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Technical Communication from 1950-1998: Where Are We Now?

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The changes in technical communication education between 1950 and 1998 have led to disciplinary maturity: the development of academic programs and of a body of innovative research. This disciplinary maturity parallels the professional identity and growth of numbers of technical communication practitioners. As a thriving multidiscipline with many direct research and pedagogical connections to the workplace, technical communication can uniquely influence workforce values, providing a new, evolving disciplinary model for higher education. However, technical communication's disciplinary maturity also means a movement away from practice and from the service course, the foundations of technical communication as a discipline and the sources of its workplace influence.

The pioneering teachers of engineering writing described in Teresa Kynell's *Writing in a Milieu of Utility* would be astonished and delighted by the growth, acceptance, and maturity of technical communication studies today. Service courses are offered at virtually every American college and university—and to students in a growing number of workplace and academic disciplines. Graduate and undergraduate courses in over 220 academic programs 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.

But have these advances resolved the conflicts that early teachers of technical communication had to face? Perhaps those most painful for educators before World War II were caused by the lack of a disciplinary identity or an administrative home inside the academy. Caught between workplace demands for improved communication skills (which many were ill prepared to meet) and looked down on by teachers of literature in established English departments (Kynell 37), early technical communication instructors persisted in teaching writing for engineers—yet another conflict between career education

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and the humanities. The issues of status and credibility for the technical communication field and for those who taught in it remained unresolved before World War II. Are they today? A look at the related educational, professional, and technical changes between 1950 and the present may provide some answers.

The 1950s saw a remarkable demand for technical communication in the academy and the workplace. The important antecedent: Public Law 346, the Serviceman's Readjustment Act of 1944. Intended to stave off a period of unemployment and civil unrest like the one following World War I, the G.I. Bill had an unexpected effect. American veterans, children of the Depression eager for educational opportunities and for better lives, took advantage of the Bill. Of 14 million eligible, 2.2 million attended college (Kiester 130). The G.I. Bill made college available to new populations, including an estimated 60,000 women and 70,000 African Americans (Kiester 130). Arguably the most far-reaching educational legislation since the Morrill Act of 1862, the G.I. Bill changed more than the numbers of college students: it redefined the goals and nature of postsecondary education.

From 1944 on, college education became accessible to new students—with new expectations. Older and more goal directed, they swelled the enrollments of colleges and universities across the country, bringing families with them. In particular, engineering programs grew. The University of Pittsburgh in 1948, for example, had more engineering students than had enrolled in any five years combined in the 1930s—and 70 percent of them were veterans (Kiester 131).

The G.I. Bill was not the only postwar initiative to address democratic access to postsecondary education. President Truman's 1947 Commission on Higher Education began a long-range planning effort to meet the needs of this generation and of the next, predicating its efforts on its belief that "education should not be confined to an intellectual elite, much less a small elite drawn from families in the higher income brackets" (Staples 217). The veterans educated by the G.I. Bill (and their college-age children in the 1960s) found higher education more accessible and more valuable in employment than had any previous generations.

With increased numbers of students flooding colleges of engineering in the 1940s and 1950s, technical communication education enjoyed increased growth and a wider range of instructional options (Adams 145). Texts began to reflect new curricular interests and a wider range of students, from fields including architecture, pharmacy, agriculture, chemistry, and home economics (Connors 344).

One influential instructional trend was supported by surveys of workplace practice. Gordon Mills and John Walter's *Technical Writing* of 1954, for example, was based on a comprehensive survey of over 300 different writing situations in industry. The text included a wide range of subjects—letters, articles, and procedures, in addition to many report types—emphasizing a rhetorical approach with emphasis on the reader (Connors 343). James Souther's 1957 *Technical Report Writing* reflected a process approach supported by studies on audience

in IBM, GE, and Westinghouse (Souther, *Technical* 7). By the end of the 1950s, technical communication instruction had grown in sophistication, considering graphic as well as verbal presentation, and was supported by a large number of texts (Connors 42).

The technical communication profession enjoyed a similar postwar boom in the 1950s. Writers who had been busy providing wartime technical information remained busy as wartime technologies were applied to peacetime uses. General Electric, Westinghouse, and General Motors initiated departments of technical writing (Souther 7). Professional technical writing organizations began to grow. Two East Coast organizations, the Society of Technical Writers and Editors (1953) and the Association of Technical Writers and Editors (1954) merged into the Society of Technical Writers and Editors in 1957. The new organization in turn joined a west coast one, the Technical Publishing Society (1955), forming the Society of Technical Writers and Publishers in 1960 (Stolgitis). Renamed the Society for Technical Communication (STC) in 1971, this organization was the first to publish a journal, *Technical Communication*, followed in 1958 by IEEE's *Transactions in Professional Communication* (Souther, *Technical* 6).

While technical communication service courses were taught in English or engineering departments, largely by adjuncts and the untenured, academic programs were beginning to develop and to expand their range of offerings as the demand for technical communicators increased and those employed during the war retired (Souther 6). Rensselaer Polytechnic Institute offered the first M.A. program in 1958, the same year as its first Technical Writers Institute.

The 1960s were a period of growth for the technical communication profession, foreshadowed by *Sputnik* in 1957. The booming domestic technologies of the 1950s were joined by the other growing technologies of an escalating Cold War—text and subtext of the Nixon-Krushchev kitchen debate. And writers were needed in increasing numbers to support both, as reflected by the growth in membership in STC from 2,564 in 1960 to 3,363 in 1965 (Stolgitis).

Despite declining numbers of engineering students, the 1960s saw a steady growth in numbers of students enrolled in technical communication courses (Souther, "Teaching" 8). The demand for teachers of service courses in applied writing remained constant, but in departments where publication, teaching, and study in literature meant status, promotion, and tenure, the teaching of technical writing was considered a career risk relegated to graduate students and adjunct staff (Connors 343-44). The Modern Language Association had consistently refused to recognize technical writing as a legitimate area for study or research, and few journals (outside of those in engineering disciplines) provided opportunities for publication.

The 1960s saw an enormous growth in numbers of texts in composition as well as in technical writing. Representative (and widely influential) was Kenneth Houp and Thomas Pearsall's 1968 *Reporting Technical Information* (still a standard in the service course marketplace). It combined a strong section on rhetorical process and audi-

ence, with a section on current communication forms and products and a useful handbook (Souther 9). Pearsall's 1969 *Audience Analysis for Technical Writing* took the trend a step further, providing the first systematic approach to audience analysis in an academic context (Souther 9).

New marketplace needs also shaped 1960s curriculum, as proposal writing became a billion dollar industry by mid-decade (Connors). A 1962 text, Siegfried Mandel and David L. Caldwell's *Proposal and Inquiry Writing*, appeared, and the second edition of Gordon Mills and John Walter's *Technical Writing* included proposals. Industry competition for the few professionally experienced technical writers grew (Connors 344). To meet industry's need for prepared technical communicators, ten academic programs, including graduate programs at the Massachusetts Institute of Technology and at Michigan, were active by the early 1970s (Souther 10). In addition, the number of institutions offering short courses for industry expanded to include MIT, the University of Michigan, Georgia Tech, and Newark College of Engineering (Souther 9). Despite a lack of disciplinary definition, the 1960s meant a closer and more productive relationship between industry and the academy than in previous decades as the technical communication profession became better recognized and more clearly defined.

By 1970, the technical communication discipline and profession had seen a slowing of growth, reflected in smaller memberships in both NCTE and STC. Despite the demands for instruction and for fewer, if better prepared, technical communication professionals, no academic publications or organizations, no academic opportunities for research and publication, and few resources for new teachers in two-year, four-year, and graduate institutions existed.

By 1970, membership in what was soon to be called the Society for Technical Communication (STC) had very gradually risen to 3,874 (Stolgitis). The typical technical communicator was probably male, perhaps ex-military or a former technician, of middle age, and probably a long term employee of a single company. He wrote manuals and other materials which supported a military, manufacturing, or domestic product industry. Such a writer might have some college education, perhaps a B.A. degree or technical training. He would compose with a yellow pad and pencil or on an electric typewriter. The audience for his work would consist of American readers of English. In 1970, the technical communicator earned a median salary of $15,000 (STC, *Profile* 9). An ancillary to industry, he was easily expendable in hard times.

Engineering enrollments, which had enjoyed unprecedented growth between 1945 and 1950 (Kiester 131), declined from 239,000 in 1968 to 187,000 in 1973—despite growth in total college enrollments (Connors 346). The technical communication profession had seen a similar reduction in growth, as reflected in a slowing of STC membership (Stolgitis 1997). The numbers of early 1970s service course offerings gradually declined (Connors 346-47), though offered

in a growing number of colleges and universities. The faculty, often from English departments, who taught such courses were required to publish, but in an environment which rewarded the study and teaching of literature, and which, outside of engineering journals, provided little forum for publication in what was essentially a teaching area.

Nell Ann Pickett's account of her 1969 experience with the publisher of the first edition of *Technical English* reveals a number of uncomfortable realities about academic status and technical communication of the period. Pickett and her coauthor, Ann Laster, were told that their initials, rather than their gender-revealing first names, and their two-year college affiliation would not appear on the title page of their text, which would be introduced by a well known (male) figure in English Studies. Pickett and Laster firmly declined these suggestions (Pickett 134-36). Their text, now in the latest of its many editions, remains a best seller, the first to meet the needs of the growing population of two-year college students with workplace writing needs.

Others teaching technical communication showed less grace under pressure in the early 1970s. For the majority teaching outside the few technical communication programs, the technical communication service course remained a necessary but thankless burden, applied discourse seemingly untouched by the changes in composition pedagogy of the 1960s. By the mid-1970s, however, technical communication teachers began to gain more resources and recognition—particularly as service course enrollments began to rise, by the late 1970s, at a rate of ten percent per year (Connors 347). By the 1980s, industry demand for specialized technical communication education had likewise grown. Technical communication credentials and education provided a career advantage, according to 76 percent of writers and 73 percent of managers surveyed in 1984 (Storms 13). This demand was to reshape the profession and the discipline.

Key in developing disciplinary identity were the new academic organizations and journals founded during the 1970s. Jay Gould's 1970 *Journal of Technical Writing and Communication* was the first of its kind. In 1973, the Association of Teachers of Technical Writing was founded, along with its publication, *The Technical Writing Teacher*. Other publications were to follow. The 1970s also saw a steady production of publications to support technical communication teachers. Pearsall's *Teaching Technical Writing* and Donald Cunningham and Herman Estrin's *The Teaching of Technical Writing*, both of 1975, were followed by Dwight Stevenson's 1981 *Courses, Components, and Exercises in Technical Writing* and W. Keats Sparrow and Nell Ann Pickett's *Technical and Business Communication in Two-Year Programs* in 1983, among others (Souther 11).

Numbers of academic programs also grew during the 1970s. The Council of Programs in Technical and Scientific Communication, founded in 1973, recorded 19 programs in its 1976 directory. By the time of the 1981 program directory, that number had grown to 56. These programs supported faculty by offering summer workshops for

technical communication scholars and teachers and opportunities for sharing programmatic information, new pedagogies, and research. As many as six were offered at different colleges and universities by 1980. In addition, academic programs continued to offer short courses to industry, both on campus and on site.

The late 1970s also saw the early development of technical communication research. The important work of Janice Redish's Document Design Center, of Carnegie Mellon's research initiatives, and of individual scholars began to enjoy a growing and appreciative disciplinary audience and a widening range of venues for publication (Souther 11).

As an academic discipline, composition studies had flourished in the 1970s, with a phenomenal growth in numbers of attendees at CCCC—from barely 300 in 1971 to over 1,200 by the decade's end (Fox). With this growth came major research titles, a maturing research agenda, and a growth in numbers of graduate programs. Technical communication, however, saw its own disciplinary flowering in the 1980s with the development and growth of graduate programs and research. The number of academic programs in technical communication rose steadily throughout the 1980s, reaching a total of 203 (including 11 doctoral programs) by the time of the 1993 STC program survey. The opportunities and audience for scholarly publication likewise expanded in the 1980s. Well-attended ATTW-sponsored sessions were held at MLA (Connors 347), technical communication sessions and the ATTW Annual Business Meeting were held at CCCC. At this conference, the NCTE Committee on Technical and Scientific Communication, definitively established after short intervals between 1960 and 1963 and 1972 and 1980, granted annual awards for excellence in technical communication scholarship (Cunningham, "Editor's" 57). The important titles of the 1980s reflected new research alliances, interests, and methodologies: Paul Anderson, John Brockmann, and Carolyn Miller's *New Essays in Scientific and Technical Communication* in 1983, Lee Odell and Dixie Gotswami's *Writing in Nonacademic Settings* in 1985, and Bertie Fearing and W. Keats Sparrow's *Technical Writing: Theory and Practice* in 1989.

With change and growth, however, came disciplinary conflict. John Harris describes the polarization of the technical communication discipline into two groups: an "old guard," the founders of the post-war discipline, chiefly men, "tough-minded and very pragmatic . . . [who] had learned technical writing from individual study of practice in the field . . . [but were] . . . very willing to share their knowledge with newcomers to teaching" (iv) and "young turks," graduates of new doctoral programs, chiefly women, fluent in classical rhetoric and communication theory, "with their own ideas and career ambitions to be fulfilled" (iv). Harris regrets a schism that destroyed the discipline's early camaraderie and shared purpose, and he argues that "through vigorous academic debates between the old and the new, the profession can continue to grow" (v).

> The old guard can clearly benefit from examining more closely—as the new people in the field keep saying—the theoretical basis of what we do . . . . The new generation has also shown some very useful methods for careful statistical testing of the effectiveness of communication. Ultimately, the old guard must recognize that the prodigious energy of youth is not by definition sinister.
>
> But if the young turks have something to teach, so do the old guard . . . . They have sold courses to administrations, established reputations of programs, and met thousands of students in the classroom. Their pragmatic success has given the discipline the stability that allows it now to re-examine itself. And they often have a greasy-knuckled familiarity with the things written about in technical communication and have often had close association with the consumers of technical reports, proposals, and manuals. There is much that is valid in that kind of experience. (v)

Carolyn Miller's 1989 "What's Practical about Technical Writing?" attempts to define and resolve the same schism between theory and practice. She traces its history from the Morrill Act of 1862 and outlines arguments about the place of technology and applied science in American higher education (19). Like Harris, Miller argues that *praxis*, applied craft, and *techne*, reflective art, can usefully support one another in technical communication. She applauds shared academy/industry initiatives in research and the use of "accepted mechanisms for channeling the [academy/industry] relation—internships, advisory councils, certification of graduates, and procedures for justifying and accrediting programs" (39). However, Miller also asserts that collaboration between academy and industry should not mean uncritical acceptance of workplace needs and conditions: existing practice does not necessarily reflect *best* practice. She argues that pedagogy to support the future technical communication practitioner must promote "both competence and the critical awareness of the implications of competence" supplemented "with prudential judgment, the ability (and willingness) to take socially responsible action, including symbolic action" (23) to the good of a larger community. Miller concludes as follows:

> Through praxis we make ourselves and each other in interaction: Aristotle emphasizes the political dimension of this interaction, Marx the economic. But whether our everyday activities are those of governing a community or those of making a living, they have both political and economic dimensions. If technical writing is the rhetoric of "the world of work," it is the rhetoric of contemporary praxis. In teaching such rhetoric, then, we acquire a measure of responsibility for political and economic conduct. (24)

The pragmatic old guard of technical communication would share Miller's conclusions about the responsibility, potential, and influence of technical communication. But they retired, and as they retired, the discipline expanded, and with it, the young turks' need for tenure, promotion, and publication in journals emphasizing research, not pedagogy.

This brings us to the present decade, whose disciplinary growth, for all of its promise, still shows old tensions, realigned but unresolved. The 1998 economy, global in scope, driven by new forces, new markets, and new users of new products, would confound even the most far-sighted market analyst of 1950. In this economy, technical communication has come into its own as a profession. Redish and Judith Ramey's landmark 1993 study of the value added to technical products by communicators (23-39), funded by STC, demonstrates, more tangibly than ever before, that the technical communicator's contribution to a product is integral to the product's worth and value. The technical communicator of 1998, as reflected by a rapidly growing STC—with membership at over 21,000 in 39 different countries (STC, "Special Edition" 16)—is more likely to be female than male and is in her late thirties (STC, *Profile* 3). She has worked at several companies or as a contractor, holds at least one college degree (STC, *Profile* 4), and works, if not in a technical industry, then certainly with an increasingly wide and sophisticated range of communication technologies. The median salary for the technical communicator is $43,782, higher for those with graduate degrees or experience (STC, *1996* 4). New areas of specialization (reflected by STC's over 18 special interest groups) can support a particular medium (such as online documentation), a particular applied communication interest (such as international communication, document design, or usability), or a specialized communication role (such as technical editing, environmental writing, or technical communication management).

In 1998, technical communication has similarly matured as a discipline. A wide range of academic journals and organizations supports technical communication scholarship and education, flourishing in over 220 academic programs across the country, and in countless service courses offered at every postsecondary level. In 1998 men and women served as teachers, researchers, authors, and disciplinary leaders.

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—and new areas of discipline specific study as well: document design, human factors, and usability. A major service course text, *Technical Communication* by Mary Lay et al., reflects the range and diversity of current research. It is the collaborative work of many noted technical communication scholars/teachers. Technical communication programs of the 1990s, for all of their diversity, and perhaps because of it, are preparing technical communication professionals for important roles and an increasingly diverse profession.

> 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 education and

practice can responsibly support and even direct the social uses of information and technology.

But can we? The virulence of current arguments leveled against theory and curriculum by practitioners and against industry practice and ethics by theoreticians smacks strongly of the virulent praxis/techne and academic/industry polarities of Miller's "What's Practical about Technical Writing?" STC strategic plans support the technical research as a means of defining and strengthening the profession, but the workplace response to research remains mixed. As Brad Mehlenbacher and Carolyn Miller suggest, the ability to locate, summarize, and apply current research has value for a wide range of technical communication professionals, and learning "to read this research critically and to solve practical problems responsibly and creatively can best be taught . . . through first-hand experience in the research process" (47). While a terminal Master's degree in technical communication is an increasingly valued professional credential, reflected by the growth in numbers of Master's programs, Mehlenbacher and Miller also suggest that the role of a research project in such a degree "is often misunderstood and devalued by both students and employers" (47). Some of the same kind of misunderstanding appears in criticisms of the research articles which appear in the new *Technical Communication*, where, like the respondents to Mehlenbacher and Miller's survey, practitioners are "overwhelmingly anti-theory, pro-fast paced 'real-world' preparation" (48).

As both Miller and Harris rightly point out, the schism between academic theory and workplace practice cannot be resolved without thoughtful and open dialogue. To insist on an isolated disciplinary stance may cost technical communication education its potential. As a discipline, we no longer fight for legitimacy inside the academy. However, the perceived gap between academy and workplace still reflects the prejudice which confronted the early programs in engineering and other applied sciences—and (later) the early engineering service course from which the technical communication discipline grew.

In our maturity as a discipline, with our own body of theory and research, it becomes easy to dismiss our origins: teaching and long association with applied technologies and with the workplace. And since academia rewards publication in research journals over teaching and first-hand knowledge of professional practice, we are finding status-driven polarities inside the technical communication discipline itself: I recently heard one theorist patronizingly sympathize with those compelled to work on "low level activities": teaching service courses and preparing service course teachers.

Perhaps to meet the disciplinary responsibility of preparing students to meet citizenship and workplace responsibility with integrity as well as with knowledge and skill (Meyer and Bernhardt), we need to broaden our research agenda to welcome the scholarship of teaching, the scholarship of cross-disciplinary integration, and the

scholarship of application (Boyer). Clearly, we still have bridges to build—or rebuild. In distancing ourselves from the achievements of our disciplinary past, we may risk the ability to meet, support, and influence a changing educational and professional future.

We must accept and value our programmatic diversity and our many points of connection with an equally diverse technical communication profession. And we must value and promote technical communication pedagogy at every level, connecting it to inquiry. These important tasks of reconciliation and integration will be for the next generation of technical communication educators to undertake.

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