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Editors
Tracy Bridgeford
Kirk St. Amant

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Editors

Tracy Bridgeford
University of Nebraska at Omaha
Department of English
Arts & Sciences Hall 189P
6001 Dodge Street
Omaha, NE 68182
402.554.3312
‹tbridgeford@unomaha.edu›

Kirk St. Amant
East Carolina University
Department of English
Bate 2201
Greenville, NC 27858-4353
252-737-2540
‹stamantk@ecu.edu›

Associate Editor

Laurence José
Grand Valley State University

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Programmatic Perspectives

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Issue Preview

Tracy Bridgeford
University of Nebraska at Omaha

Kirk St. Amant
East Carolina University

We're pleased to present the second issue of 2014. With this issue, we are excited to present some editorial staff changes. Laurence José will be stepping down as Book Review Editor and assuming one of the main roles as a developmental editor. Taking her place is Joanna Schreiber from Georgia Southern University. We welcome both of them to their new roles. The articles in this issue reflect the changing field of technical communication, from the influence of social media to an increasingly diverse work environment. These realities and more are impacting academic programs.

The first article by Saul Carliner, Liz Pohland, and Steven Jong addresses a growing post-graduate and workplace expectation, certification. To verify professional competence, many communication organizations have developed certification programs. The authors present various credentialing options, the impact on programs, and how to get involved.

Noting that research studies and jobs in the field increasingly show the need for social media skills, Alice R. Daer and Liza Potts extend ideas for incorporating digital tools in the curriculum. The authors expose the myth of digital natives, promote the use of critical thinking skills within the constantly changing digital environment, and point out that social media literacy is a practice, not a static skill.

Another aspect of the changing workplace, internationalism, forms the backdrop for Jennifer deWinter's article framing the purpose and process of offering linguistic and cultural competencies. Her program has enacted a China emphasis within a Professional Writing track utilizing faculty, grants, curriculum, and international opportunities to expand global understanding.

Programmatic Perspectives, *6*(2), Fall 2014: 1-2. Contact authors: ‹tbridgeford@unomaha.edu› and ‹stamantk@ecu.edu›.

Continuing a focus on the changing environment for technical communicators, Darina M. Slattery and Yvonne Cleary describe the MA in Technical Communication and E-Learning in this issue's Program Showcase. Graduates learn traditional skills of communicating clearly and concisely along with an emphasis on e-learning, which situates them for positions not only in technical communication but also instructional design and interactive courseware development, sought-after skills in many markets. The unique program is now moving toward offering a fully online MA.

Brian D. Blackburne considers the marketplace, especially the workplace challenges graduates may face, as he explores a method of stylistic analysis in this issue's Curriculum Showcase. This article presents specific instructions on implementation and rationale as Blackburne analyzes the ineffective writing style of airline safety briefings and the implications for passengers, technical communicators, and curriculum.

Curriculum is only one issue addressed in the Guest Editorial by Robert R. Johnson, Pavel Zemliansky, and Heidi McKee reviewing challenges and opportunities of technical communication programs. The editorial stemmed from a plenary panel at the 2013 CPTSC Conference. Johnson confronts the issue of Massive Open Online Courses (MOOCs) and the need for faculty to stand together "as the heart and soul of the university." Zemliansky advocates fostering collaboration between technical and scientific communication and writing across the curriculum to strengthen both programs. McKee promotes the need to keep curriculum current, resist program take-overs, and maintain program identity. Finally, a shared closing reflection directs attention to the decline of tenure.

Rounding out the coverage on the marketplace, Jessica Lauer reviews Susan Katz's book, *Start Your Career: 5 Steps to Finding the Right Job after College*. In her review, Lauer notes that the e-book format and comprehensive information make the book useful for both advanced students preparing to enter the job market and for the program administrators who are helping to prepare them.

We hope you enjoy the issue, and we look forward to the conversations it may provoke, perhaps at the CPTSC 2014 Annual Meeting.

Have a good fall semester, everyone.
Tracy and Kirk

Certification and Its Implications to the Academic Community in Professional and Technical Communication

Saul Carliner, CTDP
Concordia University

Liz Pohland
Society for Technical Communication

Steven Jong
Oracle Corporation

Abstract. Interest in certification has grown in recent years with the growth in credentialing options available to professional and technical communicators. This article provides a foundation for considering certification. It first explains the purpose of certification and contrasts it with other types of credentialing, including licensure, accreditation, and certificates. Then this article identifies the certifications and certificates available to professional and technical communicators, and explains how third-party certifications differ from degree programs. Next, this article explains why organizations serving professional and technical communicators have increasingly stressed certification and how certifications encompass critical thinking. The article closes by suggesting how certifications affect academic programs in the field and how faculty can become involved with the process.

Keywords. Certification, credentialing, competencies

In the 2013 book *Solving Problems in Technical Communication*, Kelli Cargile Cook, Emily Cook, Ben Minson, and Stephanie Wilson suggest that certification of technical communicators "is still on the distant horizon" and that "much work has yet to be done before [certification] can happen" (pp. 105–106).

Actually, certification has been available to professional and technical communicators for several decades. For example, the Public Relations Society of America (PRSA) began offering certification of public relations professionals in 1964 (PRSA, 2012b). The Board of Editors in the Life Sciences (BELS) began offering certification of biology editors in 1991 (Wikipedia,

Programmatic Perspectives, *6*(2), Fall 2014: 3-20. Contact authors: ‹saulcarliner@hotmail.com›, ‹liz.pohland@stc.org› and ‹stevefjong@comcast.net›.

2014). More recently in 2012, the Society for Technical Communication (STC) launched the Certified Professional Technical Communicator (CPTC)™ program to certify technical communicators and added the Certified Professional Technical Writer (CPTW)™ in 2013.

But what exactly is involved in earning these certifications? How did they emerge? And of most immediate concern to the readers of this journal, how might they affect academic programs in technical communication? In this article, we try to answer these questions, and place the development of the certification programs within the larger context of the evolution of education and continuing professional development for professional and quasi-professional fields. We start by defining the term certification and distinguishing it from related terms including licensing, certificates, and accreditation. Next, we explain how certification differs from a degree. Then, we consider certification within the larger context of work-related credentials, including other certifications available in professional communication and why interest in certification has grown in the past decade or so. We close by considering how certification might affect academic programs in technical communication and the advantages and disadvantages of faculty seeking certification.

Note, however, that this article primarily intends to explore what certification is and to place it within a larger context of current human resources and professional development practice. We recognize that certification is a controversial topic, but a critical assessment of certification is beyond the scope of this article. We leave such an assessment to future articles and hope that this one provides a common foundation on which to base such a discussion.

What is certification? How does it compare to certificates and accreditation?

In the vernacular, people use several terms interchangeably to refer to certification: certification, license, certificate program, and accreditation. Although used interchangeably, these terms each have distinct meanings and are not interchangeable with one another.

What is certification?

Certification is the recognition of professional competence—that is, the ability to produce work that meets identified standards within the framework of the job (Hale, 2011). Although certification processes for different professions have slight differences, all have these general characteristics (Hale, 2011; NISO):

- Voluntary participation. Certification is not required to work in the field, but it demonstrates a commitment on the part of the professional who earned it and employers might cite it as a preferred qualification.
- Identification of the key competencies of the profession. If certifications recognize professional competence, then a certification program must identify the key competencies—or skills—that people who practice in that field must possess. These competencies not only identify what professionals should be able to do but also provide indicators of competent performance in the resulting work products.
- Assessment of key competencies in each candidate. Certification processes require that applicants demonstrate that they have achieved competent levels of performance. Some do so through an examination, others do so through an annotated portfolio of work samples (as is the case with the CPTC and CPTW), and others do so through a combination of the two.
- Work experience in the field. Because they certify competence within the context of professional work, certifications are only open to people who have a designated number of years of experience in the field. For example, people seeking certification as an Editor in the Life Sciences (ELS)—the certification offered by the Board of Editors in the Life Sciences—need at least 2 years' experience. Those seeking Diplomate status as an Editor in the Life Sciences (ELS-D) need at least 6 years' experience.
- Adherence to a code of ethics. Certification programs require that certified professionals agree to follow the code of ethics for the profession—and they face consequences if they fail to do so, including loss of certification.
- Continued participation in professional development. To ensure that certified professionals have current knowledge of the field, most certification programs require that certified professionals continue their professional development through a combination of learning, contribution to the body of knowledge, and leadership in the profession—and to provide evidence of having had done so. Certifications not maintained in this way expire.

Professionals who successfully meet the requirements of certification earn a designation. The designation usually refers to the rights to use a particular title, such as Editor in the Life Sciences (ELS), Accredited Busi-

ness Communicator (ABC) from the International Association of Business Communicators, or Certified Professional Technical Communicator (CPTC). The process of going through certification and earning the designation is called the credentialing process.

The sidebar, A Sample Certification Process, explains the process that candidates for the CPTC follow to receive their credential.

A certification body oversees the credentialing process. Under US law, only organizations chartered under Section 501(c)(6) of the Internal Revenue Code are authorized to offer certification programs. But many professional organizations, like STC, are incorporated in the US as a charitable organization under Section 501(c)(3) of the code and must spend their revenue providing a service to the public, not certification. To address this situation, professional organizations incorporated in the US as charitable organizations often set up separate corporations chartered under Section 501(c)(6) to administer their certification programs. This situation is unique to the United States. Professional organizations in other countries often offer certification without incorporating a separate organization.

What is a license?

A professional license is the right to perform a particular job (Trice & Beyer, 1993) or permission to practice. Similar to certification, licensing differs from certification in a few fundamental ways:

- Certification is voluntary; licensure is mandatory. That is, one usually cannot perform certain jobs without a license. Licenses are issued by government agencies and typically required where public heath and safety is involved. Most people are aware that doctors and lawyers require a license to practice their work. Fewer people realize that hair stylists also require licenses.
- Licenses are granted by professional bodies, such as medical and bar associations. These associations also control education for the field by designating required competencies and the required curriculum for developing these competencies, specifying other aspects of the curriculum and, later, by verifying that organizations teaching that curriculum meet these requirements. Only graduates of these approved programs are eligible for licenses. Certifying bodies do not exercise such authority over the education for the field.
- Laws establish the framework for licensure.

What is a certificate?

In contrast to certification, a certificate recognizes completion of a program of study (Hale, 2011). Each certificate program has its own require-

ments, but they usually involve a combination of class attendance, completion of assignments, and perhaps successfully passing an exam.

In some cases, the program of study is short term, such as the certificate programs offered by STC and private training and development organizations. In other cases, the program of study involves several courses, such as certificate programs in technical communication offered by the continuing education units of many colleges and universities.

Note that certificate programs do not assess competence to perform work; they merely assess whether learners have met the educational requirements. As a result, certificates do not expire and do not need to be maintained. They are simply statements that a person completed a program of study at some point in time.

Despite the similar names, certificates and certification represent different types of credentials.

What is accreditation?

Sometimes people accidentally use the terms certification and accreditation interchangeably. But the two terms have different meanings.

Accreditation is a process of verifying that educational programs adhere to established standards of performance (AACSB, n.d.). These standards affect not only the curriculum itself but also the qualifications of the instructors, the facilities for teaching, library and laboratory facilities, and other support services.

For example, Engineering and Business programs are accredited by specialized organizations that have established performance standards for academic programs in the field.

STC is not involved in accrediting programs, nor does it plan to do so.

(As a point of information: the International Association of Business Communicators and the Public Relations Society of America offer certification programs to business communicators and public relations specialists respectively, but they use the term accreditation to refer to their credentialing process. This is a nonstandard use of the term.)

How do third-party certifications differ from a degree program offered by a college or university?

Degree programs and certification fill different needs. Degree programs provide the conceptual background and foundational education to work as a professional technical communicator. These programs prepare people for work in a field and provide not only the skills but more fundamentally the intellectual foundations for critical thinking about the field. Many people who enter academic programs, especially undergraduate and asso-

ciate's degree programs, have not worked in the field; many earn degrees in the field without ever having held a job in the profession. The degree prepares someone to work in the field.

Certification, by contrast, "is all about the workplace experience" (Barker, 2012, p. 31). Certification assesses the competence of communication professionals within the context of real jobs, contexts in which "skills are honed or milestones passed . . . that do not exist in an academic setting" (Barker, 2012, p. 31). As a result, certifications like the ELS, ELS-D, CPTC, and CPTW require several years of full-time equivalent work experience in the profession before candidates become eligible for certification. Candidates submit samples of their actual work in the field or equivalents as part of the application package for certification.

Which certifications are available to professional and technical communicators?

Most of the other major organizations serving professional and technical communication professionals have developed some sort of certification program, including those listed in Table 1.

At the time this article was submitted for publication, two of the certification programs listed above have been suspended. IABC suspended its ABC certification as the organization makes significant changes to the assess-

Table 1: List of Certifications in Professional Communication

Type of Communication	Name of the Credential	Sponsoring Organization	Type of Assessment
Business communication (general)	Accredited Business Communicator (ABC)	International Association of Business Communicators	Submitting a portfolio and completing an examination (IABC, 2012)
Life sciences	Editor in the Life Sciences, Editor in the Life Sciences—Diplomate status, and Honored Editor in the Life Sciences	Board of Editors in the Life Sciences (BELS)	Examination (BELS, 2012)
Public relations	Accreditation in Public Relations (APR)	Public Relations Society of America	Test (PRSA, 2012a)
Technical communication	Certified Professional Technical Communicator (CPTC) Certified Professional Writer (CPTW)	Society for Technical Communication	Portfolio (STC, 2013)

ment process. STC has suspended applications to the CPTC and CPTW programs as it focuses on other priorities of the organization.

In addition to certifications, several specializations in professional communication offer certificates that are viewed by members of their fields and hiring managers as certifications, including those listed in Table 2.

Table 2: List of Certificates That Many Professionals View as Certifications

Type of Communication	Name of the Certificate	Sponsoring Organization	About the Program
Medical writing	Separate certificates in each of the following topics (AMWA 2012): • Essential skills • Business • Composition and publication • Concepts in science and medicine • Regulatory and research	American Medical Writers Association	Each certificate involves attendance at a selection of workshops (usually more than three) and completion of pre-course assignments.
Scientific communication	Publishing Certificate Program	Council of Science Editors	Participation in conferences, webinars, and short courses, and knowledge is verified through preparation of a research paper and conference poster (Council of Science Editors, 2012).
Technical communication	Technical Writer (tekom), offered in German and English (tekom, 2013)	tekom (the German technical communication association)	Completion of a program of study and a capstone project (Herzke & Fritz, 2003). Originally offered only in German, the organization launched an English-language version in 2012. Although called certification, tekom's offering is not certification under the definition used by this article, but a continuing education program intended for people who work in the field or want to do so, and who prefer an alternative to a university certificate, diploma, or degree.
Technical communication	Variety of certificate programs with changing topics. Staples include basic technical writing, Darwin Information Typing Architecture (DITA), and technical communication management.	Society for Technical Communication	• Either a several-day face-to-face workshop or several online sessions. • Assignments (Society for Technical Communication, 2012).

Why have organizations serving professional and technical communicators increasingly stressed certification?

Those who have been following the discussions of certification in technical communication are likely aware that it's not a new topic. The first discussions started nearly 50 years ago in the Society for Technical Writers and Editors, the predecessor to STC (Turner & Rainey, 2004). This section explores the broad trends in certification, how one program evolved, and how organizations keep their certification programs current.

What are the broad trends in certification?

Not only is the discussion an ongoing one in our field but the discussions of certification extend well beyond professional and technical communication. The trend toward certifications is part of a growing trend in the workplace. According to Carter (2005), in just a small sample of "thirty-eight private organizations . . . between the years 2000 and 2003, the number of computer-related certifications available increased by 231 percent" (p. 44).

Experts in the workplace have offered several reasons for the trend. One of the most basic is a general reduction in employer investments in training that has occurred during the past 25 years, a trend accelerated by the economic downturns of 2001 and 2008–2009 (Carliner & Bakir, 2010).

Total spending on employer-provided training between 1986 and 2008 only rose 1.5% , while the workforce grew 38%, suggesting that a real drop in spending occurred (Carliner & Bakir, 2010). Economics accounts for part of this drop: employers reduced training costs as part of a larger effort to keep total costs under control. Part of the drop in employer expenditures on training is philosophical. In the 2000s, some experts in human resources (such as Capelli, 1999) began advising organizations to focus the majority of their training investments on high potential workers and only provide the rest of the workers with just the amount of the training needed to perform their jobs without a focus on long-term development (although, more recently, some of the same authors have advocated for increased investments in training [Capelli, 2012]). Furthermore, many employers show an increasing reluctance to provide training on transferrable skills (ones that the employee can use with any employer) for fear of that investment leaving with the worker should the employee choose to leave the company (Capelli, 2012; Downs, 2012).

A more significant reason for the move toward third-party certifications results from a change in employment arrangements, from longer- to

shorter-term employment, whether contract-based (contingent) employment or full-time jobs that turn over more frequently than 20 years ago. In the past, job markets valued experience and seniority. Current job markets therefore emphasize skills (Capelli, 2012, 1999).

Tax codes spur some of this shift in emphasis, especially regarding contractors. Tax codes in many countries prevent employers from providing much training to contractors because the tax code defines them as people who can already perform the core functions of the job (training on company products, policies, and procedures notwithstanding).

Rather than providing training, employers seek verification from an independent third party about whether workers already have the skills they seek, and certifications address such a need. That's why employers like certifications.

Workers like them, too. In a workplace that increasingly values skills over seniority, certifications provide a means for workers to demonstrate that they have particular skills. Certifications include those in project management, on widely used technologies like those from Microsoft and Cisco, and in professional areas, such as human resources, that have already gained wide popularity.

How did certification emerge in technical communication?

As noted earlier, the discussion of certification for technical communicators has continued for more than half of a century. For example, surveys conducted by STC in the early 1980s suggested that a majority of members supported certification, but the firm that won the contract for preparing the certification exam determined that certification would not be financially viable. Discussions quieted for a while.

But the profession of technical communication underwent significant shifts in the subsequent decade, with the rise of personal computing and its applications, and significant growth in the membership of the STC, as well as renewed interest in certification. So the organization commissioned another survey of interest in certification in the late 1990s, which suggested an even split among members of those who supported certification and those who did not. The survey also failed to yield conclusive evidence of employer interest in, or support for, certification (Turner & Rainey, 2004).

In response to another survey conducted about the same time that found that consumers of technical communication services were satisfied with the services—but could not specifically describe the unique value technical communicators added (Cash, 1995)—STC launched a project to define the core knowledge and skills of technical communication.

Although the project faltered (Turner & Rainey, 2004), it led to the establishment of a related project with a similar motive, the Technical Communication Body of Knowledge[1] An auxiliary use of both the core knowledge and skills and the Body of Knowledge is the establishment of a certification program.

While STC debated certification, other branches of communication and related fields launched the certifications mentioned earlier in Table 1, including ones in public relations, training, and editing in the life sciences. In response to these larger developments and requests from members, the STC Board decided in 2010 to launch a certification program.

Because the STC Body of Knowledge project was not fully developed (nor is it fully developed as of the writing of this article), an examination based on it was not feasible. So the STC Board decided to base competency on a portfolio assessment. In a portfolio assessment, applicants submit work samples and related commentaries that describe the participant's contribution to the sample and explain their choices. An evaluator assesses the extent to which the work sample and related commentary reflect the evaluation criteria—which are rooted in competencies and provide evaluators with explicit guidance in identifying competent performance. Because STC did not have a Body of Knowledge, it had adopted the competency model for technical communicators developed by the NorthWest Center for Emerging Technologies (1996) in the late 1990s, and that would serve as the basis for the certification program.

Substantial precedent exists for basing certification programs on competency models rather than bodies of knowledge. For example, two major training certifications—the Certified Professional in Learning and Performance (CPLP) offered by the American Society for Training and Development and Certified Training and Development Professional (CTDP) offered by the Canadian Society for Training and Development are both based on competency models rather than bodies of knowledge (Arneson, Rothwell, & Naughton, 2013; CSTD 2010).

Substantial precedent also exists for using portfolios to assess professional competence. The field of Prior Learning, Assessment and Recognition (PLAR) recommends the use of portfolios as a means of assessing professional knowledge, skill, and ability for the purpose of placing professionals in jobs (Manitoba Adult Learning and Literacy, 2006). Some academic programs in technical communication integrate portfolios into their curricula. The University of Minnesota has reviewed portfolios for applicants to its program in Scientific and Technical Communication. Fur-

[1] See ‹http://stcbok.editme.com›.

thermore, many certification programs are partially or completely based on a portfolio assessment, including the CPLP and CTDP (CSTD, 2012) mentioned earlier, the Certified Performance Technologist offered by the International Society for Performance Improvement (ISPI, 2009), and the Chartered Institute for Personnel and Development (CIPD), which certifies training professionals in the UK (CIPD, 2010).

Because the model was developed a decade earlier, STC engaged a certification consultant to validate the model with current practice and to update it if needed; the result was the set of competencies covered by the CPTC program. Believing that some technical writers might seek a credential but have positions requiring a more limited set of competencies, the STC Certification Commission commissioned a follow-up study to validate the competencies of a technical writer. The study confirmed this belief and identified the specific competencies used by technical writers. The competency model suggested the key sections of the portfolio and the guidance provided to applicants who prepare their portfolios. The committee validated the evaluation criteria through a process known as cut-scoring, in which evaluators determine which portfolios "make the cut" and, with the guidance of a certification expert, identify the characteristics of those portfolios that distinguish them from portfolios that do not "make the cut."

Do certification programs change?

All certification programs remain works in progress. Because work responsibilities and methods continually evolve, certifications require ongoing review and modification to reflect such developments. Such processes should be inclusive and transparent so that the changes reflect competencies the majority of professional and technical communicators use in their everyday work, rather than the bleeding edge of the practice used by a small percentage of professionals. In some instances, organizations suspend applications to their certification programs during such a review. For example, the IABC has suspended applications to its certification while it reworks its examination and assessment process. Similarly, STC has suspended applications to its certifications while it focuses on other priorities.

Certifications focus on competencies. So what about critical thinking?

A competency is "the quality of being adequately or well qualified physically and intellectually" (Dictionary.com, 2013). Intellectual competencies encompass critical thinking, and often include judgment calls, such as those included in the competency models used in the curriculum of

Western Governor's University and Texas Governor's University (Kolowich, 2012; Young, 2012) and the competency model of the Canadian Society for Training and Development (CSTD, 2010). For example, the competency in the latter model—"attend to social and emotional needs of learners"—requires substantial critical-thinking skills because it encompasses both the identification of those unique needs and devising appropriate responses to them. In other words, critical thinking is a type of competency under this framework.

One reason some people disassociate the two emerges from the connotation of the word competency. In some academic circles, the term "competency" is solely associated with vocational education, and many universities do not believe that their primary purpose is providing vocational education.

This view is changing in North America, with entire higher education systems like those in the states of Arizona and Wisconsin adopting competency-based approaches to higher education. In such systems, education is focused on students demonstrating that they have mastered well-defined outcomes (Kolowich, 2012; Young, 2012) rather than the number of hours they have spent in class.

How do third-party certifications affect academic programs in technical communication?

Education and certification serve different purposes. Degree programs provide the conceptual background and foundational education to work as a professional technical communicator. They prepare people for the work world. The majority of students—especially those in undergraduate degree programs—earn degrees in the field before starting their first job. In some instances, an internship that is part of the program provides an initial working opportunity.

In contrast, certification assesses the competence of working technical communication professionals within the contexts of their jobs.

That is why certification requires several years of full-time work experience in the profession before people can apply to go through the certification process. This experience is called a residency requirement. As noted earlier, the residency requirement for ELS, for example, is two years and for the CPTC is five years.

Such an approach is also consistent with current theories on the development of professionals in their jobs, in which professionals first receive some formal education, then coaching for initial performance on the job, and learn the majority of their skill informally in the context of the job

(Tough, 1968; Lombardo & Eichinger, 1996). Although the extent of each is not known, research suggests that coaching and informal learning represents between 56 and 90 percent (Wihak, Hall, Bratton, Warkentin, Wihak, & MacPherson, 2008).

Certification offers an effective means of surfacing and recognizing this informal learning (Carliner, 2012). In fact, one of the reasons most certification programs in professional communication (including the ones in technical communication and technical writing) require that applicants have experience is that, as part of the application process, people must submit samples of their professional work. Applicants need enough time in their jobs to build such a portfolio of work.

More fundamentally, however, certifications require that applicants have experience in the field so they have time to become fully familiar with the body of knowledge in the field. Some seeking certification start their careers in the field without a formal education in the discipline. As a result, they need to learn everything about technical communication and technical writing within the contexts of their jobs.

Others have degrees and start their jobs with a base of knowledge and skill. Some certifications recognize this by providing credit toward the residency requirement. For example, the CPTC recognizes programs that have at least six months of study and include required courses in technical writing and visual communication (which are essential components of the certification process). It does not distinguish among levels of programs, however, providing the same residency credit for master's and bachelor's degrees, and certificates. This kind of credit provides graduates of several different types of programs with the opportunity to receive some credit toward the residency requirement. The amount of credit depends on the type of program: related or relevant. Related programs are those that are directly related to technical communication and are likely to cover most, if not all, competencies in required courses in the program. Those who have degrees in related fields receive two years of credit toward the residency requirement for the CPTC. Relevant degrees prepare people for work in technical communication, but typically are in other fields and often cover only a portion of the competencies in their required courses. Those who have degrees in relevant fields receive one year of credit toward the residency requirement for the CPTC.

In theory, degrees and certification are complementary processes—one prepares people for careers, and the other recognizes that people have reached a certain level of ability in their career. In reality, the addition of a new credential in a field without any formal entry requirements could

cause competition among the two. That two certifications in technical communication offer credit for a university degree, diploma, or certificate is intended to mitigate most of that competition. But larger forces affecting academe—such as the rise of Massive Open Online Courses (MOOCs) (Chea, 2012)—could provide an alternate entry into the field. The challenge of MOOCs and third-party professional credentialing are challenges far beyond the scope that faculty in technical communication can address on their own.

Should faculty in professional and technical communication in the field seek certification?

All certifications are voluntary, so the decision to seek one or the other is a personal one for each faculty member.

For those whose primary focus is on teaching the service course in professional and technical communication or running a writing center and who have little or no work experience as full-time professional or technical writers or communicators working on projects like help systems, marketing white papers, intranets, Standard Operating Procedures, major grants, and similar content, the value of certification is unclear.

But for those who have such work experience, whose teaching focus is on majors in professional and technical communication, and who want to model professionalism for their majors, certification makes good sense. It follows similar examples set by faculty in other programs, such as engineering faculty who hold their professional engineering licenses, accounting faculty who hold their Certified Public Accountant credential in the United States, Chartered Accountant and similar credentials elsewhere, and Management faculty who specialize in Human Resources and hold their Human Resources certification.

How else can faculty become involved with certification?

As noted in the introduction, our article merely explores what certification is and places it within a socio-economic context. We do not critically explore certification.

Part of the reason we do not is because within the field of technical communication, the limited research conducted about certification has been market research to assess the viability of a program, and much of the theory has attempted to apply general models of professionalization to the development of technical communication.

The advent of certification allows us to move such research and theory out of the realms of the hypothetical into the realms of an actual phenomenon. Whether academics choose to seek it, certification offers academic

faculty a place to contribute to research and theory related to this phenomenon. At the least, researchers might track changing attitudes toward certification among practicing technical communicators, hiring managers, and academic programs as certification does (or does not) take root. At the most, researchers might explore, over time, how the availability of a certification program affects the behaviors of the various stakeholders in the certification system, such as the types of activities in which professionals participate when maintaining their certification and whether academic programs choose to align their curricula with the competencies in certification. Researchers and theorists might also critically analyze the competencies used in the certification programs and their appropriateness to everyday work in the field as well as how they align with—or diverge from—visions for the future of the field. For example, what impact (if any) results from a certification program that only addresses communication and project skills about which the applicant writes and does not address competence in the technology (like civil engineering, computer applications, or military technology) or industry (such as telecommunications and financial services)? Certification programs are not likely to resolve the long-standing and unresolved discussion on the relationships of technology and communication skills to our work. Other theorists might consider how the certification does or does not fulfill the immediate goals of strengthening the profession, much less the longer-term goals of professionalizing the field. After all, both were goals of launching the certification program. In other words, although certification of professional and technical communicators is available, much work remains as certifications develop and take root.

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Author information

Saul Carliner is an associate professor, Director of the Education Doctoral Program, and Provost Fellow for Digital Learning at Concordia University in Montreal. He is also Editor-in-Chief of the *IEEE Transactions on Professional Communication*, a past chair of the Certification Steering Committee for the Canadian Society for Training and Development, and a Fellow and past international president of the STC.

Liz Pohland is Director of Communications and editor of *Intercom* magazine at the Society for Technical Communication. She is pursuing her doctorial degree in Technical Communication and Rhetoric at Texas Tech University.

Steven Jong is the former chair of the STC Certification Commission and an Associate Fellow and past director of STC.

Teaching and Learning with Social Media

Tools, Cultures, and Best Practices

Alice R. Daer
Arizona State University

Liza Potts
Michigan State University

Abstract. This article provides items to consider and best practices for implementing a strategic plan for the use of social media in technical and scientific communication programs. The authors contend that social media can be used, adopted, and implemented best when its champions are thinking strategically, not just tactically. They note that these strategies should be based on realistic expectations about what students and users can contribute to a curriculum that integrates social media tools. Challenging popular assumptions about "digital natives," the authors apply contemporary research on new literacy practices to provide concrete ideas for incorporating social media into curriculum design.

Keywords. Social media, internet, pedagogy, literacy, identity, privacy, digital native

With the advent of social media technologies, program leaders and classroom instructors are challenged with launching, using, and teaching a variety of digital tools across various digital spaces. The past five years have seen more than 50 published pieces on the importance of technical communicators' use of social media tools such as text messaging, instant messaging, microblogging, image-sharing, social network sites, and various mobile applications (Abel, 2011; Baehr & Henschel, 2013; Barton & Heiman, 2012; Damrau, 2011; Maggiani, 2011; Panke & Gaiser, 2009; Self, 2009; Swarts, 2011; Vashishtha, 2010). A careful search of Technical Communication Quarterly, The Journal of Business and Technical Communication, and Intercom revealed dozens of research studies in which social media applications like wikis, YouTube, Facebook, Twitter, and LinkedIn played a significant role in gathering, measuring, and/or distributing information among technical and professional communicators (Ball, 2012; Ding, 2009; Frost, 2013; Graham & Whalen, 2008; Kaufer, Gunawardena, Tan, & Cheek, 2011; Katz & Odell, 2012; Lam, 2012; Lillqvist & Louhiala-Salminen, 2013;

Programmatic Perspectives, *6*(2), Fall 2014: 21-40. Contact authors: ‹alice.daer@asu.edu› and ‹lpotts@msu.edu›.

Mason, 2013; McNair & Paretti, 2010; Pickering, 2009; Potts, 2009; Sherlock, 2009; Singleton & Meloncon, 2011; Spinuzzi, 2012; Stolley, 2009). Social media engagement, according to our database search, has the potential to boost careers (Maggiani, 2011), gather and analyze large data sets (Potts & Jones, 2009), and enable technical and professional communicators to build interest and maintain relationships with products and customers (Ames & Riley, 2011). Taken together, the articles cited above argue that technical and professional communicators have the potential to act as key decision-makers as organizations adapt to social media use as part of their daily communications routines (Hockenhull, Martin, Mayhall, & Stude, 2013).

Even more, jobs in technical communication are increasingly seeking social media skills. While few job advertisements use the industry phrase "social media," we found nearly all of this year's academic posts ask for candidates to be able to conduct research with digital tools while teaching digital rhetorics and literacies as course topics. Our search of the Modern Language Association's Job Information List (2013) revealed that nearly every technical and professional communications position called for candidates with experience teaching in online environments; when we accessed this data set on November 13, 2013, half of those ads specified a desire for digital media proficiencies in particular. Knowing how, when, and why to use social and digital tools is becoming increasingly important for new and established faculty, especially as we begin to engage with more technology to augment our classrooms and teaching experiences.

That said, the deployment of socially-networked tools across a multitude of digital spaces tends to cause users to assume that like magic, social media will augment classroom time, help spread the messages of the program, and increase reach. Unfortunately, these deployments can be met with resistance from teachers, administrators, and students. Such resistance is often tied to assumptions about digital literacy, privacy, and usefulness. We offer the viewpoint that social media can be used, adopted, and implemented best when its champions are thinking strategically, not just tactically. We also note that these strategies should be based on realistic expectations about what students and users can contribute to a curriculum that integrates social media tools. What follows is a discussion regarding best practices for social media implementation that are practical and backed by research in a variety of communications fields. Furthermore, we offer concrete ideas that are informed by the best research on literacy, learning, and digital technologies and grounded in our own experiences using social media tools and technologies as students, professors, and program leaders.

Myths of the Digital Native and Realities of Participation

We have seen an enormous growth in the number of young adults participating online and the kinds of content they are willingly sharing with others in digital spaces. A 2013 report from Pew Internet and American Life states that 92% teenage Americans are using their real names on social media websites that they use the most often (Madden, et al, 2013). Over 91% are posting photos of themselves (Madden, et al, 2013). These increases show a willingness to participate, while leading us to be concerned about the kinds of personal information flowing freely across these systems.

At the same time, we contend that it is a mistake to assume that the majority of students in communications classrooms are "native" to learning, thinking, and producing with digital media. The myth of the so-called "digital native" is a tempting narrative that is just persuasive enough to be believable. The term dates to 2001, when self-described "author, speaker, consultant" Marc Prensky (2001) conceptualized a dichotomy between "digital natives" (today's plugged-in young people) and "digital immigrants" (their ignorant elders and teachers), emphasizing the idea that a new generation of more digitally-savvy students has made its way into our classrooms, expecting to be entertained by their education. Prensky's argument is so pervasive that his writings have become a rhetorical strong man for numerous studies across the fields of educational technology, sociology, information science, media studies and neuroscience (Bierma, 2012).

The heart of the issue is this: while it is true that young people are producing, distributing, sharing, and remixing digital content more now than they ever have, it is not safe to assume that all or even most students are experts or even intermediate users of digital tools. It may indeed seem like our classes are filled with students checking Facebook or using their smart phones to assess their fantasy sports standings, but we cannot say that students are critical experts of either the tools or the cultures that emerge from them. Recent data from the Pew Internet and American Life Project confirms our thesis, reporting that the majority of 18–29 year-olds are using social networking sites but use of other social media is extremely varied (Duggan & Brenner, 2013). Just 16% of those people surveyed said they use Twitter; 15% use Pinterest, and 13% use Instagram (Duggan & Brenner, 2013). Each service appeals to a different demographic, too: Twitter is popular with urbanites; Pinterest appeals to older white women; and Instagram is a favorite for African Americans, especially women living in cities (Duggan & Brenner, 2013). Some market researchers claim that

Facebook is trending older and Twitter is trending younger (Pingdom.com, 2012) but that the majority of young people online are visiting niche sites like DeviantArt, HackerNews, and reddit (Pingdom.com, 2012). In the world of measuring social media use, variety is a constant.

For instance, a significant study conducted by Northwestern University professor Esther Hargittai (2010) showed that "considerable variation exists even among fully wired college students when it comes to understanding various aspects of Internet use." Hargittai's report shows that the popular rhetoric surrounding the concept of the "digital native" is not supported by the empirical data. She concludes by arguing for a "much more nuanced approach" to the study of internet use, one that accounts for particular differences—such as social inequality and context of use—that we tend to ignore when we think about what young people do with digital media. In other words, yes: the largest group of social media users is young people. But where they are and what they are doing while they are there is not definitive. There are just as many spaces, tools, and rules for sharing, posting, and checking in as there are demographic categories. Therefore it might be true that younger students never knew a time without the Internet, but we cannot assume that they have equal access to it, consistent participation with it, or homogeneous experiences as a result of exposure to it.

At the same time we caution against being too persuaded by the myth of the digital native, it is nevertheless true that more Americans are using the internet than ever before. For those who are online, the vast majority claim to use social networking sites with some regularity (Duggan and Brenner, 2013). But what are people doing online? There are varying degrees of participation, and when they do participate, they may not follow the cultural norms or unspoken rules for posting, responding, and commenting. In the next section, we argue for viewing social media activities as important literacy practices, rather than skills. Our claim is that mastery in the world of social media is not the goal—practice is our goal. No one is an expert; there are only those who engage more or less with the media and methods available to them.

Literacy is a Practice, Not a Skill

One of the hallmarks of contemporary literacy research is to emphasize the concept of literacy as a practice and not a skill (Barton, D., 2000). Literacy is something we do, not something we have. The reason for the distinction between skill and practice is that contemporary research on literacy emphasizes the dangerous societal implications of equating knowledge and literacy. Put another way, to say that someone "has" a literacy "skill" is

to draw a line between those who do and those who do not, when in fact neither is true (Graff, 2011). It's a false binary. We all have varying degrees to which we are knowledgeable and communicative, but what is truly critical is whether someone can read contextual cues and say or write the right thing at the right time for the right audience.

Our distinction between practice and skill is fundamental to understanding the importance of developing opportunities for students to practice using social media. At the heart of contemporary research on literacy and writing is the need to study how humans use language informally to better create opportunities for learning in formal academic settings (Nystrand, Greene, & Wiemelt, 1993; Rose, 1989; Shaughnessy, 1979). We say that literacy is a practice because we want to point to the multiple ways people are making meaning with texts and tools in multiple contexts for all kinds of audiences (Barton & Hamilton, 1998). It matters less whether someone "can write" in the abstract sense and more whether she knows what to write for whom and in what way with which tools. It is one thing to "be able to" write an email to a teacher and quite another to choose the appropriate medium, tone, style, argument, design, and content for that teacher. We therefore prefer to think of literacy as literacies: that is, literacies are ways of knowing, doing, and making meaning across contexts and audiences. Literacies should be thought of as ecosystems of practices rather than as acquired sets of skills. After all, we are always practicing literacies in some particular way for some specific reason; all communicative acts are rarely (if ever) abstract, decontextualized proficiencies.

Every social media user learns to use the tools in different ways for different purposes, which is why we emphasize the need for sustained, guided practice and reflection in lieu of emphasis on measurable outcomes (see Figure 1). What counts as proficiency in the world of social media is so deeply situated and perpetually changing that to think of social media use as a "skill" that can be "mastered" is to work under an inaccurate definition of the very terms "literacy" and "social media"—neither is a fixed constant. Instead, we assert that social media users must be given ample opportunity to practice multiple literacies for different purposes. Therefore we advocate for policies, curricula, and learning experiences that reflect the distinction between learning outcomes (whereby absolute mastery is implied) from literacy practices that are embedded in contexts of use.

For practitioners in technical and professional communication, such literacy practices will be called upon in the workplace. It follows then that current students should be expected and encouraged to navigate multiple

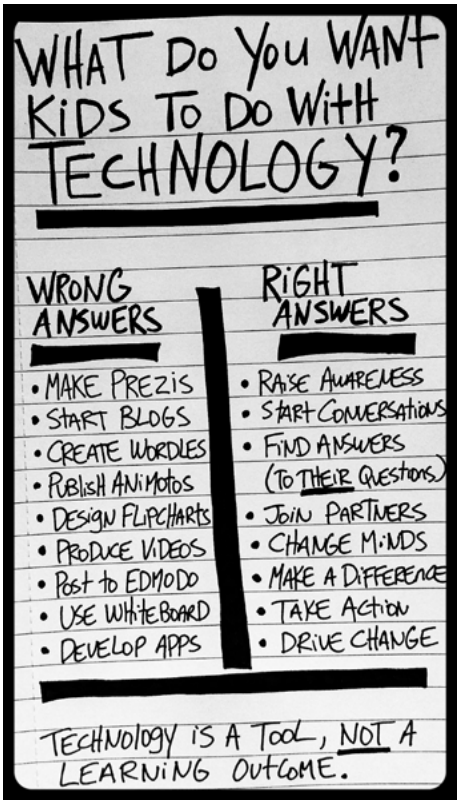

Figure 1: Technology is a tool

Image credit: William M. Ferriter, blog.williamferriter.com via Flickr, Creative Commons Share-Alike license

social media environments. Whether they are writing content for websites, running social media campaigns, presenting themselves on LinkedIn, or setting policies for online communities, professionals will need to understand these practices to be effective communicators with and around social media.

We acknowledge that this socially-situated model of literacy has challenging implications for evaluation and assessment. Increasingly, scholars in the field of learning sciences and new literacies research have called for measurement tools that capture and highlight what students can do to apply literacy practices in designated situations and contexts (Shute & Becker, 2010). In that sense, problem-based and inquiry-based learning models are particularly useful because they ask students to evaluate a problem, "read" its signs and symbols, and then make what they know relevant to the situation to solve a problem with several potentially viable solutions. What is being measured then is the degree to which a student interprets a problem, recognizes how their learning can inform a solution, and then

produces a context-appropriate solution. To many instructors, this method of measurement is more authentic than standard skill-and-drill approaches as it allows them to better gauge how students are learning, not just what they have memorized.

Practicing Social Media Literacies

When designing learning experiences around social media practices, we like to reflect on the difference between media consumption and media participation (Jenkins, et al., 2009). That is, we acknowledge the difference between having an account and being a critical and sustained member of that social community (i.e., making an edit to a Wikipedia page versus being a Wikipedian). Put simply, we caution against presuming that simple uses of social media connote critical engagement with it. Like many digital technologies, social media suffer from what some media scholars refer to as the "transparency problem" (Jenkins, et al., 2009). The sophisticated messages and complex uses of media are not always obvious to our students. Many social media tools are designed to be easy to add content to, but that does not necessarily mean that users foresee, for example, potential privacy issues or misappropriation of content. Each medium and tool has different features, implementations, and audiences. YouTube might be great for viewing a friend's streaming video, but it can be useless for distribution because it does not allow downloading (as of November, 2013). Twitter can be useful for talking with strangers about a live event, but it can be difficult for location friends and colleagues because of the use of inconsistent usernames. Tumblr is useful for viewing and sharing web-based content, but it is unreliable if the goal is to trace content back to its original source.

Furthermore, each of these spaces changes so frequently that it can be almost impossible to pin down for even those of us who study the internet. Facebook is notorious for changing its privacy features regularly (and failing to provide a truly user-friendly explanation for using those features to maximum benefit). It seems as though we read news reports daily about people making egregious statements and trying to retract or hide those posts after the fact. Even the most avid users of these spaces cannot anticipate how a post, share, tweet, or check-in might come back to haunt them.

So, what can we do to help users of social media maximize their critical use of these spaces? What can we teach our students about decorum, privacy protection, anticipating audience responses, and curating their online identities? What follows is a list of general principles that should

guide the specific designs, assignments, policies, and rules to establish when incorporating social media and social networking into technical and professional communication programs and classes. We recognize that every instructor and classroom is a deeply contextualized space with its own culture and audience. That is why this list is meant to inform a strategy so that program directors and instructors can develop their own tactics. Every education professional knows the importance of having a solid purpose or rationale to support a policy or lesson. Below are some suggestions to begin conversations that will inform these practices.

1. **Get familiar enough with the tools**. By "familiar enough" we mean that instructors should download the app, set up an account, and post content. Today's social web tools are meant to be learned as they are used. Participating within these systems is imperative if we are going to teach within them or conduct research in them (Potts, 2013). That means locating a community and becoming immersed. The instructor's knowledge of how these spaces work—the common language, the tropes, the tricks—are all critical knowledge that students will need to participate fully in these spaces.

   Thankfully, good designers of popular sites are working hard to make their designs as user-friendly as possible, and many of them pay attention to what participants do with the tools they are given. That is part of the reason why social web tools are constantly being redesigned. It might seem to the user that an application like Foursquare is in a constant state of what we like to call "forever beta," but those frequent software updates are part of today's iterative design process. Participants are expected to roll with the changes, and developers are expected to respond to the ways that participants tweak their content within these spaces. This back-and-forth is fundamental to the culture of social media use.
2. **Actively maintain and own online presence across multiple digital spaces.** As researchers, instructors, and program directors, we are already in the public eye. It is important that we do our best to model appropriate ways of being present online both as a professional practice and to model behaviors for our students. This is not to say that everyone should jump on Twitter, Instagram, Pinterest, Foursquare, reddit, Facebook, and Tumblr right now and launch their accounts. What it does mean is that

program directors and instructors should at least have some sort of online identity that they check in with every few days to keep a foot in the world of digital culture.

Twitter is one tool program leaders and instructors can use to practice these skills and connect with other academics. Create lists to organize these communities, making them public or private depending on whether you want to share this information. Consider both professional and social uses, just as your students will need to. Use Twitter to follow other academics in technical communication or fans of a science fiction western television show. Use a tool such as Tweetbot to make it easier to manage lists, follow hashtags, and send direct messages. Participate—tweet, retweet (RT), and use hashtags (#msupw). If students follow instructors on Twitter, follow the students so that they can send each other Direct Messages (DMs).

Most applications allow users to toggle privacy settings on or off depending on a given activity, so experimentation is available. For example, instructors can use Foursquare to let students know when they are on campus, but not when they are at a movie with their families. Program leaders can create public pages for their programs on Facebook or invite members to a Facebook Group to discuss newsworthy events for a club. The goal should be to find something that interests the group enough to participate frequently in a way that makes each other comfortable and in control over what content is visible when people search for these programs online.

3. **Teach students how to curate their online presence, too.** Part of what we must do is help students recognize that their movements online are always an identity building exercise. Their LinkedIn profiles, their public Facebook user profile pictures and banners, and their Instagram photos are all part of their identities. We must teach students how to carefully assemble this material and curate it.

Better yet, ask them to teach each other. Chances are, in any given classroom some students are already active participants in social media and can teach each others about managing privacy settings, optimizing search engines, and pushing notifications to alert them to when someone is mentioning or tagging them. In fact, it is likely that every student knows how to do something useful with social media, whether it is as simple as searching for a

common hashtag or as complicated as generating traffic toward a remix uploaded to Soundcloud. Asking students to generate their own list of "do's" and "don'ts" for social media use could be an enlightening exercise. Instructors might be surprised by how much students do and do not know already. And, of course, be at the ready to clarify and enlighten them about privacy policies and security issues.

4. **Design exercises that emphasize practice, not mastery.** Instead of creating lesson plans that ultimately measure a student's ability to create a finished product using one instrument or tool, focus on the alternative: lots and lots of practice with multiple media across platforms. Think of it as an ecosystem, rather than one single space where activity takes place. For example, give students experience with creating and sharing images to mark a historical event. Instructors could ask students to use their phones to snap original photos, upload them to a designated site like flickr, and tag them with the same word or group of words to see how they get shared and searched for by others interested in that same event. But what results from such an exercise is not much more than simple sorting and labeling of information, as all this assignment demands is following simple uploading and posting instructions.

   A richer experience would involve allowing students to follow the event over multiple social media as it happens. Asking them to follow a hashtag like #SFBatkid or #BostonMarathon might be better for teaching them how information spreads across media and how users manipulate tools to express their thoughts. This is where tools like Storify.com might be handy: students can use that site to collect all the social media they want, as long as that tool has an open API. The result could be a collection of Instagram posts that show how people take screenshots of thoughts they write using simple note-taking applications on their phones. A follow-up discussion would involve questions like "why do you suppose these users did not just post tweets about their feelings? Why did they use Instagram instead?" Discussions would center on participation within communities and across platforms, instead of focusing on basic tool use.

5. **Highlight good uses of social media already happening at the institution.** Many educational and instructional technologists, librarians, information scientists, and student support ser-

vices are already implementing clearinghouses for their institutions. Investigate whether the university already has something like this in place. Chances are, there are at least a few great examples within the university already. Ask about partnerships with those who are interested in developing and presenting locally relevant materials together. Know another instructor with a great idea or policy for using social media in her classroom? Tell others! Better yet, ask her to write up a short description and highlight it on the program's web page or newsletter. And, by asking instructors to share their ideas, leaders are giving them the opportunity to draw attention to the good work they are doing.

6. **Be aware of the differences between social media and social networking.** This might seem like semantics on the surface, but we stress the difference between social media and social networking because it matters when it comes time to evaluate student performance. When instructors design an assignment that involves using social media, it is important to remember that the media are the tools for communicating within and across networks. But building networks of strong and weak ties (Granovetter, 1983) takes a lot of time and effort. Instructors will need to have conversations with students about who to "friend" or "like" or "follow" and why. Encourage them to be open about how they build their networks, feeds, and lists. Does it matter whether students know someone "IRL" (in real life) before adding this person to a network? Why or why not? Which media are more conducive to building and creating networks? What design features enable us to turn weak ties into stronger ones? Are some social media better for social networking than others?
7. **Build students' awareness of how networks and media work over time and across space and place.** Media literacy educators have been creating these kinds of exercises for years, and they are a key part of our technology-focused sections of the First Year Writing program curriculum at Michigan State University. They usually involve asking students to write short essays on all the media they encounter on a daily basis. We recommend focusing on how networks and their media compare by going beyond the "notice and report" exercise. Ask students to provide evidence of the difference between a network and a medium, for example. Or ask them to trace a network as it exists across multiple media

for a given event. This exercise will help them also understand the different genres available to them and others across these spaces.

The objective is to help our students see how people within certain networks behave differently depending on the tools, platforms, and contexts. A student might be an active user of Twitter but only when she is participating in a shared event like watching a soccer game. Another student might work hard to protect his privacy on Facebook but has an easily traceable gamertag on XBox Live. It is important to generate regular discussions of how we establish identities across social media, within and among networks, so that we are constantly reminded that none of us uses the same tool in the same way for the same purpose.

8. **Resist the urge to evaluate based on quantifiable outcomes.** If there is anything we know from instructors' use of blogs, wikis, and online discussion boards, it is this: grading students on the number of posts they produce is fruitless. Instead, take a more reflective, analytical approach. If the goal is to create community, then consider requiring them to interact with each other. Ask students to evaluate their friends' identity performances in different social media contexts. Get them to notice how their use changes when they switch between mobile and desktop versions of the same applications. Invite comparisons of similar actions such as liking (Facebook) and pinning (Pinterest) or retweeting (Twitter) and reblogging (Tumblr). Create social assignments whereby students interview people they view as novice and expert users, synthesizing and visualizing the data when the transcriptions are complete. There are so many ways to design assignments that put students in the position of thinking more about the quality of their analysis instead of the quantity of their production. Remember, this is about practice, not skill; make sure assignments emphasize that knowing who to follow and when to post is just as valuable as crafting the perfect status update or tweet.
9. **Allow for "throwaway" accounts.** It is very possible that a given classroom will include students who either will not or cannot use their real names and real identities in their social media accounts. The reasons may vary from fear of stalking to outside obligations. While we want everyone to try these systems, it is important that we also allow them to have a safe learning environment.

We have both had experiences where students needed to

create throwaway accounts to participate. These accounts may have false information about the student's location, gender, age, and other attributes. They may use a stock image for their profile picture. When students ask to create fake accounts, we include them as if they were their real accounts, sharing their information with their peers, following them on Twitter and Tumblr, unless they ask us not to include them. If that is the case, we identify their online selves during class in lieu of publicly linking to their accounts. Again, there are real reasons why a student may be unable to participate in a public way, and we believe strongly in accommodating their privacy preferences.

10. **Remind students (and instructors) that nothing is private on the internet and that the internet has a very, very long memory.** Absolutely, positively nothing is private on the internet. Direct Messages in Twitter can accidentally be exposed, encryption can be broken, and email is easily forwarded. Remember those old Usenet posts? Google has lovingly archived them for us.

    We must make it apparent to our students that whatever they share, tweet, upload, or post has the possibility of being publicly accessible. These are actions that they may never be able to erase. While this sounds incredibly daunting, this point must be made to students. The Public Service Announcement website Take This Lollipop (Zada, 2011) can help students reassess what they are sharing online by watching a horror movie unfold, using their Facebook data as the central actor. Extreme? Sure, but in a climate in which the CEO of Google suggests that teenagers should be able to change their names when they reach adulthood specifically so that they can shed their past search histories (Jenkins, 2010), it is imperative that we are aware of the spaces in which we are asking our students to participate. See the discussion above about throwaway accounts.

11. **Emphasize accessible technologies.** When we ask our students to participate with social media, we must also be aware of issues of accessibility. Here we mean issues of internet access (do students have fast, reliable internet connections?), machine access (do they need special equipment, such as iPads?), financial access (are these spaces pay for play, do they require app purchases?), and capability (are the tools 508-compliant?). It is

possible that the department is providing equipment, space, and access. That said, a plan is needed for students who may need more help, assistance, and even alternatives.

Resources for Designing Learning Experiences with Social Media

Dozens of freely available and very well researched resources contain simple, instructor-friendly advice for putting social media to use in learning environments. Below is a list of some of our favorites, with annotations.

CommonCraft (http://www.commoncraft.com/)

Put simply, CommonCraft does a fantastic job of visually explaining how things work. This is a collection of short videos (about 3 minutes each) that use clever analogies to explain everything from APIs to Zombies. We like to use them during class discussions if someone brings up a term the rest of the class does not know, such as "crowdsourcing" or "social bookmarking." An institution can purchase a membership to gain access to the full site's resources or instructors can simply share videos one at a time for free.

Educause's "Overcoming Hurdles to Social Media in Education" (http://www.educause.edu/ero/article/overcoming-hurdles-social-media-education/)

Educause is a nonprofit organization for IT educators and professionals working in higher education. This article from April 2013 summarizes the current research on how colleges and universities are using social media. Reviewing everything from barriers to adoption to a rundown of popular uses of Twitter, Pinterest, and Wordle, the piece is a smart survey of how and why educators use social media (or not). If program leaders are trying to gauge the current state of how social media is being used in higher education, this article is relevant.

Edutopia's "How To Create Social Media Guidelines For Your School" (http://www.edutopia.org/how-to-create-social-media-guidelines-school)

Edutopia is an initiative of the George Lucas Educational Foundation. This 2012 collection of articles and resources was written by school district instructional technologist Steven Anderson. It is a great first stop for administrators and officials hoping to design step-by-step guidelines tailored to their own learning environments. Note the multiple links within the document to other blogs, writers, and resources that offer even more current information. Follow @edutopia on Twitter for the most up-to-date information and advice or visit Steven Anderson's blog page at http://www.edutopia.org/blog/social-media-guidelines-steven-anderson.

Facebook for Educators Guide (https://www.facebook.com/safety/.../Facebook%20for%20Educators.pdf)
A downloadable guide commissioned by Facebook to help educators make smart decisions about how best to use Facebook as a part of their teaching. Includes some excellent thoughts and resources on privacy settings, bullying, and digital citizenship. Some of its information is a bit outdated, but the concepts and ideas are worth consideration. Visit their Facebook page for updates to the guide: https://www.facebook.com/FB-forEducators.

Facebook in Education (https://www.facebook.com/education)
To the best of our knowledge, Facebook owns and maintains this page; it is nevertheless a nice resource for keeping track of what is going on in the world of social networking and education. For those who use Facebook as part of their teaching already, it is worth "liking" this page and following it frequently for updates on how educators across the world are using Facebook in learning settings.

Lesson Plans from The University of Texas-Austin's Digital Writing Research Lab (http://lessonplans.dwrl.utexas.edu/)
This excellent collection of lesson plans and writing exercises is meant for undergraduate writing instructors, but it can be used or modified to fit any communications classroom. Click on the "social networking" tag to find several pages' worth of ideas for using social media in a course on written communication. All the lessons are shared via a Creative Commons license, so be sure to give credit and "share alike," but know that these plans are meant to be distributed and redesigned according to context of use. Instructors can even submit their own ideas and add to this repository.

Pinterest Boards
Online trend forecasters are speculating that the future of social media will be centered around the "visual web." Communities that focus on the sharing of visual media are terrific for collecting and sharing teaching ideas in small chunks. Infographics, listicles, and data visualizations can be posted and traded easily, allowing for users to curate their own collections of favorites in a simple, easy-to-read format. To get started, use Pinterest's search bar or click on the "Education" feed. Also look for popular bloggers and educational organizations by searching for them by name. Starting a big collection is easy but overwhelming, so if you need a launch point, visit Alice Daer's board at http://pinterest.com/alicedaer/teaching-with-social-media/.

10 Signs You Shouldn't Be Doing Social Media (http://www.slideshare.net/robin2go/10-signs-you-shouldnt-be-doing-social-media) Robin Smail, an educational technologist at Penn State University, put together this short slide deck that humorously captions what most of us already know: There are limits to what we can expect from social media. It is a concise list of friendly reminders that if we use these tools, we need to maintain a sense of humor and a thick skin. Our favorite piece of advice is Smail's note that simply using social media does not guarantee an automatic audience of fans.

In closing, it is important to have a strategic plan before launching any new initiative. The use of social media in technical and scientific programs is no different. In using these systems, leaders and instructors can participate with students, support their learning of these technologies, and connect with other academics. Done well, social media participation can widen any academic circle, help students manage their online identities, and enrich a program. We welcome feedback and want to hear how you are using social media in your programs. We look forward to seeing you online.

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Author information

Alice Daer is an assistant professor in the Rhetoric and Composition Studies Program within the English Department at Arizona State University in Tempe, Arizona, where she has been named the 2014–2015 ASU Associated Students' Centennial Professor for her excellence in teaching. At ASU, Professor Daer also holds affiliations with ASU Writing Programs and The Center for Games and Impact. Her research and teaching interests include digital literacies and rhetorics; social media design and use; internet culture; sociolinguistic discourse analysis; and postsecondary curriculum design. Most recently, her work has been focused on documenting and theorizing the ways that people write and use language in social media contexts so that we might better design learning experiences that appeal to those uses of language. Her professional affiliations include the Association of Internet Researchers (AoIR) and the Association for Computing Machinery's Special Interest Group on the Design of Communication (ACM SIGDOC).

Liza Potts is an associate professor in the department of Writing, Rhetoric, and American Cultures at Michigan State University. At MSU, she is a senior researcher at WIDE, Director of the Experience Architecture Program, and the Director of the Creativity Exploratory. Her research interests include digital rhetoric, internet studies, participatory culture, and social user experience. She is the Chair of ACM's SIGDOC, a leader in the Women in Technical Communication group, and affiliated with the Association of Internet Researchers (AoIR). Her work has been published in *Technical Communication Quarterly*, *Journal of Business and Technical Communication*, and *Technical Communication*. Her new book, Social Media in Disaster Response, is the first in the ATTW series by Routledge.

Integrating Chinese Emphasis into a Professional Communication Program

Jennifer deWinter
Worcester Polytechnic Institute

> *We also need to prepare our kids to navigate a global workplace in which knowledge of languages and cultures other than our own will provide a key competitive advantage for higher-paying jobs. China will inevitably be a major economic, political, and cultural force in our children's future. We should prepare our students to engage, collaborate, and compete with their Chinese peers.*
> —Supanc, "U.S. Kids Should Learn Chinese," *BusinessWeek*

Abstract. This article outlines the processes and challenges of offering a China emphasis in a Professional Writing (PW) major. This approach to integrating cultural and/or linguistic competency track in a PW major addresses the need for more communication experts to have the culturally-based analytical skills needed to move within an increasingly international business market. This article discusses the steps for instituting a cultural focus in PW, including: 1) defining a strategic focus, which for WPI was China, and with this focus, we could identify key faculty and apply for appropriate grants; 2) conducting a full curriculum review of the PW courses to integrate Chinese content and offer a track for students who wanted depth in this area; 3) instituting study abroad and international university collaboration, which provided both students and faculty with research opportunities; and 4) attracting students with an emphasis on both traditional PW populations as well as our growing Chinese student population.

Keywords. Program development, international communication, cross-cultural communication, cultural competency, localization, study abroad

In 2010, then Secretary of State Hillary Clinton launched the 100,000 Strong Initiative that would see 100,000 US students studying abroad in China. According to the 100 Thousand Strong Foundation (2013), "The Foundation believes that its best ambassadors are the American students who have studied in China and learned about the Chinese culture,

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language and people firsthand." This ambitious plan has and will encounter perhaps its greatest challenge in recruiting engineering students to study in China. This recruiting challenge is because not quite 4% of American-educated engineering students study abroad. The low figure stands in stark contrast to the needs of the country and the field. According to The National Academy of Engineers (2005), in the coming decade American engineers will need area studies training, as they "will be based abroad, will have to travel. . . around the world to meet customers, and will have to converse proficiently in more than one language." Moreover, "U.S. engineers ... will have to be open to different religions, different ways of thinking, and different social values. Flexibility and respect for ways of life different from ours will be critical to professional success" (p. 152). Indeed, the need to create humanistic engineers has been central to Worcester Polytechnic Institute's mission since the WPI plan was adopted in the 1970s.

Worcester Polytechnic Institute (WPI) is a small science and engineering school located in central Massachusetts. Co-housed in the Interdisciplinary and Global Studies Division (IGSD) and the Department of Humanities and Arts, the Professional Writing Program offers undergraduate courses as well as a minor and major. On average, between 20–25 students major in Professional Writing. Because of the particular makeup of the WPI student body and the course requirements, the majority of students dual major in Professional Writing with a STEM discipline (Science, Technology, Engineering, and Math). In response to university strategic positioning, student demand, and the exigencies of the market, WPI formulated a plan to integrate Chinese linguistic and cultural content into STEM disciplines. In 2012, the China Initiative Team (comprised of a Chinese Historian, the Co-Director of Professional Writing, and a School of Business faculty with a specialty in China) received a Department of Education Undergraduate International Studies and Foreign Language Program grant (UISFL). This particular grant enabled the China Initiative Team to offer Chinese language classes and Chinese culture classes, as well as supported the team in developing learning modules that integrated Chinese content into STEM and business classes. However, because WPI is not a liberal arts university, there is no department of East Asian Studies and therefore no major in Chinese in the traditional sense; thus, the Professional Writing Program filled an important academic responsibility of offering students an integrated course of study that could culminate in a minor or major. The Professional Writing Program was well poised to adopt this role because of the emphasis on rhetorical awareness, cross-cultural communication, and writing for particular purposes.

In this article, I discuss the process and challenges of offering a China emphasis in the Professional Writing major. The field of Professional and Technical writing has long acknowledged that international and cross-cultural communication is an important part of the discipline and workplace (Ulijn & St. Amant, 1999; Mirshafiei, 1994; Matsuda & Matsuda, 2011). Further, a number of articles in technical communication journals have attended to China specifically (Ding, 2003; Barnum et al., 2001; Duan & Gu, 2005). Yet a survey of technical communication programs show that few degrees even offer intercultural communication. According to Meloncon and Henschel (2013), 2011 survey data indicates that only 18% of undergraduate professional and technical communication programs in the US offer courses in intercultural or global communication, and of those, only 9% of the programs require this component (p. 56). Further, in the raw data that the authors shared with methat although a number of schools offered courses in intercultural or global communication, only three schools offered a graduate certificate with an international focus.

The challenge that any professional communication major faces, however, is a dual one: expertise and resources. To teach about a region as culturally different as China requires at the very least cultural competency, if not linguistic competency. Add the simple fact that many universities are conservative with budgetary lines and program development, and the hurdles for programmatic development into this area seem insurmountable (see, for example, DeVoss & Julier, 2009). Before delving into WPI's programmatic development, I begin with a brief review of the literature concerning cross-cultural and bilingual education in professional communication. Following this, I discuss the structure of the program and the ways we were able to integrate Chinese content in key strategic areas, such as courses, project work, and study abroad. Following this, I discuss the partnerships we are building in China and how these partnerships act to augment our on-campus offerings and provide a framework for long-term sustainability and collaboration. For on-campus activities, I focus on recruiting students into professional writing, and our surprising outcome: creating a China emphasis in professional writing has offered our Chinese students an entrance into what has historically been a native-speaker major. And finally, I conclude with a brief consideration of transferring this approach to other institutions as well as some of the very real challenges we face at WPI in implementing and sustaining this effort. Ultimately, this new programmatic opportunity allows us to internationalize our education, serve the student population (including our growing Chinese student population), and provide strategic cross-institutional partner-

ships that support future collaboration and research. And while we were unable to find other programs approaching their undergraduate curriculum in this way, we are responding to the general consensus in the field that international communication is necessary. Indeed, as Meloncon and Henschel (2013) strongly urge, even covering international communication "through the tight integration in a variety of courses" is vital (p. 59). And this redundancy (rather than an isolated course) drives home to the students the importance of cross-cultural communication, cultural competency, and linguistic concerns.

Internationalizing Technical Communication

Most notably starting in the 1990s, the field of Technical and Professional Communication has argued for the importance of intercultural communicative competency. Yu (2012) defines intercultural competency thusly: "the ability to communicate appropriately and effectively in international and cross-cultural technical communication situations based on one's sensitivity, awareness, and skills" (p. 171). And Thrush (1993) identifies two exigencies that make this competency imperative: 1) globalizing workplaces and international corporations, and 2) growing multiculturalism in the US borders with varied non-English languages. Thrush (1993) offers three approaches to attend to these pressures, such as raising student awareness regarding differences, introducing students to sources of information, and providing practice to rhetorically analyze different cultures' communications. And although her argument was made 20 years ago, the main points still stand, especially in the context of China. More businesses are entering the Chinese market, and Chinese is the most spoken language in the world with 1.15 billion speaking it[1] (2.9 million people speak Chinese at home in the US, making it the third most spoken language according to a 2013 United States Census Bureau release[2]). The literature on intercultural communication and cross-cultural communication in technical communication tends to group together in three distinct areas: linguistic competence, localization, and cultural awareness.

Linguistic Competence

Language provides a persistent barrier in international technical and professional communication, giving rise to literature on both translation and on localization. As Wright (2013) noted, "Scientific and technical trans-

[1] See ‹http://www.nationsonline.org/oneworld/most_spoken_languages.htm›.

[2] See ‹http://www.census.gov/newsroom/releases/archives/education/cb13-143.html›.

lation, especially if software localization materials are included, comprises the lion's share of texts generated by the translation industry" (p. 1). And a cursory search of the Web supports this statement, with any number of sponsored links and a seemingly endless list of search results for companies that work in translation. In response to translation demands, many textbooks recommend short, simple sentences that can be easily and universally translated (see, for example, Matsuda and Matsuda's [2011] "Globalizing Writing Studies: The Case of U.S. Technical Communication Textbooks"), but as DeVoss, Jasken, and Hayden (2002) pointed out, "These same sets of guidelines seem useful in succeeding in any business situation. Many textbooks suggest that the principles associated with a North American style of technical writing are in some senses universal, but we must be cautious when making these kinds of claims" (p. 82). The caution stems from the simple fact that cultural context affects a language's meaning and how it is used.

Localization

Localization as a process and a career trajectory arose in response to the need to create technical and professional documents that attend to particular groups, nations, or cultures. Localization, according to Nancy Hoft (1999), provides an alternative to globalization by offering strategies for attending to cultural differences. The problem, Hoft noted, is that "localization is a strategy adopted by very few companies because it is expensive and time consuming. […W]e continue to struggle to find economic, timely, and effective ways to [address] the blatant cultural differences in our audiences" (p. 147). The real challenges of localization—that process of translating with cultural competency—have to do with the well-documented messiness of culture; culture's just not easily codified. Here, consider Sun's (2006) critique:

> The popular cultural dimensions used to guide localization practices (e.g., power distance and uncertainty avoidance) only represent the dominant cultural values in a national culture while ignoring other subcultural factors. Thus concrete cultural realities including the messiness and complexities of local contexts (e.g., immediate context) and the actual practice of social activities are stripped away during the localization process. Instead, localization specialists focus most of their attention on the delivery aspects of technology, such as what colors or page layout would be preferred by some ethnic cultures and how the dialog box should be resized for a certain language. (pp. 459–460)

The side effect of this, according to Sun (2006), is that localization often neglects social affordances, which affect the use of objects in social and cultural contexts. And the oft-neglected point in localization research is the fact that translators not only need to be bilingual but also need to be bicultural, and this is a challenge that many US universities are unable to overcome with student populations.

Cultural Competency

One possible solution to these challenges, and the one that WPI decided to act upon, is an emphasis on cultural competency and collaboration. Hoft (1999) noted that collaboration is one of the better options in intercultural communication, arguing that "a team of people—particularly a multicultural and multilinguistic team—that works together to find creative approaches to cultural difference is perhaps our best strategy today" (p. 147). Such is the strategy that Arya et al. (2003) discussed in "Culturally Sensitive Problem Solving Activities for Multi-National Corporations"; however, as the authors noted, "there are also belief systems and ethical principles underlying these cultural dimensions, which can give rise to ethical issues related to decision-making and problem solving in corporate learning settings" (pp. 47–48). Jennifer Bracken Scott (2010) attended to this dimension much more strongly when she wrote, "The importance of awareness reported in the research often boils down to an assumption that students in technical communication courses have U.S. cultural values, and think that these values can simply transfer to intercultural situations" (p. 82). And this transfer points to a need to teach students to be aware of their home culture in addition to the target culture. Culture affects communication on both sides of the fence.

WPI's Technical & Professional Communication Curriculum and the Challenge of Integrating Chinese Linguistic and Cultural Competency

WPI prides itself on offering students a project-based curriculum that meets real-world challenges with research and innovation. In addition, students must complete a course of study that is akin to many other universities, complete with distribution requirements and a holistic liberal education in the framework of a STEM or business degree.

To ensure that each aspect of a student's undergraduate experience in Professional Writing touched upon China, the China team carefully reviewed the entire curriculum, including projects, needed courses, and distribution requirements (as can be seen in Figure 1).

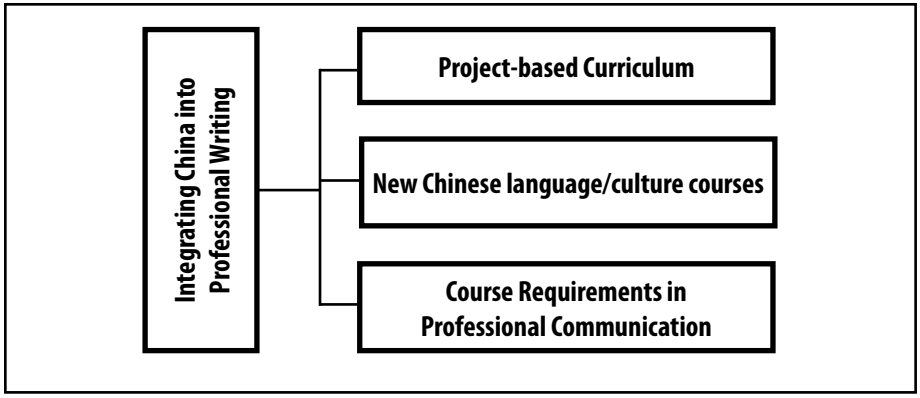

Figure 1: Integrating China into Professional Writing at WPI

Project-based Curriculum

WPI uses a project-based curriculum to enrich the undergraduate experience. Students are required to complete three projects in their sophomore, junior, and senior years, and increasingly they are advised to participate in the first-year Great Problems Project Seminar. The first-year project is interdisciplinary, often co-taught by a STEM faculty and a person from the Humanities and Arts or from the Social Sciences. Students are asked to tackle a "great problem" such as feeding the world, powering the world, or healing the world. These problems must be global in nature; that is, they cannot be national or international problems, but must be problems that affect people no matter their geo-political borders. In their second year, students complete the Humanities and Arts project requirement in a disciplinary area of depth. Students completing this in Writing and Rhetoric can do projects in Usability Studies, Writing for the Web, Public Health, and Writing for Hospitals.

In their junior year, students complete their Interactive Qualifying Project (IQP), which asks them to face a defined problem and use a marriage of social science methodology with technical solutions to achieve the goals of the project. To complete this project, students have the option of leaving campus for a seven-week term and doing their work for a project sponsor at a project site. WPI has project sites all over the world, including (but not limited to) Thailand; South Africa; Namibia; Venice; London; Washington, D.C.; Costa Rica; and Morocco. WPI sends nearly 50% of its undergraduates abroad for a 7-week term; in fact, WPI sends more science and engineering students overseas than any other US university. While at a project center, students typically work in teams of four for project sponsors to develop documents and solutions or even build appropri-

ate solutions for intended audiences and uses. For example, in Thailand, a group of students worked for a nonprofit to help a village in rural Thailand switch to cash crops, such as lettuce and tomatoes, rather than rice and corn. However, after working with villagers, the student team was able to make the argument to the nonprofit that this switch would be a poor choice for this particular social group, because cash crops require more maintenance and those left in the villages were the very old and very young. They proposed a series of different solutions appropriate for this particular community.

Then, in their senior year, students complete a Major Qualifying Project (MQP), a senior thesis in their major. These are large projects that span the full year, and students typically produce an 80– to 120–page document to complement their build projects, complete with literature review, methods and designs, and then discussions and implications. Students in professional writing approach this in multiple ways, depending on their technical expertise. In past projects, students have researched in-game help and then integrated in-game help into video games they made. They have designed usability studies for a high school robotics program. And they have researched professional trade journals to write an article for a trade journal in their field.

In developing a Chinese emphasis, we targeted all four projects as possible sites of entry and development for students. For the first year Great Problems project, we worked in collaboration with the faculty of Power the World to develop modules on the Three Gorges Dam, which considers the cultural and social impact of this engineering megaproject. Students can complete the Humanities & Arts second year project with Chinese history or culture. In our five-year strategic plan, we intend to create a study abroad option for students to go to China to fulfill the Humanities & Arts project in China. For the third year IQP, we are working with a Hangzhou Dianzi University in Wuhan, China to facilitate students completing their projects on site in Hangzhou. And finally, although we already have MQP centers in China, we are in the process of formalizing a system that enables professional writing students to go to China and work on a senior thesis project on site. Students do not need to take all these projects (or indeed any of these project options) to complete the degree requirements; however, by integrating Chinese cultural competence into the project-based curriculum, we are offering students multiple points of entry and opportunities to develop their knowledge base should they choose to pursue this track. I discuss partnering with Chinese universities in more depth later in this article.

Integrating Chinese Language and Culture into Courses: Effects on the Curriculum

WPI already had a China historian and a number of faculty who used China in non-Humanities courses to teach STEM and business content. However, to offer a Chinese emphasis for either the Humanities and Arts or the Professional Writing project, the China team determined that WPI needed to create courses on Chinese language and culture. In 2012, WPI received a two-year renewable Department of Education Undergraduate International Studies and Foreign Language Program grant (UISFL) to help us institute two years of Chinese language courses, introduce or make permanent courses in Chinese history, and introduce a 3000-level course in Cross-Cultural Communication with an emphasis in China as a Writing and Rhetoric course. Although WPI will probably not invest heavily in China-area faculty, the university is supportive of faculty training. Through the UISFL grant, we provide funding to help non-Chinese specialists learn about China and possible intersections with research and teaching responsibilities. We do this by sending faculty to China and conferences about Asia. Further, WPI has worked to create university exchanges and collaborative agreements with a number of universities in China that benefit current faculty with visiting faculty positions, collaborative opportunities, and advising trips to mainland China.

We have also worked within our university's consortium to identify courses at two nearby universities—College of the Holy Cross and Clark University—that students can take as part of our exchange agreements. Holy Cross, in particular, has an excellent Chinese language major that students can use to gain a higher proficiency in language.

Further, we have worked to internationalize our current courses in Writing and Rhetoric. The program has just completed a comprehensive curriculum review and identified eight courses in the curriculum in which international examples can be used to teach rhetorical theories and writing processes. These include, but are not limited to:

- Introduction to Rhetoric: To this course, we have included readings on Chinese rhetoric, Chinese philosophy, Chinese visual and color theories, and Chinese popular culture texts. One-fifth of required readings have a Chinese focus and students can choose to do their final project on rhetorically analyzing a Chinese text or use a Chinese rhetorical lens to analyze any text.
- Visual Rhetoric: To our previous offerings, we have augmented the materials with Chinese aesthetics and layout, Chinese rhetorical

concepts, and the history of certain Chinese visual motifs. Approximately one-quarter of the class material has a Chinese focus.

- Digital Rhetoric: To this class, we have included readings on Chinese social networks, Chinese information policies, and an examination of the intersection of Chinese politics and Internet politics. One-fifth of the class material focuses on Chinese examples.
- Technical Writing: To this course, students read materials on cross-cultural technical communication, writing for translation, writing for localization, and the rising roles of technical communicators in China. Approximately one-sixth of this class' course readings have a Chinese focus.
- Business Writing: We have augmented this course with readings on international professional communication, business organizations in China, business and general cultures in China, and international collaboration. Students can also do a final project with a Chinese emphasis. Approximately one-forth of all readings in this class has a Chinese focus.
- Teaching About Writing: This course is a pre-requisite course for all students who would like to work as a peer tutor in the writing center. The writing center serves a high percentage of Chinese students. This course now includes materials on peer tutoring and international student populations, Chinese rhetoric and forms of communication, Chinese linguistic structures, and challenges in translation. Approximately one-third of the material attends to this particular population.
- Cross-Cultural Communication: This is a new course that we instituted as part of our internationalizing process. In this course, students read general cross-cultural communication readings, but they are also asked to analyze texts in specific cultural contexts. Students are then asked to produce writing with a target culture in mind. Fully one-third of this class has a Chinese focus.
- Research Methods in Writing: This course opens up opportunities for students to define a Chinese focus for their personal research projects. Although this is a methods course, students interested in designing a cross-cultural or cross-linguistic project with a Chinese focus are steered to readings on appropriate methods and cultural readings that will help with data interpretation. The percentage of Chinese content varies based on student projects.

During each seven-week term, instructors of these courses have committed to including at least two examples from a non-US source, and because of our current work to incorporate China content, instructors are including China as one of those sources. We continue to work with our Chinese experts to develop materials that are culturally specific. The faculty who work on the China initiative help nonspecialist faculty to develop modules—short scaffolded assignments that introduce a concept in Chinese STEM or communication, provide relevant readings and assignments to the students, and provide a framework for understanding and presenting the materials to the faculty. In this way, faculty are not charged with becoming experts in China; they are charged with broadening culturally-specific examples that illuminate a way of thinking internationally and highlight the complexities of cultural competency. In addition to this competency, the faculty meet with nonwriting faculty teaching courses in approved elective courses (such as, but not limited to, Chinese Mega-Projects; Chinese Environmental Studies, Chinese Popular Culture, and Chinese Supply Chain Management) to talk about curricular questions, articulate courses to projects, and identify collaborative opportunities for students and faculty. And finally, we have instituted a Chinese Speaker Series and a Chinese Film Series to introduce Chinese cultural content to the broader WPI community.

In this way, we are responding to Jeffrey Grabill's (2005) argument that the US study abroad approach to international education by itself is not enough (although we offer that too). Rather, he proposes a liberalizing of technical communication. He writes, and I quote extensively here:

> Technical and professional writing students also need strong and long-term education in languages, particularly in the U.S. Coursework focusing on studies of culture, which cross a number of disciplines, is essential, as is basic coursework in economics, particularly macro economics and intellectual property issues. Organizational theory is also essential, as is a continuing examination of civic culture and democratic practice. (p. 377)

His model asks for an integrated curriculum that marries humanities and social sciences and business. To this model, our program attempted to integrate technical proficiency. Because many of the students are not entering professional writing as their primary career—they are often going on to an engineering, science, or business position—this approach has enabled us to teach students to communicate effectively within their career field. Our current goal is to respond to the exigencies of international markets with an eye toward China as students will need to have the skills and savviness to navigate these new communication challenges.

Course Distribution Requirements

Within the framework of an undergraduate project-based curriculum, students must complete 27 courses with an additional MQP that is a three-course equivalent. Of these 27 courses, 18 are in a technical area of concentration and nine courses are in Writing and Rhetoric (WR). Students must complete at least six courses with a WR prefix and can fulfill the degree requirement with more WR courses or an additional three courses that make sense for their communication goals. In the past, we have had students fulfill this requirement with upper-division Spanish and German classes, which prepared them to produce bilingual documentation about their technical area of expertise. We even offer two Spanish courses in Comparative Business Environments and Technical and Business Spanish at the 3000-level to prepare students for a professional writing degree with a Spanish emphasis.

This previous experience provided the framework needed to integrate Chinese into Professional Writing. Students with a high level of Chinese language ability can follow their predecessors in Spanish and German, opting for bilingual Chinese-English technical and professional writing. Our department does not offer Chinese languages courses above second-year Chinese, so students with the appropriate language proficiency have either matriculated up from high schools with a Chinese program, are native Chinese speakers, or are using consortium agreements with area colleges to take upper-level Chinese courses.

Students can also use their three elective credits to take courses about Chinese culture and history. This track is meant for students who cannot achieve language proficiency in our current system but know they will likely be in a business situation that requires them to have cultural sensitivity concerning China. Part of this course of study may require students to take STEM or business courses with China content, often presented via a module developed by the grant team. Students would then pair this option up with the Cross-Cultural Communication class and complete an MQP that examines Chinese culture or society in relation to their communication challenge and their technical field.

Partnering with Chinese Universities

For a number of years, WPI faculty have worked to nurture collaborations and partnerships with a number of Chinese universities. When the Professional Writing Program started developing a China option for students, we collaborated with faculty from the School of Business to approach Hangzhou Dianzi University (HDU) in Wuhan, China. In many

ways, HDU fits the profile of WPI; it, too, is a polytechnic institute with a drive to internationalize its curriculum. However, the comparisons stop there. HDU enrolls approximately 23,000 students, whereas WPI enrolls about 5,500 students (undergraduate and graduate). HDU is experiencing tremendous growth, whereas WPI is limited in both urban space and faculty availability.

The WPI School of Business has already signed a memorandum of agreement with HDU to set up a faculty and student exchange. Now, as part of our China initiative, we have started to approach a memorandum of agreement that would enable junior-year IQP students and senior-year MQP students to complete their projects on site in China. WPI already has an IQP site in Hong Kong. However, the China team determined that we should complement this project site with an additional one in a more culturally traditional Chinese location (Hong Kong was a British colony following the First Opium War and is now one of only two Special Administrative Regions in the People's Republic of China).

Collaborating with a Chinese university enables us to address many of the concerns expressed by our administration, including safety and sustainability. WPI students traveling to China are not required to have Chinese language proficiency; therefore, they would probably struggle when fulfilling the rigorous project requirements. Further, China is a country in which personal relationships—guanxi—have tremendous rhetorical power in getting anything accomplished. As Kirk St. Amant (2001) emphasized, long-term relationship building is a relationship "in which parties have certain expectations of and obligations to one another. Unlike traditional Western business relationships, guanxi relationships often draw little distinction between the public (business/professional) and the private lives of the interactors. Rather, the two are often considered interconnected" (p. 386). And indeed, these relationships cause a series of ethical dilemmas that Western technical communicators need to attend to, including the apparent favoritism and special treatments demanded of guanxi relationships. Nevertheless, St. Amant (2001), among others, made a compelling case that the field of professional and technical communication needs to develop an understanding of China, and it is through developing guanxi with a Chinese university that our team intends to approach this.

Further, because HDU is interested in this collaboration, they are working with our team to offer students on-campus housing, Chinese student partners, and access to essential amenities, such as the on-campus clinic and the university technical infrastructure. This collaboration is providing

the framework to move forward and offer our professional writing students an immersive China experience without having to provide all of the components on campus.

In addition to the support that HDU is offering us and students, they are also interested in faculty exchanges in our represented disciplines. HDU has a degree in Editing and Publishing Science, and many of the courses are similar to those offered in technical writing programs at other institutions. Upon further research, we discovered that China was in the process of developing more technical writing degrees and courses of study. Indeed, Duan and Gu (2005) pointed to this very development, noting that China invests in English for Specific Purposes (ESP), and that through this institutional structure, more ESP faculty are developing technical and business writing courses. Since the publication of this article, a search of Chinese university webpages shows a high number of technical writing courses and programs under varying titles. Thus, in the eight years since the publication of Duan and Gu's (2005) article, university systems have responded to the fact that "China is becoming an increasingly important market for international investment and technical products" (p. 434). This growth is a boon to our major. Not only do we receive an institutional partner in HDU, we also benefit from a relationship with a collaborative department with much to teach us about Chinese professional and technical communication.

Recruiting Students & Chinese Student Involvement

The final component of our programmatic emphasis on China is attracting students. Although WPI has had great success in attracting students into the Global Program and off-campus IQPs, students typically choose countries that are culturally familiar (London, Venice) or where they see their participation having impact (Cape Town, Bangkok). China is neither culturally familiar nor is it a country that "needs saving." Indeed, stronger engineers are coming from China than from the US, and the Chinese government is comprised largely of engineers (rather than lawyers as in the US). Therefore, our challenge has been attracting students into the China project centers. We have addressed this aggressively in new student orientation, on-campus study abroad fairs, and in China-oriented classes. Student demand is growing, and with the launch of the HDU/Wuhan project center, we will have two junior-level (or IQP) centers in China.[3]

[3] The Major Qualifying Project centers are not centralized in this same way and typically belong to the major-granting department.

We are also using Chinese language and content classes to attract students to Professional Writing. Typically, these students had not considered Professional Writing as a major or complementary major. However, they are invested in Chinese language and culture, and they see Professional Writing as a means to receive credentials that prove their proficiency in this area.

Finally, and most surprising to us on the team, we have seen a number of Chinese students express an interest in Professional Communication as a second major. These students had typically avoided writing classes at WPI (no writing classes are required as part of the undergraduate curriculum), and a large number of Chinese students fulfill their Humanities and Arts Requirement through the study of other foreign languages or in history with a Chinese emphasis. Comments on the course evaluation point out that familiarity with the content decreases their apprehension concerning humanities work in the English language.

In many ways, this new demand has exposed a problem in our program—a general lack of diversity. Indeed, like other Professional Writing Programs, WPI struggles to meet diversity goals, a topic examined by Savage and Mattson (2011). Much as Savage and Mattson reported, some of this failure is beyond our control, mirroring institutional and disciplinary patterns. Thus, when Chinese students started enrolling in our WR courses and pursuing a degree in Professional Communication, we became aware that we were not previously attracting or serving at least 10% of the undergraduate student population—a problem that may have stayed invisible had we not reimagined the Professional Writing curriculum with a China focus. The benefits have already been great, with Chinese students contributing to class discussions and providing counterpoints to communication strategies that may have stayed invisible in the power structures that they enacted. Our experiences mirror Mirshafiei's (1994), who pointed out that cultural differences are often conflated with language inability and that as teachers of technical communication with an international student body. We should attend to cultural differences in treatment of information and patterns of thinking. Further, Ulijn and St. Amant (1999) found that people from different national backgrounds understand and interpret different oral communication events differently, noting that "by realizing how different cultures might perceive and interpret the same nonverbal cues differently, professional communicators can begin to understand how intercultural confusion could occur" (235). They conclude with this statement: "The findings of this study might also be helpful for the technical communicator who has to negotiate management information tasks

and who finds him- or herself in an increasingly multicultural workplace, whether abroad or at home" (Ulijn & St. Amant, 1999, p. 235). The challenge that becomes clear in reading this study is that people must analyze their own intercultural exchanges, which means they must have intercultural exchanges. Thus, the integration of a Chinese focus in technical communication coupled with the increase in our interested Chinese student body has created an exigency for these conversations to occur in class.

Implementing Cultural Competency into Different Institutional Settings and Some Very Real Challenges

From the beginning of this process, faculty and students expressed concern about a lack of expertise, and this is not a concern to take lightly. Yet what we offer in a China track in professional writing is provide disciplinary scaffolding to enable students to develop cross-cultural competency. In this framework, all faculty can participate even though not all faculty are experts in China. Here, I offer strategic considerations for institutions that would like to implement a similar approach:

Defining the Strategic Focus

- Target a strategic culture and/or language: For us, Chinese made sense for a variety of reasons. We have already implemented this approach with Spanish and to some degree with German.
- Identify experts in the target language and/or culture: At WPI, we did not have a Chinese language person. We did have a Chinese historian in Humanities and Arts, and we had Chinese experts in the school of business. Once we identified this group of people, we started to strategize how to offer students a unified approach to gain cultural and/or linguistic competency.
- Identify possible grants: We needed money to start offering language courses and provide training to faculty who did not have Chinese specializations. In our case, we identified the Undergraduate International Studies and Foreign Language grant (UISFL) from the Department of Education. We considered, too, collaborating with the Confucius Institute, which is funded by the Chinese government and supplies Chinese foreign language teachers to US universities. Because we are a technical university, foundation monies often available to liberal arts institutions were out of our reach yet would be possibilities for more traditional colleges and universities.

Reviewing the Curriculum

- Offer a linguistic track: Students who take upper-level Chinese courses can fulfill their electives by pursuing bilingual technical and professional communication. In our case, we started offering lower-level Chinese courses and identifying consortium classes that students could attend to gain upper-level proficiency.
- Offer a cultural competency track: For those students who do not want to take a foreign language, we offer a way to get a professional writing degree that emphasizes cross-cultural communication along with developing cultural competency. Cultural competency is different from cross-cultural communication in that cultural competency requires students to have a historical and contemporary framework through which they can ask and answer questions that affect communication within localized processes. We offer this track in two ways:
    - Integrated into the Writing and Rhetoric (WR) courses via readings, examples, and projects; and
    - Offered via elective courses with a Chinese emphasis, such as Chinese history, Chinese philosophy, environmental studies with a Chinese emphasis, business courses with a Chinese emphasis, among others.

Instituting Study Abroad and International University Collaboration

- Provide students with study abroad opportunities that are accepted into the course of study: We opted to achieve this opportunity through the third-year IQP. In our strategic plan, we intend to allow students to go abroad to take courses to fulfill their Humanities and Arts requirements. Other institutions may have study abroad offices that will help identify possible collaborations.
- Pursue Memorandums of Understanding (MoU) with Target Country Universities: MoUs facilitate both student and faculty collaborations. In our case, we have created a faculty exchange as part of our MoU with Hangzhou Dianzi University (HDU). In addition, HDU will act as the hosting institution for our IQP students who will complete their junior-level project in China. This exchange is particularly important in China, where relationships matter and help academic and corporate work to get done.

Attracting Students

- Create traditional advising materials: We created brochures, a website, and revised our catalog description. We then talked with our admissions and advising office about this option.

- Attend all first-year advising sessions: WPI has open student advising where all first-year students are required to go to informational sessions about opportunities and tracks for study. We volunteer for all of those sessions.
- Present materials in all relevant classes: Every term, we go to all relevant courses that have a Chinese emphasis and talk to the class for approximately five minutes.

Integrating Chinese linguistic and cultural competency into professional communication has come with its own set of challenges. Although we had a structure in place via Spanish and German to attend to students who wanted to utilize the knowledge gained in language courses, Chinese is, quite frankly, a much more difficult language to achieve proficiency in. As such, unless a native English speaker started Chinese language courses in high school (which is more and more likely), their time studying Chinese in college is unlikely to give them the foundation for bilingual professional writing. In this situation, the Chinese students studying in the US have the advantage. For our native English speakers, this challenge may be alleviated by study abroad through either our project system or another study in China program. WPI does send approximately 50% of undergraduates to off-campus project sites. However, not all students can afford either the monetary commitment or the time commitment. One term away from campus is expensive and disrupts course sequences in a number of majors. Also, China is culturally alienating, so while some students see the need to understand China, they admit that they are not psychologically or emotionally ready to spend two months in Asia.

In addition to the challenges with the material, the simple fact at WPI is that the majority of students pursue professional writing as a second major to complement their STEM or business major. To fulfill the requirements for both degrees, students must take significantly more classes. Therefore, the addition of Chinese often adds an extra workload as students complete WR courses and Chinese courses.

And finally, throughout this article, I emphasize the challenges faced by students in developing expertise. What appeared at the beginning of this process is the seemingly insurmountable fact that none of the Professional Writing faculty had China expertise. We had expertise in rhetoric, organizational theory, technical and professional writing, and general cross-cultural communication. However, not one of us had taken a course on China nor had we ever been to China when we responded to this need. I mention this here because faculty in many programs fear that their lack

of cultural expertise means there is no clear way to integrate international technical communication into the classroom.

The Professional Writing faculty overcame this in a number of ways. Once the faculty agreed this was important, we systematically started working with China-based projects. For example, Lorraine Higgins joined a Civil Engineering project, the Solar Decathlon, as its communications advisor. Through this opportunity, she was able to travel to Datong, China, with the team as they competed in this event. We have also pursued granting opportunities to fund faculty development in this area, which has helped to send other affiliated faculty to China for exposure and training. Our library has generously agreed to start aggressively pursuing relevant China materials. Most importantly, we have partnered with China experts at the University and strategized courses students could take to fulfill cultural and linguistic competency requirements.

The China emphasis in this program will only ever be one track that students can take through our major. We continue to support more traditional technical and professional writing students, and we continue our work with Spanish and German faculty to provide students with a pathway to bilingual technical and professional communication. As we continue work in this area, we intend to work with HDU to orchestrate faculty exchanges to benefit from experts in Chinese language and culture, thus sidestepping many budgetary constraints placed on our program. And as a final note that speaks to the strong start of our new track: Yunqiu Sun, a dual major in Professional Writing and Chemistry, won the Provost's MQP award in 2013 for her excellent work on a bilingual website for the Solar Decathlon and the subsequent report that she wrote on the process.

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Author information

Jennifer deWinter is an assistant professor of Rhetoric and faculty in the Interactive Media and Game Development program at Worcester Polytechnic Institute. Additionally, she co-directs and teaches in the Professional Writing program. She teaches courses in rhetoric, professional and technical writing, and game studies. She focuses on internationalizing technical and professional communication as well as pursuing her research in computer games. Her work has appeared in numerous journals, including *Works and Days*, *The Journal of Gaming and Virtual Worlds*, *Eludamos*, *Computers and Composition*, and *Rhetoric Review*. Her upcoming book T*echnical Communication and Computer Games* (co-edited with Ryan Moeller) marries her interests in game studies and technical communication. She is the editor for the textbook *Videogames* for Fountainhead and is a co-editor for Bloomsbury's book series on Game Designers, for which she is writing the inaugural book on Shigeru Miyamoto.

University of Limerick's MA in Technical Communication and E-Learning

Darina M. Slattery
University of Limerick

Yvonne Cleary
University of Limerick

Abstract. This article describes the mission, history, development, structure, and curriculum of the MA in Technical Communication and E-Learning, which is offered by the University of Limerick. The program started as a Graduate Diploma/ MA in Technical Communication but merged with the MA in E-Learning Design and Development in 2010. While the curriculum has evolved over the years, the overriding skill set of graduates remains constant; graduates are able to write clear, concise content for a range of media. In addition to discussing the curricular changes and structure, this article describes the typical roles filled by graduates, the faculty involved in the program, and the challenges they face administering the program.

Keywords. Technical communication, e-learning, curriculum development, industry links, assessments, online collaboration, teaching challenges

The University of Limerick (UL), situated in the mid-west of Ireland, was founded as a National Institute of Higher Education in 1972 but received university status in 1989. At present, approximately 12,500 students are enrolled at undergraduate and postgraduate levels, with the majority of programs offered full-time on-campus. However, in recent years, the University has started offering more programs on a flexible basis, with part-time and distance programs becoming more popular. Technical Communication and Instructional Design (TCID), housed within the School of Culture and Communication, offers two such programs: a Master of Arts in Technical Communication and E-Learning (full- and part-time on-campus) and a Graduate Certificate in Technical Writing (distance learning). The Technical Communication Section also offers courses[1] on undergraduate programs, such as the Bachelor of Arts in New Media and English and

[1] Known as modules at the University of Limerick.

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the Bachelor of Arts (Joint Honors). This article, however, focuses primarily on the Master of Arts (MA) in Technical Communication and E-Learning program.

While courses on technical communication and writing are offered in a handful of other Irish university programs, UL is the only Irish university offering a full MA program in technical communication. UL is also unique in that the MA program focuses also on the related field of e-learning. Although standalone programs on e-learning, technology-enhanced learning, and digital media are offered in other Irish universities, no other Irish program has a dual emphasis on technical communication and e-learning. This dual emphasis means that graduates can apply for a range of positions—including technical writing, instructional design, and interactive courseware development—upon completion of the program. Because the program is unique, many Irish and multinational employers see UL as a "one-stop-shop" when looking to hire graduates from these fields. In fact, many multinational companies (including IBM and SAP) have content development and localization teams based in Ireland because Ireland (and UL more specifically) can provide graduates skilled in these areas.

Program Mission

The MA in Technical Communication and E-Learning emphasizes strengths developed over more than a decade at UL. Contact with alumni has shown overwhelming support for the program's dual emphasis on technical communication and e-learning. The need for this type of expertise is expanding rapidly as more and more companies and institutions use information and communication technologies (ICTs) and need employees who can write clearly and/or teach effectively using these technologies. The part-time version of this program facilitates those who may not be able to undertake the full-time version due to work and/or family commitments. We aim to make its delivery as flexible as possible to facilitate students who are working or do not live close to the campus. For example, most tutorial work is managed online through synchronous chats and asynchronous conferences. In addition, we provide learning objects and lab sheets to support student technology use, and we offer podcasts of many of our lectures. The next phase of development for this program will be to offer a fully online MA, which will eventually replace the on-campus program; this is a necessary move as students will soon be faced with higher tuition fees and may need to remain in full-time employment while undertaking the program.

Mission Statement

The mission of the MA in Technical Communication and E-Learning is to equip graduates with the skills needed to design and develop usable content and technology-enhanced learning resources.

The 2013 National Skills Bulletin (Forfás, 2013) notes a persistent skills shortage in many IT sectors in Ireland and describes the increasing importance of communication in conjunction with ICT skills and the need for innovative learning, including e-learning. Our MA aims to address these shortages by providing graduates with advanced online development and collaboration expertise. Graduates are unique in Ireland, qualified to work as both instructional designers and technical writers, and in a variety of related roles such as editing, web design and technology journalism (see also "Students and Graduates" later in this article for an overview of typical roles held by UL graduates). Based on our mission to equip graduates with these skills, upon successful completion of the program graduates should be able to:

- Communicate effectively in online and face-to-face environments.
- Write clear, correct, precise content.
- Conduct workplace and academic research.
- Manage complex writing and design projects.
- Deploy and use Web 2.0 technologies to collaborate with peers and to create engaging collaborative environments.
- Use multimedia applications to design and develop content.
- Evaluate software applications, tools and programs.
- Design and deliver instructional materials.

Programmatic Vision

This program combines a mix of theory and practice. Our pedagogical approaches reflect the importance we place upon practice informed by theory. Although we teach software tools on the MA, and software skills are important to students seeking employment because employers tend to value them highly, we agree with Carliner (2010, p. 47) that "the purpose of an academic degree is to serve the student for decades after graduation by providing durable skills and knowledge. Technology skills and knowledge are perishable, often outdated within five years." Even where courses and assignments are explicitly practical, such as a website design assignment, we require students to reflect on their design decisions and to explain how they have put theory into practice. In fields such as technical communication and e-learning, which are strongly affected by changing

technologies, these "durable" skills enable graduates to adapt to new work environments and technologies. In fact, some employers hire UL's graduates because they possess the ability to use a range of tools, rather than because they know specific tools.

A second important theoretical perspective of the program is its emphasis on usability, and user- and learner-centered design. Technical communication and e-learning are humanistic disciplines with service to users of technology at their core. Regardless of the environments graduates find themselves working in, they will have to consider the audience for their work. We aim to approach all courses on the program from an audience-centric perspective. Students also learn that their audience may not speak English as their first language, and they must work to accommodate culture difference and design for international audiences.

Program History

In 1994, the University of Limerick offered its first technical communication courses in an undergraduate program, the BA in Languages with Computing. The instructor hired to deliver these courses, Anne Keane, began developing a Graduate Diploma/MA in Technical Communication in collaboration with industry and academic partners, including John Kirkman, who also served as the first External Examiner. The Graduate Diploma/MA program was first offered in the Fall semester of 1995, and attracted 15 students in that first year, and subsequently cohorts of up to 30 students per year for the following 15 years.

In the Graduate Diploma/MA program structure, students undertook eight courses taught traditionally in the classroom during the first year, after which they could graduate with a Graduate Diploma award. Of those eight courses, four were core technical communication, covering content such as writing style, information design, theory, interviewing, desktop publishing, documentation management, and economics of text production. Students also took core courses in information systems development and human computer interaction. In addition, students chose one elective each semester, selecting from options such as computer programming, marketing, or software localization (a buoyant sector within the Irish software industry at the time).

If students achieved a 2.1 award[2] or higher, they were offered the option to write a dissertation to be examined for the award of MA. In prac-

[2] The equivalent of a GPA of between 3.3 and 3.7, according to the British Department for Education Overseas Grade Comparison: ‹ https://www.gov.uk/government/publications/grade-comparison-of-overseas-qualifications ›.

tice, most students graduated with the Graduate Diploma award and we straight into industry, with most of them gaining employment in the Irish software industry.

The field of technical communication was expanding as Ireland's economy went through a boom period, which later became known as the "Celtic Tiger." The boom was partly fuelled by the strong software sector. Many practicing technical writers lacked technical communication qualifications, leading to a need for an online course to enable them to certify and upgrade their skills while continuing to work. In 2001, a pilot version of the Gradate Certificate in Technical Writing by distance learning ran for the first time, with just 4 students. The pilot was a success and, 13 years later, this program continues to be offered, and attracts approximately 20 students per year. The program structure, which remains the same today, offers the four core technical communication courses from the Graduate Diploma/MA. Students can undertake the Graduate Certificate over one or two years.

In 2002, an additional MA program was offered, the MA in E-learning Design and Development, designed to prepare graduates to work in the e-learning industry. This program also proved popular, and ran until 2010, when it and the Graduate Diploma/MA in Technical Communication were collapsed into a single MA in Technical Communication and E-Learning, our current on-campus MA, and the focus of this article (the structure of this program is outlined in "Curriculum" later in this article). This MA and its sister program, the Graduate Certificate in Technical Writing by distance learning, are the only technical communication programs available to university students in the Republic of Ireland.

Description

As outlined in the previous section, the MA in Technical Communication and E-Learning program has been running since 2010, although a good deal of the curriculum builds on content taught in other programs since the mid-1990s. The program is offered and coordinated by Technical Communication and Instructional Design (TCID), which is housed within the School of Culture and Communication, within the Faculty of Arts, Humanities and Social Sciences, one of four Faculties at the university.

There are currently 19 students enrolled on the program, with 12 taking the program full-time over one year. The remaining students are taking the program part-time over two years. The program also qualifies under the Higher Education Authority's (HEA) Graduate Skills Conversion Program, which means that full-time students qualify for significantly

reduced fees. In 2014-15, full-time students will pay Euro 3,000 (approx. USD $4,100) rather than Euro 4,888 (approx. USD $6,720). The part-time program is not subsidized by the government so students pay Euro 2,800 for each of the two years.

Impetus

Software development was one of the primary drivers of the Irish economic success story, which became known as the "Celtic Tiger" economy. Multinational companies such as Microsoft and Symantec began to off-shore several development functions, including technical communication and localization, to Ireland in the mid-1990s, because Ireland was a relatively low-cost economy. Other reasons that Ireland became an IT hub were its strong links to Europe as a member of the EU, and its native English-speaking and educated workforce.

John Kirkman (1996) described the development of the original Graduate Diploma/MA in Technical Communication in an article for the Journal of Technical Writing and Communication, in which he emphasized the importance of the program's links with industry.

The technical communication offerings at Limerick have changed in the intervening 19 years since Kirkman was involved in establishing the original MA. For example, undergraduate students in New Media degrees study technical communication courses, a distance learning Graduate Certificate in Technical Writing has run since 2001, and most recently the MA in Technical Communication and E-Learning has replaced the original Graduate Diploma/ MA in Technical Communication. The links with industry, however, remain strong, with companies such as IBM and SAP hiring many of UL's graduates on an almost annual basis.

Changes Over Time

The program is administered through a course board whose members meet each semester, to discuss curriculum development and any student issues that may have been raised during the semester. The course board constitutes all current TCID faculty. While industry practitioners do not sit on the Course Board, the curriculum is heavily influenced by industry practices. Industry professionals are regularly invited on-campus to speak to faculty and students and this situation provides us with an informal way of soliciting industry feedback. Many of these industry professionals are also former graduates of our programs, so graduates can have some input into the curriculum. Also, TCID faculty regularly receive job specifications from prospective employers by email, so these documents are monitored closely to ensure students are graduating with the necessary skill-set.

Course or program modifications are first discussed at course boards and then the Program Director presents the modification at school level. Once the modification is approved at school level, she presents it to faculty board and finally to the Accreditation Program Review Committee (APRC). In addition, the Program Director reviews applications from prospective students each spring.

In 2010, the course board merged the Graduate Diploma/ MA in Technical Communication with the MA in E-Learning Design and Development. Many graduates from both programs were seeking jobs in similar areas; therefore streamlining the offerings into a single program gave graduates a more expansive skillset, and enabled them to pitch their skills in both markets. Consolidating the programs also made the single offering more attractive and competitive.

When we developed the new MA, we also merged two practical workshop courses into one, to facilitate a new course called Learning and Collaboration Technologies. We had been teaching RoboHelp and Authorware in one workshop course but found that these tools were rarely required by industry, so we replaced that course with a new, more current one, which focused on Web 2.0 technologies and the like. In "Curriculum" later in this article, we will provide an overview of that course (as well as the other courses on the program).

We also introduced a new course called Research Methodologies in Languages and Cultural Studies because we found that students had little or no background in research methods, research ethics, or relevant research tools. In some cases, this lack of knowledge was impacting the quality of their final projects and dissertations, so we decided to address it formally in the curriculum.

The program continues to evolve, and each year we update course content to remain abreast of technological, industry and pedagogical changes. While the majority of curricula changes have been reactions to industry requirements (e.g., dropping RoboHelp or offering workshops on DITA), we have been proactive in terms of incorporating innovative technologies and techniques into the curriculum, particularly when compared with other Irish educational institutions (for example, we have been using asynchronous discussion forums with on-campus students for several years, to facilitate constructive discussions and deeper learning). We were also proactive when we introduced wiki writing, blogging, and podcasting into the curriculum. While employers were not specifically requesting these skills, we knew that it would only be a matter of time before graduates would need to be proficient in using Web 2.0 technologies. Recent

initiatives at the University of Limerick have focused on the development of six graduate attributes—knowledgeable, proactive, creative, responsible, collaborative, and articulate—but our curriculum has always focused on the development of transferable skills that can be used in a variety of workplace settings.

Students and Graduates

The MA in Technical Communication and E-learning is a conversion program, which means that students can have any disciplinary background—this program "converts" their existing skills to enable them to work in technical writing, instructional design, and related roles. Students, therefore, typically come from a range of backgrounds, most notably the arts and business, but also from education, science, and engineering. Students from this year's cohort have backgrounds in humanities, IT and multimedia, and education, for example.

In terms of entry requirements:

- Applicants must have a primary degree in any discipline (2.2 honors[3] award or higher, at level 8[4]). Applicants who do not have a primary degree can apply to be considered through a Recognition of Prior Learning (RPL[5]) process.
- Applicants must have a high standard of written English and they are asked to submit a personal statement outlining their reasons for applying, as part of the application process.
- Applicants are expected to be proficient in using standard office applications (e.g., Microsoft Word, PowerPoint, and Excel). They must also be proficient in searching the Internet and familiar with using electronic communication tools (including email, chat rooms, and discussion forums).
- Applicants may be required to attend/ participate in interviews to determine their suitability for the program.

Since its inception, several hundred graduates of the University of Limerick have completed undergraduate courses, or full programs at Graduate Certificate, Diploma and MA levels in technical communication. Many of these graduates now have ten to fifteen years of industry experience. The

[3] The equivalent of a GPA of between 3.0 and 3.3, according to the British Department for Education Overseas Grade Comparison: ‹https://www.gov.uk/government/publications/grade-comparison-of-overseas-qualifications›.

[4] Honors bachelor degree level, as per the Irish Framework of Qualifications: ‹http://www.nfq.ie/nfq/en/FanDiagram/nqai_nfq_08.html›.

[5] For an explanation of RPL, see: ‹http://www.fetac.ie/fetac/aboutfetac/policies/rpl.htm›.

great majority of these graduates find work in Ireland. Although we do not have precise figures, our contact with alumni suggests that the following workplace scenarios are most typical:

- Information developers in large technical writing teams for multinational companies like IBM and SAP.
- Technical writers in software and IT companies (working as lone technical writers or in small teams).
- Instructional designers in e-learning companies in Ireland.
- Instructional technologists in Irish second- and third-level educational institutions.
- Hybrid roles that encompass instructional design, technical communication and information design, in multinational companies.

In addition to these typical scenarios, additional job titles of UL's graduates reflect a range of complementary roles, and the increasing digitization of the industry. These titles include "content specialist," "digital editor," "web content strategist," "online marketing specialist," and "digital project specialist."

Some comments from recent graduates indicate how beneficial they have found their studies in technical communication:

> "I really enjoyed the challenge of the MA program. It was well thought out and structured. Further, the modules covered are very relevant to current industry needs and have been instrumental in helping me and classmates secure employment."

> "I really enjoyed my year studying at UL. The modules were relevant, challenging and absorbing, and the lecturers were supportive and helpful. The MA in Technical Communication and E-Learning helped me get back on the career ladder after being home with my kids for a few years.

> "I got a job as an Information Developer as soon as I completed the course."

> "This MA improved my writing, design and development skills immeasurably. The 1-year, full-time course was challenging; however, the content of both the technical communication and e-learning related modules was extremely relevant and provided invaluable preparation for me for a variety of career options. I would recommend the course highly."

> "The course introduced me to the latest industry software, taught me practical writing skills and alerted me to the career options in the technical communication profession. The decision to undertake the MA has been invaluable; this qualification enabled me to execute a career change in my thirties in the midst of a recession! I would highly recommend it to anyone interested in technology and writing."

Faculty

With the exception of one course (RM6011 – see "Curriculum" later in this article), all faculty teaching on the program work in TCID. The following full-time faculty teach in the program:

- Yvonne Cleary, Lecturer in Technical Communication, and MA Program Director.
- Darina Slattery, Lecturer in Technical Communication (former MA Program Director).
- Ann Marcus-Quinn, Lecturer in Technical Communication, and Graduate Certificate in Technical Writing Program Director.

The backgrounds of faculty are varied but include applied languages, business, computer science, and the arts. Where feasible, faculty teach subjects that relate to their teaching and research interests, which include:

- E-Learning design and development
- Financial content analysis
- Instructional design
- Intercultural communication
- Online collaboration and virtual teams
- Open educational resources
- Professionalization of technical writers
- Software/ web localization and internationalization
- Technical communication
- Usability

The three full-time faculty coordinate and teach eight of the nine courses on the MA program, as well as courses on our Graduate Certificate in Technical Writing program and some undergraduate programs (e.g., the BA in New Media and English). On average, we each teach two courses

per semester, but we have been required to teach up to four courses per semester, depending on faculty numbers available. Some of these courses are taught face-to-face and online simultaneously (e.g., TW5221 Theory of Technical Communication—see "Curriculum" later in this article). Teaching typically requires faculty giving one or two double lectures and one tutorial per week, per course, over a 12-week semester. For some of the courses, a Teaching Assistant (TA) facilitates weekly lab sessions; in these lab sessions, students learn how to use software applications by following pre-written instructional materials. The Teaching Assistant position is filled annually (10-month contracts), but these contracts cannot be renewed more than three times. This policy has been a major challenge for TCID, because a new TA has to be hired every three years; this level of staff turnover disrupts continuity and creates additional work because new TAs need to be not only mentored but also have time to become accustomed to courses and university procedures. Over the last 15 years, our TAs have included Emma O'Brien, Michael O'Brien, Majella O'Dea, Marie Flannery, Yvonne Diggins, and Ann Marcus-Quinn (Ann is now full-time TCID faculty).

In recent years, we have been fortunate enough to hire an Adjunct Professor, who facilitates the development of TCID both pedagogically and professionally. Our current Adjunct is Professor Philip Rubens, formerly of Rensselaer Polytechnic Institute (RPI) and also a former External Examiner for TCID. In his capacity as Adjunct Professor, Rubens typically facilitates online discussions in one course per semester, thereby offering off-campus expertise to students and easing the workload for full-time faculty. He also visits the campus once a year and gives face-to-face presentations to students and faculty, and he facilitates the professional development of faculty on an ongoing basis.

If a full-time faculty member has to go on leave, for whatever reason, a part-time Tutor is sometimes hired to cover the core teaching hours for that faculty member, but only if financial resources are available.

Curriculum

The MA program is offered as a one-year, full-time course taught over three semesters, or as a two-year, part-time course taught over five semesters. Part-time students attend classes during the day with the full-time students. Each semester comprises 12 teaching weeks. Students taking the dissertation/ project course are not required to be on-campus during the summer semester but their project work is supervised by full-time faculty, either online or in face-to-face meetings.

The structures of the full- and part-time programs are as follows:

Full-time Program

Fall semester	Spring semester	Summer semester
TW5211 Principles of Professional and Technical Communication and Information Design (9 ECTS[6])	TW5212 Workplace Issues in Technical and Professional Communication (9 ECTS)	EL6013 Dissertation/ Project (30 ECTS)
EL6041 Instructional Design (9 ECTS)	EL6052 E-Learning Theories and Practices (9 ECTS)	
TW5221 Theory of Technical Communication (9 ECTS)	EL6072 Interactive Courseware Workshop (9 ECTS)	
RM6011 Research Methodologies in Languages and Cultural Studies (3 ECTS)	EL6082 Learning and Collaboration Technologies (3 ECTS)	

Part-time Program

Year one:

Fall semester	Spring semester	Summer semester
TW5211 Principles of Professional and Technical Communication and Information Design (9 ECTS)	TW5212 Workplace Issues in Technical and Professional Communication (9 ECTS)	
EL6041 Instructional Design (9 ECTS)	EL6072 Interactive Courseware Workshop (9 ECTS)	

Year two:

Fall semester	Spring semester	Summer semester
TW5221 Theory of Technical Communication (9 ECTS)	EL6052 E-Learning Theories and Practices (9 ECTS)	EL6013 Dissertation/ Project (30 ECTS)
RM6011 Research Methodologies in Languages and Cultural Studies (3 ECTS)	EL6082 Learning and Collaboration Technologies (3 ECTS)	

Coursework

This section will outline the courses on the program. In all courses, students undertake 100% continuous assessment; i.e., there are no summative examinations. Lectures focus largely on theory, tutorials focus on small-group work (with an emphasis on assignment deliverables), and workshops focus on teaching industry-standard tools such as Adobe Dreamweaver, Flash, Framemaker, and Photoshop in a computer lab environment.

[6] The European Credit Transfer System (ECTS).

TW5211 Principles of Professional and Technical Communication and Information Design

Syllabus

This course covers the following topics: Introduction to technical communication; audience analysis; writing style for technical communication; information design; typography; color; graphics and illustrations; technical communication genres; writing technical manuals; designing and writing brochures; writing for new media.

Assessment Mechanisms

Assignments typically require students to rewrite a passage of text, summarize a document, critique and redesign a brochure, and design and develop an instruction manual. Marks are awarded for writing style and document design.

EL6041 Instructional Design

Syllabus

This course covers the following topics: Brief history of instructional design; main approaches to instructional design (behaviorism, cognitivism, and constructivism); individual learning theorists (including Skinner, Bloom, Gagné, Jonassen, Gardner, Kolb, and Merrill); needs assessment; front-end analysis (including learner/ audience analysis, technology analysis, task analysis, objective analysis, and media analysis); course design (including project scheduling, definition of team roles, media specifications, content structure, and configuration control); delivery systems for instruction (differences between individualized instruction, small-group instruction, and large-group instruction); and the systematic design of instruction (the Dick & Carey model).

Assessment Mechanisms

Typically, students are required to write two essays and to participate in online discussions. Essay topics include comparing the three approaches to instructional design (behaviorism, cognitivism, and constructivism) and discussing how Gagné's nine events of instruction could apply to an online course. Marks are awarded for a thorough discussion of the essay topic, writing style and overall presentation of the document.

TW5221 Theory of Technical Communication

Syllabus

This course has two principal strands: Research methods in technical communication and theory topics in technical communication. Research topics include: phases of a research project; research strategies; data analysis; ethical considerations; usability studies and heuristic evaluation. Theory

topics include: history, definition, and rationale of technical communication; minimalism; information design theory; readability; international communication.

Assessment Mechanisms

Students undertake a substantial research project in this course. Students are free to research any topic of relevance to technical communication or e-learning, provided they can demonstrate that they have devised a suitable hypothesis or research question(s). The majority of students undertake a usability study on some communication product (e.g., a brochure or website). For this assignment, marks are awarded for proposal development (this is facilitated online by our Adjunct Professor) and for the final research report.

RM6011 Research Methodologies in Languages and Cultural Studies

Syllabus

This course covers the nature of research and how to formulate a research question. Topics related to research methodologies include qualitative versus quantitative approaches, ensuring reliability and validity, survey research (sampling, questionnaire design etc.), text analysis and critical discourse analysis, content analysis, conversation and interaction analysis, interviews, classroom observation, action research, and case studies. Topics also include researching and evaluating information and communication technologies for pedagogical purposes, and ethical issues and good practices in research involving human subjects. Electronic tools include databases and search tools, as well as electronic reference managers. Academic writing topics include structure, work-plan, presentation, literature reviews, referencing, and planning and writing a research proposal. The overall structure of the course focuses on progressing from research question to thesis.

Assessment Mechanisms

By the end of the semester, students write a proposal for their dissertation or the development project that they propose to develop during the summer semester.

TW5212 Workplace Issues in Professional and Technical Communication

Syllabus

This course covers the following topics: Ethical issues in professional communication; writing and information design ethics; codes of practice; cyber ethics; legal issues, including consumer protection, patent, copyright,

trademarks, trade secrets, and contracts. XML and structured authoring. Communication theory includes models; problems; work teams; virtual teams; non-verbal communication; interviewing skills; presentation and listening skills. Trends in writing and communication: technology trends; employment trends; language trends; design trends.

Assessment Mechanisms

Students undertake two assignments in this course: an XML development project and an interview assignment with two deliverables—a report and a screencast.

EL6052 E-Learning Theories and Practices

Syllabus

This course covers the following topics: Trends and issues in distance education and e-learning; the depth education model; considerations and procedures for using/implementing virtual classrooms, web-based instructional systems, learning management systems, and learner support systems; e-moderating; interaction and assessment activities; evaluation of distance education and e-learning programs.

Assessment Mechanisms

Students write two essays in this course. The topics typically include a discussion of the convergences and divergences in conventional and distance education and a discussion of the three key elements of a community of inquiry framework (based on the depth education model). Students are also required to participate in online discussions.

EL6072 Interactive Courseware Workshop

Syllabus

This course covers the following topics: Introduction to HTML; Adobe Dreamweaver CS5; Adobe Flash CS5.

Assessment Mechanisms

Students undertake a group website and an individual FLASH assignment. Typically, both assignments also require students to submit reports, describing how and where they applied the theories they studied in other courses.

EL6082 Learning and Collaboration Technologies

Syllabus

This course covers the following topics: Introduction to blogs and wikis; Adobe Captivate; Introduction to podcasting; Introduction to assistive technologies; Web-based tools for e-learning and collaboration.

Assessment Mechanisms

Students set-up and maintain a reflective learning blog throughout the semester. They also develop a podcast on a topic of interest to them and present it to their classmates at the end of the semester. Some years, students also participate in virtual team projects with students in the U.S. as part of this course.

EL6013: MA Project/Dissertation

Students submit a proposal in January, and in the summer semester, they either complete a development project and evaluation or a dissertation describing a research project in an area relevant to technical communication or e-learning. This part of the program is self-directed, but each student is assigned a supervisor who offers guidance throughout the process.

Experiences

Overall, the curriculum is defined by a balance of theory and practice, the merging of cutting-edge and durable content, and an emphasis on real-world assignments and industry links. The MA program provides students with a range of valuable experiences, including opportunities for the following activities:

- Individual and group work, both in face-to-face settings and in virtual teams. The virtual team projects, in particular, are a defining feature of the program, as they give students opportunities to collaborate with teammates in another country to produce a common deliverable. The challenges, issues, and outcomes of the virtual team projects have been well-documented in various articles, including Flammia, et al. (2010).
- Service learning and civic engagement. In the past, students have undertaken assignments that required them to develop online resources for community groups and policy makers. These kinds of projects have enriched the student experience and broadened their skill-sets.
- Industry presentations and workshops, which provide students with opportunities to see how the theory is applied in a real-world setting. Each year, industry experts present to the students on a range of topics including the typical duties of a Technical Writer/Content Developer, the workflow process, and the tools used. Companies such as IBM and SAP present to the students almost every year.

- Learning and practicing a number of transferable skills, including oral presentations, document design, content development, blogging, podcasting, and multimedia development.
- Researching, designing, and developing a substantial project that is a) of interest to the individual student and b) of relevance to potential future employers.

Students preparing to apply for employment value the opportunities to engage in real-world assignments, develop their portfolios, and network with employers. Alumni consistently comment on how the program prepared them for the workplace.

Challenges and Lessons Learned

As with all academic programs, the MA in Technical Communication and E-learning has faced some challenges. In this section, we discuss these challenges, as well as lessons learned regarding curriculum development and administration of the program.

Challenges

The following are persistent challenges:

- Ensuring that students have the skill-set required by industry. Both technical communication and e-learning are constantly-evolving fields and the curriculum needs to be flexible. For example, faculty recently incorporated XML and DITA training into the curriculum, as some employers requested this skill-set. However, it is not always feasible to add new content without sacrificing existing content, so sometimes it is not possible to devote adequate time to topics.
- Updating software, which not only has severe financial implications, but also requires a steep learning curve for faculty.
- Getting the right balance right between individual and group work. While relevant pedagogical models such as the five-stage model of teaching and learning online (Salmon, 2004) advocate group work to facilitate knowledge construction, some students welcome individual assignments as there are fewer issues to contend with; issues relating to non-participating team members are common concerns. Moreover, because students graduate with an individual award, many of them prefer assignments for which they have sole control and responsibility.
- Providing detailed constructive feedback, ideally during the semester. For every assignment, students receive feedback not only

on the task at hand (e.g., design and develop a website), but also on their writing style, document design, and technical skills. Despite best efforts, it is not always feasible to provide this level of feedback before another assignment is due, but faculty endeavor to do so whenever possible.

- Moving online. The latest challenge we have set for ourselves is to make the program more flexible by offering it entirely online. In an institution where most programs are run on-campus, we may encounter some bureaucratic and logistical issues as we undertake this endeavor.

Lessons Learned

Over the years, faculty have made the following observations:

- Students benefit from continuous assessments, which facilitate learning outcomes better than summative examinations. Overall, grades tend to be higher when students are required to practice their skills on a regular basis, and they receive constructive feedback on that practice.
- Students need feedback on their writing and document design at an early stage, as these skills will be needed throughout the program in every assignment. Indeed, they are the key skills that students use after graduation.
- Students learn adaptability. Although it is not feasible to teach all the ICT tools that might be used in industry (some companies use proprietary tools), nonetheless, by the end of the program, students possess the ability and flexibility to learn any application they are likely to need in the workplace.
- Students value interactions with industry experts. From a faculty perspective, experts often confirm what is taught in-class, thereby reinforcing the curriculum.
- Students need instruction on basic document formatting, Web searching, and referencing, as these skills are rarely taught in undergraduate programs. In the early years, students had to learn these skills themselves but more recently, faculty have integrated instruction on these skills into existing courses.

Concluding Remarks

While the program structure has changed significantly from the original Graduate Diploma/MA in Technical Communication, the overall skill-sets of graduates have remained consistent. Graduates of the MA in Techni-

cal Communication and E-Learning are good writers, capable of conveying complex content in a clear and concise way. They are also aware of the challenges of writing for international audiences and writing for new media.

As the program continues to evolve, we look forward to welcoming new students and to keeping pace with pedagogical and disciplinary developments into the future.

Author information

Darina M. Slattery is Lecturer in Technical Communication. Previously, she was Program Director for the MA in Technical Communication and E-Learning, the Graduate Certificate in Technical Writing, and the MA in E-Learning Design and Development programs. Her PhD research explored how computational methods can be used to a) examine the language of financial reports and b) automatically predict the likely share price direction, depending on the language used. Her teaching and research interests include instructional design, e-learning, technical communication, information design, and virtual teams, and her research is published and pending in various international journals, including the IEEE Transactions in Professional Communication and the Journal of Technical Writing and Communication.

Yvonne Cleary is Lecturer in Technical Communication and Program Director for the MA in Technical Communication and E-Learning. Her research interests include professional issues in technical communication, technical communication pedagogy, virtual teams, and international technical communication. Her PhD explored Irish technical writers' perceptions of their work and community of practice. She has presented her work at conferences in Europe and the United States and has published in leading journals in the technical communication field, including Technical Communication, Journal of Technical Writing and Communication, and IEEE Transactions in Professional Communication. She is a 2014 recipient of the CCCC Technical and Scientific Communication Award for Best Article on Pedagogy or Curriculum in Technical or Scientific Communication.

Overcoming Workplace Writing Norms

Empowering Technical-Writing Students Through Stylistic Analysis

Brian D. Blackburne
Sam Houston State University

Abstract. This article explores the importance of cultivating stylistic analysis in the technical-writing classroom. By acknowledging workplace challenges that graduates will likely encounter as technical writers, I begin by making a case for in-depth stylistic analysis of everyday documents. Using a specific example, the genre of airline safety briefings, I then provide a methodological framework that advanced students can use to understand such analyses—and ultimately plan their own. By first reviewing how these briefings function and how they have been studied in other fields, I demonstrate that the organizations involved with producing and regulating these documents have failed to incorporate the perspective of the technical writer. Drawing from Williams' (1988; 1999) widely adopted principles of technical-writing style, I then analyze the scripts of representative safety briefings and quantify key stylistic aspects of the analysis. The resulting data indicate the extent to which these briefings employ ineffective writing style and the implications that such a style can have on readers (passengers). The discussion returns to the importance of empowering students with the skillset of conducting stylistic analyses. Before concluding with the significance that this type of study has for the technical-writing classroom, I provide a list of actions, and their rationales, that instructors can use to incorporate similar stylistic analyses in their programs' curricula.

Keywords. Style, stylistic analysis, risk communication, technical-writing pedagogy, airline safety, curricula

If you were to present a native speaker of English with a set of grammatically incorrect sentences, she or he would likely know that the sentences are wrong. If you asked how the speaker knew that the sentences were wrong, you may receive answers like, 'I just know' or 'they sound wrong.' As instructors of technical writing, we see this effect demonstrated frequently in our courses. Often the tech-writing service course is taken by students who are nearing graduation and who haven't actively studied grammar in years. Even when they write grammatically well, they can't always articulate why because native speakers of a language just

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know. Chomsky (1975) observed the "remarkable ability of any speaker of a language to produce utterances, which are new both to him and to other speakers, but which are immediately recognizable as sentences of the language" (p. 131). Similarly, Davies (2003) explained: "The native speaker has intuitions (in terms of acceptability and productiveness) about his/her [grammar]" and a "unique capacity to produce fluent spontaneous discourse, which…is facilitated by a huge memory stock of complete lexical items" (p. 210). Of course, if students' intuitions or memory stocks are lacking, we can direct them to rulebooks. And whether students can articulate such rules on the fly, they know that a system of tenets governs their language. They know, for the most part, they must play by these rules, and when presented with a rule, they typically comply (or at least try).

Promoting Style to Empower Student Writers

Whether inside or outside the classroom, we can find consensus that grammatically incorrect writing is wrong writing. Even if we speak/write using slang, contractions, or casual tone among our friends, we tend to "switch to hyper 'correct' speech" on occasions we feel we are performing (e.g., giving a presentation, talking with strangers, meeting new colleagues, or interviewing for a job) (Elgin, 1973, p. 69 – 70). As professional writers, when we're faced with workplace documents that are grammatically flawed, we have little problem supporting our revisions of such documents. In fact, people with whom I've worked or consulted often prefaced their documents with apologies for any mistakes I would likely find and hopefully fix. Again, this notion of a canon of rules and its acceptable applications influences the writer. But what happens when writers encounter text that is grammatically correct, yet stylistically flawed? Those same coworkers who wince at the thought of committing common grammatical errors suddenly become confidently defiant when their "style" is called into question. Taken out of context, the word style implies personal expression, choice, or preference, and such words are seldom associated with correctness or revision.

Returning to the classroom, I find writing students even less able to express why stylistically weak writing is weak. For example, when I show students a passage of text from a typical airline safety briefing, they often tell me the writing is long, unclear, or wordy. Such assessments are gut reactions, yet they have value. If, as native speakers, our students are guided by intuition, then we should encourage them to listen to that intuition. But we must also remind them to recognize intuitions as internalized emotions, which have limited authority when one author tries to change another author's writing (e.g., in everyday workplace writing). In addition

to their inherent vagueness, intuitable assessments (e.g., long, unclear, or wordy) are subjective; therefore, we must inspire students to make the most of effective writing style by understanding how to analyze and quantify it in workplace writing scenarios.

As I've already revealed, I enjoy bringing airlines' safety briefings into the classroom. These documents are generally regarded as lacking (see Realities of Airline Safety in this article), and I've yet to encounter a student who hasn't experienced at least one of these briefings. Whether I incorporate these documents into first-day icebreakers or semester-long studies, the students are engaged and entertained by the process of articulating how these "bad" documents derive negative characteristics because of ineffective writing style. Such documents, which aren't limited to safety briefings, allow students to appreciate the power of stylistic analysis. Possibly for the first time, students are able to deconstruct ubiquitous, accepted, institutionalized documents that—even if criticized by popular culture—often go unquestioned (e.g., terms-and-conditions statements for credit accounts, privacy policies for websites, etc.). Though seasoned technical writers view any communication with a critical eye, students have a tendency to accept what is already in print; what's more, they often emulate the style of the very documents we would hope to see them challenge. Because students will enter a variety of professional situations already entrenched in accepted writing styles, the greatest hope we have for improving the state of workplace writing is to graduate students who have a working knowledge of style and its effects on everyday documents.

This article provides a framework for teachers of technical communication to help students recognize the importance of stylistic analysis and to understand how it can be applied to the documents they encounter every day. In an advanced style course, the assignment/analysis I propose would be given to students after they've had a month or so to familiarize themselves with the style and principles they'll apply in their analyses. (Appendix A contains the introduction students receive.) This project can be intimidating at the onset, so the point of the handout is to explain the reasoning for completing the project and to outline the major deliverables and their due dates. Instructors could even assign this article as a reading for students to see how the process works and to guide them in organizing and documenting their findings.

Framing the Problem: Weak Writing Institutionalized

In this article, I will provide a framework for incorporating in-depth stylistic analysis into a graduate-level course devoted to technical-writing style. I

say this analysis is for graduate students merely because I will demonstrate a treatment of stylistic principles that wouldn't normally appear in undergraduate curricula; nonetheless, stylistic analysis isn't reserved exclusively for graduate students. The process is easily scaled back for majors in undergraduate programs or even nonmajors taking the typical service course, and suggestions for doing so are provided later.

As an example for applying this method, I will consider an everyday document that has gone largely unchanged for decades: the airline safety briefing. Airline safety briefings have long been regarded as lacking, when critiqued by industry insiders, satirized by the public, or assessed by governmental agencies. Over the last 40 years, analyses of these documents have come from usability experts or governmental agencies trying to gather metrics on how easily passengers can decipher, recall, or follow evacuation instructions. These groups have also tested passengers' abilities to comprehend the briefings' pictorials and have compared their findings with usability benchmarks from similar fields. Assessing airline safety briefings from these standpoints makes good sense, and these perspectives have no doubt helped the safety briefing evolve and improve; nonetheless, these important documents are still ridiculed by critics and ignored by passengers. If the information in the documents is correct, and obviously integral to the safety of passengers, why does the flying public continue to feel that safety briefings fail to engage passengers effectively? Is it possible that something as simple as writing style plays a part in how these documents are received? Drawing upon Williams' (1988; 1999) principles of technical-writing style, we will explore the stylistic traits of various airline briefings in an attempt to establish a link between writing style and the current state of the genre. In the following section, I outline the pertinent principles from Williams' work that will guide my analysis. After supporting my decision to use Williams' principles, I discuss each one briefly and provide an example that relates to the subject of my analysis (in this case, airline safety briefings).

Methods for Analyzing Writing Style

In this style analysis, the following principles were examined in the airlines' safety briefings:

- Clarity
- Concision
- Functional sentence perspective
- Writer-oriented language/information

The first three of the above principles are, without coincidence, derived from Williams' foundational works on style. The majority of my analyses are based on his book *Style: Ten Lessons in Clarity and Grace*. At the onset of this text, Williams offers a simple aim:

> Your inability to write clearly conspires with an impulse to write complexly, a conspiracy of influences resulting in prose that thoroughly confuses your readers. The aim of this book is to help you cut through that confusion by showing you how to make better choices. (Williams, 1999, p. 11)

The ten lessons that follow Williams' edict comprise an assortment of tools that writers can use to understand and improve their—or others'—writing styles. In addition to Williams' *Style*, I explore his work with functional sentence perspective (Williams, 1988), which is concerned with the ordering of information within and between sentences. Finally, I consider the presence of writer-oriented language/information, which is essentially the antithesis of the advocated reader-oriented (Sims, 2002) and reader-centered (Anderson, 2010) approaches.

The efficacy of using Williams' text in beginning writing courses has been questioned (Pringle, 1983), and such concerns are well founded. Anyone who's read *Style* can attest to its complexity—one that only the most avid technical communicators may appreciate. For example, in lesson seven, Williams (1999) teaches concision, which he characterizes as "the first grace of style" (p. 140). Within this lesson, Williams instructs the writer to delete meaningless words, doubled words, ideas the reader can infer, and redundancies (among others). Within the category of redundancies, Williams identifies metadiscourse, "the language we use to refer to our intention, the reader's response, and the structure of our text" (Williams, 1999, p. 150). And within this subset of metadiscouse, Williams proceeds to identify five variants. Such stylistic analysis goes well beyond what is found in typical technical-writing texts, so even advanced writers can be intimidated by the level of stylistic awareness that Williams advocates; nonetheless, his text, now in its eleventh edition, provides a solid foundation for understanding and improving professional prose. Especially where institutionalized documentation styles are involved, thorough assessments of clarity and concision are essential.

Method: Assessing Clarity

At the highest level, clarity involves two key concepts:

- Readers expect to see an agent as the subject of a sentence.
- Readers expect to see verbs express important actions involving those agents. (Williams, 1999, p. 66)

Clarity describes style elements that let the reader know what is happening in a sentence and who is doing the action. Clarity is essential when writers are crafting instructional information because readers need to know when/whether they should act. When a writer is imparting safety information to passengers, clarity is the most important stylistic convention. I evaluated each safety briefing for clarity by annotating its transcript twice for each of the following problems:

- **Non-agent subjects** -- This term describes a sentence that has no agent in its subject position or a sentence that has no agent at all. For example, the following sentence lacks an agent: A life jacket can be found underneath your seat. As simple as the content of this sentence may be, the lack of an agent literally removes the reader from the text and focuses instead on objects that the implied actor (the passenger) possesses. A sentence without a clear agent forces the reader to decide who or what is acting, and it can add unnecessary overhead to the sentence. In making such decisions, a passenger may have to reprocess the text, slowing the act of extracting pertinent information, or the passenger may make an incorrect assumption about who should act.
- **Passive Voice** – Passive voice either obscures or eliminates the actor in a sentence because the object of the sentence's action appears in the subject position. Passive voice can make sentences unnecessarily long and may cause readers to misinterpret the implied actor in the sentence. When telling passengers how to prepare for landing, a flight attendant might announce: At this time, seatbacks should be returned to their upright and locked positions. Such passive constructions are often favored to avoid telling passengers what to do; however, this act of passively buffering a message also makes it easy to ignore because the actor isn't engaged in an imperative mood (e.g., Please return your seatback to its upright and locked position). Especially where safety instructions are concerned, if a passenger misinterprets or ignores who will complete an action, valuable time could be lost, and people could be injured or killed.
- **Nominalizations** – A nominalization is an adjective or verb the writer uses as a noun. Nominalized verbs lose their action and, when placed in the subject position of a sentence, obscure or eliminate actors. In addition, nominalized verbs and adjectives add to the overhead of sentences because they need additional words to function. For example, airlines routinely inform passengers "the

use of approved electronics is now permitted." In this case, the verb use has been nominalized into a noun (the use). The words look the same but the nominalized form now requires an additional verb and a passive construction for the sentence to function. In such a construction, literally bigger and more words are added to the sentence. The writer could save time and effort, while engaging the audience directly, simply by saying: "You may now use your approved electronics." When receiving information about procedures for evacuating an airplane, passengers would benefit from instructions that convey information as succinctly as possible.

Method: Assessing Concision

Williams (1999) describes concision as "the first grace of style" (p. 140), and he uses concision to eliminate unnecessary words. Because "unnecessary words" can be a vague and subjective term, I evaluated concision in the five airlines' briefings by reading for stylistic errors that commonly produce unnecessary words. The main issues of concision I focused on (simply because most of the others from Williams' list weren't present in any of the documents) came from Williams' discussion of metadiscourse, which is language that draws attention to the text itself (i.e., discourse about discourse). Writers use metadiscourse to state their intentions, refer to their readers' responses, and structure their documents (Williams, 1999, p. 151). Admitting that some metadiscourse can be useful, Williams concludes that it should be eliminated when it does any of the following:

- **Belabors the obvious** – states something the reader can infer from the text. For example, telling passengers they cannot tamper with, disable, or destroy the smoke detectors in the lavatories belabors the obvious notion that smoke detectors are not to be touched. Furthermore, the redundant language of disabling or destroying further belabors the initial instruction that passengers should not tamper with the devices.
- **Announces/highlights the topic** – announces what the writer is about to say (e.g., This video demonstration covers the safety features of this aircraft).
- **Attributes ideas to a source** – announces something that has been anonymously observed (e.g., It is recommended that all passengers keep their seatbelts fastened while seated).
- **Narrates unnecessarily** – announces the writer's position when it is not needed (e.g., We ask that you please pay attention to the safety video).

- **Hedges** – weakens the writer's claim (e.g., You may be required to assist the crew in an evacuation).
- **Intensifies** – makes the writer's claim sound too authoritative or bold (e.g., Your complete attention is appreciated).

Method: Assessing Functional Sentence Perspective

According to Williams (1988), functional sentence perspective:

> …allows writers to arrange information systematically and generalizes that writers should, whenever possible, prepare their readers for new information by beginning their sentences with a "topic," or idea that is familiar to the audience or that has already been referred to, and then moving to the "comment:" newer, less predictable, less familiar information. (p. 91)

Once writers have appropriately ordered the information in their documents, they can help their readers focus on this information (improve coherence) by leading them through passages with well-defined topics. The order of information in and between sentences deserves close attention, but even more so when the writers are creating oral documents. Audiences of oral documents, just like those of print documents, need organizational cues to help them make sense of the information. In addition, the writers of these documents must consider the ways they parcel information. That is, writers should focus on keeping related information as close together as possible (in the same "paragraph") and using functional sentence perspective to weave that related information into cohesive, useful parcels that readers can unpack with minimal effort.

To evaluate the functional sentence perspective of the briefings, I analyzed the scripts for their organizations of topic (old) and comment (new) information. I also considered the relation of sentences' grammatical subjects with the paragraphs in which they were located. If a topic appeared outside its original paragraph without an appropriate transition, I counted it as a new comment that wasn't properly introduced. Because first-time and frequent fliers must use the same safety documents, I assumed only basic topics of information as existing in the common knowledge of the passengers.[1] Still, these common concepts had to appear in the documents via proper functional sentence perspective and had to be grouped together within paragraphs organized by topic sentences.

Method: Assessing Writer-Oriented Language

Writer-oriented language involves a writer's using words, jargon, or idiom that readers don't know. This practice can also include writing that elimi-

[1] Topics of common knowledge included electronic devices, cell phones, exits, windows, doors, life vests, passengers, we, you, flight attendant, smoking, seat, and seat belt.

nates necessary information (because the writer doesn't realize the reader needs it or because space doesn't allow for it) or that forces readers to go to another source for the rest of the information. In safety briefings, writer-oriented language could either confuse readers or leave them with incomplete information because they may not have the time or motivation to seek additional sources.

So far, I have outlined a set of stylistic principles that will yield plenty of work—and data—for a student conducting a stylistic analysis. But as part of completing an analysis, a writer must first understand how the document functions and how it is situated/perceived relative to other discourse groups and modes of study. By gaining this necessary perspective, we are able to appreciate the necessity of analyzing writing style, and the role of the technical writer, in this analysis. This step will be useful to students because they must first understand how others regard a document. Also, they need to see that many documents, even those that have been scrutinized in multiple modes of study, have yet to undergo substantive stylistic analysis.

Discussion of Related Literature

An appropriate place to situate airline safety briefings in our field is risk communication. The fit is a logical one; however, my analysis of these documents focuses on subtleties that are less common in the literature. Rather than focusing on post-accident reports or reconstructions of evidence (Dombrowski, 2006; Sauer, 2002; Winsor, 1990), this discussion is grounded in the delivery of pre-accident safety education. Airline safety briefings are unique in this field because they are created for, and conspicuously provided to, the general public. This rhetorical situation differs from those surrounding the documents frequently discussed in risk communication:

- The "decide-announce-defend" (Belsten, 1996, p. 31) style of creating policy behind closed doors and involving the public only when necessitated by disaster.
- The "goals [of] limiting, obscuring, or hiding information" (Slack, Miller, and Doak, 1993, p. 33).
- True inequities in power, class, and language (Sauer, 2002).
- Pure hatred (or at best apathy) for marginalized groups by a controlling power (Katz, 1992).

Operating in a different realm of risk, airline safety briefings are communications mandated by the government, supplied by industry, and read by anyone who is capable of flying commercially. Airlines have little to gain by obfuscating or withholding information in the safety briefing; nonetheless, airlines must provide this information within physical and

psychological constraints that affect how passengers receive it. Planes are crowded vehicles that operate on the thinnest of margins. Flights must happen frequently, and passengers must be briefed quickly in order to maintain tight schedules. Publicly, the safety of airlines and their passengers has been under increased scrutiny since 9/11, and the complications, hassles, and fears that passengers experience when traveling continue to play important roles in how airlines communicate safety information to their passengers. After hurrying to make cut-off times to check baggage; waiting through long security lines; enduring a variety of scans, searches, and pat-downs; and squeezing into increasingly oversold flights, the average passenger receives a 4- to 6-minute safety briefing, which typically occurs while the plane is taxiing for takeoff. The opportunities for imparting crucial safety information are limited. Though technical writers have little control of TSA threat levels, ticketing practices, or other anxiety-inducing aspects of airline travel, their applications of writing style can positively influence how mandated information is imparted to passengers.

I begin this assessment by providing background on airline safety in general and discussing the roles of key regulatory agencies in creating airline safety briefings. I then provide overviews of the assessments made by government, industry, human-factors scholars, and public experts. Understanding these points of view allows us to appreciate the significance of these safety documents and the general perceptions that—no matter how technologically advanced or entertaining—passengers and the flying public regard these documents as lacking. I propose that a key element contributing to the shortcomings of airline safety documents is the lack of effective technical-writing style. Once the need for a technical-writing analysis has been established, I provide a detailed examination of five airlines' safety briefings to discover any correlations between writing style and the general content of these documents. This evaluation leads to opportunities for further discussion and analysis of airlines' safety briefings.

Realities of Airline Safety

In August 2005, an Air France A-340 carrying over 300 passengers and crew skidded off the runway after landing in Toronto, Canada. The plane was eventually overcome with flames, which left nothing but the wings and the ashy outline of the fuselage where passengers had been sitting. As if the accident weren't noteworthy enough, incredibly, all 309 passengers and crew escaped the wreckage—with only 26 having minor injuries. Few accidents of this scale have such happy endings, but they serve to remind us of a very important fact: people do survive airline accidents. A study

conducted by the NTSB (2001) reveals that nearly 96% of passengers involved in domestic commercial aviation accidents between 1983 and 2000 survived (p. 19).

Looking at recent data from 2007–2009, we find that an average of 1.5 accidents occurred per million departures in the U.S., with only 5.81% of those accidents involving fatalities (NTSB, 2011, p. 1). Based on these numbers, an airliner departing in the U.S. has around a .00087% chance of being involved in a fatality-resulting accident. Accordingly, passengers are continually assured that flying is safe and that emergency events, as discussed later in my analysis of hedging information, are unlikely. I argue that this 'comforting' effect alters the habits of the organizations responsible for disseminating safety information and the passengers who attend to (or ignore) the briefings. We could reasonably deduce that an audience who is continually reassured—by statistical information and stylistic presentation of relevant texts—that flying is safe might well become uninvolved in the discourse of related risks. Coppola and Maloney (2009) remind us that "no matter how logical and sensible it may be for people to engage in the behavior the communicator is promoting, it will likely take more than just a rational argument to get them to assume the inconvenience of a new behavior" (p. 7).

Despite the miniscule chance of being involved in catastrophic accidents, passengers still need to receive accurate, well-written safety information. In a 16-month period alone (September 1997–January 1999), the NTSB (2000) studied 46 evacuations from commercially scheduled planes—an average of 11 evacuations per month. Of the 141 people who reported watching/reading the entire safety demonstration, only 71 of them said that the information was helpful to their getting out of the plane (p. 62). The NTSB's suggested remedy for this issue is to use "state-of-the art technology…to improve passenger attention to safety information" (p. 63). To date, this technology has been limited to airlines' employing videos of safety briefings, which play on the entertainment screens throughout the cabin. Such briefings offer several advantages to the "live" ones recited by flight attendants:

- They ensure that all required information is included in the briefing.
- They provide consistent information across varying flight crews.
- They provide the mandated oral component of the briefing in a controlled reading style and mitigate issues related to attendants' individual accents or speech tendencies.
- They allow airlines to incorporate additional visual information in their briefings. (NTSB, 2000, p. 61)

Video briefings also create opportunities for airlines to create engaging documents that adhere to principles of effective design, organization, grammar, and writing style. Current video briefings have integrated animations, computer renderings, and on-screen texts; yet their oral components are the same as typical announcements made by live attendants. And while videos' narrators speak with polished, professional diction, they read scripts that may be stylistically flawed. Such flaws could go beyond the communication preferences of an organization; they might actually contribute to safety briefings that are difficult to follow and comprehend. These potential stylistic deficiencies are the subject of the analysis that follows, but we should first understand assessments from other perspectives, such as from governmental agencies, the airline-safety industry, human-factors specialists, and the public.

Assessment from the Government

The Federal Aviation Administration (FAA) and the National Transportation Safety Board (NTSB) regulate airline safety, and both agencies are key in defining safety measures onboard commercial flights. As it relates to safety, the FAA "issue[s] and enforce[s] regulations and minimum standards covering manufacturing, operating, and maintaining aircraft" (2013, "Safety Regulation"). On the other hand, the NTSB is responsible for determining probable cause for all U.S. civil aviation accidents. The NTSB doesn't have authority to enforce recommendations, but it has established itself as a thorough and reputable investigator of aviation accidents. In the last 30 years, transportation officials have adopted 82% of the NTSB's 13,454 recommendations (Rosekind, 2011, slides 5–6).

Notwithstanding their collective purview over airline safety, neither the FAA nor the NTSB mandates a style for airlines to adopt when providing safety briefings; the only requirements are that airlines provide printed safety cards at each passenger's seat and that they deliver oral safety briefings before each flight departs. Exploring the efficacy of these requirements, the NTSB (2000) concludes: "Despite efforts and various techniques over the years to improve passenger attention to safety briefings, a large percentage of passengers continue to ignore preflight safety briefings" (p. 78).

Detailing how these deficiencies affect airplane evacuations, the NTSB (2000) states:

> The majority of serious evacuation-related injuries…occurred at airplane door and overwing exits without slides…Passengers continue to have problems opening overwing exits and stowing

> the hatch. The manner in which the exit is opened and the hatch is stowed is not intuitively obvious to passengers nor is it easily graphically depicted. (p. 65)

Additionally, the NTSB (2000) surveyed passengers who had been evacuated from planes, reporting that of the 457 passengers surveyed, 93% said they had not watched/read the entire pre-flight safety briefing (p. 62). Such research shows us that, even at best, instances of passengers' paying attention to and comprehending airline safety demonstrations are significantly lower than they should be.

Assessment from the Airline-Safety Industry

In deciding how to present safety information, the airlines seem to have final word on the style and design of the finished product. The FAA Guidelines are prescriptive at a high level and leave much room for interpretation. For example, the FAA (2003) states that safety-briefing cards should be "interesting and attractive so passengers will want to read them" (p. 5). But they don't offer suggestions for achieving these two desirable features (aside from using color and images).

Figure 1 demonstrates just how differently the "interesting and attractive" mandate can be interpreted in the required safety-briefing cards. The United brochure (left) has a cover containing small, margin-to-margin text in multiple languages. Without speculating about why United chose this design, we can see the document is neither interesting-looking nor inviting for a passenger to read. On the contrary, the Delta brochure (right), with saturated color and the simple imperative, "be safe," creates a more engaging invitation to open the document.

Once inside these documents, passengers find graphic-intensive instruction, with little or no text—a practice that opposes recommendations from Aero Safety Graphics, Inc., a major supplier of flight safety cards. Aero Safety Graphics (2000) emphasizes the importance of using text to accompany pictorial representations, basing its stance on a 1970 McDonnell Douglas study (Altman et al.). But Aero Safety Graphics also states: "Ultimately, we let our clientele, who know the makeup of their passengers better than we do, determine how much text and which languages, if any, they wish to have on their cards" (2000, "Effective Styles of Instruction," para. 4).

Given the recommendations provided by the FAA, NTSB, and independent researchers, we can reasonably deduce that the safety documents provided by airlines are inadequate:

- They fail to capture the passengers' attention.
- They present information inconsistently and often unintuitively.
- They fail to comply with all recommendations for imparting safety information as effectively as possible.

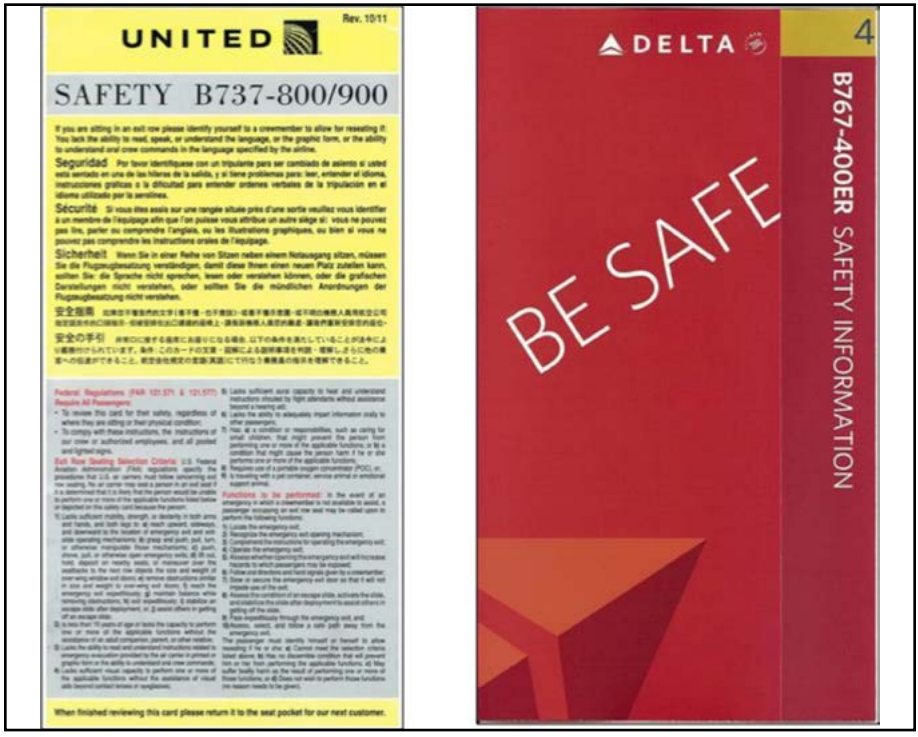


Figure 1: Differing interpretations of an "interesting and attractive" briefing card

Assessment from Human Factors

In 1997, Caird, Wheat, Macintosh, and Dewar studied passenger comprehension of graphics in airline safety pictorials. Caird et al. found that passengers—even those who flew several times a year—had low comprehension levels of safety pictorials. Out of 36 pictorials, most had comprehension levels below 50%, and all were below 85%, which is the American National Standards Institute suggested minimum (p. 803). Caird et al. also noted that passengers typically "do not attend to oral or video briefings nor do they usually study the safety card in the seat pocket in front of them" (p. 801).

In a similar study, Silver and Perlotto (1997) evaluated 40 pictorials and found that about half met the International Organization for Standardization (ISO) benchmark of 67% comprehensibility and that a quarter of them met the American National Standards Institute (ANSI) 85% comprehension level. Silver and Perlotto found higher comprehensibility of graphics, but

they still stressed that, even for graphics with high (86%) comprehension, a large number of the flying public would not comprehend crucial information in life-and-death situations (p. 806–10).

More recently, Thomas, O'Ferrall, and Caird-Daley (2006) studied the effects of "active" versus "passive" safety demonstrations and evacuation commands; however, the differences between "active" and "passive" safety briefings were not related to writing style. Their briefing techniques involved flight attendants' actively demonstrating tasks and tapping on relevant equipment to capture passengers' attention or passively reading the briefings without these performative aspects. For example, the preflight instructions for using an oxygen mask are the same for the "active" and "passive" briefings, and both employ passive voice (Thomas, O'Ferrall, & Caird-Daley, pp. 14–15).

Assessment from the Public

Having looked at what the government and industry experts think about the state of airline safety briefings, we should also pay attention to what the public thinks. James Wysong (2007), a flight attendant and travel columnist, addresses both public and industry attitudes towards safety briefings in the title of his editorial, "The Safety Demo: Theater of the Absurd?"

Shifting to the passenger's perspective, Murphy (1996) discusses "Airline English" and draws attention to some humorous aspects of airline lingo while making interesting observations about how this language functions:

> Airline English has, in a way, become the linguistic equivalent of the worldwide nonverbal graphic system that conveys such meanings as "ladies' room," "no parking," "first aid," and "information." It is just as streamlined, just as stylized, often in the same oddly archaic sort of way…Whenever else does one hear the word "stow" being used, except as part of the command to "stow your belongings in the overhead bins?" (para. 3)

Finally, George Carlin (2009) incorporated his observations about airline language into an award-winning, if not profane, performance. Interestingly, only the public sector critiques the actual language used in airline safety briefings. To better inform the study of these documents, we must examine them through the lens of technical-writing style.

The Current State of Safety Briefings

Paper safety briefings have been a staple onboard commercially operated aircraft for decades, and the ones we see today are largely the same as they were 30 years ago. Much like those in the 80s and 90s, today's printed safety briefings come in the form of laminated, cardstock brochures that

rely heavily on pictorials to convey information. Despite this uniformity of the print documentation, airlines are exploring video briefings to make the safety information more engaging and useful to passengers. In 2008, Delta Airlines garnered national media attention because of its new video briefing and associated viral-marketing campaign. Similarly, other airlines (Virgin Atlantic, Virgin America, and United) have explored different genres (e.g., cartoons or computer animation) to convey safety information; nonetheless, we will see that the language employed across different video types remains stylistically flawed.

As I discuss the video briefings of airlines in this article, I use a sampling of five airlines' demonstrations:

- Delta (DeltaAirLines, 2008)
- Continental (Keithamootho, 2008)
- United[2] (FriendlySky, 2008)
- Virgin America (letVAfly, 2007)
- Virgin Atlantic (TheSafetyVideos, 2011)

I chose to analyze five briefings because I wanted to demonstrate that industry, much like the novice student, tends to emulate documents already in print. As the results of this analysis reveal, a striking similarity exists between most airlines' safety briefings—again supporting my earlier assertions that workplace writers often adopt a certain style just because. The other reason I chose five briefings is because these documents are brief. For students to master the act of scouring documents for stylistic issues, much practice is needed. If students were working with larger documents, one analysis might provide sufficient practice.

Video briefings are integral to this study because the average safety card has little written information and is packed with pictorials. Additionally, the NTSB has found that passengers tend not to read the safety cards (see Assessment from the Government in this document), so a passenger's greatest hope for receiving complex instruction is listening to the flight attendant's announcements and/or the pre-recorded briefings. The five video briefings discussed in this analysis were chosen because they represent unique points along a continuum of current video presentation styles, which I have classified as:

- Real (real people in real environments).
- Real with computer enhancement (real people depicted in computer enhanced/created environments).

[2] At the time of analysis, United and Continental were completing a merger that would finish in 2012. Prior to the completion of this merger, the airlines operated as independent companies with different video briefings.

- Real with cartoon enhancement (real people depicted in cartoon/artistically enhanced environments).
- Computer animation (digital renderings of people and environments).
- Cartoon animation (cartoon drawings of people and environments).

Despite the varied presentations, the selected safety briefings are otherwise similar in length, content, and style. Table 1 provides a general overview of each briefing's content.

Table 1: Overview of Five Airlines' Video Briefings

Airline	Duration	Numer of words	Number of sentences	Avg. words per sentence
Continental	4 min. 19 sec.	680	47	14.5
Delta	4 min. 30 sec.	778	55	14.2
Virgin America	4 min. 13 sec.	653	49	13.3
Virgin Atlantic	5 min. 29 sec.	664	54	12.3
United	4 min. 14 sec.	665	48	13.9

Results of the Style Analysis

With the identified principles in mind, I first transcribed the scripts from each of the videos. I then marked multiple copies of the transcripts according to a style sheet using a series of circles, underlines, and color codes for each stylistic issue (see Figures 2 & 3).

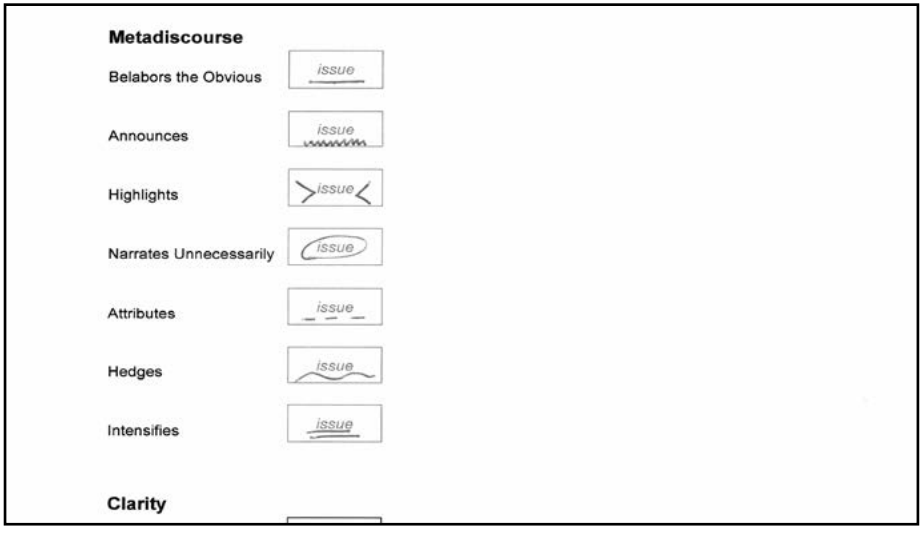
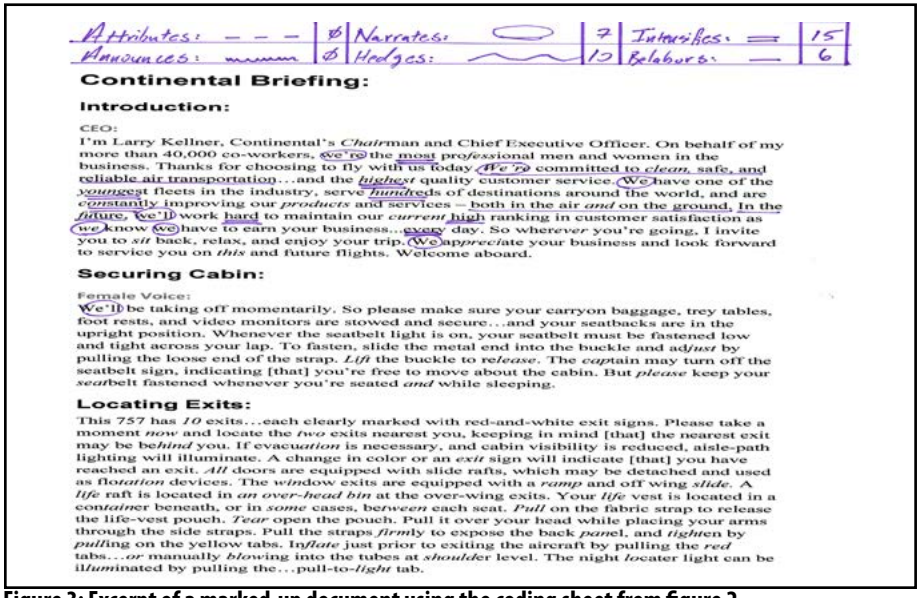


Figure 2: Excerpt of a coding sheet for stylistic issues.



Attributes: — — — | ∅ | Narrates: ⬭ | 7 | Intensifies: = | 15
Announces: ⌒⌒⌒ | ∅ | Hedges: ~~~ | 12 | Belabors: — | 6

Continental Briefing:

Introduction:

CEO:
I'm Larry Kellner, Continental's *Chair*man and Chief Executive Officer. On behalf of my more than 40,000 co-workers, we're the most pro*fess*ional men and women in the business. Thanks for choosing to fly with us today. *We're* committed to *clean*, safe, and reliable air transportation…and the *highest* quality customer service. We have one of the *young*est fleets in the industry, serve *hundred*s of destinations around the world, and are constantly improving our *products* and services – both in the air *and* on the ground. In the *future*, we'll work hard to maintain our *current* high ranking in customer satisfaction as we know we have to earn your business…*every* day. So wher*ever* you're going, I invite you to *sit* back, relax, and enjoy your trip. We ap*prec*iate your business and look forward to service you on *this* and future flights. Welcome aboard.

Securing Cabin:

Female Voice:
We'll be taking off momentarily. So please make sure your carryon baggage, trey tables, foot rests, and video monitors are stowed and secure…and your seatbacks are in the upright position. Whenever the seatbelt light is on, your seatbelt must be fastened low and tight across your lap. To fasten, slide the metal end into the buckle and ad*just* by pulling the loose end of the strap. *Lift* the buckle to re*lease*. The *cap*tain may turn off the seatbelt sign, indicating [that] you're free to move about the cabin. But *please* keep your *seat*belt fastened whenever you're seated *and* while sleeping.

Locating Exits:

This 757 has *10* exits…each clearly marked with red-and-white exit signs. Please take a moment *now* and locate the *two* exits nearest you, keeping in mind [that] the nearest exit may be be*hind* you. If evac*uation* is necessary, and cabin visibility is reduced, aisle-path lighting will illuminate. A change in color or an *exit* sign will indicate [that] you have reached an exit. *All* doors are equipped with slide rafts, which may be detached and used as flo*tation* devices. The *win*dow exits are equipped with a *ramp* and off wing *slide*. A *life* raft is located in *an over-head bin* at the over-wing exits. Your *life* vest is located in a con*tain*er beneath, or in *some* cases, be*tween* each seat. *Pull* on the fabric strap to release the life-vest pouch. *Tear* open the pouch. Pull it over your head while placing your arms through the side straps. Pull the straps *firm*ly to expose the back *pan*el, and *tight*en by *pull*ing on the yellow tabs. In*flate* just prior to exiting the aircraft by pulling the *red* tabs…*or* manually *blow*ing into the tubes at *shoulder* level. The night *lo*cater light can be il*lumi*nated by pulling the…pull-to-*light* tab.

Figure 3: Excerpt of a marked-up document using the coding sheet from figure 2.

After reading each document twice for each issue, I then counted and recorded the numbers of flags found for each of the main elements:

- Clarity
- Concision
- Functional sentence perspective
- Writer-oriented language

In discussing my analysis, I arrange the results according to major stylistic issue first and airline second.

Results: Clarity

Of the five videos analyzed, Delta's had the greatest number of flags for clarity. Eighteen of the 41 total flags related to clarity in Delta's video came from instances of passive voice. As for the individual criteria for clarity, Continental had the most instances of passive voice (21), and Delta had the most instances of missing actors (15) and nominalizations (8). Table 2 summarizes the issues that each briefing exhibited related to clarity.

Results: Metadiscourse

Among all five airlines, hedges and intensifiers were the two most common occurrences of metadiscourse. Delta led the group with 16 hedges in its briefing, and Virgin Atlantic had the most intensifiers, also at 16. All five airlines had at least one instance of belaboring the obvious, and this issue was typically related to describing the rules against tampering with smoke detectors. Table 3 summarizes the issues related to metadiscourse in the five airlines' safety briefings.

Table 2: Issues Related to Clarity for Safety Briefings

Airline	Issue with Clarity	No. of Issues	Example (issue *italicized*)
Continental	Passive voice	21	"The night locater light can *be illuminated* by pulling the pull-to-light tab."
	Non-agent subject	9	"*A change in color or an exit sign* will indicate you have reached an exit."
	Nominalization	3	"…the *use* of approved electronic devices…"
Delta	Passive voice	18	"Your mobile phones and other electronic devices should *be turned* off."
	No actor	15	"*There* are six exits on this plane."
	Nominalization	8	"A water *evacuation* is also unlikely."
United	Passive voice	19	"If additional flotation *is needed*…"
	No actor	11	"*U.S. law* also requires passengers…"
	Nominalization	3	"In an *evacuation*…"
Virgin America	Passive voice	8	"The vest can also *be inflated* by…"
	No actor	6	"*There* is also a path of white lights…"
	Nominalization	2	"…used for *flotation* if necessary."
Virgin Atlantic	Passive voice	15	"Adult life jackets must only *be inflated* when…"
	No actor	9	"*Your life jackets* can be found…"
	Nominalization	2	"…gives full information on the *operation* of…"

Of the issues related to metadiscourse, hedging is the most problematic where understanding safety information is concerned. Though intensifiers, unnecessary narrators, and belaboring information add overhead to sentences, they don't preclude meaning; however, hedges can exist in varying degrees, and some of those instances could lead passengers to question how to act in an emergency situation. Here are some examples of how hedges work in these documents:

- Using the ubiquitous phrase "your nearest emergency exit may be behind you" hedges important technical information about the aircraft.
- Repeatedly telling passengers that a situation is unlikely hedges its relevance to the passengers and negates its being included in the briefing.
- Telling passengers where life vests are located in some cases hedges not only on technical information but also the airline's credibility as a reliable source of information.

Table 3: Issues Related to Concision for Safety Briefings

Airline	Issue with Concision	No. of Issues	Example (issue italicized)
Continental	Belabors	4	…*tampering with, disabling, or destroying* these systems.
	Hedges	10	…the nearest exit *may* be behind you.
	Intensifies	15	…*highest* quality customer service…
	Narrates	8	…*we* know that *we* have to earn your business…
Delta	Belabors	1	…*tampering with, disabling, or destroying* restroom...
	Hedges	17	*Just in case*…
	Intensifies	11	*All* carry-on items…
	Narrates	9	Before *we* depart, *we'll* be showing…
United	Belabors	1	…*tampering with, disabling, or destroying* smoke...
	Hedges	5	You *may* be required to assist the crew…
	Intensifies	8	…your *complete* attention…
	Narrates	4	*We* appreciate…
Virgin America	Belabors	2	To be safe…
	Hedges	13	…*just in case* there is unexpected turbulence…
	Intensifies	6	…*everyone* is required…
	Narrates	2	*We* recommend…
Virgin Atlantic	Belabors	2	*You are about to see our safety information video.*
	Hedges	16	*In the event of* reduced visibility…
	Intensifies	16	…it's *expressly* forbidden…
	Narrates	2	*We* ask you all to please study the safety card…

Results: Functional Sentence Perspective (FSP)

The results for issues related to functional sentence perspective are summarized in Table 4.

Continental had the highest number of issues with functional sentence perspective in its briefing. Of the 18 issues identified in Continental's document, 10 came from the instructions related to locating and using exits and flotation devices. Table 5 provides examples of these problems from each airline's briefing. In the column next to each problem, I have provided a revision. In each problem and revision, the topic information appears in *italics*, and the comment information appears in **bold**. In the "problem" column, the comment text falls immediately around the punctuation

separating each sentence (indicating that new information at the end of one sentence is followed by more new information at the beginning of the next). In the "revision" column, the comments are moved closer to the ends of the sentences, indicating a more functional sentence perspective. Other stylistic errors have been left in the "revision" column to help focus attention on improvements related to functional sentence perspective.

Table 4: Summary of Issues Related to Functional Sentence Perspective in Airline Briefings

Airline	No. of sentences	No. of FSP issues	% of sentences with FSP issues
Continental	47	18	38%
Delta	55	10	18%
United	48	12	25%
Virgin America	49	7	14%
Virgin Atlantic	54	11	20%

Table 5: Problems and Revisions Related to FSP in Airline Briefings. In each column, familiar information appears in *italics*, and new information appears in bold.

Airline	FSP Problem	FSP Revision
Continental	*The window exits* **are equipped with a ramp and off-wing slide**. **A life raft is located in an over-head bin** *at the over-wing exits*.	*The window exits* are **equipped with ramps and off-wing slides**. *At each window exit*, you'll also find a **life raft in the over-head bin**.
Delta	*Each door* **has a detachable slide that can be used for flotation**. **Life rafts are located in ceiling compartments at** *the front and center of the plane.*	*Each door* has a **detachable slide that you can use for flotation**. *In addition to these slides*, we have **life rafts in the ceiling compartments** at *the front and center of the plane*.
United	*A life vest equipped with a water-activated light* is **located under or near your seat**. **It can be identified by a red tab.**	A *life vest equipped with a water-activated light* is **located under or near your seat**. *The life vest* is in a **pouch with a red tab on it**.
Virgin America	*The vest can also be inflated* **by blowing into the red tubes at both shoulders**. **A water-activated locater light** is *attached at shoulder level*.	*You can also inflate the life vest* **by blowing into the red tubes at both shoulders**. *Just below the red tubes*, you'll find a **water-activated locater light**.
Virgin Atlantic	*Your life jackets* can be found either **under or between your seats**. Please **refer to your safety card** *for the exact location.* B**reak the seal to remove it from the bag**.	*You can find your life jackets* either **under or between your seats**. For the *exact location of your life jacket*, please **refer to your safety card**. To open the *life jacket*, **break the seal on the top of the bag**.

Results: Writer-Oriented Language

The frequency of writer-oriented language in the safety briefings was low, but those instances typically involved generalizations or omissions of information—sometimes that passengers would have no way of figuring out on their own. The majority of airlines used writer-oriented language to address configuration inconsistencies across their fleet. Though single-sourcing information for technical documents in large organizations is certainly well practiced in industry, it should never be at the expense of the readers' receiving accurate information—especially where the reader's safety is concerned. Table 6 summarizes the instances of writer-oriented information in the airlines' safety briefings.

Table 6: Writer-Oriented Language in Airline Briefings

Airline	No. of Writer-Oriented Issues	Example (*followed by reader-oriented questions that the issue raises*)
Continental	2	Your life vest is located in a container beneath, or in some cases, between each seat. *(Where is my life vest?)*
Delta	6	Also, most seat cushions can be used for flotation. *(Which ones can't? How can I tell the difference?)*
United	2	In the event of water landing, main-door slide rafts detach from the airplane and are used for flotation. *(How do I deploy the rafts? How do I detach them?)*
Virgin America	4	If this happens, pull one of the masks down to your face, and cover your nose and mouth. *(What do I cover my nose and mouth with?)*
Virgin Atlantic	2	Please refer to your safety card for the exact location [of your life vest]. *(Why can't you tell me now where my vest is? Where is my safety card?)*

Possible Reasons for Stylistically Weak Language in Safety Briefings

After conducting such a detailed analysis, student writers may feel they are authorized to critique all and empowered to save the world from bad writing. Unfortunately, organizations often have very real reasons for creating documents with stylistically weak writing, so students should take pause to identify and appreciate these reasons. In the case of the airlines' safety briefings, the reasons are implicit. Anyone who has flown commercially in the last 20 years will recognize certain consistencies in the language of airlines' safety briefings. Notwithstanding the occasional airline or flight attendant experimenting with humorous renditions of safety briefings, the majority of these documents, whether prerecorded

or performed live, are strikingly similar. The most plausible explanation for this similarity is that the governing body of airline safety, the FAA, has compiled a written list of information that must be provided orally to all passengers before each takeoff. This list unwittingly dictates the style of speech that passengers hear during the mandated oral briefings. For example, in providing information about smoking onboard, an FAA Advisory Circular (1999) specifies "that smoking is prohibited in the lavatories and other designated nonsmoking areas and that tampering with, destroying, or disabling smoke detectors in the lavatories is prohibited by Federal law" ("Appendix 1," p. 2). This writing style aligns directly with the language found in many airlines' safety briefings. In fact, four of the five safety briefings analyzed in this study employed the belaboring metadiscourse of "tampering with, destroying, or disabling smoke detectors…" (FAA, 2003, "Appendix 1," p. 2). In an industry that it so heavily regulated, we can understand how operators might be quick to adopt the language of the main regulatory agency. Interestingly, the FAA does not prescribe the language or style airlines must use. The lack of a directive, coupled with the FAA's calls for briefings that are more creative and engaging, suggests that the opportunity for making the language of safety briefings more stylistically effective is waiting to be explored. The next step would be to implement language changes that support effective technical-writing style and see whether improvements in passengers' attention, perception, and performance can be measured. But these tasks would go beyond the scope of the stylistic analysis—though the analysis would surely be integral to such future projects.

A Quick-and-Easy Analysis for Future Style Experts

As promised earlier, I would like to provide an example for reducing a detailed analysis, as depicted in this article, into a topical in-class exercise that would be appropriate for any level of technical-writing course. The following example provides an excerpt from a typical safety briefing along with in-class activities to help students discover the effects of style on writing.

When we board an aircraft, we're allowed to use our mobile phones, laptops, and MP3 players until the crew closes the door to the plane. At that point, we have to turn everything off, and only after the plane reaches an altitude of 10,000 feet (signaled by the two dings that you hear a few minutes after taking off), may we use approved portable electronic devices. A typical safety briefing conveys this information in the following style:

> The use of cell phones and approved devices is permitted while parked at the gate. Once the main cabin door has been closed, all devices must be turned off and stowed for the duration of the flight. Once we've reached a safe altitude, you will be advised when the use of approved devices is permitted. A list of approved devices may be found at the back of the [Magazine Name] magazine, located in the seat pocket in front of you. [Magazine Name] magazine is offered complimentary to all passengers, and you are invited to take your personal copy home with you today.

Even in my introductory course, I frequently use such passages for students to analyze when they're learning stylistic analysis. Typically, I provide students with a copy of the passage (or read it aloud in my best flight-attendant tone) and ask them to engage in a "gut-reaction" discussion of its strengths and weaknesses. After they've said how the passage makes them feel, they must then tie those feelings to issues in the writing. At the undergraduate level, we would forego a discussion of metadiscourse (save for simple redundancies), but focus on three essential stylistic elements from my earlier discussion of clarity (passive voice, nominalized verbs, and agents), which can help students see how style affects this everyday document. For example, the first sentence alone contains a nominalized verb ("use"), which appears in the subject position of the sentence; accordingly, we end up with a passive construction ("is permitted") and a sentence with no agent. Early in the semester, I might have students work in pairs or groups of three to analyze and revise the passage. If the class is particularly lively, then we may complete the analysis as a group with me acting as scribe. Some students must fight the urge to suppress first person or imperative statements (two stylistically advantageous choices that they have been told to avoid in other courses), but usually within 20 minutes, the class is able to produce texts that provide the same information in the following, stylistically sound, manner:

> You can use your phones and other portable electronics while we're boarding; I'll tell you when you must to turn them off. After we reach a safe altitude, I'll tell you when you may use approved devices, such as laptops and iPods. We have a full list of approved devices printed at the back of the [Magazine Name] magazine. Your personal copy of this magazine is in the seat pocket in front of you.

Looking at the above versions of the approved devices speech, students quickly see that the second version is shorter, more direct, and closer to

the conversational prose that an everyday speaker might use while talking to a friend or colleague. And the process of getting students to articulate the problems with the first text is quite fun. The class is able to laugh at an anonymous author, critique the documents' style, and share one or two stories about their travel experiences. Make no mistake; style can be a dull, intimidating topic to the novice student, so exercises like this can help break the ice and lull them into a challenging set of writing lessons. Once students have taken a hand in assessing and manipulating such an official document, they can begin to feel empowered as both critical readers and authors.

General Applications in the Classroom

Having called for stylistic analysis in the classroom, I now offer suggestions for incorporating such activities into technical-writing programs. Table 7 provides a list of suggested actions and their supporting rationales. As mentioned earlier, the analysis described in this article is designed for graduate students; however, with the instructor's modifying the breadth of each activity (as demonstrated in the previous section), students at virtually any level of study could complete these tasks to support a thorough stylistic analysis.

Table 7: Suggested actions (and their reasons) for incorporating stylistic analysis into the classroom.

Action	Reason
Hold an informal, "gut-reaction" discussion on found examples of stylistically weak writing; let students speak candidly using casual, subjective language. The instructor might provide an excerpt of a popular website's terms and conditions, a hotel's refund policy, or a credit card's privacy policy. The instructor could play scribe and keep a list of issues that students identify (however imprecise they may appear). Even a large-group discussion will quickly gain momentum when students are given the opportunity to say what they think about these documents. This activity could be a 10-minute exercise to introduce a lecture on style, or it could be modified into a series of group activities that take place in multiple workshops.	Students often identify with documents that are perceived as important, expensive, or somehow official. By providing students with examples of documents that use weak style, the instructor can deliver a topical introduction to the subject. Invariably, the students feel that the sample documents exhibit "bad" writing, but they can't pinpoint the reason. The goal is to have students rule out other issues (grammar, tone, jargon, etc.) until they realize (or are told) that faulty style is the culprit.
After students have been introduced to style and studied it sufficiently to begin practicing it, the instructor can provide a large document for in-depth analysis. For graduate students, a large document may be 10–20 pages; for non-major undergraduates, 1–2 pages will likely be large enough.	Students may not know enough about style to spot a document that is sufficiently flawed; therefore, the instructor should provide a document that has been deemed weak enough for the students to practice identifying key stylistic issues.

Action	Reason
Develop coding mechanisms for analyzing documents. Create a style legend in class with the students.	One of the more difficult tasks for students will be the act of coding their documents. They'll need to practice circling, underlining, highlighting, etc., and they'll need to be creative with their flagging mechanisms. A detailed analysis can involve dozens of types of issues (some occurring dozens of times), so the students will need to devise coding schema that are legible and manageable. Each student's legend will be her or his key to continuing with the assignment, and it should be given the authority of an APA or MLA guide. Coding errors will create headaches down the line, so students need to make informed coding choices and see them through the duration of the project.
Let students practice coding in class.	Rather than having students dive into large, complex documents with their coding legends, allow them to practice coding smaller documents with limited instances of issues. For example, each day of the project could start with a 10-minute coding activity, in which students mark up a paragraph of text while looking only for one or two issues at a time. The goal is to help students better learn the style principles as well as their personal coding keys.
Have students research the rhetorical situation for the large document being analyzed. This task should involve identifying steak holders, audiences, industry practices, legal and ethical considerations, etc. By the time an advanced style analysis occurs, students are likely familiar with exploring a rhetorical situation, and this information will help them justify their analyses– especially if they are in a service-learning environment that puts them in contact with clients. Regardless, students will ultimately discuss their findings in a report, so this rhetorical analysis will help them both with understanding their situation and writing-up their findings.	As important as stylistic analysis is, it must be situated within a broader understanding of the document being studied – how it functions, why it has (or hasn't) changed over the years, what people think of it, etc. Students should realize that waving a copy of Williams' text at colleagues wouldn't grant them authority in most workplace writing situations. Understanding a document and how it exists within the rhetorical situation will help them learn how to talk to people about their findings and how to prioritize plans for improving the writing style within a document or its parent organization.
Complete the major stylistic analysis.	Most of this work will take place outside of the classroom. After students have been granted class time to learn principles and practice coding, they're ready to work on their own. If the analysis is the equivalent of a term paper for the course, the students will need ample time to identify and code; what's more, they will need time to tabulate the results of their analyses and work them into meaningful discussions of the document.

Action	Reason
Document findings from the analysis.	The last step of the students' process is to synthesize their findings into a cogent discussion of the document, the contexts in which it functions, the issues that appear to be most detrimental to the document's current style, etc. Students need help talking about the issues that they've discovered, and writing a formal paper will help them practice this type of professional writing. Though the root of the analysis involves simply identifying and quantifying issues, the students must ultimately decide whether issues are detrimental to the readability of the document and how they might affect change in the organization's stlye.

Conclusion

Outside understanding the rhetorical situation, the most important skill students in the technical-writing classroom must acquire is style, the importance of which is conveyed by Nardone, Johnson, and Carnegie (2011):

> Style is the means through which technical communicators attempt to control the meaning conveyed to audiences, and, as a result, the actions the audience will perform. In other words, it is through style that technical communicators make information usable. (p. 64)

Helping students appreciate the usability of their prose can be challenging for even the most experienced teacher because students learn that style and grammar aren't necessarily inextricably linked. Stylistically weak writing may well be grammatically correct, and grammar is something that students take for granted. For these reasons, we must push students to question even the most commonplace documents—even if no one currently takes issue with them.

As we've seen in this discussion of airline safety briefings, the sameness of language from regulatory agency to airline (and from airline to airline) suggests a phenomenon writers may experience when they enter any professional writing environment. Frequently, documents have been created and maintained for years by employees who were never trained as writers, so their personal habits became the organization's official style. Even when no official style guide exists in an organization, I've often found authors supporting stylistically weak writing, "because that's the way we've always done it. "When students encounter such attitudes, they'll need more than their intuitions to overcome organizational writing practices that exist "just because." A fundamental understanding of writing style will

help them make decisions that benefit their organizations, colleagues, and readers. Whether an instructor chooses safety documents or organizational memos, stylistic analysis of industry-specific texts is essential to empower students as competent and confident professional writers.

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Author information

Brian D. Blackburne is an assistant professor of Technical Communication at Sam Houston State University, where he teaches undergraduate and graduate courses in technical writing, composition theory, and pedagogy. As both instructor and professional writer, Blackburne has worked simultaneously in academia and industry since 2000. His professional experiences include web design, usability, process documentation, product development, marketing, and digital-media production. Similarly, Blackburne's research interests span a broad range, to include pedagogy in traditional and online writing courses, stylistic analyses of everyday writing, and the cultural implications of texts and technologies. He has presented scholarly work at national conferences, including CCCC, CPTSC, SCMLA, and ATTW.

Appendix A

Introduction to the Formal Project

Throughout this course, we will explore writing style and its importance in creating documents that are not only engaging and writer-oriented but also technically sound and ethical. As future professional communicators, you will encounter a variety of workplace documents, some of which will be at odds with the principles of effective writing style. A lucky few of you will be granted authority to modify the writing style within your future organizations, while others will be encouraged to emulate weak practices because "that's the way we do it here. "We technical writers seek to improve the everyday documents that we create/encounter, but where documents already exist, so do authors' egos and organizations' politics. Subjective statements and emotional assessments wield little authority when persuading a colleague or superior to adopt your writing style; instead, objective treatments of text backed by sound methodologies will be necessary to support your recommendations. What's more, your plans/suggestions will have to be delivered in a rhetorically appropriate package that empowers your fellow writers, spares feelings, and makes the organization look good. Getting to this state will be your everyday challenge, but an integral part in deciding how an organization's style develops will be your ability to conduct stylistic analysis. The following project is designed to help you understand the intricacies of style and the process of analyzing an organization's everyday documents and the contexts in which they operate.

In lieu of writing a traditional term paper, you will work throughout the semester to conduct a substantive stylistic analysis and recommendation report (10–15 pages) of a set of everyday documents. A sampling of documents, related to airline-passenger safety, will be provided to you, and you will have the option of choosing any three to include in your analysis. Many of the tasks that support your project will happen in class via workshops and planned activities, but these will only help you build a repository of tools and information for completing your analyses; accordingly, the bulk of the writing will take place outside of class. In the coming weeks, I will provide you with detailed instructions for required tasks. In the meantime, this handout will afford you with a general idea of the project and the deliverables that you will complete along the way.

What Is the Formal Project?

The formal project involves a comprehensive stylistic analysis that is comprised of the following activities:

- Understanding essential principles from Williams' writings on style.
- Practicing your skills for identifying stylistic issues in a variety of small, everyday documents.
- Conducting a rhetorical analysis of the provided airline-safety documents.
- Creating a personal coding schema, which you will use to conduct the larger analyses of this project.
- Reading (multiple times) and marking-up the safety documents for a variety of stylistic issues.
- Summarizing the data from your readings of the safety documents.
- Synthesizing all of the above information into a formal report, which includes recommendations for improving the style of the documents.

When Is the Formal Project Due?

The formal project is due December 5, 2014. In addition to this due date, please keep in mind the following important dates:

- October 7–Preliminary style coding key due by the end of class.
- October 14–Draft of the rhetorical analysis of the safety documents due at the beginning of class. Bring three copies of your analysis for in-class peer review.
- October 28–Final version of your coding key due by the end of class.

- November 11–Data from your analyses due by the end of class.
- November 18–Draft of the Formal Project due at the beginning of class.
- December 5–Final version of your analysis and report due at the beginning of class.

If you have additional questions, please let me know.

Challenges and Opportunities Facing Programs

A Continuation of the CPTSC Plenary Conversation

Robert R. Johnson
Michigan Technological University

Pavel Zemliansky
University of Central Florida

Heidi McKee
Miami University

Abstract. At the 2013 CPTSC Conference, speakers on the plenary panel addressed a number of issues, including the greatest challenges programs face now and in the near future and how those challenges might be addressed. Drawing from our institutional experiences, we articulate a number of issues, including the continual need for programs to change to meet changing academic and professional contexts, the strengths and weaknesses of moves to intra- and inter-disciplinarity, and the problems created by the loss of tenure-line positions.

Keywords. Challenges, digital, educational technology, technical communication, professional writing, writing-across-the-curriculum, wac-tsc collaboration

At the 2013 CPTSC Conference, Kirk St. Amant and Lisa Melancon organized a plenary panel to focus on the conference theme, "Reflections and Projections: Examining the Status and Future of Programs in the Field." One of the questions asked of the three of us was the greatest challenges programs face now and in the near future and how those challenges might be addressed. In what follows, we each extend our plenary comments in ways that we hope will prove generative for continuing conversations about program development and sustainability. Specifically, Bob will focus on the complications and dangers of MOOCs being brought to writing programs. Pavel will focus on the relationship between programs in technical communication and our field as a whole on the one hand and WAC programs on the other. And Heidi will focus on three chal-

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lenges facing undergraduate programs, particularly adapting to changing contexts, fending off take-over attempts, and maintaining program identity. We close with a final reflection on the decline of tenure.

A Cautionary Tale of Educational Technology, or "Give Me an M, Give Me an O, Give Me an O, Give Me a C, Give Me MOOC!": Bob Johnson

To begin my reflection upon our plenary session concerning the challenges for technical and scientific communication in the academy, I'd like to start with a couple anecdotes separated by more than 50 years.

In 1948, on the heels of WWII and the threshold of his 1952 presidency, Dwight Eisenhower began a brief residency as the president of Columbia University. In an effort to introduce himself to the university faculty members, Eisenhower called a faculty forum and told the professors that he wanted to meet the employees of the university. At several moments in his remarks, he is said to have referred to the faculty as the "workers" of the university. During a question and answer session following the general's remarks, the preeminent physicist Isaac Rabi rose to his feet and said, "Mr. President, you refer to us as the workers of the university. With all due respect, sir, we are not the workers of the university. We *ARE* the university."

In the summer of 2013, some brave and committed minimum wage fast food workers staged protests in various US cities and called for higher hourly wages. Their demands were modest: give us a few dollars an hour more so that we might begin developing a livable wage for food service workers and, by extension, all minimum wage workers in the US. Their demands were heard across the nation and, as might be expected, some members of the retail business sector became alarmed at the imagined effects such a raise might have on profits. In an attempt to ward off an increase in the legal minimum wage, the conservative Employment Policies Institute took out a full-page advertisement in the *Wall Street Journal* with the headline, "Why Robots Could Soon Replace Fast Food Workers Demanding a Higher Minimum Wage." The page sported a photograph of a Japanese-made robot named "Motoman" pouring pancake batter onto a griddle. Below, a caption read, "Today's union organized protests against fast food restaurants aren't a battle against management—they're a battle against technology." For those of us employed in educational institutions, technology means, simply, digital technology and the "robots" in our contexts are the digitally-driven devices we employ (or that employ us?).

Digital: The adjective turned noun has become a synonym for contemporary technology itself, and has begun taking on potential all-powerful consequences for education through a leviathan known as MOOC. Massive Open Online Courses promise to teach thousands, even tens of thousands of students worldwide in one swoop of the electronic sword. Arguments in their favor range from the practical (MOOCs will save money because only one or two teachers, aided by a drove of graduate student assistants, will minister to these almost uncountable student masses) to the ethical and moral (MOOCs will be offered at no cost as the current providers tend to be the most affluent of American universities and, with additional corporate backing, can allow people in even the most remote places on Earth to learn from grand masters of knowledge through lectures and videos).

Diverse, Egalitarian, Efficient, Democratic: The words roll out as quickly as an electronic pulse in the rhetoric that promotes MOOCs. But what are some of the real consequences of MOOCs, especially for the fields of writing studies generally and technical communication specifically? With university instructional positions becoming more and more an adjunct "worker" marketplace, it is very possible that a vulnerable "service course" sector such as writing studies could become a prime target for administrative edicts to create classes that can teach massive worldwide audiences how to write. Imagine: ten thousand essays, ten thousand recommendation reports, ten thousand instruction sets written on and for the small screen to fulfill writing and communication general education and ABET requirements. Then, they can all be machine graded by a Motoman electronic wordsmith for pennies per word.

Cynical? Maybe, but it is not beyond the pale of administrative decision-making in this era of tighter and tighter educational budgets and big data measurement analytics.

Our job as faculty—as the heart and soul of the university—is to keep shared governance, tenure, and communal decision-making the "work" of the whole academic community.

Building Partnerships Between TSC and WAC: Both Necessary and Possible: Pavel Zemliansky

I would like to consider the importance of building tighter relationships between technical and scientific communication (TSC) and writing across the curriculum (WAC) and briefly chart some pathways along which such relationships can be built. I briefly address both intellectual reasons for why we, as a field of study and of practice, may want to build and sustain these relationships and institutional ones.

Creating a stronger relationship between TSC and WAC is both important and possible. The need and possibility of such work have been articulated by Russell (2007, 2010) and others. TSC and WAC as fields overlap in significant areas of goals and interests, if not always in practice and methodology. Both fields are interested in preparing students to be better communicators in professional and academic contexts. Because of this overlap and because both kinds of programs often serve very similar constituent groups at US colleges and universities, TSC and WAC have much to learn from one another. Moreover, the interdisciplinarity of our field allows for conceptual and practical collaborations with WAC. A closer relationship with WAC could become an important programmatic issue and task for TSC program because it could allow for an increased role for such programs on university campuses. At the same time, by imagining a closer connection between TSC and WAC, I am not predicting or advocating for a dissolution of TSC as either an intellectual or an organizational entity. On the contrary, I think that by collaborating closely with WAC we have an opportunity to increase our relevance both across the university and in the professional world. My ideas here are based on my experiences directing the WAC Program at the second largest university in the nation, University of Central Florida.

A least two factors position TSC for just this kind of closer collaboration with WAC and necessitate it. Firstly, we have a "good product." No one disputes the importance of what we do: the teaching of communication. Our expertise in the teaching and theorizing of professional communication is a valuable asset for a lot of our colleagues across the university and in the professions. This expertise allows us to gain reputation in many circles without giving up on our identity as a separate discipline. Add the increased interest in STEM and STEM communication (sometimes misguided and misplaced) on the part of universities and legislatures, and we have a real opportunity to meaningfully promote our work beyond our own programs and departments. Secondly, the interdisciplinary nature of our field and the diverse knowledge and experiences of its members allow us to effectively collaborate with colleges in other fields. Our knowledge of rhetoric, academic and professional workplace communication realities, design, usability, and other important topics makes us useful partners across the university and beyond.

So what first steps might we, in technical and scientific communication, take to foster such collaborations? One step may be a reimagining and re-embracing the notion of "service" to others. Not the kind of service that allows other departments, say, engineering, to outsource that one re-

quired technical writing course to us, staffed by adjuncts. No, I am talking about the kind of service that positions our programs and our expertise as indispensable partners to others in the work of teaching students life-long communication and critical thinking abilities. We possess unique expertise and a unique ability to help other fields in their teaching of communication; this skillfulness may bring a new kind of prominence to our field and to our programs. In my experience, colleagues in other disciplines lack and want writing and communication expertise to be brought into their courses and into their programs. We are in position to provide such expertise. I suspect that many of us who have worked in WAC have had similar experiences.

Here is how reimagining and re-embracing of service-as-collaboration has worked so far at the WAC Program that I direct. Our program is a part of the University of Central Florida (UCF)'s Department of Writing and Rhetoric. One of the missions of our department is to provide "coordination and support of writing across the curriculum and in the community" (DWR website). To fulfill that mission, the WAC program uses the department-centered model and trains (serves and collaborates with) faculty in other departments to teach writing in their discipline. Many other WAC Programs across the country use this model, and anyone interested can easily find other examples of this work. Since 2011 when the program began, we have worked with about 100 faculty in about 20 departments from 8 colleges, ranging from fine arts to engineering to chemistry and nanoscience.

Connections between TSC and WAC abound in this work. For example, when we began to help the Chemistry Department to reconfigure their lab report assignment, we kept hearing the phrase "technical writing" from them, which they used to describe the laboratory report assignment. Their use of the term was certainly different from how we use it in TSC, but this led to a useful discussion of what "technical writing" is and is not, and of how its definitions differ from one context and from one activity system to another. Later on, we co-developed with the chemistry faculty a methodology of teaching the form of the lab report as a set of effective professional communication and document design practices. Similarly, when working with other departments, from nanoscience to criminal justice to nursing, we routinely bring in concepts and ideas from professional communication to help our colleagues reimagine the teaching of writing and communication in their field. I think that both sides are better off and stronger because of these collaborations, both intellectually and institutionally.

Challenges and Opportunities on Moving from TSC to Professional Writing: Heidi McKee

From my perspectives as director of a professional writing major, I will address three challenges that I see facing programs today: (1) the need to keep curriculum current, (2) the need to resist program "take-overs"; and (3) the move by many programs to "big tent" majors.

Change or Die: The Need to Stay Current and Forward-Looking

Programs, like people, get tired, stuck in their ways, and stagnant. Curriculum gets stale, partnerships lose their luster or fade away altogether, and digital technologies evolve at a dizzying pace. Often individuals and programs struggle to keep up, especially given the demands on faculty time and the pressures of ever-shrinking resources. But keep up we must. We need to keep a continual eye on local, national and increasingly, international trends, and we need to revise our curriculum accordingly.

At Miami University in 2010 we faced a change-or-die moment. The 25-year-old BA in Technical and Scientific Communication (BATSC) was in danger of being cut by upper administration. BATSC had fewer than 15 students declared as majors across all four years of study (first-year through senior year), and most classes in the program were running with single-digit enrollments. While the few students who graduated from the program were getting excellent job placement, the degree was too narrowly focused on the technical and scientific for the Miami student population. With input and collaborations from faculty in Interactive Media Studies, Journalism, and Communication, colleagues in TSC and in Rhetoric and Composition came together to revise BATSC into a BA in Professional Writing with four tracks in Digital and Technical Communication, Editing, Public Writing and Rhetoric, and Self-Designed.

This move brought about a number of changes in curriculum, faculty collaborations, and community partnerships that are too numerous to discuss here. But the net effect of these changes has been that the Professional Writing major has proved very popular with students, employers, and community partners. Since the program's launch in August 2011, we have grown to 110 majors (graduating our first class of 9 last year) and 75 minors. Although we have lost an intensive focus on technical and scientific communication (now just a track option), we have gained a major that provides more opportunities for students to locate themselves within the wide continua that is professional writing.

Obviously for many programs, such a move to a broader Professional Writing major may not be needed given local contexts, but the takeaway

still applies: change is hard but absolutely necessary. Amid the never-ending tasks of day-to-day administration, it's imperative that program faculty and administrators also take the time to reflect critically on the state of the program and to stay in touch with evolving trends in the academy and industry so as to make changes needed to keep programs current and forward-looking.

Resist Calls for "One English Major": The Potential Tyranny of the Majority

I recognize that many programs in scientific and technical communication are not housed in English Departments, but many still are and this point is addressed to those who are.

In the past year I have had conversations with colleagues at institutions large and small across the country who faced or are facing what they call "take-overs" of their writing majors by colleagues in literature. At the same time that writing majors are rising (facing pressing challenges on how to meet demand), many literature majors are declining, creating an imbalance between faculty and students. The net result is not enough literature classes to go around and many literature colleagues aren't thrilled about having their seminars cancelled due to low enrollments.

So, the solution as some see it: One major where all students are required to take literature. While literary studies may be beneficial for some (such as those seeking to go into literary editing), it is certainly not a must-have for all writing majors, any more than, say, courses in interactive media studies, communication, journalism or, depending on a student's focus, any other disciplinary field. Merging distinct majors in writing (both creative and professional) and literature into "one English major" creates a mushy, amorphous degree, serving neither literature nor writing students well.

But for many programs housed in English Departments, the issue of numbers comes in to play. If you're in a majority-rules department and one program has way more faculty than all other programs combined, then the potential for tyranny of the majority is very real. For programs in this situation, as we are at Miami, it's imperative to collect data frequently about student and employer needs so as to be able to articulate to colleagues and administrators the importance of a professional and technical writing major. But at the same time that programs need to argue for distinct identities, they have to be careful not to frame those identities too narrowly.

Live in a "Big Tent—A Big Writing Tent": Recognizing and Bridging Differences While Maintaining Program Identity

As shown by Lisa Meloncon and Sally Henschel's (2013) research into undergraduate writing majors, by data collected by the CCCC Committee on the Major in Writing and Rhetoric (2009) and by recent discussions on the CSPTC listserv, more and more programs in Technical and Scientific Communication are retitling and repositioning themselves as programs in Professional Writing. A name change is not, of course, an innocent act, and with the name change comes many challenges, including the one I'll focus on briefly here: maintaining a big tent while keeping program identity.

When I was first hired at Miami in 2005, I could not understand why writing faculty were classified as either Rhetoric and Composition or Technical and Scientific Communication. I recognize now the political and curricular importance of that move when the technical and scientific communication program at Miami was formed back in 1980's. To fight for its very existence and for its separate BA that is not a BA in English, technical and scientific communication at Miami had to have a distinct identity. But that distinctness grew to be a detriment, because it's a lot easier for administrators to lop off small isolated programs. By banding together across all writing programs into a Rhetoric and Writing faculty with responsibility for many undergraduate and graduate programs, we gain strength in numbers and we share richer, diverse perspectives. But we, of course, also face tensions coming from those different perspectives.

For example, when deciding on the name for the revised major, some colleagues were opposed to the inclusion of "Professional," feeling that they were not in the field of professional writing. Other colleagues objected just as vigorously to the loss of technical communication from the degree title. But, after many meetings and hallway conversations, the need for a "big tent" term for the major won out: *Professional* and *Writing* serving as inclusive markers for all involved with the major. Having the track titles helped too.

All programs, from the very focused to the more wide-ranging, face epistemological, pedagogical, and ideological differences among faculty. What's essential is that programs should never sweep their differences under the rug, but instead aim in curricular and programmatic decisions to discuss differences and yet to also affirm collective commitment to the goals and outcomes set for the undergraduate major. The tent is big but it is one *writing* tent. Keeping it that way is both the challenge and the opportunity.

A Shared, Closing Reflection

Amid the issues we've addressed, one common, final, pressing problem that we see facing all programs is the decline of tenure. In 1969 higher-ed institutions were staffed by 78% tenure-track faculty whereas in 2009 by just 33% tenure-track faculty (Kezar & Maxey, 2013). This dramatic decrease in tenure track faculty has serious consequences for our profession, our programs, and, most importantly, students.

Without tenure, it's harder to stand up and fight any problematic policies coming from upper administration (and elsewhere). Without tenure or the certainty of continuing contracts, it's harder to build the long-term relationships with students, colleagues, and community-corporate partners that are so vital for sustaining programs. And without tenure-track faculty it can be difficult, especially in hot fields like technical communication and professional writing, to find well-qualified temporary instructors to teach courses, design curriculum, conduct research and assessment, etc. And when a program is lucky enough, as many of us at our institutions are, to find exceptionally talented and committed visiting professors, the struggle to get those lines converted to permanent positions is uphill.

Despite the challenges and upper administration's eagerness for non-tenured positions, both within our programs and collectively across our institutions, we need to continue to argue and advocate for the importance of tenure. This is an essential undertaking that unites us across all disciplines and all program levels.

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Author information

Robert (Bob) R. Johnson is Professor of Technical and Scientific Communication at Michigan Tech where he served for nine years as the Humanities Department chair, but now is devoting his time to reading, teaching, and writing. His recent book, *Romancing the Atom: Nuclear Infatuation From the Radium Girls to Fukushima* (Praeger, 2012) was given the 2014 award for "Best Book in Technical and Scientific Communication" by the National Council of Teachers of English.

Pavel Zemliansky is an associate professor in the Department of Writing and Rhetoric at the University of Central Florida. He also directs UCF's Writing Across the Curriculum Program. His publications on professional writing, WAC, and composition pedagogy appeared in *IEEE Transactions on Professional Communication*, *Journal of Technical Writing and Communication*, *Programmatic Perspectives*, and other journals. He is also the editor or co-editor of numerous essay collections on professional writing and composition, including the innovative open access series Writing Spaces. He teaches undergraduate and graduate courses in professional writing and rhetoric.

Heidi A. McKee is the Roger and Joyce L. Howe Professor of Writing, an associate professor, and the Director of Professional Writing in the Department of English at Miami University. She is Director of Howe Writing Initiative in the Farmer School of Business, and an affiliate faculty member in Interactive Media Studies. Her teaching and research interests include technological literacies, multimodal and digital rhetorics, writing pedagogy and assessment, qualitative research methodologies, and ethical research practices. She has co-authored and co-edited a number of books, including: *Digital Writing Research: Technologies, Methodologies*, and *Ethical Issues* (winner of the Computers and Composition Distinguished Book Award); *The Ethics of Internet Research: A Rhetorical, Case-Based Process* (2009); *Technological Ecologies and Sustainability* (2009); and *Digital Writing Assessment and Evaluation* (2013).

Book Review Editor

Joanna Schreiber, *Georgia Southern University*

Start Your Career: 5 Steps to Finding the Right Job after College

Author
Susan Katz

C&M Online Media, Inc.
2013. 88 pp.

Reviewed by Jessica Lauer
Michigan Technological University

Planning ahead may not be the first (or second) thing on the mind of a typical college student, but having a guide such as Susan Katz's e-book *Start Your Career: 5 Steps to Finding the Right Job after College* can help them do so. In a convenient e-book format, students can use Katz's book to help make the most of their university experience by planning ahead for each year of their degree, thus making the transition from college to the workplace happen more smoothly. Not only for students, this book is a useful tool for program administrators who want insight into current job search and internships trends, as well as access to a comprehensive resource to provide students with this information to help guide them through each step of the process. This book is not just for advanced undergraduate students ready to graduate and enter the job market; rather, the advice in the book parallels the progression of an undergraduate, from identifying skills early on to more practical advice related to a job search, such as resume and interview advice. Katz's book has strong aspects; however, like any career-related advice, it is not static. Because *Start Your Career* is offered as an inexpensive e-book at $10, it lessens the sting of knowing

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some of the information risks becoming outdated in years to come (I'm particularly thinking about the section on social media), as well as the probability that many of the hyperlinks included in the book may not remain active or accurate.

FKatz's expertise comes from her years of experience coordinating the internship program in the English Department at North Carolina State University. She has organized the book so that students can easily search key words related to their specific questions, or advice catered to stages during the progression of their degree ("early stages", "before you graduate", and "after you graduate"). This e-book is budget-friendly for students, and it is a text that students will refer to more than once; it is a guide that can be used throughout a students' entire college career–not *just* when they are ready to graduate and look for a job. The e-book format adds the convenience of being able to click on active hyperlinks that automatically direct the reader to useful resources online.

For program directors or instructors, the appendix will be valuable because it contains sample documents, such as resumes and cover letters for a variety of majors (though none in STEM fields), that students can be directed toward rather than the instructor or program director having to compile these sample documents. Likewise, the appendix section is equally beneficial to students who would like job search resources compiled in one place that they can continually refer to.

As the title suggests, the book is organized into five steps, with several tips outlined within each. In "Step 1: Identify your Skills and Strengths," Katz begins with a tip about utilizing aptitude tests, giving feedback on those she has tested herself. After taking the test Katz found to be the most accurate (the "Color Test" via Careerbuilder.com), my results included the suggested "occupational categories" of both Organizer and Researcher, with suggested jobs ranging from teacher to underwriter, making the results indeed not far off from reality. Another useful tip under Step 1 is the importance of conducting information interviews, which not only allows for students to get a sense of what happens in a particular job position but also provides them with a contact within the specific field who can provide them with useful feedback on resumes and other aspects of their job search.

"Step 2: Envision a Satisfying Worklife" includes researching and comparing costs of living, ideal work environments, and the importance of understanding job benefits, such as health insurance and retirement plans (despite the fact they are probably the *last* thing you want to think about!). "Step 3: Research Potential Jobs" builds from this advice, providing some

practical guidelines for investigating potential jobs or for considering graduate school. Katz lists several websites for job seeking but also highlights the critical (and sometimes underused) resources a university has to offer students, whether a career center or an alumni network.

"Step 4: Create a network" in part covers the age-old adage: it is not what you know; it's who you know. Katz offers networking tips in this chapter, including the suggestion of creating and perfecting the ever-important "elevator speech" before you graduate. Networking can be both online (e.g., LinkedIn) and via university and community organizations, and Katz also stresses the importance of maintaining contacts you already have (such as professors and advisors). Volunteering is a great way to gain experience in a career area you are interested in pursuing; for example, if a student is interested in a career in publishing or technical writing, working on newsletters to gain writing and editing experience has twofold benefits: volunteer work can be added to a resume and is also a relevant career skill.

In "Step 5: Prepare for the application process," Katz writes that "it is never too early to take a close look at any of your social media sites" (p. 116). This chapter gets at the "meat" of the job search process; it primarily focuses on preparing job application materials, navigating interviews, and asking critical questions when considering a job position (salary, for example). This information itself is critical, but having it all in one place is invaluable not only for students but also for instructors teaching career preparation courses or program directors guiding students into the job market. The appendix itself is worth the money of the book. It is a lengthy and valuable tool because it provides additional resources for students, such as template letters, common interview questions, and lists of useful websites related to job hunting.

Faculty running internship or career prep courses will find this book especially useful, as will students majoring in humanities or social sciences, in which a specific career path is not always defined. One of the strengths of this book is that it offers tips and advice for students, regardless of their major. Although much of the advice is cross-disciplinary, it does seem that the book will be of most use to Liberal Arts, Humanities, and Social Science majors more so than students in STEM fields. Nevertheless, much of the advice in "Step 5" is related to communication in general and often echoes advice commonly heard in writing classrooms of being aware of your audience, making *Start Your Career* a text that could, in part, be more broadly incorporated into composition and technical communication courses as well as internship programs or career counseling/preparation classes. Yet the benefit of the e-book format makes it easier to pick out exactly which

information may be most useful to the reader, whether that reader is a student, a faculty member preparing career-based lesson plans, or a program administrator hoping to provide some increased support when it comes to helping students find not just a job, but a job they will enjoy.

Author information

Jessica Lauer is a PhD candidate in the Rhetoric and Technical Communication program at Michigan Technological University. She was a recipient of the 2011 Dean's Fellowship and is currently a graduate instructor of technical and professional communication courses at MTU. She is also a reviewer for *Queen City Writers*, an undergraduate journal focused on writing and composition. Her research interests include food studies, the history of technical communication, and the history and philosophy of technology. She is currently working on her dissertation about food and community among prison inmates. Her academic and creative writing—as well as some artwork—can be found at ‹www. jessicaroselauer.com›.