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ABSTRACT

This research focuses on the history of technical communication since 1850, with a specific focus on the technological changes that occurred between 1900 and 1950. This paper also discusses the development of professional technical communication organizations and the development of technical communication programs at the bachelor, masters, and doctoral levels. Finally, the research reports on three surveys completed since 2000. The results indicate that over 200 college and universities offer degrees and certificates in Technical Communication. In addition, two studies which focus on Society for Technical Communication (STC) members and STC students' perceptions of certification in technical communication areas are discussed. (Contains 5 tables and 33 references.) (Author/RS)

Tracing the History of Technical Communication from 1850 –2000: Plus a series of Survey Studies

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Abstract

This research focuses on the history of technical communication since 1850. The primary focus is on the technological changes that occurred from 1900 to 1950. Next the focus is on the development of professional, technical communication organizations and the development of technical communication programs at the bachelor, master and doctoral levels. Finally, the research reports on three surveys completed since the year 2000. The results indicate that over 200 college and universities offer degrees and/or certificates in STC. Two studies focus on STC members and STC students' perceptions of certification in technical communication areas.

STC is an individual membership organization dedicated to advancing the arts and sciences of technical communication. It is the largest organization of its type in the world. It 25,000 members include technical writers and editors, content developers, documentation specialists, technical illustrators, industrial designers, academics information architects, usability and human factors professionals, visual designers, Web designers and developers and translators –anyone whose work makes technical information available to those who need it.

This paper will examine the history of technical communication from 1850 through the year 2000. Teresa Kynell's article, "Communication from 1850-1950: Where have we been?" discusses the foundational, historical issues that led to the foundation of a technical communication pedagogy by following shifts in an engineering curriculum throughout the nineteenth century. She believed that history forms the foundation upon which the future will be built, and by understanding the history of technical communication researchers and educators can contribute to the shaping of the future theoretical and pedagogical trends.

From 1850 to the Morrill Acts of 1862 engineers were not taught in a college environment. Instead they were trained as apprentices. Engineering was thought of as vocational and low status. There were, however, exceptions. West Point offered engineering training, and Rensselaer School also offered engineering as early as 1824. After the expansion of land grant colleges in 1862, practical trades like engineering began to appeal to middle class students. As a result, engineering became part of college curriculum. Still the low status of engineering continued, but educators embarked on curricular revision as a way to elevate the social status of engineers. The primary problem engineering educators faced was that many of their students struggled with near illiteracy

and English courses were needed in the curriculum. Kynell (1999) concluded: "Writing, as a result, became part of the necessary means to solve both illiteracy problem and remaining status concerns."

Kynell (1999) continued her article by describing the challenge of curricular revisions by implementing English literature and composition into the engineering curriculum of the late 1800s. She stressed from 1893 to 1910 the dialogue of English courses was virtually limited to engineering faculty members. The students rebelled against extra coursework and felt there was no purpose between composition and literature. Overall, engineering professors were not willing to devote themselves to the low status of a "service course."

In 1911 educators began to realize that English instruction had to be linked to students' interests. Specifically, educators believed that engineering topics would provide a real-world context for writing. Chandler Earle (1911) wrote a paper entitled, " English in the Engineering School at Tufts College," which he presented at the Society for the Promotion of Engineering Education Committee. Some of his radical suggestions included teaching the students to write product descriptions, as well as the importance of understanding how to write for different audience (audience analysis.) Earle proposed four separate abilities that he believed would make English more relevant to engineers:

1. the ability to put into words an abstract thought
2. the ability to describe, in writing an object not present
3. the ability to write for different audiences
4. the ability to give a concept full treatment by demonstrating an understanding in writing

Earle plan for an English course to be taught to engineers was not embraced by either the English or engineering departments. The key question: Who would teach the course Earle envisioned? In 1916, five years after Earle's paper, the SPEE's committee asserted: "the attitude reported between instruction in English and instruction in other departments extends all the way from open hostility to sympathetic cooperation." Parks (1916) reported that between the extremes existed a mild tolerance of one another's existence.

Prior to 1920 no English professor had fully embraced the concept of an engineering English course. Sada Harbarger (1920), professor Ohio State University, presented a paper entitled, " Qualification of the Teacher of English," In contrast to many of her peers Harbarger taught engineering English and passionately embraced the discipline. She felt the ideal instructor could teach the engineer to become a good writer. She asserted in her paper that there was a need for cooperation between English and engineering faculties "in order for the discipline of engineering to advance."

Kynell (1999) reported that in the 1920s the technical writing course was a synergistic results of (1) experiments in composition courses, (2) the role of English in an engineering curriculum, (3) the increased value of engineering itself, and (4) the valiant efforts of a few who fashioned and shaped the course recognizable to us today. Several textbooks including: *English for Engineers* (1923) by Sada Harbarger, *Technical Writing* (1920) by T. A. Rickard, and *Preparation of Scientific and Technical Papers* (1925) by Sam Trelease and Emma Yule, were used to teach English to engineering students.

The need for technical writing courses increased in the 1930s. Derby (1938) address to the SPEE Committee, "Improving the Status of English Instruction in Technical Colleges," concluded that teachers of technical writing should be trained at land grant colleges and should stress science and technology. Kynell noted that with two world wars "Advances in weaponry and technology meant more jobs in manufacturing, so the need for technical communication had never been greater . . .Technical writing, then, was realized full status as a discipline because people were being hired to do it."

During the 1940s the Hammond Report expressed concern over too much practicality in the curriculum. The Report generated several questions: Should the engineer pursue a purely professional degree? Should English education serve to humanize the engineer? Should engineering students stay in school longer, if necessary, in order to take more "culture" courses? It appears that this humanistic stem for engineers was designed to prepare them for service and productivity for self and society.

During the 1950s an increased demand for technical communication occurred in academic institutions as well as in the workplace. In part this was due to the G.I. Bill. Specifically, 2.2 million older students used benefits of the G.I. Bill to attend colleges and universities. As Connor (1982) indicated thousands of students took courses in architecture, pharmacy, agriculture, chemistry and home economics. Likewise, course in technical writing became commonplace in engineering and science departments. Two keys textbooks emerged in the 1950s, *Technical Writing* by Gordon Mills and

John Walter and *Technical Report Writing* by James Souther. These books reflected the process approach with a focus on writing letters, articles and procedures. In short, the technical communication profession enjoyed a postwar boom in the 1950s. In addition, General Electric, Westinghouse and General Motors started departments of technical writing.

Likewise, professional technical writing organizations advanced rapidly. For example, in 1953 two technical communication organizations concerned with improving the practice of technical communication formed on the East Coast: the Society of Technical Writers and the Association of Technical Writers and Editors. In 1957, these organization merged to form the Society of Technical Writers and Editors. On the West Coast the Technical Publishing Society (1955) merged with the Society of Technical Writers and Publishers which was renamed Society of Technical Communication (STC) in 1971 (Stolgitis 1997). The Journal of Society of Technical Communication began in 1953. Rensselaer Polytechnic Institute started the first M.A. program in technical communication in 1958.

During the 1960 there was a rapid growth of number of textbooks in composition as well as technical writing. This included Kenneth Houp and Thomas Pearsall's *Reporting Technical Information (1968)* and Thomas Pearsall's *Audience Analysis for Technical Writers (1969)*. These books provided the first systematic approach to audience analysis in an academic setting.

During the 1970s two technical communication journals were introduced. In 1970, Jay Gould developed the *Journal of Technical Writing* and

Communication. In 1973 the Association of teachers of Technical Writing was formed and it journal, *The Technical Writing Teacher*.

According to George Hayhoe et al (1994) since the 1950s, but particularly in the past decade, there has been a rapid growth in academic programs in technical communication, ranging from certificates and associate degrees through bachelor's, master's, and doctoral programs. Their programs typically offered through English departments at United States colleges and has spread to universities in Canada and throughout the world. Hayhoe et al were part of an academic-industry workshop hosted by the STC Board of Directors in which industry questioned whether graduates of academic programs are as well prepared for careers in technical communication as their peers trained in other disciplines. Boards members concluded:

> We must continue to facilitate dialogue between academe and industry.
> We must help identify the body of knowledge and the core skills, which define our profession.
> We must establish the benchmarks of quality and success for technical communication tasks performing in industry.
> We must identify and encourage research which will enrich both teachers and practitioners in our profession.

Staples (1999) revealed that the number of academic programs in technical communication grew rapidly during the 1970s. The Council of Programs in Technical and Scientific communication reported that 19 programs existed in 1976 and had increased to 56 in 1981.

Research by Gould(1974) asked alumni if the master's program at Rensselaer Polytechnic Institute several open-ended questions to determine the curriculum needs for future graduate students. The results indicate that writing

and editing were the two areas mentioned most frequently by alumni. McDowell et al concluded that alumni, potential employers, and members of the Society of Technical Communication felt that writing and oral communication courses were the most important and useful courses in the bachelor's program at the University of Minnesota. These studies completed over 20 years ago indicate that both undergraduate and graduate students need to develop basic communication skills.

In addition, Wahlstrom (1989) reported:

> Just ten years ago no institution had a comprehensive graduate program in STC. Today, fewer than a score of universities have had more than a decade of experiences offering technical communication or technical writing programs even at the undergraduate level. In 1986-87, however, more than sixty schools were positioning themselves to take advantage of the market demands of STCs.

The publication, *Academic Programs in Technical Communication* (1987) also provides a list of 37 undergraduate programs. Barchilon (1988) reported the names and locations of 18 institutions offering master's degrees in technical communication.

In the early 1990s, Humphreys (1997) estimated that approximately 65 college and universities offered undergraduate degree in technical communication. Today, according to Society for Technical communication Web site, approximately 230 schools offer a certificate or degree in technical communication.

Staples (1999) also indicated that the number of academic programs in technical communication grew rapidly throughout the 1980s reaching a total of

203 (including 11 doctoral programs) by the time the 1993 STC program survey. Staples also asserts: "Graduate and undergraduate courses in over 220 academic are supported by trade and scholarly journals, texts and trade books, academic and professional organizations, and most important of all by a growing body of technical communication theory and research."

McDowell, Frissell, and Winkler (1981) surveyed 205 students from different technical communication programs. They discovered that students as a whole, "perceived themselves as self-starters, innovative, responsible, enthusiastic and organized . . . " Students ranked listening, professional writing and scientific and technical writing as the most important technical communication courses."

In addition in 1986, Kalmbach, Jobst, and Meese assessed the curriculum of Michigan Technological University. They concluded that technical communication need course work in writing, working in small groups, researching, editing, designing documents, and field testing.

The authors also stated:

> We need to advice students to select a group of courses And extracurricular activities that will give them experience in a variety of communication projects. Students certainly need not try to become experts in everything, but they should try to develop enough understanding of different media so that they can work with experts in these forms (Kalmbach, Jobst, and Meese)

Basically the authors suggested curriculum advisors need to assist students to explore and expand new possibilities.

The increase of the number of programs at the undergraduate and graduate levels has intensified the need to identify what types of skills and

courses should be taught at the two levels. For example, Storms (1984) distinguished between the bachelor's and master's degree in the following way:

> Courses offered at the graduate level typically require more work and treat more sophisticated concepts than undergraduate courses in the same areas. Moreover, Master's programs . . . often emphasize communication theory more than do undergraduate programs.

John Harris (l985) compares two types of teachers and professional in technical communication. He describes them as "old turks" and "young turks" The "old turks" is described as tough-minded and very pragmatic, where as the young turks are fluent in classical rhetoric and communication theory. Carolyn Miller supports, in part both camps, but asserts that collaboration be the academy and the industry should not mean uncritical acceptance of workplace needs and conditions. Miller concluded: "If technical writing is the rhetoric if "the world of work," but is the rhetoric of contemporary praxis? In teaching such rhetoric, then, we acquire a measure of responsibility for political and economic conduct. "

McDowell (l991) explored educators' and professional writers' perceptions of curriculum needs of undergraduate and graduate students. The results revealed that technical writing, editing, document design and graphic design are the most important courses for undergraduate technical communication students and graduate students with their undergraduate degree in an unrelated discipline. In contrast, publication management, document design, testing documents, computer system documentation, instructional materials and graphic design courses are most important for graduate students with an undergraduate

degree in technical communication.

In addition, "Theory and Research in Audience Analysis" is important for graduate students. Educators feel that rhetorical theory and communication theory are significantly more important for graduate students than technical communicational professionals. The findings support that an "old turks'" For undergraduate technical communication students and a "new turks'" position for graduate students.

Gurak (l993) noted that over the past 15 years advances in computer technology –such as word processing, software desktop publishing, desktop laser printing, online communication, multimedia, hypertext and the internet—have impacted the practice and theory of technical communication.

Staples (l999) also concluded that with disciplinary maturity comes a multidisciplinary technical communication research agenda in such diverse areas as rhetoric, gender, and composition studies, cognitive psychology, sociology and ethics as well as document design, human factors and usability.

In l997, Coon and Scanlon conducted a study with students from Rochester Institute of Technology. Approximately, 60 percent of the respondents suggested additional course work in computer-oriented skills, while other students stressed the need for more writing and for less theory and more practical skills in be reinforced in the technical communication curriculum. The authors recommended

> "I would recommend that the curriculum stress writing proficiency even more than I did... I would also suggest a course that introduces them to ... the principles of graphic design and layout."

> "I strongly believe the most important addition to Professional and Technical Communication would be increase reliance on computer technology."

In short their study should help to create a curriculum that is

Responsive to the requirement of the profession, while remaining committed to the intellectual growth of technical communication students. The results of this study seems to support the "old turks'" viewpoint.

In addition, Mary Lay reinforces in the need for academic skills learned in scientific and technical communication, Mary Lay et al. (1995) asserts:

> Academic departments of technical communication have established themselves in American higher education. As a discipline, technical communication has the potential to provide a unique educational forum for diverse programs, for innovative research and curriculum, and for a wide base of theory, inquiry, and application. In the face of change, technical communication educational practice can responsibly support and even direct the social uses of information and technology.

Marian Barchilon's and Donald Kelly's article, "A Flexible Technical Communication Education Model for the Year 2000," provides a blueprint for the beginning of the 21 century. The authors indicate: "Educators must equip technical communication graduates so that they are better prepared for success in business and industry." They suggest 10 attributes industry needs and possible ways to implement them in a technical communication programs.

Attribute 1 Strive for Excellence

> Have students participate in communication competitions
> If possible, obtain funding (money) to financially reward students for excellent performance

excelling far beyond these standards
Provide tools (instruments, apparatuses, or knowledge) to increase Productivity

Attribute 2 Work in a team

Design documents in communication teams and in interdisciplinary teams
Incorporate coursework in interpersonal communication

Attribute 3 Be customer-focused

Stress audience-analysis as a tool to satisfy the internal and external Customer
Differentiate tasks in teams so students depend on each other to satisfy internal customer expectation

Attribute 4 Integrate information from various disciplines

Stress the interdisciplinary focus of technical communication's body of knowledge
If possible, organize teams with individuals from other disciplines who have discipline-specific information
Incorporate communication problems that require interviewing subject matter experts from other disciplines
Provide assignments that require students to conduct library research in other fields
Provide guest speakers from different disciplines

Attribute 5 Apply what is learned in context

Give students applications-oriented communication projects that require them to satisfy REAL audiences
Have students design and then use their documents for their designed purpose
Provide instruction in interpersonal communication and then place students in terms in which they can apply it

Attribute 6 Know where to obtain expert information

Encourage students to use library resources
Support professional society involvement
Obtain guest speakers to expose students to experts

Attribute 7 Engage in lifelong learning

Stress the importance of advanced education

Support student networking with professionals in technical communication, other disciplines and in formal and informal settings
Surround the student with a highly charged intellectual and social atmosphere so that learning in an integral part of their lives
Avoid the passive classroom lecture style; instead, provide adequate resources so students go beyond classroom instruction and search for information on their own

Attribute 8 Be flexible in an ever-changing business climate

Give unannounced quizzes so that students anticipate change

Give students an equal chance to serve in different roles (e.g., leader) on teams

Attribute 9 Understand the "big picture"

Give students the opportunity to write their own mission statement,
Goals, and objectives so they "own" the process

Attribute 10 Work with and appreciate individuals from other cultures

Place students in culturally diverse teams
Invite culturally diverse guest speakers
Provide exams and assignments that contain culturally diverse information

Barchilon and Kelly (1995) Technical Communication Model was used to design a NSF engineering and technology program called Sun Devil Bridge Program (SDBP). The primary purpose of the program was to help eligible minority students to advance to a baccalaureate degree in engineering and technology. The program was designed to emphasize the relationship between theory and practice. As discussed above the Technical Communication Model lists 10 attributes industry needs and expresses possible ways to implement these attributes into the technical communication program.

Their model can also be used to develop other programs. Because the technical communication discipline is constantly changing, educators design or redesign undergraduate, graduate and certificate programs. The model emphasizes/implies integrated faculty from other disciplines and other institutions as well as collaborating with professional technical communicators.

Finally, Barchilon and Kelly assert:

> The year 2000 is almost upon us. If technical communication programs are to continue to respond to industry, educators must listen to industry's needs and then formulate creative ways to meet those needs. The TC model provides one way for educators to help students (future employees) be more successful in the competitive and global workplace they will face.

Studies in Technical Communication for the 21st Century

Below is a series of studies that focus on STC at the beginning of 21st century:

Study 1

A Curricular Profile of Technical Communication Departments at the Beginning of the 21st Century

Purpose

The primary purpose of this study is to explore websites to determine the present curriculum offerings of colleges/universities offering courses, certificates and/or degree in scientific and technical communication. I sought to answer the following questions:

1. What scientific and technical communication courses are offered by colleges/universities in the United States at the beginning of the 21st century?

2. How many states offer courses in scientific and technical communication at the beginning of the 21st century?

3. What percent of courses/programs are offered in each State?

5. What is the curricular profile of courses in scientific and technical communication?

Method

I obtained a list of college and universities offering technical communication courses by checking website: http://www.stc-va.org/scripts.schools. Next 100 of the college/universities websites were searched to discover the scientific and technical communication courses that were listed. The investigation found the websites for 60 of the 100 colleges/universities (60%). The information was downloaded and printed. Next cover letters were sent to the 60 college and universities requesting hardcopy of courses, certificates and degrees programs.

Results

Based on the STC website 148 of the colleges/universities are in the United States. I attempted to find 100 of the 148 websites. I found significant information for 60 of the websites. Table 1 reports that 16 community colleges of courses. Certificates and/or associate degrees, while Table 2 shows 44 colleges and universities offer courses, certificates, and/or bachelor degrees and/or master degrees.

Table 3 provides the number and percentages of colleges and universities in the United States offering courses, certificates and degree in scientific and technical communication. The results indicate that 36 of the 50 states have courses and/or programs of some type of scientific and technical communication. Thirty-sever percent of the colleges/universities are located in

California, Ohio, Texas, Illinois and New York. An additional 22 percent are located in Michigan, Pennsylvania, Massachusetts, Louisiana, Minnesota and Wisconsin. Sixty percent are located in the Northeast, Midwest, Northeast, while other areas have fewer programs.

The results reported in Table 4 indicate that technical writing, technical editing, internships were offered by more than 40 percent of the programs. In addition more than 20 percent offer courses in management communication, computer documentation, grammar and style, research in technical communication and advanced technical communication.

Courses in graphics, teaching document design, business writing, rhetorical theory and professional editing are offered by more than 10 percent of colleges and universities. These courses as well as others will be discussed in the next section.

Discussion

In this study websites for 60 college/universities are explored to discover scientific and technical communication courses, certificate programs and degree programs offered in their departments. The results reveal that technical writing, professional writing, technical editing, managerial communication, grammar and style are the same courses offered in STC programs 20 years ago. In contrast, courses in computer documentation have continued to grow in the last 20 years. Courses arte now offered on online documentation. World Wide Web design, computer aided publishing, and writing for online presentation. Over 40 percent offer courses in rhetorical theory. The courses range from

classical rhetoric to modern rhetoric, technical editing as well as human communication. The growth in courses in qualitative and quantitative research and teaching courses can be explained by an increase in the number of universities offering bachelor and master programs in scientific and technical communication. That is during the l990s scientific and technical communication programs continued to develop. As reported earlier Lay reported academic programs of technical communication have established themselves in American higher education.

Other results reveal that approximately 30 percent of the colleges and universities offer at least one computer documentation course and over 20 percent offer courses in qualitative and quantitative research, including 5 courses in usability studies, and 10 percent offer international communication. In addition, Staples indicated that these areas have become areas of specialization in the technical communication field.

The purpose of this study was to identify the types of courses being offered in scientific and technical communication programs as we enter the 21st century. Assuming the results are representative of the field, it will be interesting to track the changes during the 21st century.

Table 1
Two Year Colleges

Community Colleges
Austin Community College
Austin Peabody State College
Belleville Area College
Burlington County College
Clackamas Community College
Cincinnati State Technical and Community College
Edison Community College
Gateway Technical College
Nazareth College
Pennsylvania College of Technology
Lake County Community College
Orange Coast College
American River College
Thomas Nelson Community college
Washington State Community College
Terra Community College

Table 2
Four Year Colleges

4-Year College
Bob Jones University
Baylor University
Boise State University
Bowling Green University
BrighamYoung University
Clalifnoria State University of PA
Carnegie Mellon University
Cedarville College
Drexel University
East Carolina University
East Michigan University
East Washington University
Gannon College
George Mason University
Georgia Institute of Technology
Iowa State University
Louisana Tech University
Michigan Technological University
Milwaukee School of Engineering
Missouri Western State College
Ohio University
Pittsburg State University
Portland State University
Purdue University--Calmet
San Fransicso State University
Rensselaer Polytechnic Institute
Simmons College
Southern Polytechnic State University
Suny Institute of Technology
University of Arkansas
University of Maine
University of Maryland
University of Memphis
University of Michigan
University of Minnesota
University of South Florida
University of Tennessee-Chattanooga
University of Washington
Towson University
Weber State University
Western Washington University
Wright State University
Texas A&M University
Texas Tech University

Table 3

Colleges and Universities Offering Scientific And Technical Communication Courses

Rank	State	Current Offerings
	Califnoria	19 (12.8%)
	Ohio	11 (7.4 %)
	Texas	10 (6.7 %)
	Illinois	8 (5.4%)
	New York	7 (5 %)
	Michigan	6 (4 %)
	Pennsylvania	6 (4 %)
	Massachusetts	5 (3.3%)
	Louisiana	5 (3.3%)
	Minnesota	5 (3.3%)
	Wisconsin	5 (3.3%)
	Tennessee	4 (2.7%)
	Utah	4 (2.7%)
	Oregon	4 (2.7%)
	Washington	4 (2.7%)
	Colorado	4 (2.7%)
	Maryland	4 (2.7%)
	Florida	3 (2 %)
	Georgia	3 (2 %)
	Mississippi	3 (2 %)
	North Carolina	3 (2 %)
	Indiana	2 (1.3%)
	Arkansas	2 (1.3%)
	Oklahoma	2 (1.3%)
	New Mexico	2 (1.3%)
	Montana	2 (1.3%)
	Kansas	2 (1.3%)
	Virginia	2 (1.3%)
	South Carolina	2 (1.3%)
	Idaho	1 (.6%)
	West Virginia	1 (.6%)
	New Jersey	1 (.6%)
	Iowa	1 (.6%)
	Kentucky	1 (.6%)
	Maine	1 (.6%)
	Delaware	1 (.6%)

Table 4

Scientific and Technical Communication Course Offerings

Rank	Course	Current Offerings
1	Technical Writing	40 (66.7%)
2	Technical Editing	25 (41.7%)
3	Internships	24 (40%)
4	Management Communication	22 (35%)
5	Computer Documentation	17 (28.3%)
6	Grammar and Style	15 (25%)
7	Research in Tech. Comm	13 (21.7%)
8	Advanced Technical Writing	11 (18%)
9	Graphics	11 (18%)
10	Teaching	10 (16.7%)
11	Document Design	10 (16.7%)
12	Desktop Publishing	10 (16.7%)
13	Business Writing	9 (15.4%)
14	Rhetorical Theory	8 (13.3%)
15	Professional Editing	6 (10%)
16	Report Writing	5 (8.3%)
17	Grant Writing	4 (6.6%)
18	Principles of Communication	3 (5%)
19	Portfolio	3 (5%)
20	Interpersonal Communication	3 (5%)
21	Interviewing	3 (5%)
22	Technical Manuals	3 (5%)
23	Public Relations	2 (3.3%)
24	Theories of Composition	2 (3.3%)

Study 2: Certifying Technical Communication in the 21st Century

STC considered certifying technical communication in 1964, 1975, 1981 and 1982. In 1983 President Kent Cook, Jr. appointed Andrew Malcolm as manager for an ad hoc Committee on Certification. During the 1980s meetings were held throughout the United States. The following questions were used to guide the discussion:

> What should a certification program include? (training, experience, tests, supervised work certificates, record keeping, judges arbitrators, standing committees, etc.)
>
> Would employees value certification? (credibility, validity, and reliability: based on hiring, promoting, increasing salary, willingness to pay fees, etc.)
>
> What would a certification program cost?
>
> How many persons would apply for certification?
>
> What would the applicants' technical communication vocation be? (writing, editing, illustrating)
>
> What would the applicant's technical skills be and should STC certify those skills?
>
> Who would operate the program? (entirely STC, entirely a contractor, or a combination)
>
> Should due s income be used to support certification or should it be self-supporting through fees?

This plan became an STC Certification Program document but was not approved by the STC board. The initial features were as follows:

1. There would be two levels of certification, regular and senior:

   Regular certification would require a combination of four years of education and experience of which two or more years would have to experience.

   Senior certification would require a combination of six and one-half years of education and experience.

1. Persons holding membership would be permitted to obtain certification without monitoring of experience by STC.

2. Testing would be by discipline, i.e., writers, editors, etc. Applications would be required to perform writing, editing, etc. to demonstrate specific skills.

Procedures

In January 1983 the STC Board authorized the Committee to conduct an opinion survey of employers of technical communicators. In the fall of 1983 the Board authorized the Committee to survey all of its members. In 2001 I asked 40 undergraduate and graduate STC students to respond to two of the questions used in the 1985 survey, as well as answer four additional questions.

Results

The results indicate that 1250 surveys were analyzed in the 1985 study, while 40 questionnaires were analyzed for the sTC students. The results are reported in table 1:

Table 1
Responses to Certification Questions

ITEMS	Responses 1985 %	2001 %
Should STC be the organization that administers a program I for certifying technical Communicators?	61	83
Would you apply for certification as a technical communicator?	71	95
Should professionals in STC receive certification without taking a test		77
Should educators develop certification tests in various technical communication areas?		63
Would you take tests to be certified in different areas of STC?		92

Discussion

The results of the 1985 and 2001 surveys seem to indicate that STC should Administer certificate programs in scientific and technical communication. In Fact, 83 percent of the respondents (2001) agreed with this statement. Moreover, 95 percent indicated they would apply for the program. Over 75 percent of technical communication students believe they should receive certification by completing a BS degree in technical communication, and 63 percent believe that the tests should be developed in different communication areas. Almost all

students (92%) believe that they would be certified in different areas.

Study 3: Should Technical Communication Professionally Be Certified in Specific Technical Communication Areas

The primary focus on this study was to discover if Twin Cities STC members think technical communicator professionals should be certified in specific technical communication areas.

A survey was conducted via email with Twin Cities Chapter STC members. The instrument consisted of eight including two demographic information questions and six questions on certification of for their occupation. Thirty-one STC members responded to the questionnaire. The results are reported for each question:

1. How long have you been an STC member?

Less than 4 years	10%
4-6 years	36%
7-10 years	19%
11-15 years	16%
over 15 years	19%

2. Which one of the following best describes your current/future work.

Technical Writer	16 (52%)
Technical Editor	1 (3%)
Technical Illustrating	1 (3%)
Managing Technical Communicators	5 (16%)
Teaching Technical Communicators	0
Other	8 (25%)

3. Do you think technical communication occupations should receive certification?

Yes	35%
No	65%

4. Do you believe a certification program would benefit employers?

Yes	55%
No	45%

5. What organization should certify technical communication?

Society for Technical Communication	13 (42%)
A Federal Government Agency	0
Educational Certifying Organizations	4 (13%)
Universities and colleges	3 (10%)
Other	3 (10%)
Don't know	8 (26%)

6. Do you think that educational programs leading to a degree in technical communication should be accredited by the same organizations that certify technical communicators?

Yes	48%
No	19%
No Opinion	32%

7. Would you apply for certification as a technical communicator?

Yes	21 (68%)
No	9 (29%)
Other	1 (3%)

8. Do you think an employer should pay between $50.00 and $200.00 for your certification?

Yes	6%
No	55%
Maybe	29%
Don't know	10%

The results indicate that 90 percent of STC members have been in the TC field for more than four years. It is somewhat surprising that only 35 percent of respondents think. TC occupations should be certified even though 55 percent believe a certification program would benefit employers. In addition, 53 percent feel that STC should certify TC areas, while 23 percent believe educators should certify the areas and 34 percent don't know. It might be that if a question suggesting a combination of the STC organization and educational institutions work together to develop certification requirements would produce a greater percentage. More research is being completed on certification of STC occupations.

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