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ABSTRACT

Prepared by representatives of industry and the educational community, the papers in this collection address issues of interest in the field of technical communication. Specific topics discussed are as follows: (1) the Resource Materials Project of the Council for Programs in Technical and Scientific Communication (CPTSC), (2) the relationship between the CPTSC and the Society for Technical Communication (STC), (3) the possible certification of technical communicators by the STC, (4) the role of the humanist in technical communication at Rensselaer Polytechnic Institute, (5) the criteria for appointment and promotion of teachers of technical communication at the Massachusetts Institute of Technology, (6) Colorado State University's program to teach the handicapped to become technical and scientific translators, (7) the University of Michigan's internship program in technical communications, (8) technical advertising, (9) graduate programs in biomedical communication at the University of Nebraska's Medical Center, and (10) technical communication program development at Texas A&M University. A copy of the constitution of the CPTSC is included. (FL)

COUNCIL FOR PROGRAMS IN TECHNICAL AND SCIENTIFIC COMMUNICATION

PROCEEDINGS

Editor

Thomas E. Pearsall

April 14-15, 1977
University of Minnesota
St. Paul, Minnesota

Preface

The 1977 meeting held at the University of Minnesota was the fourth annual meeting of the Council for Programs in Technical and Scientific Communication.

Once again we had good informal discussions and formal presentations. The formal presentations were taped and transcribed and later edited by the speakers themselves. The edited talks form these proceedings.

At the end of the meeting we discussed needed constitutional changes and elected officers for the following year. The new constitution that resulted is included in these proceedings. The elected officers are as follows:

President	Thomas E. Pearsall
Vice President	Thomas L. Warren
Secretary	David L. Carson
Treasurer	James E. Connolly
Member-at-Large	Virginia Book

The Council decided to hold next year's meeting at Rensselaer Polytechnic Institute.

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VICE-PRESIDENT'S REPORT ON THE COUNCIL's RESOURCE MATERIALS PROJECT

by
Thomas L. Warren
Oklahoma State University

We are all familiar with the attitudes many schools have about courses in technical communication. Since most departments are faced with declining enrollments, the attitude either hardens when suggestions are made to begin or add to courses in technical communications (many senior members fear losing students in their classes), or the department decides to increase offerings in technical communications even to the point of offering a major or concentration. Technical communication courses are beginning to be very attractive to many schools. If you attend C.C.C.C. or N.C.T.E. or M.L.A., you find out just how many schools are starting courses or expanding offerings in technical communications. More and more people attend these meetings to learn: "What do I do now? My dean (or department chairman) has told me that I am going to teach technical communications." Once in a while you hear someone ask how to start an entire program in technical communications. The N.C.T.E. Committee on Scientific and Technical Writing is working hard to help people answer that first question. It has published one book of essays already (edited by Don Cunningham and Herman Estrin). I have collected a number of course syllabi[1], and Bob Donovan of the Air Force Academy has put together an annotated bibliography of textbooks. A collection of lesson plans and teaching outlines is being assembled by Dwight Stevenson. The first question is well answered. What about the second?

Two years ago in Boston, Roland Brown from Florida came to find an answer to that second question. I hope that he got the information he needed. Maybe that was what gave Tom the idea for compiling that kind of information, because, at our Fort Collins meeting, I was asked to put together material on establishing programs in scientific and technical communications. I sent a letter to as many schools as I could find who have programs beyond the service course level. I received materials from 13 institutions[2] while 22 institutions did not send material, or were not contacted.[3]

I gathered the materials, condensed them and prepared folders for each school. I want to pass them to you for your inspection. For those representing schools for which there is not a folder, I have the forms I used and would appreciate your completing as much as possible here. Check all the information on the condensation for accuracy and completeness. A status sheet asks you to respond for materials there and materials missing. Please complete it. I will make a copy of the status sheet for you so that you can take it home as a memory tickler.

Send me the missing materials as soon as possible so I can get the project to the printers.

(end of session)

NOTES

[1]A collection of materials including Donovan's annotated bibliography (59 items), a bibliography of books in scientific and technical communication (27 pages), and course syllabi (19 schools) may be obtained by writing to the OSU Bookstore. Reproduction cost for the package will be $4.85, including postage (check payable to OSU Bookstore). Send to: OSU Bookstore; Att: James Robinson, Oklahoma State University, Stillwater, OK 74074.

[2]Massachusetts Institute of Technology, Renselaer Polytechnic Institute, Illinois Institute of Technology, Carnegie-Mellon, Michigan Technological University, Clarkson College, Colorado State, University of Washington, Boston University, Metropolitan State College in Denver, University of Minnesota (St. Paul), Alderson-Broaduss College and the University of South Dakota at Springfield.

[3]University of Nebraska, Oregon State University, University of California--Santa Barbara, Texas A & M, Kalamazoo Valley Community College, Florida Technical University, City College of New York, University of Florida, University of Utah, Iowa State University, University of Wisconsin--Stout, William Rainey Harper College, Rock Valley College, Arizona State University, California State College at Fullerton, University of Missouri, Rochester Institute of Technology, San Diego Evening College, Oklahoma State University Technical Institute, Spokan Community College, Texas State Technical Institute and South Dakota State University.

RELATIONSHIP BETWEEN THE COUNCIL FOR PROGRAMS IN TECHNICAL AND SCIENTIFIC COMMUNICATION AND THE SOCIETY FOR TECHNICAL COMMUNICATION

Myron L. White
University of Washington, Seattle

I have just seen this item on the agenda and have been caught a bit by surprise. I did come prepared to do some informal reporting about the relationship between STC and the Council for Programs in Technical and Scientific Communication. However, I had not counted on doing so under such formal circumstances.

In any event, after the Council organized itself a year ago, I wrote a short article about it for the newsletter of STC's Puget Sound Chapter. This got picked up by other STC publications around the country, and a former STC president, Mary Schaeffer, a very good friend of mine, apparently became upset over the notion that teachers couldn't find within STC an opportunity to carry on their activities. She was very concerned that the Council would become a competing organization. I don't look on it as such and was somewhat surprised that anyone else would.

Anyway, I received a request from Russ Terry, the current president of STC, to report on the Council to the STC Board of Directors when it met in Seattle with the Puget Sound Chapter last September (1976). I trust that I represented the Council reasonably well. I tried to allay any fears and suspicions which I thought the members of the Board might have and tried to justify the existence of an organization like the Council. I pointed out that teachers have special problems which most people going to STC conferences aren't excited over talking about. Nevertheless, we need and like to talk shop just as much as manual writers do. The difficulty is that there usually are more manual writers at STC conferences than teachers, and our opportunities to talk shop are never extensive enough. Consequently, an organization which does provide these opportunities is very important.

I must admit that my report on the Council got little response from the Board. As a matter of fact, the general impression I carried away was that my "command performance" had been a kind of formality, possibly to satisfy Mary. I got no hostile questions and, indeed, very little comment at all. So I'm not prepared to tell you exactly what the status of our relationship with STC is. At the same time, I'm not particularly concerned about it. The fact that so many people here are members of both organizations bears out my own belief that each organization has its unique value and that, in the long run, the relationship between the two should present no problems. It would be a mistake, of course, to compete with or cut ourselves off from STC because there's no doubt that it is the largest organization of actual practitioners in the field. I think we all recognize as

educators that we can't always agree with practitioners and their employers about what we should teach students who are going to take jobs in technical communication, but, on the other hand, if we cut ourselves off completely from the practitioners, what we have to provide our students is likely to be of little or no use to them when they start seeking jobs.

I would like to report on another matter that isn't strictly related to this agenda item. Recently, I have been using some of the STC Anthology publications as texts in courses that I've been teaching out at Washington. At first, I was concerned about their cost because I assumed that students would have to buy them at the prices for nonmembers. I investigated, however, and found that as a member of STC myself, I can order these books at membership rates and, in fact, can do so through my university's bookstore. It is necessary, however, to let the STC headquarters office in Washington know that such an order is on the way. Otherwise, it will charge for the books at the nonmembership rate, and, when you add the bookstore's markup to that, the anthologies can run pretty high.

As satisfactory as this arrangement is for me, however, I think that its availability only to classes being taught by STC members is both unfair and shortsighted. I believe that STC should have a general education discount and told the Board so at its September meeting. To my surprise, the Board needed no persuasion. It decided virtually on the spot to introduce an educational discount sometime this Spring. I'm not sure what it will be finally, but the last figure that I saw in a letter from Ron Field was 25% off the membership price for copies of five or more. Incidentally, at the moment, my students in a publications management course are buying one of the management books in the Anthology series at $6 (with bookstore markup), the price which you and I would pay for the same book as STC members.

Getting an educational discount at this time is especially important because STC probably will raise the prices of its books. Actually, the prices at which its publications are being sold now are possible only because of a very sizable subsidy from Westinghouse. Ron Field, Assistant to the STC President for Publications, can manage his budget at Westinghouse so that STC pays considerably less than cost for production of its publications. He is of the opinion, however, as I am too, that to continue to rely on this subsidy is a mistake. The Society should come closer in its pricing to the real cost of its publications. I got the impression in September that the Board of Directors was about evenly divided on the issue, but Ron and some members of the Board are pushing very hard for an increase. The increase he has in mind would raise the Anthology books from $6 to $10 for STC members and from $9 to $15 for nonmembers. I've argued against pushing the prices quite so high, but Ron's got the cost figures and I don't, so I can't argue very well.

(QUESTION: What as STC members can we do to keep the prices down? Ten dollars is awfully high. What do the Anthology volumes run, 100 pages?)

They run 100 to 150 pages. The one on publications cost management is longer, but the one I'm using now on publications management is about 100

pages. The one on cost management is meatier in some respects, but it's rather specialized.

(COMMENT: I like to use them; I think they're really good.)

An educational discount of 25% off the new members' price would help to keep the cost down for our students. It would lower the price from $10 to $7.50. Adding a bookstore mark-up of $1.50 means that we're talking about a $9 cost to our students. And, let's be fair. Textbooks generally are going up; they're pretty expensive. At the same time, there is nothing in the field that is comparable to some of these Anthology books. I believe that we're going to have to get used to the fact, as our students are, that they're going to pay a good deal more for books than they have in the past.

I did point out to the Board that textbook sales represented a rather good market for the Society's books, provided the prices were reasonable. But the Society has two problems. It is not selling many books now and can only see the cost-price relationship in terms of the present sales volume. The other problem is that the Society is not really set up to handle textbook orders, as many of you probably know. As members of STC, the best that we can do is to persuade the Board to recognize our needs and the potential market which our students offer. Perhaps some complaints will help to keep prices down.

(Mike, I have a question which relates to the first issue you spoke of--your presentation to the board of STC. Did you get the impression at all that their lack of reaction was a reflection of indifference?)

No, I don't think they're indifferent. I think that those who probably are most concerned are puzzled over why we exist. I tried to make as clear as I could what the reasons are for an organization of this kind. Maybe my arguments were convincing, but I'm not at all sure about that. I suspect that they still don't quite understand. They're not quite sure what to do about what looks to them like a splinter group. I don't feel that we are such, of course, or that we are competing with STC in any significant way. We're simply the result of a felt need. But whether or not I convinced the Board of all this, I just don't know.

POSSIBLE CERTIFICATION OF TECHNICAL COMMUNICATORS BY STC

Richard M. Davis
School of Engineering
Air Force Institute of Technology

(Dick, I don't want to put you on the spot, so just say "no" if you want to, but could you follow up a little on what Mike has been saying? For about two years now, Dick has been conducting a study on certification for STC and has been gathering a lot of information. Would you tell us, just very informally, what you've been finding out?)

Certainly, I'd be glad to give you a rough idea of what we've been doing and what we've found. We have not yet submitted a report to the Board, although a draft is out for coordination now and we will be making a report to the Board in May.

Apparently there had been some rumblings of discontent and feelings here, there and the other place for some time to the effect that STC should consider the possibility of accrediting technical communicators. There had been discussion of this for some years, I take it, in several different parts of the country. There had been a semi-organized effort to develop such a program in California, and quite a bit of talk about it in other places. So about two years ago, Pete Smith, who was then the president of STC, established a committee to look into the question of certification. The committee has had various names and is presently called the Committee on Certification. Its purpose is to look at the question of possible certification of technical communicators, try to see what some of the problems might be, and make a recommendation to the Board whether or not STC should undertake such a program. It is not our charter to begin developing such a program, but only to recommend whether or not STC should do it. The committee is composed of eight people: myself, Dick Russell, Bob Weaver, Clark Beck -- these names will be familiar to some of you, perhaps not to others -- Emily Schlesinger, Stello Jordan, Walter Crites, and John Colby. Our direction was pretty simple, and the action that we took was pretty direct.

First, each of us separately drew up a preliminary position paper in which we outlined some of the things that occurred to us as considerations that should be carefully worked out before any decisions were made, and we circulated these preliminary positions among ourselves. We made them separately -- without collaboration -- and on a given day each committee member sent a copy of his own to each other committee member -- so, theoretically at least, no one was influenced by what anyone else said.

Pete Smith kicked off the committee's effort with an editorial in Technical Communication describing what we were going to do and urging the membership of STC to respond. We also had a number of articles and releases in Tieline and Intercom as the committee's work progressed.

During the first year we sent letters to all of the chapters, suggesting that certification was an issue that could be of some importance to them and to the membership and that we would like to know what their members thought about possible certification by STC. We included sample questions for discussion, issues that might be addressed, and things of that sort. Some chapters responded, but most didn't. The second year we sent a similar letter to all of those chapters that had not held meetings on the subject, and again we got a few responses. In our various releases to Tieline and Intercom and elsewhere, we also urged members to respond individually. We suggested, "If your chapter does not have a meeting, by all means send us a letter and give us your thinking. And if you can, go twist your chapter chairman's arm and get him to have a meeting, because we want to know what you think about possible certification by STC" -- the thought being that the separate thinking of thirty some odd hundred people would be much better than that of eight individuals who would otherwise be immediately accused of being an elitist group trying to run a Facist operation.

We also wrote individually to each Fellow and Associate Fellow of the Society. There are about 50 of them and we solicited their comments, quite apart from any response they may already have made either as members of chapters or as people who had sent individual comment. Only one of them had already sent comment, so there was no big problem there. After some time had passed, we send a second letter to all of those Fellows and Associate Fellows who had not yet responded and said, "Hey now, we hate to jostle your elbow, but how about it?" and we wound up with a 75% response from the group. One gentleman in this room did not respond, and I'm sure he has good reason. I won't reveal his name.

Another thing we did was to start a considerable collection of articles, brochures, and other published pieces about certification programs. As you probably know, quite a number of organizations either are considering the possibility of something like certification, have just instituted such programs, or have just decided they shouldn't for one reason or another, generally associated with the nature of the positions they would be certifying or the kinds of things their people do. So we collected quite a bunch of these, reproduced them all, and sent copies to everybody on the committee and, presumably, everyone looked them over carefully.

Well, the result of all of this was that the response from individual members of STC was abysmal. They may have been sitting out there thinking things but they sure weren't telling us. The response from the chapters was very poor. A number of them held meetings, apparently there was spirited discussion, and they sent us results of those meetings. In some cases they sent us copies of individual questionnaires filled out by the membership; in some cases we heard nothing further from them after they said, "We are now going to hold a meeting." But anyway, the response there was not much. As I have said, the response from the Fellows and Associate Fellows was pretty good, but then we had addressed individual letters to them and individual second letters to those who didn't respond to the first one, so we would have thought that we might have had a pretty fair response. The upset, as I say, was that the total response was a little bit disappointing. In all, I

suppose that we heard from something over 200 people, one way or another, and the answer to the basic question of whether STC should or should not undertake such a program was split right down the middle -- a little bit heavy on the "no, they should not" side. Maybe 55-45, something like that. Generally, the individual members and the Fellows and Associate Fellows were against it. Within the individual chapters that responded, some chapters' responses were almost entirely pro and some were almost entirely con, and this, I think, is a fine illustration of the fact that the way in which a meeting is run often determines what the result might be. Tom's chapter, incidentally, responded very well.

Our recommendation to the Board probably will be that STC should not undertake certification at this time, and we have quite a number of reasons for that. First, there was no clear evidence of interest in the membership. It may be that the members have interest, but they certainly didn't show it to us. Secondly, we couldn't see any real demonstrated need for certification. Where you're dealing with a profession which may in some way jeopardize the health or well being of the community, sure, you need some kind of certification. But we didn't see that kind of need. Further, we didn't find any evidence that employers would support or honor the folks who would be certifidd as a result of a certification program. So, we couldn't really see any benefit coming to the individuals certified in return for all of the time and effort that might be required to become certified -- beyond whatever personal satisfaction might come from having such certification. There were several other prime concerns; I'll mention just one. We saw the possibility of fairly substantial legal questions that would have to be answered. For example, what would happen if someone were denied certification and then used that as a reason for claiming that he was denied a job? Suppose he sued STC for preventing him either employment or advancement within some employment, whether it were a legitimate case or not? On the other hand, suppose some blithering idiot were certified and then made some horrible blunders that cost somebody large amounts of money. Why did we certify him and what did we mean when we certified him? Those are some things that will cause us, I believe, to suggest to STC that they should not begin a certification program at this time.

We will probably suggest several kinds of things that STC might undertake if they want to pursue further action. One would be to get a better feeling for what the membership thinks. It may be that the membership is indifferent. On the other hand, it may be that our methods of trying to plumb their thinking simply were not effective. This might be determined by including a set of boxes to check on the next STC ballot: Are you for certification or against it? A tear-out form might be included in Technical Communication with a short accompanying article indicating roughly how the committee stood, what some of the issues are, and asking the reader to tear the form out and send it in. There are a number of things of this sort that might be done to better determine the thinking of the membership.

Some action might be undertaken to find out what employers think of the possible value of certifying technical communicators. Possibly we might ask them what a communicator should be able to do and what they think the

criteria should be for judging competence. This might very well provide some indication of potential employer interest and, at the same time, stimulate further interest on the part of some employers. Some might say "Yes -- who are these folks? I never know in advance whether they can do the job or not. Yes, by George, it would be convenient to have some sort of mark beyond the fellow claiming that he has done this or claiming he has done that or having his pal give references which are bound to say he's a fine fellow and an excellent communicator." At any rate, we believe that some kind of action might be taken to determine whether employers and potential employers of communicators feel that certification would be of any value to them. It seems to the committee that certification has to be of value to them to mean anything in the long run.

The report will also indicate that the legal question should be very carefully studied. Perhaps other organizations that have recently faced the problem of certification should be contacted and we should review with them just what their problems were and how they were handled. I suppose many of you know that there is a certification program in England. The folks who developed and administer it have been very kind and have invited someone from STC to come over and spend time with them. They will let STC go through their records and they'll show everything they did and every move they made. Their certification is a little different kind of thing than STC might contemplate, but the folks over there are very accommodating and would be glad to help out in any way they could.

So, there's how we stand. Once the report is coordinated and any necessary changes made, and I suppose I'll get some violent reactions from some committee members, that's essentially what I think we'll be presenting to the Board in May.

THE RPI GRADUATE STUDENT IN TECHNICAL WRITING, CLASS OF '77: THE ROLE OF THE HUMANIST IN TECHNICAL COMMUNICATION

The problem in technical writing today is that it doesn't really exist, and technical writing doesn't exist expressly because no one can really define what it really is. Obviously, without a clear definition of the object at hand, we academicians, in particular, are at a loss to build a paradigm about it and thereby demonstrate its true academic character. The rest of the world may be, as Matthew Arnold wrote "Wandering between two worlds, one dead,/ The other powerless to be born," but we teachers of technical writing are just plain wandering about on the "darkling plain." Or so it would seem.

THE CHANGING NATURE OF TECHNICAL WRITING

Not that we do not conduct some of the best practical writing courses known to man, for we do this regularly, and some of us have been doing it for over three decades. Moreover, our success is aptly documented by the rush we find throughout the world to get into the business of teaching technical writing. In 1972, Tom Pearsall and I conducted a survey for the STC which showed there were only eleven colleges and universities which offered four-year programs in technical writing. Tom's most recent figures however, show that there are now at least twenty. You must admit this is excellent growth for a discipline without paradigm, and despite the pleasure we derive from watching our sometime orphan grow, we are all, I suspect, a bit uncomfortable about not being able to define what it is that we are after, any better than we can. Not that we haven't tried.

Attempting to Define Technical Writing

Some say technical writing has to do with explicating the objective world of truth. Others call it "honest writing." Many like to think of it as being

scientific writing. Still others insist upon identifying it as a branch of expository writing, or as writing whose sole purpose is to communicate clearly on a first reading. Teachers I admire insist that technical writing is expository writing without persuasion or argument. Some others call it writing for the world of work. And although it is certainly all of these, technical writing cannot be simply restricted to any single one of these definitions. Its problem, to borrow a line from Huck Finn, is that it's about as various as a dead cat. This brings us to our problem, which stated simply is this: "How can we develop and sustain coherent technical writing programs when technical writing, itself, is so various?"

The Variousness of Technical Writing

In today's world specialization within all professions seems to be an unstoppable trend, and our systems of higher education seem, more and more, willing to educate students to fit into specific niches within industry, business, the professions, and government. Interestingly, most of us once thought that the profession of technical writing was just this narrowly specialized, but as it turns out, we were wrong.

Not long ago I asked a group of my students to jot down all of the types of writing they could think of which might be grouped under the term technical writing. The results will not surprise you. When we compiled a joint list we had over a hundred types--ranging from advertising writing through insurance underwriting. At this point we gave it up as a hopeless task. Even within a single large company we might come up with thirty or forty clearly differentiated classes of writing tied to specific job descriptions, and all would be technical writing. Given this variousness, it becomes strikingly apparent that it would be impossible for any technical writing program to address such "variousness" through

specific courses. A look at some statistics drawn from Rensselaer's twenty odd years of experience in conducting technical writing programs at the graduate level will, I think, bear this out.

The Technical Writing Student of the Past

In 1975 Professor Jay Gould conducted a survey of our approximately 300 master's level technical writing alumni to draw upon their experience as a guide in modifying our program to better prepare our students for the world of work. The data is interesting.

We discover, for example, that only 30% of our former students were still employed as technical communicators. Thirty-seven percent were employed as managers, twenty-one percent as teachers, nine percent worked in public relations jobs of some sort and three percent were unemployed.

From its inception, the Rensselaer program had followed several basic premises. Since its first students were primarily engineers who had decided, for one reason or another, that they would rather write than engineer, the program assumed that the student would bring his own specialized background with him. The program attempted, therefore, to provide the student with a broad, general background in technical communication augmented by a career-oriented supportive graduate curriculum in the area of the student's undergraduate major. This is still basically true today.

The Technical Writing Student Today

The program continues to take a liberal arts approach, if you will, to technical communication. Except for required courses such as Writing and Editing, Writing for Publication, Writing in Industry, and two communication theory courses, the student, with his advisor's approval, selects five other courses from among the university's graduate offerings which seem most pertinent to the student's career goals. That the program has been generally successful is

partially attested to by the fact that most of our graduates who are unemployed are apparently unemployed by choice. Moreover, our graduates who responded to the Gould survey were overwhelmingly positive in their assertion that the program had prepared them adequately for the world of work. Whether the program will be as successful in the future remains to be seen, because the students of 1977 are quite different from their predecessors of 1967, and the class of '67 had already moved far from the 1957 prototype of the engineer who wanted to write. (See Table 1) For purposes of comparison, the following statistics contrast certain characteristics of the class of 1967 with those of the class of 1977.

The Class of 1967 vs. The Class of 1977

In 1967 40.7% of our students possessed undergraduate degrees in science or engineering, but by 1977 this percentage had fallen to 22%. And, whereas 78% of the class of 1967 were male, 50% of the class of '77 were female. We should note, however, that a higher percentage of the women in the class of '77 had scientific backgrounds than did those of the class of '67. At this point it is interesting to compare some other differences in the undergraduate preparation of the two groups.

In 1967 only 43% of the students with other than scientific backgrounds had taken at least two undergraduate courses in science or engineering. By 1977 this figure had risen to 75%. In 1967 only 36% of our students with undergraduate degrees in the sciences or in engineering had taken at least one undergraduate course in either writing or communication. By 1977 the proportion had risen to 100%, and 50% of the class of '77 had taken at least two such courses. So it would appear that both groups of students are in some ways better prepared in 1977 than they were a decade earlier, but the increasing proportion of students with non-technical undergraduate degrees again raises the ogre of specialization.

TABLE I

SELECTED DATA: RPI M.S. Students 1967 and 1977

Student Category	1967 %	1977 %
Non-Tech Preparation	59.3	78
Prep includes at least two courses in sciences or engineering	43	75
Science/Tech Preparation	40.7	22
Prep includes at least one course in writing or comm.	36	100*
Female	7	60
Male	93	40
Overall Sex Distribution		
Female	22	50
Male	78	50

*50% of the students in this category had taken at least two such courses.

What Employers Want

Employers, in the best of all possible worlds, would like to hire bright young people with Ph.D.'s in science or engineering who also hold M.S. degrees in technical writing. And there is still a very vocal cadre of supervisors which insist it will hire only engineers or scientists as technical writers. Recently, however, I made an informal survey of a number of industries in the northeast which have employed graduates of our program. I found that 30% of the supervisors (mainly holding degrees in engineering themselves) insisted upon hiring engineers. On the other hand, 50% of the supervisors stated that several courses in the sciences usually provided sufficient background, except for a few, highly-technical positions, and 20% insisted that intelligence and aggressiveness coupled with a willingness to learn and the ability to write or edit were the only prerequisites to success in their organizations. It would appear, therefore, that about 70% of the supervisors queried would be willing to hire graduates with non-technical undergraduate degrees so long as they were capable writers and editors. And, of course, our past and current employment records bear this out.

The Need for a "Liberal Arts" Approach

In the best of all possible worlds, it would be nice in a program such as RPI's if we could take the student with a non-technical undergraduate background and recap him or her, as we would a tire, with an impressive new technical tread, but the logistics of this process are overwhelming, and I suspect that we at RPI truly have more faith in the generalist than in the specialist anyway. Flexibility and adaptability are, after all, very important attributes.

As fellow technical communicator Bob Pirsig comments upon so well in Zen and the Art of Motorcycle Maintenance, the division between technology and humanism is, finally, an artificial one, for the same thought processes are required to conceive both the camp stove and the painting, or the radar set and the poem.

And, therefore, the dichotomy is artificially sustained. So in accepting what our experience tells us about the world of technical communication and in accepting the fact also, that it would be virtually impossible to turn out students trained to fit into the specialized niches prescribed by industry, even if we thought specialization a good idea, we are left with basically one alternative. That is that we must listen closely to what our former students say, and judiciously modify our programs to insure that we are doing the best job possible within our capabilities. And so back to the alumni questionnaire.

Adapting to Meet a Changing World

Generally, our alumni thought such courses as Writing and Editing, Writing for Publication, and Writing in Industry were the most valuable parts of our program. So we will not change them very much. Communication Theory, on the other hand, came in for a fair share of brickbats. Many of our graduates thought it too esoteric and therefore not relevant to preparing them for their jobs. As a result we are doing what we can to make our theory courses more relevant, but in no way do we intend to eliminate them. Ninety percent of our surveyed alumni insisted that a general media course would have been valuable to them. They suggested that such a course should introduce the student to audio visuals, photo and art work, printing and typesetting basics, layout, and graphics, and although we have always offered advanced courses in such things as visual communication, we will begin next fall offering a required course in media which will attempt to cover the areas just described from a general rather than from a specialized viewpoint. We do not wish to train photographers, printers, or layout men. We do wish to educate technical communicators.

Large numbers of former students suggested incorporation of a computer science course in our program, so next semester, through the good graces of our computer sciences department, we will offer a course entitled Computer Science for Communication Majors for all of our students who have no background in this area. To meet our alumni's request for formal training in oral presentation,

we have already incorporated required formal oral presentations into three of our core courses, and to meet their requests for more liaison with the real world of technical communication, we have modified our Writing in Industry course to include eight or so guest lecturers. We have also incorporated an increased number of field trips throughout the program.

Only time will tell whether our efforts to be responsive to the needs expressed by our former graduate students without offering narrowly focused trade-school courses will work, but I am inclined to believe that they will. If they do our Class of '78 will be more than good enough to function successfully, if selectively, in the world of technical communication. After all, if technical writing is so various that we cannot yet define it among ourselves, we would probably be remiss in becoming overspecialized in our approaches to education for the field. Writing, finally, is still a humanistic discipline in that its purpose is to convey ideas efficiently to other human beings, and the technical writer more often than not is a humanist-generalist who lives comfortably between the worlds of technology and humanism, linking the two together, whatever the writer's undergraduate preparation may have been.

The Role of the Modern Technical Communicator

As I see it, the technical communicator's role in the twentieth century is, in part, to resolve the problem of the machine in the garden. For the machine is here to stay, and the generalist working as a technical communicator may be better prepared than almost anyone else to insure that we make the best of the machine without letting it destroy the garden.

So I feel comfortable with the concept of generalist as technical communicator, for I believe that only through the general approach can we adequately address the variousness of technical communication. And although some might say that without definition technical writing cannot possibly exist, the discipline's formlessness may be a sign of its mixed humanistic/technological heritage. Un-

definable and, therefore, indistinct as Ralph Ellison's Invisible Man, technical writing is, nevertheless, alive and well today.

* *

DISCUSSION

Chair-- Thank you Dave for a very fine talk. It will, I am sure, inspire some interesting discussion. Are there any direct questions for Dave?

Q-- You mentioned throughout your paper that the dichotomy between humanisim and technology was artificially sustained. Could you speak to that a little bit? Who sustains it? How is it sustained?

A-- The parties in both camps sustain it, although the humanists probably sustain it a little harder, if you will. Those of us who live solely in the humanist camp still tend to look at the twentieth century and the changes it has made in human existence from a nineteenth-century belles-lettristic point of view. That is to say, with horror at "some rough beast slouching toward Bethlehem."

The scientists and engineers, on the other hand, in pursuing so-called scientific truth or the doctrine of getting most material comfort for the fewest dollars, see the humanist as performing a rather minor service role in the scheme of human existence. In its most virulent form this attitude would have it that pictures are to hang on walls to brighten up rooms, or that books, novels, are to read when one cannot possibly find anything else to do.

Of course, these are sterotyped descriptions, perhaps caricatures would be more apt, but as Ralph Ellison says, behind every stereotype there is a very large kernel of truth.

Actually C.P. Snow deals with this much better than I could possibly do, and so does Bob Pirsig in Zen and the Art of Motorcycle Maintenance.

Q-- Sir, please, you should recognize the engineering mind in the humanities department which is worse than the engineering mind in the engineering department.

A-- I think I know what you mean, and I think you're probably right.

Q-- I recall a survey which showed that the kind of people who go most frequently to the symphony, to art museums, to plays come predominantly from the sciences, business, or engineering. I vaguely recall reading another survey which sustains the arts. Maybe it's because the humanist who works with these things constantly wants to get away from it sometimes; doesn't want a busman's holiday. But it is interesting that they support us more than we apparently support them.

A-- Well there are more of them than there are us, and most of them make more money than we do, and besides even if one does think that hanging pictures on walls is only to brighten up rooms, one does, after all, feel obligated to hang the pictures anyway. Perhaps it's a very involuted form of reverse snobbery.

Q-- I'm sitting here like a man in depression which I can't pass up the opportunity to discuss--privately. I'd like to relate a personal anecdote. Would you turn off the recorder?

* *

Q-- Just what is communication theory?

A-- I'm not sure I know, never having had a course in it. It is very difficult to pin down. First because different experts in the field disagree as to what it is, and second because it has changed so much in the past ten years that what it was a decade ago is barely recognizable as a distant cousin of today's version. But communication theory attempts to treat, generally from a social sciences approach, the theorhetical underpinnings of the entire communication process. As such it tends to be highly esoteric and highly abstract, and

as a result it tends to scare off traditionalists in the communication arts--which is to say English teachers. I suspect that the discipline of modern communication for the most part came out of colleges of education where there was a felt-need--note that educationist jargon--to study the learning process using the tools of educational psychology and empirical sociology. And I most definitely think that we as teachers of writing ought to become familiar with what is going on in communication theory, because I suspect that until we do we will never get to know any more about the process of writing than we now do. If we don't, the communicologists will do it for us, and I think such analyses could benefit greatly through being leavened by our attitudes and by the experience we could bring to the task.

However, I must say that many of our graduate students strongly resist learning anything about communication theory.

Q-- Well, as an old RPI guy, let me say that communication theory may be more important to them than they think. As a student, however, I didn't like it and thought the whole thing was a waste of time. But not long ago, I encountered a problem which I couldn't solve. So I finally started to plug the problem into comm theory. I found the loophole, and solved the problem. So I think it's very important that students continue to learn comm theory, and I think it's very important that they be told of its valuable applications. One of the problems is that you have to learn the theory before you can begin to visualize its possible applications, and learning it, so to speak, in the blind is a hard and very frustrating task.

Q-- I'm still not sure what communication theory is.

A-- Me neither. But I guess maybe I ought to try to define it operatively. Communication theory attempts to understand the human communication process through

eclectic methods--using bodies of knowledge from any relevant disciplines, such as psychology, sociology, educational psychology, anthropology, literary criticism, linguistics, physics, et cetera. It often uses mathematical and statistical analyses to reach its conclusions, and, therefore, it is essentially applying scientific methods to problems once thought to be solidly the purview of the humanistic disciplines. So, a lot has happened since Shannon and Weaver.

Q-- But how does it apply to the teaching of technical writing?

A-- Well, as I implied before, we know a great deal, intuitively about the writing process, but we don't know exactly why it is that the process works in the way it does. We don't know much about how thinking works either, and thinking and writing, as we have told our students many times, are very closely related. After all we, when we write, transfer ideas from an amorphous conceptual world to a linear code for the purpose of communicating those ideas to the conceptual worlds of other people. As you know this is an exceptionally complex process which I think is related somehow to Kant's and Coleridge's attempts to define two types of knowing--a surface or linear knowledge on the one hand and a deeper understanding on the other.

If it is true, as many say, that most of today's crop of college graduates can't write, the responsibility partially lies with those teachers of writing whose intuitive perceptions of the process are inadequate to the task. And although we as teachers of technical and professional communication generally employ methods which produce more satisfactory results for students, than some other writing teachers, we too go after it largely from the intuitive standpoint. It would be nice if we could all come to know more cognitively about what makes writing function.

We have some Ph.D. candidates, for example, who are interested in doing studies in socio-linguistics, in readability in applying the techniques of the

social sciences to the process of writing in attempts to learn what is is that makes good writing function efficiently. Dick Davis, who is here in this room with us today, had done some pioneering research along these lines and this is the direction, I think, in which we ought to be going.

When you think about it, we haven't advanced much beyond Aristotle or Horace. Don't you think it's about time we did?

by
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CRITERIA FOR APPOINTMENT AND PROMOTION OF TEACHERS OF TECHNICAL COMMUNICATION

Robert R. Rathbone, Professor of Technical Communication, The Writing Program, M.I.T.

INTRODUCTION

Purpose of Talk

The purpose of my talk is to get your reaction to and ideas on the criteria we are beginning to adopt for appointment and promotion in the Writing Program at M.I.T. In a few weeks we will be developing guidelines to distribute to our staff, so we welcome the opportunity to hear outside voices before the policies and procedures become fact.

Criteria for hiring and promotion (or firing, for that matter) normally are influenced by external conventions as well as internal ones. How one college or university develops its criteria is largely determined by what the current practices are nationwide (or at least at sister institutions). Internally, the criteria for a specific program also are influenced by the practices held by the departments within a given college and, in fact, by those other sections within the same department. Further, guidelines for hiring and promotion of teachers of technical communication often follow those already established for teachers of creative writing and freshman composition. For these reasons, I believe that we need to take a hard look at the book of rules on personnel staffing to determine if changes aren't in order. I hope that my review this morning will aid in the investigation.

Summary of Current Practices

Briefly, the criteria traditionally applied to appointment of teachers of literature and freshman composition to an assistant professorship in a four-year college or university include:

1. A doctorate degree.
2. Three or four years' teaching experience at the college level.
3. Some publication in the literature of the profession.
4. Participation in a professional society or similar organization.

Promotion to associate professor adds:

1. Original research in the professional field.
2. Extensive publication.
3. National recognition of competence by the candidate's peers.

Awarding of tenure and promotion to full professor requires:

1. International recognition of competence by the candidate's peers.
2. Publications of major importance and scope.
3. Exceptional service to the academic community.

Questions Raised by These Practices

When we examine the criteria as they relate to the appointment and promotion of teachers of technical communication, the question of the Ph.D. is the first to arise. Should the degree be a standard requirement for a teaching appointment in technical communication? If so, in what professional field or fields should it be awarded? Are there sufficient degree programs offered in these fields to accommodate those who wish to find positions in the profession? At what level (instructor, assistant professor etc.) should the requirement begin?

The criterion of previous teaching experience also raises some questions. How much college teaching experience should the applicant have for appointment as an assistant professor? Should teaching outside the field of technical communication count? If so, what fields? Should practical experience as a technical writer or editor count? What about in-plant teaching?

What should be considered as "scholarly research" for an applicant for a technical communication teaching position? Should research con-

ducted while working as a tech writer or editor qualify? Should we think of the people we wish to hire as being primarily teachers rather than scholars?

The Regular Academic Ladder

If we relate these questions to appointments on the regular academic ladder for full-time faculty (assistant professor, associate professor, and full professor) we find that, based on current practices of hiring at a majority of universities,

1) A Ph.D. would be required of the applicant, no matter what subject he or she teaches.

2) Teaching experience at a reputable college in the discipline for which the opening exists is required.

3) Published works of scholarly research are "highly desirable" (which means "required" --especially in the higher ranks).

But suppose we have an opening for a teacher of technical writing at the rank of assistant professor and we receive an application from a candidate with the following credentials:

--A B.S. in electrical engineering and an M.S. in technical communication.

--Two semesters as a teaching assistant in an E.E. lab course.

--Two years experience as an instructor, teaching expository writing to undergraduates in the Engineering College of a large university.

--Three years experience as a technical writer for a large electronics firm.

--Publication of three journal articles on some phase of technical communication, in addition to the reports, manuals, brochures, etc. produced as a technical writer.

--Currently preparing, in his own time, a style guide for making video tapes for classroom instruction.

--Membership in the Society for Technical Communication.

--Recipient of these honors and awards:

STC award for the best article written

by a student.

The John Doe medal for excellence in teaching awarded each year to a member of the junior faculty at XYZ University.

If We Followed the Current Practices for Hiring as Stated in the Policies and Procedures of Most Colleges, We Would Have to Pass up This Applicant.

This is not to say that another candidate with equal credentials, plus the Ph.D., might not come along. But the hypothetical case study does imply, and rightly, that there is the danger of good (and sometimes, exceptional) talent being overlooked.

I am not suggesting that we advocate dropping the Ph.D. requirement for college teaching. I do think we should point out, rather strongly, however, that an alternative route should be available for teachers of technical and scientific communication.

Many of you probably work at Institutions that already have special provisions for hiring teachers of music, art, drama, and foreign languages. Isn't it reasonable, then, to include teachers of writing in this category?

THE M.I.T. LECTURER/SENIOR LECTURER PROGRAM

At M.I.T. the department of Humanities has recently adopted a Lecturer/Senior Lecturer Program for hiring and promotion, to serve as an alternative to the regular Institute procedure. We think that it has promise. I would appreciate having your reactions to it and also hearing about any schemes your institutions may be trying. In the past, many posts in technical writing at M.I.T. have been filled by hiring people part time. I dare say you have followed this stop-gap measure too and you will agree, I hope, that it is not the best solution for developing a sound, imaginative writing program.

The Lecturer/Senior Lecturer program now in effect offers a career plan for young teachers already employed at M.I.T. as instructors who do not hold a doctorate and might otherwise have to terminate their services. It also

provides the administration with a means of hiring any exceptional new talent at a higher professional level who otherwise would not qualify for a teaching position because of the lack of a doctorate. In brief, the lecturer position covers the assistant/associate professor levels; the senior lecturer level is equivalent to the full professor level. To quote our policies and procedures document:

"The Senior Lecturer appointment is intended for those whose maturity and professional stature are equivalent to those of full professor."

Main Advantages of the Scheme

1. A Ph.D. is not a prerequisite for appointment in either the lecturer/senior lecturer grade. Teaching experience and experience as a writer replace it.

2. The salary range for hiring a lecturer is wider than that for an assistant professor, permitting the employer to offer pay commensurate with credentials. For example, it is possible for a Lecturer to receive an Associate professor's beginning salary.

3. A teacher with a Ph.D. who was hired as a lecturer, let's say, because no openings existed on the regular faculty ladder, can apply for appointment as an assistant or associate professor later if an opening arises. The appointment is NOT automatic, however. This teacher would have to go through a review and evaluation, just as a new applicant would.

4. Research is not a required function of the lecturer. No 'Publish or Perish". And it is optional for the senior lecturer (but certainly looked upon favorably). Teachers in these ranks, therefore, can devote more time to teaching.

Disadvantages

The major disadvantage in the lecturer/senior lecturer sequence, of course, is that tenure is not awarded. But this is not meant to label the teacher as second-rate.

You will have to look to the tenure policy at your own institutions to evaluate just what this loss means. There are some places where tenure is just a name.

32 Another disadvantage, or perhaps I should say "difference", is that lecturers have a greater teaching load than their colleagues in the

faculty ranks. (At M.I.T. this amounts to three sections vs. two, or nine hours/week vs. six hours of classroom time.) Another possible negative aspect of the lecturer/senior lecturer plan is the bias that a minority of scholars have in this country about sharing the academic scene with non-scholars. This bias often is noticeable in a scenario that casts professors of literature and lecturers of writing in the same department, competing for students and promotions. The confrontation can produce constant bickering and sometimes hostility, but can be avoided, or at least lessened, by an alert administration.

Criteria for Appointment to Lecturer

Initial appointment to lecturer in technical communication is for two or three years. Positions are filled by the Head of the Department of Humanities, upon recommendation of a search and evaluation committee. Criteria for appointment are drawn up by the senior staff member in technical communication (in consultation with the committee.) The following criteria are currently being used:

1) Since the basic responsibility of a lecturer is undergraduate teaching, an applicant for this position must have at least two years of outstanding teaching of technical writing, scientific writing or expository writing at the college level.

2) An academic background that demonstrates general competency in understanding technical subjects and singular competency in communicating about them. This requirement could be satisfied by successful completion of

--Undergraduate courses in the physical and life sciences and/or engineering.

--Undergraduate or graduate courses in technical writing, scientific writing or expository writing, OR courses in which major writing projects are required. (Bachelor's or Master's theses could satisfy this requirement.)

Desirable, but not required:

--Some work (could be part time) or summer employment as a technical writer in industry, government, or business.

--Published work at the journal article level.

Normally, the maximum term of service for a lecturer is six years. Reviews for reappoint-

> ment as lecturer are conducted the second and fourth years.
>
> A review at the end of the sixth year is to determine whether or not to recommend the individual for promotion to senior lecturer.

Criteria for Senior Lecturer

Initial appointment to senior lecturer is for a maximum of five years. Appointments and reappointments are reviewed in a manner similar to tenure and promotion reviews for faculty members, i.e., they are subject to judgment by outside experts and the approval of the School Council and the Academic Council.

The following criteria for appointment and reappointment are used:

1) Outstanding ability as a classroom teacher, not only of undergraduate subjects, but also of advanced graduate subjects.
2) Publication of research on some aspect of technical or scientific communication, or publication of creative writing OR some creative activity other than publication that demonstrates substantial intellectual and creative interests and capacities.
3) Outstanding professional contributions to the Department, the Institute, and the academic community at large (e.g., service on committees, administrative positions, contributions to professional societies.

Quoting from MIT's Policies & procedures:

> Promotion to senior lecturer from lecturer is granted only to exceptionally well qualified and successful teachers, normally after 6 or 7

years as lecturers. Departmental recommendations for reappointment as senior lecturer are formally reviewed by the School council and the Academic Council. The judgment of outside experts (nationally and internationally) in the field of technical communication is considered essential to this review.

In closing, I want to pass out an advertisement we have just circulated nationally. It calls for applicants to fill a teaching position in technical communication. You will note that the position is open to either an assistant professor or lecturer.

DISCUSSION

Q. Your lecturer position is somewhat parallel to that in our university. We have Agriculture Journalism, Information Services and some of the people teach, but for the most part they produce brochures, fact sheets and those kinds of things. And because they are in an academic setting most of them over the years have had academic rank, which includes tenure. Now the thought is that there is some pressure to accept what is known around here as E-track. The pay would be just as good, in some cases better, but they would lose tenure and there is no way that anyone so far has figured out how to keep them from receiving that second-class status. They simply say if we are as good as a professor, then we should have tenure.

A. This is indeed a problem, but could be worse if the salaries weren't equivalent. I asked the chairman of my department, before I left, to give me a ball park figure for the salary that might be available

for this position we're advertising. The appointment salary for assistant professor and lecturer are the same: $15K for about a nine-month appointment. I might add that there are many opportunities in consulting to supplement the base salary for teachers of technical writing. Literature teachers and teachers of creative writing do not get these extras.

Q. What kind of courses come under the category of teaching technical writing?

A. We have one elective course, offered each semester. We had three sections this semester, and probably we will have four sections next fall and spring. In addition, we work in a co-op program with the Engineering Departments, giving writing instruction to undergraduates as an integral part of engineering subjects. In the fall of 1978 we will begin a pilot program with graduate students. The mechanical engineering graduate program is going to petition the faculty for permission to drop the foreign language requirement. They feel that one year of foreign language doesn't do enough for a student and that maybe a year of writing would do more. Mechanical engineering has about 100 students coming into the master's program each year. Of those, maybe 30 will be foreign students. Of the 70 remaining, we estimate that half may need some form of writing instruction.

Q. In your regular courses, do students learn how to use the library sources?

A. The people from the various libraries handle that. All incoming freshmen go through an orientation session on the use of the libraries and again when they select a major. This is another one of the things that the departments handle; we don't do it

ourselves. For example, electrical engineering has its own library, and there is also a general engineering library, a science library, a humanities library, etc.

Q. What type of academic schedule does MIT run?

A. MIT operates on a semester basis: a fall semester and a spring semester, with an independent activity period in between. The month of January is devoted to change-of-pace activities. We have courses in belly-dancing, wine-making -- you name it. This arrangement also means that final exams are over before the Christmas holidays and students can relax.

Q. Have you offered any writing courses to the faculty at MIT?

A. I offered a seminar in teaching writing for faculty members. I sent around a questionnaire first saying what I would like to propose and asking for responses. I had 200 positive responses but only 15 people showed up for the seminar. Actually, I'm told that my percentage of return was rather good!

Q. Have you had many takers for the senior lecturer position yet?

A. Not in our department. We don't have lecturers who are that far advanced. We will have some who will qualify before long, but they're not ready at the moment.

Q. Do you have any teachers without Ph.D.'s who are in the academic track?

A. Yes, we have someone, an assistant professor without a Ph.D., who has been promoted to associate professor. This person probably will not get tenure though.

Q. He may remain as associate professor without tenure or switch over?

A. Probably not. Anything's possible, but the administration does not want the senior lectureship to be a repository for associate

professors who don't make tenure.

Q. If they choose the academic track at the beginning and don't make tenure, then they're out?

A. Yes, that is correct.

Q. Is there a difference in requirements between the lecturer and senior lecturer position -- both of those positions obviously require writing?

A. Yes. Publishing is required by the senior-lecturer. The lecturer is not required to publish.

Q. Yet one of the criteria that you are looking for in the lecturer in tech. comm. is that he publish.

A. For appointment but not to hold the office.

Q. Once he is there he can stop?

A. We hope not. It is not required. If we are going to insist that this fellow teach three sections and not have any time available to do research - then we won't require him to publish.

Q. That's my point. The lecturer could do things like, for example, technical writing, reports - etc. How about your professorial line - is that supposed to be scholarly research? Let me give you an example of a friend of mine, some of you will recognize. When he left the Air Force Academy back in the late 60's he had published two very fine books. One was the Life of Amelia Earhart, the other one the Joint Lives of Nordhoff and Hall. He was looking, of course, to the scholarly professorial rank and he ultimately got very well placed. But he was refused at several institutions because these two books, which were both well received, and required enormous research, were not scholarly. An article in PMLA would have done him more good than two biographies. Now how would you fit into that?

A. I would say they would count, if this person were teaching writing. I would think it very unfair if they didn't.

Q. We had for instance, the novelist Gladys Schmidt, who had only a BA degree from the University of Pittsburgh. She got tenure, of course, and was a full professor and occupied a chair actually before she died.

Q. At RPI we had a similar system, but it's "de facto" rather than formally arranged. We were in the same predicament that you found yourself. Early on the Department of Language and Literature and now Communications was considered as a service department, and a Ph.D. was not considered necessary. What they felt they needed were good teachers. They didn't care whether anybody had a Ph.D. so we're in a predicament now where we essentially have two tracks. We have people who've been around for a long time who do not have Ph.D.'s and now the new people coming in must have Ph.D.'s. They must publish or perish, whatever. Tenure is tough, and the way RPI has handled it is with contracts. We don't use the title lecturer-senior lecturer, it's messy, but as long as the person continues to be a good teacher he can pretty well stay. He has in a sense "de facto tenure". The thing that worries me about these kinds of systems is -- O.K. we give these people contracts, without tenure, and they're subject to the whims of changing administrations. What does a teacher do when he is age 55 and he's got a wonderful record and we get a new department head who doesn't like him?

A. I think the only way that you can look at it is to say that without the second track he wouldn't be able to teach at RPI or, perhaps, at many other places. So one has to make a choice about one's career.

Whether you want to stay in teaching or not.

Q. What is the size of the courses lecturers teach?

A. We try to get each section down under 20 and keep it at 15 if possible. It doesn't always happen, but we like to keep class size down to 15 if we can. We get enrollment figures for the chairman to look at and show that over the past ten years the enrollment has grown, and that the trend says we are going to have this many more people next year. We try to figure ahead of time what enrollments for new courses will be and then present the case to the chairman of our department.

Q. Tell us more about the Writing Program at M.I.T.

A. Our writing program at M.I.T. includes writers in all areas. The creative writers, the poets, the people who teach the short story and the novel, the people who teach science writing and technical writing are all in one large group called "The Writing Program". They number about 15. The program was started as a pilot program so that it could be evaluated by a group of people from outside. They took a whole year to do this evaluation, and they came up with a written report to the dean of the school making recommendations on the program. One of the recommendations was that they felt the writing program should be taken out of jurisdiction of the Department of Humanities and be given an independent status under the dean of the school. We have a lot of centers at M.I.T.; they are groups that grew too large for an individual department and became separate entities, usually under the dean of a school. One of the recommendations of this evaluation was to take the writing program out of the Department and make it a writing center. The Center for Writing Programs or whatever. That recommendation was

not followed. The Writing Program is still under the Department of Humanities, and I guess it will stay there for the foreseeable future.

Q. Does this bother you?

A. It doesn't bother me. I have always worked in the Department of Humanities, and I have always had good relations with the head of the department. But I represent just one phase of the writing program; some of the creative writing people have not had good relationships with the head of the department. Probably, some of them will be leaving. In any event, I think it makes sense to put people who are creative writers, technical writers, science writers together. They should be able to exchange ideas: I might have some things that might help you, and you have some things that will help me - why separate us? We are all trying to teach people to write. Why not consolidate?

A PROPOSAL FOR PLANNING AND ACHIEVING A PROGRAM FOR EDUCATING HANDICAPPED TO BECOME TECHNICAL AND SCIENTIFIC TRANSLATORS

by
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ABSTRACT

The twin problems of rewarding education for the handicapped and the growing need for competent scientific and technical translators are attacked by combining them into this educational program for teaching the blind, the deaf, the dumb, in the skills and knowledge necessary to perform effectively in the modern international scientific and technical community.

Problem

The problem is two-fold, but fortunately a single solution is available. The first problem is that very few really rewarding jobs are available to the handicapped--the deaf, the dumb and the blind. The second problem is that really competent technical and scientific translators are a rarity, although very badly needed and highly paid.

Objectives

The objectives are to plan in detail, collect and prepare the many special materials which the plan might require and to educate deaf, dumb, and blind people to become scientific and technical translators: the deaf and dumb to specialize in written translation; the blind to specialize as oral translators at international scientific and technical events. There is some reason to suspect that the "handicaps" of the student translators may in fact be advantageous in the proposed context.

Procedures

The basic procedure is simple in outline, but the details will require careful, extensive and expensive planning and preparation.

In outline it is to educate handicapped students by appropriate language skills, scientific and technical vocabulary and background as well as general college subjects, leading to a Bachelor's degree in Technical Communications-Foreign Language.

The details are more complex and it is to resolve these that some of the funding is being requested. It is estimated that it will take four experts a year to plan the required curriculum and prepare the language tapes and programs which will be required during the four-year course. This seems expensive

and time-consuming. However, a makeshift program will bring no real relief to the problem, but a well-prepared one will, on the other hand, have a lasting and continuous effect with long-range savings.

Evaluation

Final evaluation of the program will, of course, be the ability of its graduates to perform satisfactorily as scientific and technical translators. They are needed--the jobs are there. Interim evaluation will depend on student feedback progress and performance in internships that the program will arrange.

Facilities

The Colorado State University will provide the basic educational facilities. Additional specialized equipment such as study tapes and computer program, books and materials will have to be purchased. Exactly what these will be, however, will have to await the results of detailed planning.

Personnel

The faculty of Colorado State University will provide the basic personnel. In addition, during planning, four additional full-time people will be necessary. During the teaching phase, it is expected that two additional people will be required. However, if the program proves successful and becomes popular, additional faculty will have to be added to maintain educational standards.

Dissemination

Much of the success of the program will depend on informing prospective students of its existence. Doing this will be an essential part of the planning phase. Announcements should be national and extensive to all agencies, institutions and associations in a position to encourage students. After the first students have graduated, or before that, if required or appropriate, reports will be made to interested agencies of progress and evaluation, as well as to communications to educators and professionals via journal articles and conferences.

Budget (1 year planning and 4 years execution)

Salaries

Program Manager	$64,000	*
Program Planners	48,000	*
Program Faculty	128,000	*
Graduate Assistants	48,000	
Work Study Students	20,480	
Secretary	35,000	*
*PERA at 10.64% of * on $275,000	29,269	
Total	$372,740	

Materials

Office Supplies	$5,000
Duplicating Material	5,000

Mechanical-Electronic Supplies

Tape Recorders	1,000
Translator Boxes	3,000
CRT Terminals	6,000
Tape Punchers	3,000
Special Typewriters	5,000
Tapes (Magnetic and Paper)	2,000
Total	$30,000

Travel

Professional Meetings	$10,000
Consultation	10,000
Subsistence	5,000
Total	$25,000

Other Direct Costs

Computer Use	$400,000
Publications	10,000
Outside Consultants	20,000
Service Contracts	5,000
Alterations, etc.	10,000
Instructional Materials	12,000
Scholarship Fund	128,000
Communications	5,000
Final Report	1,000
Total	$591,000
Grand Total	$1,018,740
Indirect Costs and Overhead	$265,018
	$1,283,758

Conclusion and Request

Although the cost is initially high, it must be remembered that it is spread over a five-year period, so the annual cost is reduced to $256,752. Moreover, much of the expense is a one-time investment and the continuing expense of the program, should its continuation after the trial period is over be desired, will be approximately halved. Also the cost is almost independent of the number of students (up to the point of facilities and faculty saturation-up to about 20 students). Therefore, if 20 students are educated during the four-year trial period, the total cost per student would be about $14,750 per year.

It is suggested, therefore, that an initial grant be made the academic year 1977-78 for $103,000 to fund the planning stage. Then if the plans are acceptable, an educational grant of $1,180,758 be committed at the rate of $295,190 per year, for the succeeding four years before which time, the decision will be made to continue the program or not, depending on results.

INTERNSHIP PROGRAMS IN TECHNICAL COMMUNICATIONS FOR THE TECHNICAL STUDENT

by Leslie A. Olsen
University of Michigan

Those of us teaching in technical communications programs try to prepare our students to do well the kind of writing required of practicing engineers, scientists, or technical writers. Unfortunately we find little support or reinforcement for such a goal in the traditional academic setting. On the job, the professional writes from a position of relative knowledge to one of relative ignorance (the writer knows more than the audience). Further, the professional writes to a diverse multi-person audience including managers with business or financial backgrounds and experts in particular technical fields. In contrast, the student in an academic setting usually writes from a position of relative ignorance to one of relative knowledge (the audience knows more than the student). Further, the student usually writes not to a diverse multi-person audience, but to a homogeneous single-person audience, the professor. Thus, to give students a more "real" professional environment, many institutions have set up internship programs which place students in local government or industrial settings. These programs expose the students to many of the audiences and communication situations they will later encounter as practicing engineers, scientists, or technical writers.

My purpose here is to describe the variety of internship programs we have developed in the Humanities Department at The University of Michigan and to suggest some ways in which our programs do not duplicate other internship programs.

COMMUNICATIONS OPTION IN THE INTERDISCIPLINARY ENGINEERING PROGRAM

Our most ambitious internship program occurs in the communications option of our interdisciplinary engineering program. Let me first describe the program and the students and then describe how the internship fits into the program. Students in the interdisciplinary program pursue an engineering degree, a Bachelor of Science in Engineering (BSE) in Communications. This degree deals with the interface between public systems management and engineering and the communication problems that arise there. Students pursuing a BSE in Communication write about public systems engineering, environmental impact issues, urban planning,

or technology assessment. In short, such students are interested in scientific and technical communication in the political arena. Such students take courses in many different areas. They first complete the rigorous series of basic math, science, and engineering courses required of all Michigan engineering students. Then they elect courses from such relevant areas as business administration, law, and journalism, as well as courses in technical communication and communication theory. A typical curriculum might include courses in human behavior and organization, organizational theory, interpersonal dynamics and management, introduction to computers and communication, elementary programming concepts, and programming languages and algorithms. As is evident in this list of courses, the focus in this program is on functioning professionals in various professional fields, not on people who are specifically interested in technical writing or even in teaching technical writing.

Students in the BSE Program, Communications Option

We want to recruit students for our BSE program who are different than students in some of the other technical communications programs. We do not want students who are primarily English or journalism majors hoping to become technical writers, but students who have advanced technical training in a variety of backgrounds--engineering, law, forestry, or urban planning. We would like them to have the equivalent of the bachelor's degree or to be pursuing a bachelor's degree in their own technical field. And we'd like them to be good in that field; we are not interested in the failed engineer or urban planner.

We are interested in these non-traditional communications students because we expect them ultimately to become organizational managers rather than professional technical writers. We are trying to train technical communicators, not technical writers.

One intern who has already gone through the program is a good example of the type of student we're seeking. This student has a very strong background in mathematics and engineering. During her internship she worked as a technical writer for a sub-contractor for General Motors and helped produce a manual for putting transmissions into trucks. Now (two years later) she is a project engineer at General Motors--an engineer rather than a technical writer. She is the type of person we ultimately see our program as producing.

Obviously such a person needs many skills in addition to communication skills. This person must be able to interface between engineers, lawyers, sales people, and managers; must be able to deal with these people; must be able to read blueprints; and must know something about the technical areas under consideration. We want students who have the background to do that.

Internships in the BSE Program, Communications Option

The internships for students pursuing the Communications Option of the Bachelor of Science in Engineering occur near the end of the students' programs and, as do most internships, provide "real" situations in which the students practice and refine what they have learned. So far, our internships have usually occurred in host institutions involved in computers and computer programs or in medical technology. (These fields are heavily represented in Ann Arbor, where we are located, and firms in these fields seem especially interested in our interns.) Interns in chemical engineering and science writing have also been requested.

Interns in our host institutions have generally participated in two different types of activities. They have either evaluated and rewritten existing documentation or they have created new documentation. They have been more than just technical writers or just technical editors; they have been writer-editors competent to evaluate the adequacy of the technical content.

INTERNSHIPS IN ACADEMIC SETTINGS

Since relatively few students can participate in off-campus internships, we sought to provide a kind of internship experience to the many more students remaining on campus. These "internships in an academic setting" again focus on the technical student (as opposed to the English or journalism student) and involve seniors or graduate students.

"Internships" in Technical Courses

One way we involve a relatively large number of students in "real" communication situations is by tying our communication courses in with specific technical courses. We offer a series of mini-courses, for instance, affiliated with engineering design courses. In these design courses, the students design some item and produce a design proposal. We go into such a course and give a one-unit mini-course on the design proposal tied to the particular engineering project. The completed design proposal is then submitted to some appropriate funding source or external examiner for evaluation. In a variant of this approach, we offer a several hour, non-credit "consultation" to various design courses to help with the design proposal. We also offer a mini-course in oral technical presentations which can be tied in with any particular project or design proposal.

As a variant on the internship programs in which students work in industrial settings, this "academic internship" has one unusual and useful feature. It helps to make the engineering professors

more aware of the complex audiences their students will face as professionals and encourages the creation of more "real" design situations in technical courses.

"Internships" in the Library

Another way we have involved a large number of our students in "real" communications situations on campus is to offer two different orientations to information resources to our technical writing students. Why have we done this?

When our students in technical subject areas graduate, they are usually well prepared to do the calculations and laboratory procedures required by them in their jobs or graduate school school careers. Unfortunately, these same students are infinitely less well prepared to keep up with the many changes occurring in their fields or to do even the most elemental information research on a topic they may be assigned the day they report for their first post-graduate job. Both of these inadequacies may destroy their authorial credibility as report writers. The real disparity between a student's undergraduate preparation and his professional demands appears in the following set of quotes.

Senior #1: "For your information, I've never set foot in the Engineering Library. It hasn't been needed yet."

Senior #2: "I have used these references at my place of employment but not for classes."
Applied Science and Technology Index
U.S. Monthly Catalogue of Government Documents
U.S. Government Reports Announcements & Index
Selected Rand Abstracts
U.S. Department of Defense, Index of Specifications and Standards
InterDok: Directory of Published Proceedings

Student #1's lack of preparation is by no means unique. A recent survey of 167 seniors in engineering revealed that only about 8% of the seniors had ever used or even looked at the basic research tools in their fields. This is especially critical in such quickly developing fields as engineering where most of the necessary material is not available in books (which are relatively easy to find) but in journals, reports, patents, conference proceedings, catalogues or other non-library sources--all of which may be very difficult to find. It is also critical for student and professional report writers whose authorial credibility depends at least partly on the thoroughness of a literature search. If a writer cannot find any of the previous work on a topic, his/her discussion of the "Background" or "Previous Work" will necessarily be sketchy.

Thus, we have two different approaches or "internships" at the University of Michigan's College of Engineering for providing instruction and "real" practice in the use of information resources. Both approaches were developed through the cooperation of technical librarians and technical writing teachers.

Overview of Library Resources

In the first approach or "internship" an overview of relevant library resources is given to all students in a senior-level technical writing class just before they are to write job letters and résumés and their first technical reports. This overview deals with the following topics:

1. The information on a card in the card catalogue and the use of the shelf list and serials records which allow a student to discover which copies of a book or issues of a journal the library holds.

2. Description of several major indexing and abstracting tools, including Applied Science and Technology Index, Engineering Index, and Chemical Abstracts.

3. An overview of government document and technical report literature and the use of Government Report Announcements and Index.

4. Brief mention of patents literature, major business and technology reference works such as handbooks and encyclopedias, and U.S. standards and specifications including those set by OSHA and Underwriter's Laboratories.

In the technical writing class, the students are asked to use and cite library resources where relevant. For instance, when they are preparing job letters and résumés, they use several major business resources to find information about their prospective employers such as:

Standard and Poor's Register of Corporations to learn about major product lines, officers, locations, and subsidiaries.

Funk and Scott's Index to locate news articles about the company from such sources as the New York Times, Business Week, and The Wall Street Journal.

At other times, students are asked to find relevant material for a report using several of the sources described in the overview lecture.

"Internship" Course in Library Resource Materials

In the second approach, an "internship" course in using resource materials was developed by the author (a technical writing teacher) and a librarian. To assure maximum benefit from the course, a student is allowed to enroll only if he/she has a current research topic either for a technical course, for thesis work, or for a project arising out of part-time employment. The course meets for one two-hour session per week for eight weeks. The course covers:

I. Books: a discussion of publishers and publishing patterns in technology, bibliographic tools such as Books in Print and Forthcoming Books, and the use of the card catalogue.

II. Journals: a discussion of types of university presses, scholarly and popular publishers, Ulrich's International List of Serials, national union lists showing the journal holdings of many institutions, etc.

III. Indexes and Abstracts: organization and use of subject indexes (e.g., Applied Science and Technology Index) and multi-approach abstracting services listing by subject, author, and sometimes by chemical formula, patent number, and author's corporate or institutional affiliation (e.g., Chemical Abstracts, Computer and Control Abstracts.)

IV. Conference Proceedings: indexing and bibliographic control of conferences via such sources as InterDok: Directory of Published Proceedings, Proceedings in Print, and professional associations.

V. Documents and Technical Reports: review of government, university and corporate publishing and distribution of their reports via Superintendent of Documents and its Monthly Catalog, the National Technical Information Service (NTIS) and its Government Reports Announcements and Index, and private mailings, etc.

VI. Standards, Specifications and Patents: history and development of voluntary and mandatory standards and specifications from American National Standards Institute (ANSI), professional societies, International Standardization Organization, and the U.S. Government. Procedures for obtaining a patent and use of the literature through searching.

VII. Reference Sources Outside the Library: discussion of directories for locating "experts" (e.g., Encyclopedia of Associations, Directory of Industrial Research Laboratories), use of yellow pages, city and state offices, direct mail advertising, etc.

VIII. Business Sources and Updating Skills: Business Periodicals Index, Standard and Poor's Register of Corporations, Thomas's Register of Manufacturers, Funk and Scott's Index. Techniques for keeping current or learning about new fields, looking for general scientific periodicals such as Science, Scientific American and American Scientist. Discussion of publication from various professional societies (IEEE, SAE, etc.); use of industrial libraries.

IX. Future Information-Handling Technologies: Videotape on the advantages and limitation of computerized bibliographic searching. On-line computerized bibliographic search through The Lockhead Dialogue or SDC Orbit systems for each student. (The data bases include on-line files of approximately 50 printed sources including Chemical Abstracts, Engineering Index and technical report literature from the National Technical Information Service.)

In addition to lectures and supervised work on the resources cited, the "internship" course includes the definition and completion of a term project which would be useful for or similar to one a practicing professional engineer or scientist would produce on the job.

More information about these courses in available from Leslie A. Olsen (Department of Humanities) or Maurita P. Holland (Head, Technology Libraries, Engineering-Transportation Library)--both at the University of Michigan, Ann Arbor, Michigan 48109.

CONCLUSION

This overview of our internship programs has tried to describe some of the ways we in the University of Michigan's Humanities Department have viewed the internship in technical communication. We have tried to provide internships mainly for students highly trained in a technical discipline such as engineering, natural science, or urban planning. We have tried to provide a variety of internship experiences to a wide range of students. And we have developed a series of on-campus "internships" aimed at students traditionally denied "real" world perspectives of their disciplines.

TECHNICAL ADVERTISING - CLASSES THAT WOULD HAVE HELPED

Karen Bunting - The Trane Company

I'm afraid a lot of what I'm going to say is going to be an echo of the previous talk, but... I'm working at The Trane Company in La Crosse, Wisconsin. We manufacture air conditioning, heating and ventilating equipment. My title is Catalog Coordinator. I started as a copywriter and have been sort of half-assed promoted - excuse the adjective. So now, I'm supervising two other copywriters and I report to the Manager of Sales Promotion. We're part of the Advertising Department but it is technical advertising. It's not normal consumer advertising.

When I started out, I can't honestly say a lack of any classes kept me from getting certain jobs, because, honest to goodness, the job market did that itself. It was impossible. It took me about four and a half months to find a job. In fact, the job I now have was my first interview - and when they offered me the job I grabbed the opportunity.

I did find three major disadvantages in the classwork I had. As has been said before - production. I didn't know keyline, galley, velox or PMT. I had no idea what any of these things were. I knew an editor used a blue pencil, but I didn't know why it had to be blue. Proofreader's marks - I knew some of them but really very few. In other words, I really think a production course is needed. Not only, in my case, for my benefit, but because I schedule everything from the conception of a project to the very end - when it's mailed to the field. To do so I have to know how long these processes are going to take and I also have to explain them to the engineers - because they think it's magically going to appear in print the minute I get it into my hands. So a production course is very definitely needed.

Secondly, I didn't have any industrial marketing or advertising background at all. I wasn't familiar with technical magazines (not technical journals). I also wasn't familiar with the kinds of advertising that industry uses - bulk postcard mailings, inserts - the whole bit. Direct mail? I had no idea how important that is in industry, nor did I know the importance of catalogs - which are really the backbone of any

industrial advertising. I just had no idea about any of these. Maybe a technical writer per se doesn't have to know these things, but I think the majority of us who graduate in these programs aren't going to end up purely technical writers - there just isn't the market. So I think a technical advertising class is important.

Before I get to the last thing, I just want to mention some of the good classes I had. Principles of Language Development. Mainly because I am now able to see a Latin or French word and immediately get it down to the Anglo-Saxon - and that really irritates the engineers. They just love to be pompous, and they don't appreciate my "little words". So, it's helped me in that respect - just because I can make things much more clear.

All my writing classes helped a great deal, but there is one problem. You never edit someone else's work. If you're going to become a tech writer, that's all you're going to do - at least for the first few months. In my job, for example, this was the first engineering bulletin I did. In our company, an engineering bulletin is written on something very technical and it goes to our field sales force - which are, by the way, all degreed engineers. This engineering bulletin was 30 pages long when I got it. It's called "Centrifugal Fan with Scroll Bypass Damper". I looked at this thing. I read it four times. It made no sense. The fifth time I outlined it - and finally realized it was just in a screwy order. So I kind of fixed it (remember - it was my first try at this kind of thing). But I had never before had to rewrite, let alone edit, anyone else's work - and it is so foreign until you learn how to do it.

There's a whole book of etiquette that could be written on editing other people's work. There are so many things to learn about it that I think if there were some way of getting ahold of rough drafts of, in my case it would be engineering material, and having classes sit down and be responsible for putting this out in a finished form - I think that would just be great!

I asked my boss for some recommendations - what else should I have had experience with that I didn't. First of all, he thought maybe if we had a minor of sorts - not really a minor but some specialty that interfaced with our major. For example, we would be in technical communications with an audio visual specialty - or

graphics or advertising - something on that order. Some small thing that can make us a little more specialized when we hit the job market. A tech com major, you can spread out in so many directions - which is part of the joy of it, but it also can hinder you some.

His second suggestion was office psychology. I don't know how you're going to teach that ever, but he felt it would be an important thing. Learning how to get along with engineers and now learning to supervise my own people - it's not covered in any course that I know of.

I thought I'd bring along some of our literature - I'll just throw these things out. These are technical and yet are sales literature too - so it's kind of a nice marriage between the two for me.

Now, to recap. A class on production techniques, one on industrial advertising (maybe an option), experience in editing someone else's work - an absolute must - and my boss's suggestions - a minor to interface and office psychology. Are there any questions?

GRADUATE PROGRAMS IN BIOMEDICAL COMMUNICATION

Kenneth L. Kuczynski
University of Nebraska

I first would like to thank Dr. Pearsall for inviting me to speak to you on behalf of Reba Bonschoter, Director of Biomedical Communications, University of Nebraska Medical Center. Due to schedule conflicts Reba could not attend this council meeting.

This afternoon I would like to discuss the role of the Biomedical Communicator as it applies to a medical center setting, the Biomedical Communications Division and the graduate level program in Biomedical Communications offered through the University of Nebraska.

The rapid increase of knowledge in the health sciences has made the eduction of health professionals a particularly challenging field. To help meet this challenge, a new type of professional, the Biomedical Communicator, is being called on to assist educators in training more health care personnel more efficiently than ever before.

The Biomedical Communicator specializes in the planning, production, utilization and evaluation of today's audiovisual teaching tools--television, films, slides, overhead transparencies, charts, manuals, pictures, programmed texts, videotapes, audio tapes, models and scientific exhibits.

Biomedical Communicators can be found in a variety of health and educational settings, including medical and nursing schools, university extension programs, allied health training programs, large hospital systems, pharmaceutical firms and medical continuing education centers. They work independently or as members of a communications staff, all with the same goal in mind--the transfer of knowledge.

The University of Nebraska Medical Center is a complete health education and care center located in Omaha. The Medical Center is made up of seven components: the College of Medicine and School of Allied Health Professions, the College of Nursing, the College of Pharmacy, Nebraska Psychiatric Institute, Meyer Children's Rehabilitation Institute, the Eppley Institute for Cancer Research, and University Hospital and Clinics.

These components are dedicated to the Medical Center's basic goals: education of health care professionals, service to patients, research, and extension of resources into Nebraska communities.

The Biomedical Communications Division has evolved from the Communications Division of the Nebraska Psychiatric Institute, first established in 1957 by Reba Benschoter. This division is responsible for the production and use of audiovisual materials throughout the Medical Center.

Long recognized as a leading maker of 16mm mental health films, the Communications Division has pioneered in other areas as well. The Department of Psychiatry (Nebraska Psychiatric Institute) was one of the first to use a telephone network for academic lectures

transmitted to Nebraska's three state mental hospitals. The Department also has been using closed circuit television in teaching and research for twenty years.

In 1964 the Communications Division established the first two-way closed circuit medical television system in the country between the Medical Center and the Norfolk State Mental Hospital, 112 miles away. A second two-way network is operating, linking the Medical Center with the Omaha, Lincoln and Grand Island Veterans Administration Hospitals. This two-way connection also includes the University of Nebraska College of Dentistry and the Creighton University School of Medicine teaching hospital.

The Biomedical Communications center offers a variety of services to its cusomers from media production in all formats, to a media library information and retreival network.

Virtually all phases of media production are carried out within the BMC Department. This includes scripting, medical writing, medical photography, graphic arts, video and audio recording. All these activities support the educational goals of the Medical Center.

The internship program in Biomedican Communications requires at least 36 hours of graduate credit through courses at the University's Medical Center, Lincoln and Omaha campuses, plus a rotating internship experience during a 12-mongh period. Students receive a minimum of 80 hours training and experience in each of six areas important to biomedical communications. The areas of internship are: closed circuit television, cinematography, hardware and software resources and administration, graphics, learning resource center, and photography.

My position within the department is that of Resource Management Assistant. This includes assisting Reba with the cinematography phase of the student internship program. My primary function has been to assist the art department by working on some of the daily graphic requests that come into the department. From time to time I also fill in as a departmental representitive on various committees throughout the Medical Center. These include PR, Human Relations and Safety.

Dr. Pearsall asked that I describe my background, education and what prompted me to choose this career.

I graduated from a junior college in Michigan in 1968 with an Associate of Arts degree in Commercial Art and Graphic Design. For about a year and a half I worked for a subsidiary of General Motors as an automotive illustrator.

In 1969 I joined the Air Force. During my tour of duty I occasionally worked as an illustrator but my primary function was aircraft refueling. About the time of my discharge I began to plan my educational future. In my mind I listed those things I liked and tried to match them to existing programs. I eventually narrowed the field down to medical communication.

I enrolled at Minnesota taking general college courses in science, math and English. I knew where I wanted to go but my problem was getting there. I was familiar with Reba's BMC graduate program having read about it in Biomedical Communications. The counselors could only suggest journalism as a possible major for me, which meant a long waiting list to enter the program.

One day a friend, who was taking a class at the St. Paul Campus, described to me a display he had seen in the Student Union. The display consisted of magazine cover relating to various areas of

of Technical Communication. I immediately contacted Dr. Schuelke and together with him and Dr. Pearsall I devised a program of study in the area of Biomedical Communication. My course work included communication theory, writing, video production, and several journalism classes to name just a few. I also developed my science background and even took an anatomy and physiology course. To gain insight into the health care field I worked as a hospital orderly and ambulance attendant.

That pretty much covers my background; are there any questions?

Q. What did you see as your biggest obstacle in going through the Tech Comm Program?

A. I think the biggest problem with the Tech Comm program is the fact that were not able to take a lot of the offered classes on the main campus. For example, journalism and speech communication offered an enormous number of classes beneficial to the tech comm student who is unable to take them basically because of the amount of people in both those programs, so we had a waiting list situation. This made it difficult to plan your schedule and plan your classes, because there are a lot of courses you want to take and may never get a chance to take them. I think I'm still on a waiting list for a photography class. I think that for the future I would like to see tech comm become a part of the university setting. People working in the biological sciences, veterinary science and medicine should be made more aware of the tech comm program, its students, and what they are doing and what they can do for these areas. I also think that the students should begin in their freshman or sophomore years to definitely enroll in either medicine, biology, veterinary medicine or business administration, as background classes for their area of interest. I found that it was really beneficial to have this basic background in the sciences because a lot of the students that are in the graduate program at Nebraska, have no medical or science background. Mention neurology and they're lost. They have no idea what neurology is.

Q. May I interrupt you-where do most of the students in the BMC program come from?

A. They come from all over the United States. This year we have one student from Nebraska who is a teacher. She taught one year in secondary education and wanted to work in adult education. We have a gentleman who's from Detroit who worked for several years in a hospital doing photography and video productions, who also worked for Channel 7, an ABC affiliate. We also have two communications majors. They're not all communication majors and they're not all medically orientated. (The students from a lot of programs, for example, would perhaps fit in this type of program, no matter what.) Right, the only drawback is that we only allow six students into the program so students are closely screened.

Q. Do you have any idea how many programs are all like this?

A. I don't know off hand, but I understand there are only 5 or 6. (You have one and Rochester Institute has one). Right, I think that Ohio State may have one and Texas has a program. (We're working toward starting one and I don't know what form it's going to take.) The BMC Program at Nebraska has been in existence for 5 years and each year it develops more and more as the program picks up momentum. Graduates seem to have no problem finding employment. They can work at most medical centers. . . or if they're interested in some other area of communication.

Q. How many applicants do you have?
A. Students are selected by their graduate entrance exam score, interviews and a graduate student selection committee.
Q. What has happened to those who graduated?
A. Quite a few of the graduates to into the different aspects of education. We have one female graduate working in patient education. She works with the nurses and the physicians in the community developing patient education materials. Biomedical communication right now is not an accepted term. It's acceptance is growing as it gets out into the medical profession and into the other science areas. I think it's one of the big problems in our field. People aren't quite sure what a biomedical communicator is. The same holds true for technical communication. I think the tech comm program needs a PR campaign to get its message to everyone; hospitals, pharmaceutical firms, publishing firms and anyone else who has a communication function. They need to know what a tech comm major can do for their institituion.
Q. You mentioned the value of your communication theory courses. Could you exemplify that at all?
A. I began by taking the undergraduate courses in the program, business and management communication, interpersonal communication and several others. I also took some of the graduate level communication courses as a senior and found those very helpful. Theory is very important and I feel that the courses here on the St. Paul campus are really great in that they provide a good background for the communicator.
Q. Do you have any idea what the basic budget would be?
A. That I don't know. I do know that the cost per student is $2,500. That covers the expenses of the film and processing and art materials and wear and tear on the equipment plus the graduate school tuition.
Q. What proportion of your time is spent in writing?
A. I would say I spend probably anywhere from 4 to 8 hours a week. Not a lot. It depends on what I'm doing. When I was researching the different evaluation forms I did a lot of writing and rewriting of the evaluation form, especially the student evaluation forms. I also worked as an assistant editor for our newsletter. I dig up news stories in the area of communication and report on what our department is doing for various people in the university setting.
Q. Who wrote this little thing?
A. Sandy Benson. She's one of our chief writers. She's been with the department for 4 or 5 years. She is an English major and she's working towards her masters in adult education as are several other people: I would say that we have, out of a department of 30, at least 20 that are college graduates. The rest are recent high school graduates.

New Program Development at Texas A&M

Merrill D. Whitburn

At Texas A&M we are beginning to see the fruits of our work in three important areas for program development in technical communication.

All indicators suggest a strong demand for technical writing teachers in the future. We have introduced a course in which 12 graduate students are currently preparing to teach technical communication in community colleges and universities. The course is designed to inform students about the current state of research and development in technical communication and the day-to-day progress of our standard undergraduate technical writing course. Current research projects, some of them involving teamwork, include an annotated bibliography, the impact of science on seventeenth-century prose style, cooperative education and technical writing, the foreign student and technical writing, and the technical writing introduction. We are currently working on a Ph.D. writing emphasis with a strong technical writing component.

There continues to be a need for professional writers in business, industry, and government. To meet this need, we have designed an undergraduate writing specialization. The specialization consists of four core courses in English and sets of satellite courses from other departments. The courses in English focus on audience analysis, technical writing, editing in business and industry, and the writing of technical speeches and other presentations. A typical set of satellite courses focuses on news writing and layout and publications production. The specialization has been approved

at the department level and must yet be approved at the college and university levels.

With students from various departments becoming more aware of the need for technical communication skills in their future professions, enrollments in our current courses for non-specialists are expanding, and we have been asked to introduce new courses. Our graduate course in "Technical Writing for Publication" has continued to grow each semester until we are offering two sections this semester. At the request of students, we are now preparing a graduate course in "Technical Editing" and expect to add other courses in the future. Our standard undergraduate technical writing course has about 1500 students each year and is projected to increase to 2000 in the next few years. Heads of other departments have indicated that they will make individual courses in our writing specialization required for their students, and we expect a number of students from other departments to join students from English in obtaining the specialization certificate. With the growth of our technical writing staff, we have instituted workshops in the Fall and Spring where we share ideas about the teaching of technical writing.

Central to program development in all three of these areas is close contact with business, industry, and government. We recently sent letters to 300 employers in Texas to explore their attitudes about the communication skills of college graduates, curriculum development, and interest in closer contact with us. We have begun a cooperative education program in an effort to give students intending to become teachers and professionals full time technical writing experience for a semester or more. We are working on a

continuing education program to bring the teaching of technical communication into employer offices.

Detailed articles about several of these developments will be completed within the next few months.

CONSTITUTION

ARTICLE I
NAME: The name of the organization shall be Council for Programs in Technical and Scientific Communication.

ARTICLE II
PURPOSE: The primary purposes of the organization shall be to (1) promote programs in technical and scientific communication, (2) promote research in technical and scientific communication, (3) develop opportunities for the exchange of ideas and information concerning programs, research, and career opportunities, (4) assist in the development of new programs in technical and scientific communication, and (5) promote exchange of information between this organization and other professional organizations and interested parties. Said organization is organized exclusively for educational purposes.

ARTICLE III
MEMBERSHIP: Membership shall be open to any individual or institution interested in supporting the purposes identified in Article II. Membership shall be open to any person without regard for race, age, sex,or religious affiliation.

ARTICLE IV
OFFICERS: The officers of the organization shall be president, vice president, secretary, and treasurer, each to be elected for a one-year term of office.

The duties of the officers shall be:

President:
1) preside at the annual national convention of the organization.
2) represent the organization at official functions.
3) serve as chairman of the executive committee.

Vice President:
1) perform all the duties of the president in the event of the president's absence.

Secretary:
1) maintain all records of the organization including matters of correspondence.

Treasurer:
1) handle all financial matters of the organization including the receiving and recording of dues and payments and paying the bills of the organization.
2) maintain an up-to-date membership list.

The president, vice president, secretary, and treasurer, plus the immediate past president and one member-at-large, elected by the membership, shall serve as an executive committee. The executive committee shall have the right to act on the behalf of the organization at such times as the organization is not meeting in full assembly except to change the constitution or carry out elections.

ARTICLE V
LIMITS:

No part of the net earning of the organization shall inure to the benefit of, or be distributable to its members, trustees, officers, or other private persons, except that the organization shall be authorized and empowered to pay reasonable compensation for services rendered and to make payments and distributions in furtherance of the purposes set forth in Article III hereof. No substantial part of the activities of the organization shall be the carrying on of propaganda, or otherwise attempting to influence legislation, and the organization shall not participate in, or intervene in (including the publishing or distribution of statements) any political campaign on behalf of any candidate for public office. Notwithstanding any other provision of these articles, the organization shall not carry on any other activities not permitted to be carried on (a) by a corporation exempt from Federal income tax under section 501(c)(3) of the Internal Revenue Code of 1954 (or the corresponding provision of any future United States Internal Revenue Law) or (b) by a corporation, contributions to which are deductible under section 170(c)(2) of the Internal Revenue Code of 1954 (or the corresponding provision of any future United States Internal Revenue Law).

ARTICLE VI
MEETINGS:

The organization shall meet in full convention annually. The location of the annual meeting shall be determined by vote of assembly at the preceding convention. The approximate date of the meeting shall also be established.

Special meetings of the organization may be held at need as determined by the executive committee.

ARTICLE VII
FINANCES:

The dues for the organization shall be $15.00 per year payable prior to or upon registration at the annual meeting.

ARTICLE VIII
ELECTIONS:

The election of officers and members-at-large to the executive committee shall be held at the annual meeting. The existing executive committee shall each year nominate a slate of officers and a member-at-large and have this slate in the hands of the membership 30 days before the annual meeting. Nominations will also be allowed from the floor at the annual meeting. Elections shall be by written ballot.

ARTICLE IX
CONSTITUTIONAL AMENDMENT:

This constitution shall be amendable by a two-thirds vote of the assembly present and voting at the annual meeting. Proposed amendments to the constitution must be in the hands of the members at least two months in advance of the annual meeting at which the vote is to be taken.

ARTICLE X
DISSOLUTION: Upon the dissolution of the organization, the Board of Directors shall, after paying or making provision for the payment of all of the liabilities of the organization, dispose of all of the assets of the organization exclusively for the purposes of the organization in such manner, or to such organization or organizations organized and operated exclusively for charitable, educational, religious, or scientific purposes as shall at the time qualify as an exempt organization or organizations under section 501(c)(3) of the Internal Revenue Code of 1954 (or the corresponding provision of any future United States Internal Revenue Law), as the Board of Directors shall determine. Any such assets not so disposed of shall be disposed of by the Court of Common Pleas of the county in which the principal office of the corporation is then located, exclusively for such purposes or to such organization or organizations, as said Court shall determine, which are organized and operated exclusively for such purposes.

ARTICLE XI
PARLIAMENTARY
AUTHORITY: All official meetings, of the organization, shall be conducted according to the Standard Code of Parliamentary Procedure by Alice B. Sturgis. The presiding officer shall appoint a parliamentarian to advise the assembly at each annual meeting.