in a Business Writing Class

Session B—Conference Room B

Sandra Nelson (Session Chair)
Indiana State University

Mary K. Kirtz
The University of Akron
The Dictates of Writing For Business: Collaborative Writing as a Coercive Act

Jules Harcourt
A. B. "Buddy" Krizan
Murray State University
Readiness Of Students to Use Word Processing in the Basic Business Communication Course—A Pilot Study

Friday, April 5, 1991

7:30 - 8:20 **Breakfast—Ballroom C**

Present Ticket at entrance

Sponsored by the College of Business Administration
The University of Akron

8:30 - 9:20 **Session A—Conference Room A**

John Beard (Session Chair)
Wayne State University

Jone Rymer
Wayne State University
— Videotaping for Facilitating Collaborative Composing: An Exploratory Study of "Video Interrupt"

Kathryn Rentz
University of Cincinnati
— A Reconsideration of Grammar Instruction in Business Communication Courses

Session B—Ballroom B

John Bryan (Session Chair)
University of Cincinnati

J. Kenneth Horn
Southwest Missouri State University
— The Perceived Relationship Between the Speech Course Completed by the Business Graduate and One's Oral Communication Proficiency on the Job

Elizabeth Brockman
Kelly Belanger
Ohio State University
— One-or Two-Page Resumes: Does It Make a Difference?

Session C—Conference Room B

Helen Sharp (Session Chair)
The University of Akron

Florence Grunkemeyer
Ball State University
— Using "VIS" To Teach the Employment Unit

8:30 - 9:20

Kathleen Krone
Ohio State University

Communicating "Jointness" in Trying Times: A Message Analysis of Public Labor-Management Communication

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9:30 - 10:20

Session A—Conference Room A

Judy Boli (Session Chair)
The University of Akron

Mary Ann Eiler
American Medical Association

Visual and Verbal Dimensions of Minimalist Documentation

Joel P. Bowman
Bernadine P. Branchaw
Bindi Shah
Western Michigan University

Computer-Based Instruction in Business Communication

Session B—Ballroom B

Elizabeth McCord (Session Chair)
University of Cincinnati

Patricia R. Kelvin
Ohio State University

Writing Out Wrongs: Teaching Bias-Free Communication

Patricia G. Wojahn
Wright State University

Exploring Controversial Issues in the Business Writing Classroom

Session C—Conference Room B

Pernell Hewing (Session Chair)
University of Wisconsin at Whitewater

James D. Bell
Southwest Texas State University

Consulting and Professional Development

Katherine Piller
Ohio State University

Learning and Adapting to the Discourse Community: A Case Study of New Engineers

10:30 - 11:20 **Session A—Conference Room A**

Jone Rymer (Session Chair)
Wayne State University

Vincent Brown *Ohio State University* Kitty O. Locker *Ohio State University* James E. Porter *Purdue University* Kathryn Rentz *University of Cincinnati* Priscilla Rogers *University of Michigan*	Solving Problems in Qualitative Research

Session B—Ballroom B

R. Neil Dortch (Session Chair)
University of Wisconsin—Whitewater

Pernell H. Hewing *University of Wisconsin—Whitewater*	Business Communication Facing the Challenge of Diversity
James R. Wilcox *Bowling Green State University* Ethel M. Wilcox *University of Toledo*	The Unintended Message: Customer Focus Sabotaged

Session C—Conference Room B

Gerald J. Alred (Session Chair)
University of Wisconsin—Milwaukee

Helen M. Sharp *The University of Akron*	Students "Selling" Their Own Businesses
Karen Griggs *Purdue University*	Wetlands Preservation and Energy Conservation: Two Public Policy Writing Projects

11:30 **Lunch – On Your Own**

1:15 - 2:05 **Session A – Conference Room A**

Joseph F. Ceccio (Session Chair)
The University of Akron

Gerald J. Alred
University of Wisconsin – Milwaukee
Are Textbooks Contributions to Scholarship?

Respondent:
Diana C. Reep
The University of Akron

Session B – Ballroom B

Jerry Parsons (Session Chair)
University of Nebraska – Lincoln

Mona J. Casady
Southwest Missouri State University
How a Pretest Can Maximize Writing Performance

Kelly Belanger
Jane Greer
Ohio State University
Beyond the Group Project: A Blueprint for a Collaborative Writing Course

Session C – Conference Room B

Carol C. Gigliotti (Session Chair)
The University of Akron

Vincent J. Brown
Ohio State University
Authors and Audiences in R&D Writing

Elizabeth A. McCord
University of Cincinnati
"But What You Really Meant Was...": Multiple Drafts and Legal Liability

2:15 - 3:05

Session A – Conference Room A

Jerome Curry (Session Chair)
Pennsylvania State University

R. Neil Dortch
University of Wisconsin–Whitewater

Ethics Codes of 12 Companies

Session B – Ballroom B

Jane Greer (Session Chair)
Ohio State University

Lisa Tyler
Ohio State University

"We Want To Be Left Alone": NCR's Efforts to Communicate Its Resistance to an AT&T Takeover

William G. Covington, Jr.
Huntington College
B. Irvin Summers
Irv Summers, Inc.
Sharon L. Summers
University of Kansas

Making the Discipline Interview More Effective: The Supervisor-Subordinate Interaction

Session C – Conference Room B

Thomas Dukes (Session Chair)
The University of Akron

Carol C. Gigliotti
The University of Akron

Consulting in Business and Industry Using a Communication Trichotomy Approach

Jerry M. Parsons
University of Nebraska–Lincoln

The Indirect Approach: Strategies in Writing the *Preliminary Draft – For Discussion Purposes Only* Business Report

3:15 - 4:05 **Session A—Conference Room A**

Mary Kirtz (Session Chair)
The University of Akron

Mary E. Vielhaber
Eastern Michigan University
— Communication Strategies of Psychological Types

John D. Beard
Wayne State University
— The Concept of the Teacher-Researcher

Session B—Ballroom B

Vincent Brown (Session Chair)
Ohio State University

Taggart E. Smith
Purdue University
— Survival in the Academic Arena: Suggestions for Women Faculty

Jerome Curry
Pennsylvania State University
— Technical Writing Assignments: A Realistic Approach

Session C—Conference Room B

Jone Rymer (Session Chair)
Wayne State University

Bruce McComiskey
Purdue University
— Multi-Perspectival Problem Solving in Business Writing

Joel P. Bowman
Bernadine P. Branchaw
Western Michigan University
— Using Neurolinguistic Programming to Improve Classroom Communication

4:30 **Business Meeting—Conference Room A**