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## Mapping ms-ptc programmatic core competencies to emerging professionalization standards: are our students fully prepared?

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## **ABSTRACT**

### **MAPPING MS-PTC PROGRAMMATIC CORE COMPETENCIES TO EMERGING PROFESSIONALIZATION STANDARDS: ARE OUR STUDENTS FULLY PREPARED?**

by

**Faye Newsham**

This paper explores evaluation of graduate student preparedness for work in technical communication and emerging professionalization standards by way of an alumni survey. This paper argues that these core competencies can be evaluated and aligned and provides an example confirming both the New Jersey Institute of Technology Masters of Science in Professional and Technical Communication (NJIT MS-PTC) and the Society of Technical Communication (STC) Body of Knowledge (BOK) and core competencies used in STC certification. The study was conducted through the month of October 2013 and queried alumni of the NJIT MS-PTC program. This paper seeks to suggest a method to map core competencies of any university program to professionalization standards and contributes to the debate on student preparedness and program evaluation.

**MAPPING MS-PTC PROGRAMMATIC CORE COMPETENCIES TO  
EMERGING PROFESSIONALIZATION STANDARDS:  
ARE OUR STUDENTS FULLY PREPARED?**

**by  
Faye Newsham**

**A Thesis  
Submitted to the Faculty of  
New Jersey Institute of Technology  
in Partial Fulfillment of the Requirements for the Degree of  
Master of Science in Professional and Technical Communication**

**Department of Humanities and Social Sciences**

**January 2014**

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**APPROVAL PAGE**

**MAPPING MS-PTC PROGRAMMATIC CORE COMPETENCIES TO  
EMERGING PROFESSIONALIZATION STANDARDS:  
ARE OUR STUDENTS FULLY PREPARED?**

**Faye Newsham**

---

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Newsham, Faye. "Capability Maturity Model Integration: Technical Writers Needed," *Direction*, pp. 7-11, June 2006.

Newsham, Faye. "Capability Maturity Model Integration: Technical Writers Needed," *Intercom*, pp. 13-15, November 2005.



This thesis is dedicated in memoriam to Thasha Ramdas who completed her MS-PTC degree in May of 2013, shortly before her untimely death. Thasha, also a bright astrophysicist, was dedicated, energetic, and a real leader in everything she attempted. She will be sorely missed and the field of Technical Communications is poorer for her loss.

This thesis is also dedicated to Dr. Beatrice Ricks, graduate of Southeastern State College, Oklahoma (Teaching Certification 1927) and the University of Oklahoma (B.A. 1949, M.A. 1950, and PhD. 1954 in English Literature). Dr. Ricks was a Professor of English at Central Missouri State University, Warrensburg, Missouri from 1958 until her retirement in 1972. Dr Ricks volunteered at the CMSU James C. Kirkpatrick library until her death in 1989. She inspired both the author's mother (who attended CMSU in the 1960s) and the author (attende in the 1980s) by her dedication to her students, the University, and the Library of books she loved. Dr. Ricks continues to influence students today through the Beatrice Ricks Library Scholarship providing funding for Library Science Masters candidates.



Finally, this thesis is also dedicated to Dr. Martha "Martie" Sammons, Professor Emerita, Department of English Language and Literatures, Wright State University, Dayton, Ohio. Her publications include Document Design for Writers, The Longman Guide to Style and Writing on the Internet, A Guide Through Narnia: Revised and Expanded Edition and many articles on both fantasy fiction and teaching with technology. Dr. Sammons influenced the direction of the author's degree and career as a professional technical communicator.

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# **CHAPTER 1**

## **INTRODUCTION**

Over the last twenty-five years the author has noted that the field of Technical Communication has been moving to better define itself. The field encompasses many competencies. Many collegiate and professional organizations have sought to define the work and workings of the field of practice to determine if our students and practitioners are ready to satisfy the needs of a variety of employers. Books and articles are devoted to understanding how the requirements of the field of practice are satisfied by graduates of Technical Communication programs. The United States Bureau of Labor Statistics (BLS) has defined and redefined the discipline in response to people working in the field, educators, and the advocacy of professional organizations. As a practitioner in the subject area hiring graduates of Technical Communication programs and as a current student in a graduate program in the topic, the author is interested in ensuring she and others are well prepared by the institutions providing this education.

### **1.1 Objective**

This paper shares one method for evaluating a single college graduate program in technical communication and a selected set of professionalization standards, based on surveying the working graduates of that program as a guide for both future improvements to that program and to serve as a model for future evaluation of other programs.

The Masters of Science in Professional and Technical Communication (MS-PTC) program at New Jersey Institute of Technology (NJIT) has a formal set of core competencies that have been in place for a number of years. One important set of

emerging professionalization standards has been developed by the Society of Technical Communication (STC) in response to efforts to define and certify practitioners. The NJIT MS-PTC program has noted that these emerging professionalization standards defined by STC appear effective, and the program seeks to adapt their current competencies to the emerging standards and map how to best make this transition once the competencies and mapping are confirmed.

As educators and professional organizations seek to prepare students for the transition between scholastics and work, they find that it is important to "mirror what is happening in the workplace." (Ball, 11) Indeed, "one way of moving toward professionalization is that rather than aiming to professionalize technical communication positions, that are inherently difficult to identify, we should focus on professionalizing the skill set." (Bloch) Programs that seek to bridge the real world of work and "seek out exemplary initiatives that achieve these requirements and disseminate these within both higher education and the creative industries sector" are ultimately going to be successful. (Ball, 11)

The economy and industry show that "[i]n order to remain competitive in an ever-changing global market, the United States must produce an educated workforce; one that is ready to lead and inspire a 21<sup>st</sup> century economy." (Nash, 1) Education for the field of technical communication before the 1950s is not the same as today. "[C]hanges in technical communication education between 1950 and 1998 have led to disciplinary maturity: the development of academic programs and of a body of innovative research." (Staples) This maturity is still burgeoning as "technical communicators are emerging as active players in today's dynamic enterprise composed of flexible labor practices that are, at once, entrepreneurial in spirit and global in domain. (Coppola, "Professionalization" Part 2)

## 1.2 The MS-PTC Program

The New Jersey Institute of Technology was listed as the number one value in education by BuzzFeed in 2013. (Cheapest) The MS-PTC program is a well-respected fully-online program of this brick and mortar university. The program "prepares its students for careers in a range of professions that involve communication and technology." (MS-PTC) The program has made several efforts to create, validate, and grow based on a variety of methods and sets of competencies. As noted by Doctors Coppola and Elliot:

"In spring 2001, the Master of Science in Professional and Technical Communication (MSPTC) at NJIT initiated an internal review process, as scheduled by the provost and the Review Committee for Department and Program Assessment. We followed the process guidelines, similar to those we had often used to help our university prepare for review by the Accrediting Board of Engineering and Technology and the Middle States Commission of Colleges and Schools." (Hundleby, 127)

Based on these reviews, the program continues to assess and modify as the field grows and changes. Meloncon notes, "What do our graduates think of their graduate training as they move and/or continue in business and industry?" Additionally she notes that "[t]hese types of questions should spur necessary reflection on program curriculum and will help guide changes in existing programs and help develop a set of helpful heuristics for building new programs." (145) Although NJIT continues to reflect on the MS-PTC program, an additional source on work preparedness (the alumni of the program) would be informative. What the graduates themselves think about the program and how prepared they have been for work provides valuable insight.

### **1.3 The Society of Technical Communication (STC)**

The STC is an international professional organization for practitioners of technical communication. This organization is both the oldest and largest association for technical communicators. "The Society's members span the field of the technical communication profession and reach across every industry and continent. In fact, the Society has members in almost 50 countries." (About STC)

As a well-respected and global entity, the professionalization standards being set by STC are one obvious choice against which to evaluate the NJIT MS-PTC program. Two special editions of STC's Technical Communication Online magazine cover the importance of core competencies. These "integrated skill sets, or core competencies, [help] to navigate the complexities of rapidly shifting work structures." (Coppola, "Professionalization" Part 2)

The organization's website notes that "STC educational events regularly feature the thought leaders and practitioners who represent the future of the profession." (About STC) The STC seeks to contribute to the education and research into the field of technical communication. The author feels that by surveying the NJIT MS-PTC alumni working in the field about STC's core competencies, a more complete picture of where the PTC competencies overlap and support the STC's will emerge.

## **CHAPTER 2**

### **METHOD**

Chapter 2 covers the methods used to evaluate and map selected professionalization standards to existing collegiate programmatic core competencies. The methods and evaluations performed can be repeated against other professionalization and programmatic core competencies. Many practitioners believe there should be professionalization standards but disagree on what those should be. "The competition among these different viewpoints on professionalization match a similar but more fundamental competition for our skills. Underlying all of these differing views are differing beliefs about how to achieve meaningful work in the field." (Carliner) The key, then, is what factors make technical communicators attractive to employers and what skills are useful to them.

#### **2.1 Select Professionalization Standards**

The professionalization standards selected for evaluation were chosen based on organizational reputation, longevity, history, and research supporting the goal of employing technical communicators. STC has formed a Body of Knowledge (BOK). As stated in the introduction to the STC BOK portal, "Every profession has its body of knowledge. The challenge of ours is that it is dispersed." (STC BOK)

An organization or association that works with bodies defining, categorizing, or legislating technical communications will be thinking about how the profession is viewed, paid, and respected. Publications supporting these activities and research in the same areas promote education and work. Coppola notes in a 2010 article on the subject

that "[i]n its report to STC, Change Management Solutions (2008) examines how other professions successfully evolved, noting that a prerequisite is an identifiable and independent body of knowledge." (Technical Communication Body of Knowledge)

## **2.2 Evaluate Program**

There are many works discussing the evaluation of programs, and the author does not intend to discount any method in use or proposed for use. Many of these are listed in the literature review included in Appendix G, which includes titles such as: "Productive Passions and Everyday Pedagogies: Exploring the Industry-Ready Agenda in Higher Education," "A Survey Investigation of Trends and Issues in Speech Communication M.A. Programs," "Final Report Issued by The National Board on Graduate Education," "Why Should Program Assessment Matter to Practitioners?," and "A Decade of Research: Assessing Change in The Technical Communication Classroom Using Online Portfolios." The intent is instead to put forward an additional tool of evaluation that ties the core competencies to employability. "The internal evaluation of graduate programs is an essential first step toward the clarification of mission." (Final Report Issued by The National Board on Graduate Education)

Self-evaluation supports many levels of critique: improvements to a program, evaluation by accreditation bodies, and changes in the industry the education supports. In fact, "degree-granting programs in technical communication must be responsive not only to regional accreditation demands but also to disciplinary agencies...demanding evidence of effectively taught required courses in technical communication." (Coppola, A Technology Transfer Model, 459)

"All studies show that graduates find the transition to work difficult and are slow to get started. They do not feel prepared for the realities of working life and they would have liked a greater focus in their courses on the opportunities open to them as well as business awareness and entrepreneurship." (Ball, 13)

So, has the PTC Masters program at NJIT avoided the surprises? Are these students prepared for the workplace?

### **2.3 Map the Core Competencies**

Once core competencies have been selected, useful data is gathered by mapping them to each other. Analyzing the content and segmentation assigned by the originators and seeking to note where each conforms to the other provides a basis for gap analysis, an analysis of where there is no overlap. If no gaps exist the comparison of like terms is easiest. Connotation and denotation of terms used should be evaluated to ensure a place for each is noted.

Once groupings are noted, seeing the results in a graphical depiction helps visualize the relationships as well as the groupings just selected. Variable analysis that feeds the survey design is the outcome of this activity with refinements possible once the mapping is in a graphical form.

### **2.4 Survey Design**

A survey to evaluate the existing programmatic and emerging professionalization will help determine the future of both. In order to develop a well structured survey the first step is to note the questions that need to be answered by the survey. These over-arching questions can be found in Appendix A. The over-arching questions are a guide to the

final list of unbiased questions that answer these needs. The actual survey questions are found in Appendix B.

In the case of reviewing a graduate program, alumni of the program are the key audience to survey. Secondary audiences to consider are practitioners in the field, employers of alumni, and/or program staff.

#### **2.4.1 Variable Model**

The data is the basis for formulating a model. The correctness of the model lies in its capacity to reproduce or account for the variability in the data. Appendix F contains the analysis variables defined for this survey.

Analysis variables are described in terms of independent or predictor variables and dependent or outcome variables. The study is descriptive. In this construct, the outcome of graduating from the MS-PTC program is measured in terms of usefulness.

#### **2.4.2 Coded Questions**

A code book is created before the survey is given out. The code book will show how the data will be collected for each question of a survey. Individual respondents are assigned a unique identity code so that the results can be identified both uniquely and with full anonymity. Refer to the Variable Model/Code Book in Appendix F for the code notations of this survey.

Once the code book is prepared, a spreadsheet for answer analysis can be prepared where each variable is represented by a column and each response is represented by a row.

### **2.4.3 Survey**

The final survey is shown in Appendix B. The preferred number of participants is thirty (30) or greater. Eighteen (18) complete responses were received with additional partial responses provided. Unfortunately, this means that statistical significance cannot be reached in the current analysis. This was not unexpected by the author as the participant pool is limited by graduates of the MS-PTC program who could be contacted, were willing to take the survey, and able to complete it.

Information collected by the survey instrument will be placed into the analysis spreadsheet, previously prepared based on the code book (refer to Appendix F), and analyzed. A unique identification number will be given to each respondent comprised of a two-digit sequence number and the eight-digit date (mmddyyyy) upon which each respondent completed the survey. Surveys with no completed date are marked either "partial" if there are any answers completed or "incomplete" if there are no recorded answers in the survey.

Information analysis performed on the remaining data is based on the code book. Appendix E shows an example of answer weighting to emphasize the value of certain professions to this survey.

### **2.4.4 Research Questions**

The research questions are outlined in Appendix A, as discussed above in the introduction of this section discussing the survey design. The research questions were developed after performing a literature search (refer to Appendix G) and reading works discussing the over-arching ideas of program assessment, work preparedness, and technical communication education.

## **2.5 Evaluate Survey Responses**

The needs of the program and the work field can be determined through evaluation of survey questions centering on each of these topics. It is helpful to write the questions so that the responses are provided in the same way. By using the same answer scale for each ensures the responses can be compared easily.

Providing scale consistency allows an individual respondent to provide responses to multiple questions in relation to each other. Textual responses should be limited to topics that evaluate a single discrete topic. Text can be assessed through sentiment analysis if a single respondent seems to be particularly outside of normal. Sentiment analysis may provide additional information about the responses. "What students thought they knew about work is challenged, and new meanings are created based on their actual lived experiences." (Barnett, 273)

## **2.6 Report on Findings**

Once evaluated, the final step in this process is to report on the results. Validation of the programmatic core competencies and professionalization standards, as well as a chance to propose improvements to each, is the final result.

It is important to report on findings that are other than what is expected, a single response far outside of the normal, as well as consensus of results leading to solid conclusions. When outliers in the data exist, an analysis of the individual respondent may prove useful and can provide key information.

## **CHAPTER 3**

### **VARIABLES**

In Chapter 3, a discussion of the standards being evaluated, required electronic Portfolio, and core competencies central to the MS-PTC program will provide an overall framework for the comparison to the emerging professionalization standards.

#### **3.1 STC Certification Core Competencies**

The STC professionalization efforts for the certification core competencies have been selected based on the size and age of the organization, research into the body of knowledge, advocacy in defining and categorizing the work of technical communication, and recent release of the certificate in Technical Communication promoted by this same organization.

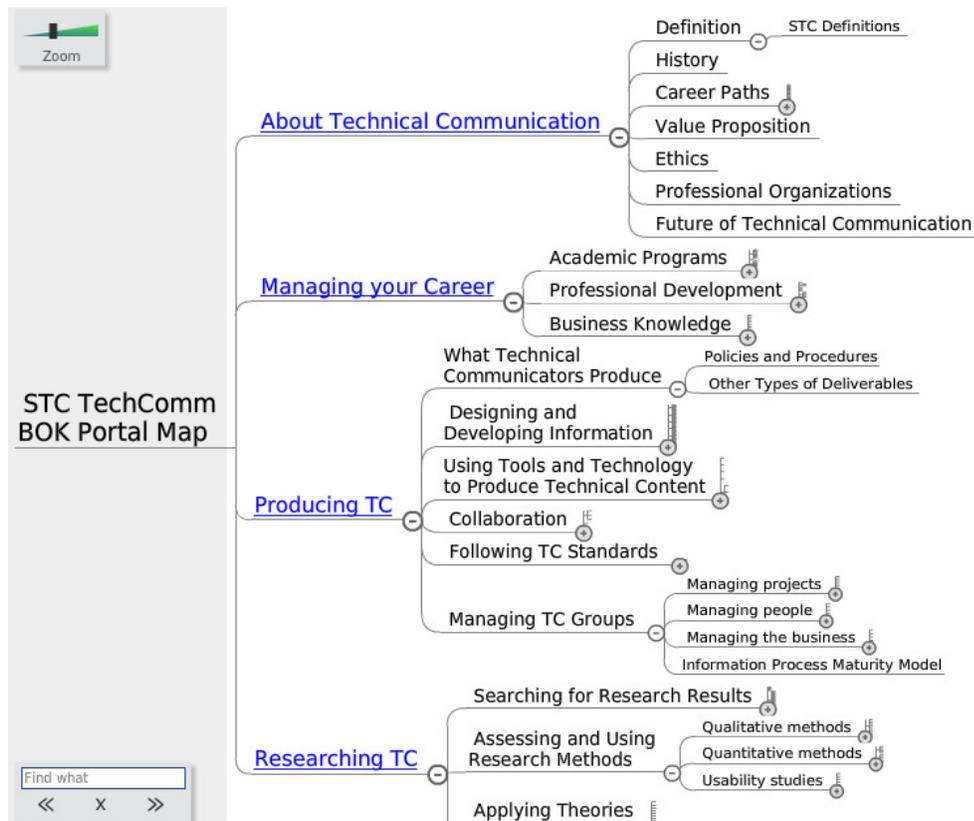
The STC is recognized throughout the industry. The organization works "with government and standards organizations to increase awareness and provide an accurate perception of technical communication." (About STC, Strategic Goals) One way STC seeks to meet this goal is through certification of practitioners. The set of competencies noted for this certification are listed in Figure 3.2.

#### **3.2 STC Body of Knowledge Competencies**

The selected professionalization standards were evaluated from an STC Technical Communication Body of Knowledge exercise that acts as the portal to a variety of areas of information for the organization. This set of competencies is listed in Figure 3.1.

As stated in the introduction to this portal, "The challenge of [our body of knowledge] is that it is dispersed: in our own publications such as Technical Communication and Intercom, in many important books, in the academic programs that we teach, and as our profession is so interdisciplinary, across other professional organizations in our field and the many closely related fields." (STC BOK)

"STC President Hillary Hart (2011) claimed the body of knowledge as a presidential goal for 2011–2012, describing it as framing out the multiplicity of skills, concepts, and knowledge—areas that enable technical communicators to contribute so effectively to business, government, and the public good." (Technical Communication Online, November 2011 special edition, Part 1)



**Figure 3.1** STC TechComm BOK Portal Map. The technical communication core competencies provided main topics for review. (STC BOK)



**Figure 3.2** STC Areas of Practice for Certification. Note the bold competencies that form the final layer for analysis.

| 3 STC Core Competencies | 9 STC Competencies    | TC Knowledge Portal Model          | NIIT PTC Core Competencies                    |
|-------------------------|-----------------------|------------------------------------|---|
|                         | Project Planning      | Management                         |   |
|                         | Project Analysis      | Business Knowledge                 |   |
|                         | Solution Design       |                                    | Problem Solving, Personal Traits, Work Skills |
|                         | Organizational Design |                                    |   |
| Written Communication   | Written Communication |                                    | Writing & Editing / Rhetoric                  |
| Visual Communication    | Visual Communication  |                                    | Document Design                               |
| Content Development     | Content Development   | Information Design and Development |   |
|                         | Content Management    |                                    |   |
|                         | Final Production      | Deliverables                       |   |
|                         |                       | Prof. Development                  |   |
|                         |                       | Academic Programs                  |   |
|                         |                       | About Tech Comm                    |   |
|                         |                       | Practice-Theory Release            | Specialized Expertise                         |
|                         |                       | Tool Knowledge                     | Technology                                    |
|                         |                       | Collaboration                      | Collaboration & Team Work                     |
|                         |                       | Standards                          |   |
|                         |                       |                                    | Interpersonal or Oral Communication           |

**Figure 3.3** Author Competencies Analysis. The figure shows the relationships the author discovered between the four layers of competencies (Figure 3.1 and 3.2 and Section 3.2.1). It shows color coding of like terms and concepts and the organization shown in completed Figure 3.4.

### **3.3 NJIT MS-PTC Programmatic Core Competencies**

The information a student learns can be expressed in groups of competencies. As such, "students must attain core competencies... [that] may help break the dissonance or "crossroads" noted by Hansen with regard to the clash of professional and academic cultures." (Benigni, 65)

#### **3.3.1 The MS-PTC Core Competencies**

The program core competencies have been established by workplace research and form the basis for the curriculum. The MS-PTC curriculum ensures graduates of the program are familiar with all aspects of the field.

There are eight core competencies deemed important for graduate students of the Professional and Technical Communication program:

- Writing and editing
- Document design
- Rhetoric
- Problem-solving and work skills
- Collaboration and teamwork
- Interpersonal and oral communication
- Specialized expertise
- Technology (Hundleby, Table 1)

These standards have been confirmed through self-study, statistical analysis, and program success over more than a decade. Surveying the success of these standards by

working alumni and evaluation against the STC-defined emerging professionalization standards allows NJIT to be very confident of the success of the MS-PTC program.

The eight core competencies have been used to formulate key areas of the MS-PTC electronic portfolio, discussed next.

### **3.3.2 The MS-PTC ePortfolio**

An important aspect of the MS-PTC program is a requirement for an electronic portfolio produced by each student. "The open-source, web-based portfolio assessment system yielded rates of agreement, reliability, and determination superior to the traditional paper-based portfolio assessment method. In addition, the system appears to be ideally suited to assess ePortfolios created to showcase student ability in digital environments." (Collins)

The practice allows "[s]tudents [to] acquire an understanding of professional communication issues, information technologies, and social media while developing a comprehensive ePortfolio that demonstrates their professional skills." (MS in Professional and Technical Communication) The production of an ePortfolio both cements learning and provides for an outlet of expression appropriate to future work. In fact, "the process authentically supports student learning, the most significant consequence for anyone assessing writing in an academic community." (Elliot, 27)

The ePortfolio is often based on coursework, final projects, research, and existing work in the field and internships. Each student is encouraged to showcase areas of expertise and interest through the capstone ePortfolio. The ePortfolio contents are evaluated against the MS-PTC core competencies.

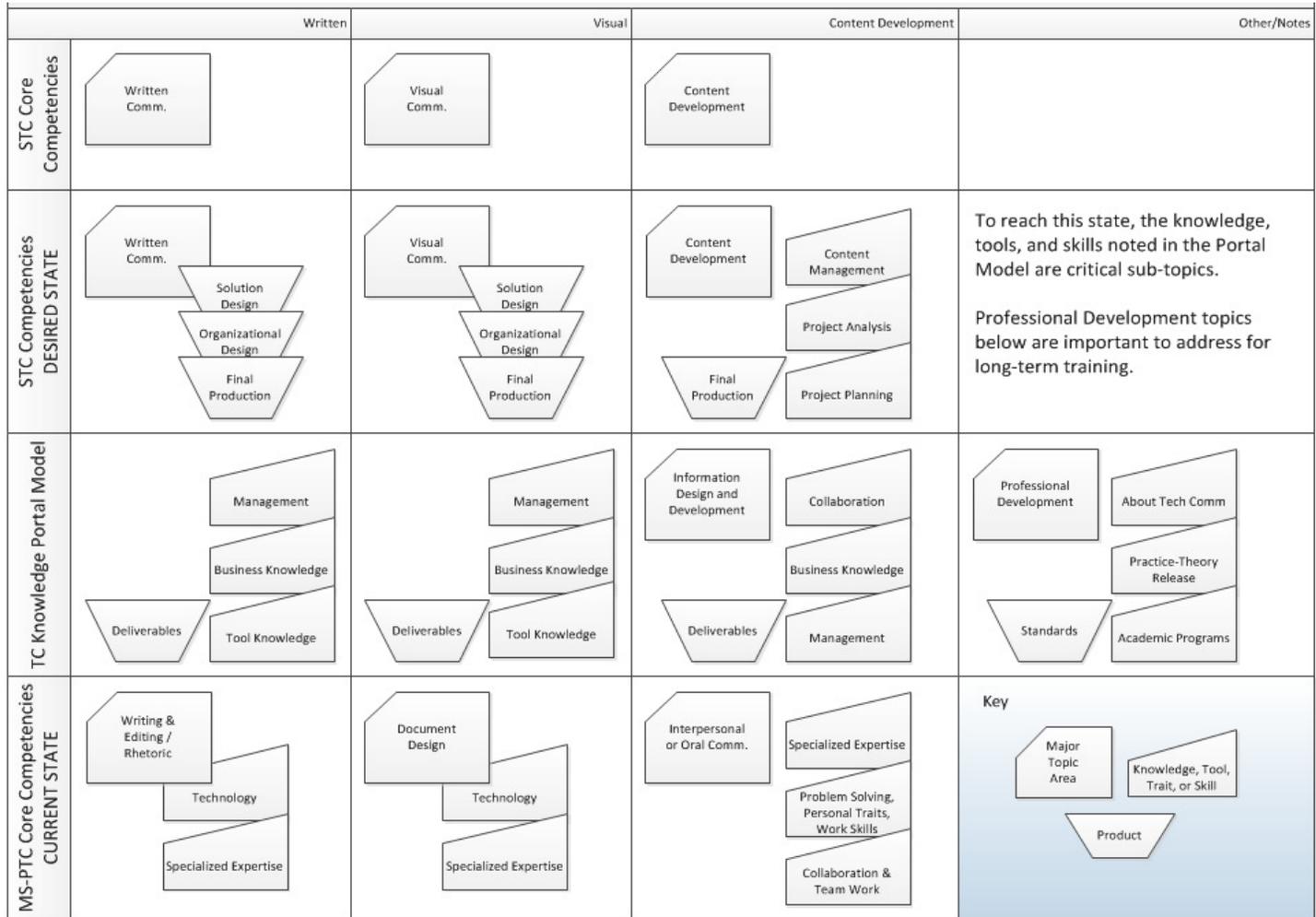
### **3.4 Mapping the Competencies Together**

The STC BOK and certification competencies can be mapped to the existing core competencies set for the MS-PTC program at NJIT.

The author has reviewed and compared four competencies/models including the MS-PTC Competencies, TC Knowledge Portal Model, the STC Certification Competencies, and the three key competencies that make up the STC competencies. The path to the STC competencies is presented in graphic form on the next page in Figure 3.4 that requires landscape format. The resulting mapping shows that all activities of Technical Communication can be divided into Written Communication, Visual Communication, Content Development, and other/notes. Three shapes have been used to differentiate major topic areas; key knowledge, tools, traits, and skills; and end products within these models and categories.

MS-PTC's Writing & Editing/Rhetoric competency is supported by both Technology and Specialized Expertise. The TC Knowledge Portal Model describes the Writing Communication category as consisting of Management, Business Knowledge, and Tool Knowledge to develop Deliverables. Finally, the STC Competency of Writing Communication is supported by Solution Design, Organizational Design, and the Final Production end products.

MS-PTC's Document Design competency is nearly identical to this except it includes and describes Visual Communication. MS-PTC's Interpersonal or Oral Communication competency is supported by Specialized Expertise; Problem Solving, Personal Traits, and Work Skills; and Collaboration & Team Work that describes the Content Development category. The TC Knowledge Portal Model describes the Content



**Figure 3.4** Technical Communication Core Competency Mapping. This diagram maps the existing MS-PTC core competencies to both the TC Knowledge Portal Model and the STC Competencies that are the desired end state.

Development category as Information Design and Development that is supported by Collaboration, Business Knowledge, and Management to develop Deliverables. Finally, the STC Competency of Content Development is supported by Content Management, Project Analysis, and Project Planning to develop Final Production end products.

It is important to note that the TC Knowledge Portal Model contains key factors of Business Knowledge, Tool Knowledge, Management, and Collaboration (Specialized Expertise, Technology, and Problem Solving in MS-PTC terms). The Professional Development of the TC Knowledge Portal Model is critical to long-term maintenance and growth through Academic Programs, knowledge of Technical Communication, and Practice-Theory Release supporting Standards.

## **CHAPTER 4**

### **SURVEY**

Chapter 4 discusses the survey instrument used to evaluate the efficacy of the programmatic and professionalization standards detailed in Chapters 2 and 3.

#### **4.1 Survey Audience**

The Alumni Association of NJIT was contacted to request access to an email list of the potential participants of the MS-PTC program, the graduates of the program. This request was kindly granted. In addition, calls for participation were put out in a variety of social media including FaceBook, Twitter, and LinkedIn where these graduates were expected to participate.

Every attempt was made to elicit responses from as many graduate years as possible from the beginning of the program to today. Appeals went out requesting assistance from FaceBook and LinkedIn groups specific to MS-PTC, alumni, and NJIT.

#### **4.2 Survey Questions and Their Analysis**

The complete survey is provided in Appendix B. The survey was developed using free software at SurveyExpressions.com. This tool allows for unlimited questions and respondents. The NJIT Institutional Review Board (IRB) reviewed and approved the survey according to the standards set for research at the university.

### **4.2.1 Screening Questions**

Screening questions are intended to ensure the best subjects take the survey and that unintended participants can be removed without including or increasing bias.

For the purposes of this survey, it is important to validate that the participants are NJIT MS-PTC graduates. The next question asks the participant to select the year of graduation. The program was begun in 1994, so the earliest expected graduation date was 1996. Participants' job-related questions also act as screening for those areas that rely on evaluating job needs.

### **4.2.2 Questions Looking Backward**

The next set of questions look at how well the participants feel the program supported them in their first post-graduation job.

These questions measure satisfaction with the programmatic standards and whether skills were not met by the program. Each respondent was asked about their first post-graduation job and what type of job it was. Respondents selected from a list of the Bureau of Labor Statistics (BLS) Standard Occupational Classifications (SOCs) as of 2010.

### **4.2.3 Questions Looking Forward**

This set of questions validates the emerging professionalization standards and how effective they may be in satisfying the needs of the workforce.

These questions are designed to use the same thresholds used in the former set of questions. The same BLS SOCs were available for selection. Respondents with more years of experience should be more heavily weighted in these questions.

## CHAPTER 5

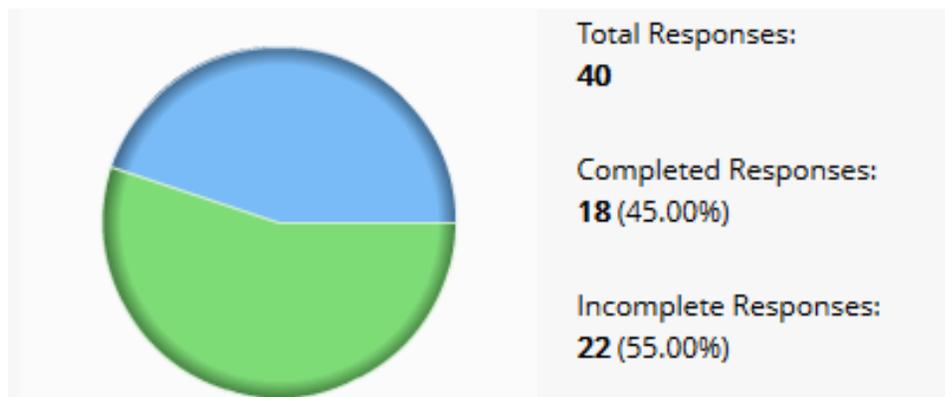
### RESULTS

All results in Chapter 5 are from the completed survey, "Mapping MS-PTC Programmatic Core Competencies to Emerging Professionalization Standards: Are Our Students Fully Prepared?" hosted on SurveyExpression.com from October 14 through November 1, 2013.

#### 5.1 Respondents

The total number of responses received from the survey was forty (40). Of those, eighteen (18) were complete. Due to the limited response, partial response sets to the survey were used. Duplicate responses (based on IP address) were removed.

Two sets of answers from a duplicate respondent were similar but not the same; the less complete set of answers was removed and not considered. One (1) respondent was eliminated through the screening questions (a graduate certificate, taking many of the same courses, but has not graduated from the MS-PTC program).



**Figure 5.1** Number of Respondents. This figure shows 18 complete responses and 22 incomplete responses.

Responses represent eleven (11) of the last fourteen (14) years (refer to Table 5.1 for the number of respondents within each year). No responses are from the first years of the program. The author has assumed that no graduate existed until the third year of the program's existence (1996). All responses are considered for analysis whether or not later responses are complete.

**Table 5.1** Graduation Years of Respondents

| <b>Year</b> | <b>Number of Respondents</b> |
|-------------|------------------------------|
| 1996        | 0                            |
| 1997        | 0                            |
| 1998        | 0                            |
| 1999        | 0                            |
| <b>2000</b> | <b>1</b>                     |
| 2001        | 0                            |
| 2002        | 0                            |
| <b>2003</b> | <b>2</b>                     |
| <b>2004</b> | <b>1</b>                     |
| <b>2005</b> | <b>1</b>                     |
| <b>2006</b> | <b>3</b>                     |
| 2007        | 0                            |
| <b>2008</b> | <b>2</b>                     |
| <b>2009</b> | <b>5</b>                     |
| <b>2010</b> | <b>2</b>                     |
| <b>2011</b> | <b>1</b>                     |
| <b>2012</b> | <b>2</b>                     |
| <b>2013</b> | <b>1</b>                     |

## 5.2 Numeric Responses

The following data is in numeric form.

**Table 5.2** Length of Work in Technical Communication

| <b>Years worked in Tech Comm</b> | <b>Years</b> |
|----------------------------------|--------------|
| I have not worked in tech comm   | 3            |
| less than 1 year                 | 1            |
| 1-5 years                        | 2            |
| 6-9 years                        | 7            |
| 10-14 years                      | 5            |
| 15 or more years                 | 5            |

Some respondents noted they did not work in the field of technical communication but selected SOCs that could be argued as both technical and communications-related.

Table 5.3 includes a weighted calculation (between 1 and 4) favoring topics in technical communication. The only categories included were selected from available occupations from Table E.2.

**Table 5.3** Occupations of Respondents Today

| <b>BLS Occupational Category</b>                                   | <b>Respondents</b> | <b>Weight</b> | <b>Final</b> |
|--|--------------------|---------------|--------------|
| 11-0000 Management Occupations                                     | 4                  | 2             | <b>8</b>     |
| 11-2011 Advertising and Promotions Managers                        | 1                  | 2             | <b>2</b>     |
| 11-2021 Marketing Managers   | 1                  | 2             | <b>2</b>     |
| 11-9033 Education Administrators, Postsecondary                    | 1                  | 2             | <b>2</b>     |
| 15-0000 Computer and Mathematical Occupations                      | 1                  | 1             | <b>1</b>     |
| 19-0000 Life, Physical, and Social Science Occupations             | 1                  | 1             | <b>1</b>     |
| 25-1122 Communications Teachers, Postsecondary                     | 1                  | 4             | <b>4</b>     |
| 27-0000 Arts, Design, Entertainment, Sports, and Media Occupations | 1                  | 2             | <b>2</b>     |
| 27-3031 Public Relations Specialists                               | 1                  | 2             | <b>2</b>     |
| 27-3041 Editors  | 2                  | 4             | <b>8</b>     |
| 27-3042 Technical Writers  | 4                  | 4             | <b>16</b>    |
| 43-9031 Desktop Publishers   | 1                  | 2             | <b>2</b>     |
| 51-0000 Production Occupations                                     | 1                  | 1             | <b>1</b>     |

Table 5.4 shows that very few respondents claim membership in a professional organization or association. Of those who noted membership, the STC is most common.

**Table 5.4** Memberships

| <b>Association or Organization</b>                 | <b>Number of Respondents</b> |
|--|------------------------------|
| STC  | 5                            |
| eLearning Guild                                    | 1                            |
| Technical Communicators Association of New Zealand | 1                            |
| None   | 15                           |

Table 5.5 and 5.6 includes a sole respondent noted as an outlier in the "Looking Back" questions. The individual response set was additionally analyzed and textual responses may explain the attitude shown in these responses. Refer to responses marked with an asterisk in Tables 5.9 through 5.11 for this additional information.

**Table 5.5** Preparation for First Post-Graduation Job

| <b>How Prepared for first job</b>           | <b>Number of Respondents</b> |
|---|------------------------------|
| Prepared, Well Prepared, Very Well Prepared | 17                           |
| Not Well Prepared                           | 1                            |

**Table 5.6** MS-PTC Remains Important to Work Today

| <b>Remains Important</b>                   | <b>Number of Respondents</b> |
|--|------------------------------|
| Agree, Strongly Agree, Very Strongly Agree | 17                           |
| Strongly Disagree                          | 1                            |

Table 5.7 indicates at least 4 textual responses should be expected (respondents who answered "Yes" to the question). The textual responses are found in Table 5.10.

**Table 5.7** Post-graduation Tasks Not Prepared For

|     | <b>Number of Respondents</b> |
|-----|------------------------------|
| Yes | 4                            |
| No  | 13                           |

Table 5.8 shows the MS-PTC core competencies fit into the STC certification competencies' three main topics by the respondents. The percentage shows the percentage of respondents who believe these topics belong in each category. All three categories have been combined into this one table and the final rows indicate topics that were not as popular.

**Table 5.8** MS-PTC Core Competencies Fit into STC Certification Competencies

| <b># of Responses</b> | <b>Topics</b>   |
|-----------------------|---|
| 50% and above         | <b>Written:</b> Document Design, Specialized Expertise, Writing and Editing, Rhetoric |
| 36-49%                | <b>Written:</b> Interpersonal, Problem Solving, Technology                            |
| 50% and above         | <b>Visual:</b> Document Design, Problem Solving, Specialized Expertise, Technology    |
| 36-49%                | <b>Visual:</b> None   |
| 50% and above         | <b>Content Dev:</b> Collaboration   |
| 36-49%                | <b>Content Dev:</b> Document Design   |
| 2 votes to remove     | Team Work, Personal Traits  |
| 1 vote to remove      | Collaboration, Interpersonal, Rhetoric  |

**Table 5.9** Evaluation of MS-PTC Core Competencies

| <b>Collab.</b>   | <b>Team Work</b> | <b>Doc. Design</b> | <b>Interpers. Comm.</b> | <b>Oral Comm.</b> | <b>Problem Solving</b> | <b>Personal Traits</b> | <b>Work Skills</b> | <b>Special Expertise</b> | <b>Tech.</b>     | <b>Writing and Editing</b> | <b>Rhetoric</b> |
|------------------|------------------|--------------------|-------------------------|-------------------|------------------------|------------------------|--------------------|--------------------------|------------------|----------------------------|-----------------|
| 4 at 1           | 5 at 1           | 4 at 1             | 6 at 1                  | 5 at 1            | 8 at 1                 | 5 at 1                 | 7 at 1             | 5 at 1                   | 3 at 1           | 9 at 1                     | 2 at 1          |
| 5 at 2           | 4 at 2           | 5 at 2             | 4 at 2                  | 7 at 2            | 3 at 2                 | 5 at 2                 | 4 at 2             | 4 at 2                   | 5 at 2           | 5 at 2                     | 4 at 2          |
| 5 at 3           | 5 at 3           | 3 at 3             | 5 at 3                  | 3 at 3            | 3 at 3                 | 5 at 3                 | 4 at 3             | 4 at 3                   | 5 at 3           | 0 at 3                     | 5 at 3          |
| 2 at 4           | 2 at 4           | 2 at 4             | 1 at 4                  | 2 at 4            | 1 at 4                 | 1 at 4                 | 1 at 4             | 2 at 4                   | 2 at 4           | 1 at 4                     | 4 at 4          |
| 1 at 5           | 1 at 5           | 3 at 5             | 1 at 5                  | 0 at 5            | 2 at 5                 | 1 at 5                 | 1 at 5             | 2 at 5                   | 1 at 5           | 2 at 5                     | 2 at 5          |
| <b>10 at 2-3</b> | <b>9 at 1-2</b>  | <b>9 at 1-2</b>    | <b>10 at 1-2</b>        | <b>12 at 1-2</b>  | <b>11 at 1-2</b>       | <b>10 at 1-2</b>       | <b>11 at 1-2</b>   | <b>9 at 1-2</b>          | <b>10 at 2-3</b> | <b>14 at 1-2</b>           | <b>9 at 2-3</b> |

These figures represent the number of respondents who viewed the competencies as most important (1) to least important (5).

The responses were additionally grouped in pairs for further analysis.

**Table 5.10** Evaluation of MS-PTC Core Competencies to Work Today

| <b>Collab.</b>   | <b>Team Work</b> | <b>Doc. Design</b> | <b>Interpers. Comm.</b> | <b>Oral Comm.</b> | <b>Problem Solving</b> | <b>Personal Traits</b> | <b>Work Skills</b> | <b>Special Expertise</b> | <b>Tech.</b>     | <b>Writing and Editing</b> | <b>Rhetoric</b> |
|------------------|------------------|--------------------|-------------------------|-------------------|------------------------|------------------------|--------------------|--------------------------|------------------|----------------------------|-----------------|
| 6 at 1           | 6 at 1           | 6 at 1             | 8 at 1                  | 5 at 1            | 6 at 1                 | 5 at 1                 | 8 at 1             | 9 at 1                   | 7 at 1           | 9 at 1                     | 6 at 1          |
| 4 at 2           | 4 at 2           | 1 at 2             | 3 at 2                  | 6 at 2            | 6 at 2                 | 7 at 2                 | 4 at 2             | 4 at 2                   | 5 at 2           | 5 at 2                     | 2 at 2          |
| 2 at 3           | 2 at 3           | 3 at 3             | 3 at 3                  | 1 at 3            | 2 at 3                 | 2 at 3                 | 2 at 3             | 3 at 3                   | 2 at 3           | 0 at 3                     | 4 at 3          |
| 4 at 4           | 4 at 4           | 5 at 4             | 2 at 4                  | 5 at 4            | 3 at 4                 | 2 at 4                 | 1 at 4             | 1 at 4                   | 2 at 4           | 1 at 4                     | 2 at 4          |
| 1 at 5           | 1 at 5           | 2 at 5             | 1 at 5                  | 0 at 5            | 0 at 5                 | 1 at 5                 | 2 at 5             | 2 at 5                   | 1 at 5           | 2 at 5                     | 3 at 5          |
| <b>10 at 1-2</b> | <b>10 at 1-2</b> | <b>8 at 3-4</b>    | <b>11 at 1-2</b>        | <b>11 at 1-2</b>  | <b>12 at 1-2</b>       | <b>12 at 1-2</b>       | <b>12 at 1-2</b>   | <b>13 at 1-2</b>         | <b>12 at 1-2</b> | <b>14 at 1-2</b>           | <b>8 at 1-2</b> |

**Table 5.11** Evaluation of STC Core Competencies for New Graduates

| <b>Project Planning</b> | <b>Project Analysis</b> | <b>Solution Design</b> | <b>Organizational Design</b> | <b>Written Communication</b> | <b>Visual Communication</b> | <b>Content Development</b> | <b>Content Management</b> | <b>Final Production</b> |
|-------------------------|-------------------------|------------------------|------------------------------|------------------------------|-----------------------------|----------------------------|---------------------------|-------------------------|
| 8 at 1                  | 7 at 1                  | 6 at 1                 | 6 at 1                       | 9 at 1                       | 9 at 1                      | 10 at 1                    | 8 at 1                    | 6 at 1                  |
| 5 at 2                  | 6 at 2                  | 9 at 2                 | 8 at 2                       | 7 at 2                       | 7 at 2                      | 6 at 2                     | 7 at 2                    | 8 at 2                  |
| 5 at 3                  | 5 at 3                  | 3 at 3                 | 4 at 3                       | 0 at 3                       | 0 at 3                      | 0 at 3                     | 2 at 3                    | 3 at 3                  |
| 1 at 4                  | 0 at 4                  | 0 at 4                 | 1 at 4                       | 2 at 4                       | 2 at 4                      | 1 at 4                     | 1 at 4                    | 1 at 4                  |
| 0 at 5                  | 1 at 5                  | 1 at 5                 | 0 at 5                       | 1 at 5                       | 1 at 5                      | 2 at 5                     | 1 at 5                    | 1 at 5                  |
| <b>13 at 1-2</b>        | <b>13 at 1-2</b>        | <b>15 at 1-2</b>       | <b>14 at 1-2</b>             | <b>16 at 1-2</b>             | <b>16 at 1-2</b>            | <b>16 at 1-2</b>           | <b>15 at 1-2</b>          | <b>14 at 1-2</b>        |

**Table 5.12** Evaluation of STC Core Competencies for Work Today

| <b>Project Planning</b> | <b>Project Analysis</b> | <b>Solution Design</b> | <b>Organizational Design</b> | <b>Written Communication</b> | <b>Visual Communication</b> | <b>Content Development</b> | <b>Content Management</b> | <b>Final Production</b> |
|-------------------------|-------------------------|------------------------|------------------------------|------------------------------|-----------------------------|----------------------------|---------------------------|-------------------------|
| 7 at 1                  | 8 at 1                  | 7 at 1                 | 6 at 1                       | 11 at 1                      | 9 at 1                      | 10 at 1                    | 9 at 1                    | 7 at 1                  |
| 7 at 2                  | 4 at 2                  | 5 at 2                 | 8 at 2                       | 4 at 2                       | 5 at 2                      | 4 at 2                     | 3 at 2                    | 5 at 2                  |
| 3 at 3                  | 5 at 3                  | 4 at 3                 | 2 at 3                       | 1 at 3                       | 2 at 3                      | 2 at 3                     | 4 at 3                    | 2 at 3                  |
| 1 at 4                  | 1 at 4                  | 1 at 4                 | 2 at 4                       | 0 at 4                       | 1 at 4                      | 0 at 4                     | 0 at 4                    | 2 at 4                  |
| 0 at 5                  | 0 at 5                  | 1 at 5                 | 0 at 5                       | 2 at 5                       | 1 at 5                      | 2 at 5                     | 2 at 5                    | 2 at 5                  |
| <b>14 at 1-2</b>        | <b>12 at 1-2</b>        | <b>12 at 1-2</b>       | <b>14 at 1-2</b>             | <b>15 at 1-2</b>             | <b>14 at 1-2</b>            | <b>14 at 1-2</b>           | <b>12 at 1-2</b>          | <b>12 at 1-2</b>        |

### 5.3 Textual Responses

The following data are textual responses provided as qualitative responses. Only applicable responses are included.

**Table 5.13** Job Title Today

|   |
|---|
| Associate Director, Policy & Communications     |
| Business Analyst                                |
| Communications Strategist                       |
| Corporate Documentation Administrator           |
| Director of Education, (Museum)                 |
| Director of Social and Digital Media            |
| Grant Coordinator                               |
| * Instructor                                    |
| Junior Technical Writer/Administrator           |
| Marketing Director                              |
| Product Manager                                 |
| Research Specialist                             |
| Safety, Health and Environment Technical Writer |
| SAP Consultant/Business Analyst                 |
| Senior Project Manager/Editor                   |
| Supervisor Technical Support                    |
| Technical Editor                                |
| Technical Writer                                |
| Web Marketing Coordinator                       |
| Web Publishing Consultant                       |

Table 5.14 expands on Table 5.7. More respondents indicated information here than was expected by the four (4) "Yes" responses from the "Did you feel unprepared for any tasks" question. The lack of "Yes" combined with this table may indicate that students continue to feel well prepared but feel that these topics are lacking but also important to include into the curriculum. Some students may also be reflecting what they have learned in the field since graduation or tools that are much newer and simply not available when they attended.

The previously noted negative respondent (refer to the asterisk below) appears to indicate that courses have either been updated in the interim period or that courses selected were less hands-on. The author's experience and those of the other respondents seem to contradict this one respondent. The author is particularly struck by indications that there was no "practical" experience. The respondent appears to be very focused on instructional design.

**Table 5.14** MS-PTC Tasks Respondents Felt Unprepared For.

|   |
|---|
| Many of the tasks in my position I had gained experience in prior to undertaking the coursework. Specific skills/competencies that are important to my job but not deeply covered in the MSPTC are: Video Production Audio Production Social Media in Practice and for Business rather than theory or 'community' based Understanding/Practicing communication delivery through a storytelling model  |
| My current job does not require additional topics. However, learning Technical Communication tools like RoboHelp or MadCap would have probably helped in my search for a job; it would've broadened my options and it is also a good tool to know as we continue to move away from print materials.   |
| Despite a visual design course, I could not efficiently create or source graphics for marketing publications.   |
| toolkit skills such as FrameMaker, full MS suite, HTML, SQL, basic s/w coding   |
| * These questions don't really allow me to communicate my professional experience. I was largely prepared for my post-graduation work, but it wasn't because of my graduate education. The graduate program did not assign practical, real-world instructional design projects. We had to read a lot of books and handouts that had nothing to do with writing documentation and developing training and other technical instruction at technology firms. |
| Designing and creating instructional software videos. I was a bit daunted by the task but I told myself that I went to grad school to gain the skills I needed to handle such tasks, I made my best effort and my employer was so happy with the result that I was asked to create more videos.   |

The responses above are of two kinds: either tools or techniques. Several respondents note specific tools while others suggest types of content they felt unfamiliar with upon graduation (video, graphics, and audio)

Table 5.15 provides input to STC on the topics they stress. As many respondents are not members of the STC these appear to be entirely unbiased.

**Table 5.15** STC Tasks Respondents Feel are Incomplete

|  |
|--|
| Using a storytelling model to expand the range of audiences that can be communicated with easily and quickly. Understanding that new communication technologies are not always simply more outlets for 'broadcast' communication but there are subtle and important differences between things such as Facebook, Twitter, and LinkedIN and they need to be utilized differently to maximize return on communication effort.  |
| Editing and Proofreading skills; Research  |
| Some of the topics need to dig deeper than they already do, such as deeper into DITA and translation when it comes to content development and content management. Content analytics, marketing communications, social media analytics and more topics on mobile content need to be addressed as well. There are topics given in the program, but they aren't offered frequently enough. I have never seen Health Communications being taught during my tenure, and I had to take the Proposal Writing class a year after I had already graduated. There is enough variety of electives, but they need to ALL be offered more often. I know that having Health Communications under my belt would be a huge boon for my resume, as I am surrounded by pharmaceutical and medical companies where I live, but I can't apply for any of them because I don't have the background or training. |
| Check the job requirements that you find in DICE or other technical jobs portals. Technical communication jobs now require TECHNICAL skills comparable to an entry-level s/w engineer. Technical communication professionals should have experience working directly with engineers.   |
| Familiarizing students with software and web tools that are widely used in industry  |
| * How technical professionals learn.   |
| Presentation skills  |
| Expert knowledge in relevant software tools  |

Techniques for making the most of social media seems to be on most respondent's minds (primarily through tools, theory, and analysis). Some respondents indicate specific tools or skills needed.

## **CHAPTER 6**

### **ANALYSIS**

The employment of new graduates is paramount for the success of any graduate program. "Students were also surprised by the differences in collegiate and workplace cultures." (Barnett, 281)

Why are students surprised? Is this a failure of the education, of the preparation for work? "The impact of the expectation-reality gap has important and potentially destructive implications for both the new employee and the employer." (Barnett, 272) Ball articulates the goal that "[i]deally, graduates should be able to articulate the value of their educational experiences and be aware of the transferability of the valuable processes they have learned: the integration of research, visual and critical thinking, technical skill, manufacture, creativity and the development of personal identity - reflecting an holistic educational experience." (15)

#### **6.1 MS-PTC Programmatic Core Analysis**

Alumni of the NJIT MS-PTC program are largely well satisfied with the core competencies of the program. Tables 5.9 and 5.10 clearly show that Team Work, Interpersonal Communication, Oral Communication, Problem Solving, Personal Traits, Work Skills, Specialized Expertise, and Writing and Editing topics are confirmed for work following graduation that continues through to work today. Collaboration, Technology, and Rhetoric were listed as less important following graduation but each gained in importance for work performed today. Only Document Design lost importance following graduation.

It is important to note that a single respondent graded all of these topics poorly. Further analysis of this individual's responses indicates a consistent poor opinion of the field in high contrast to others in the same graduate year and general occupation. Indicators in the textual responses provided by this respondent bring to light two important considerations. First, as a 2009 graduate, the student claims no "practical" assignments were conducted. A review of the available courses ending in that year might show changes in curriculum that will have already changed this paradigm. Particular courses during these years may also have been less focused on the practical work conducted today. Secondly, the lacks noted and a hint at job needs indicate the individual is responsible for training others and that "developing training and other technical instruction" was needed.

Tables 5.14 and 5.15 indicate that a few tools and activities such as video production are both desired and missed in the current core competencies of both the program and STC. Alumni noted that periodic review of employment trends in tools and skills would suggest updates to program segments. Due to the fluid nature of the field, it may prove most useful to conduct this review annually to address the high volatility of social media practices.

## **6.2 STC Professionalization Competencies and Mapping**

Alumni of the NJIT MS-PTC program appear impressed with the STC core competencies found in Tables 5.11 and 5.12, rating all topics very high. In all cases, a majority of respondents rated the usefulness of all topics at either a 1 or 2, the highest scores.

Table 5.8 shows that initial mapping provided in Figure 3.4 has also been confirmed by the respondents. Three respondents indicate topics that reflect the earlier

lower scores for Collaboration and Rhetoric for removal from the lists altogether. The topics of Interpersonal Communication, Team Work, and Personal Traits also received the same response when looking to insert these programmatic competencies into the professionalization standards. The author posits that definition and use of the terms and exercises supporting Collaboration, Interpersonal Communication, Team Work, Personal Traits, and Rhetoric could be improved. In particular, the differentiation between Team Work and Collaboration and the use of Rhetoric seem to confuse even practitioners.

## CHAPTER 7

### CONCLUSIONS

"With declining budgets and increased pressure to deliver a prepared and hireable workforce, universities must look externally for resources to assist with recruiting and retaining top students." (Benigni, 54)

"More so than other types of graduate degrees, technical communication graduate programs attract a diverse set of students with an equally diverse set of reasons for pursuing the degree." (Meloncon, 137)

Figure E.1 and Table E.1 give evidence to the notion that Technical Communication practitioners are hired into a wide variety of fields. In today's economy, being able to prepare students for this breadth and depth of knowledge goes a long way to recruiting and retaining top students.

The NJIT MS-PTC program appears to be succeeding in educating students in transition realities often lacking in other programs, as noted by Ball, that "although higher education has the potential to develop capable, flexible, adaptable, lateral-thinking and creative individuals, students do not necessarily recognize these positive outcomes, and it is abundantly clear that appropriate preparation for the transition and the realities need to be addressed." (17) The alumni of the NJIT MS-PTC program are working in the field or related fields and can clearly see the value in both the PTC core competencies but also the STC professionalization standards.

The faculty of the MS-PTC program show that they are clearly invested in the importance of the education to work transfer supported by these core competencies by their own published works. The literature search (Appendix G) and Works Cited of this

thesis include six (6) journal articles written by the faculty of the program specifically on these topics. The founder of the program, Coppola, indicates the "[s]elf-studies produced as part of the accountability tradition often yield information on courses taught, grades earned, student demographics, faculty qualifications—all serving as important summative evidence used to provide the accrediting agency snapshots of educational contexts." (A Technology Transfer Model, 459) Research on portfolio assessment and core competencies performed by the faculty provide valuable contributions to the entire field as well as the students.

It is also clear from the depth of research available that it is highly important to successes and growth in the industry to continue to periodically evaluate available programs. Moving forward, NJIT's MS-PTC program should assess tools and emerging practices often (possibly annually) for course updates; host the planned courses frequently enough to ensure student specialization is supported; define and reinforce the importance of Collaboration, Interpersonal Communication, Team Work, Personal Traits, and Rhetoric; and work with external partners to evaluate the job market in advisory board and internship capacities. As Benigni notes, "companies need prepared graduates with experience in dealing with complicated business and social situations." (65)

Yes, the NJIT MS-PTC students are prepared.

**APPENDIX A**

**ORIGINAL QUESTIONS**

The following are the original questions the author wanted to answer by performing research. These draft research questions were used to formulate the research tool, the survey. Each question is appended with some specific answers provided by the survey data. The author notes that not all questions have been addressed by the survey or results and some answers may still not be available.

1. Who are our participants in each population (e.g., how many recent graduates (1-5 years), how many mid-level graduates (6-10), etc.)?

| <b>Categories</b> | <b>Actual # of Responses</b> |
|-------------------|------------------------------|
| less than 1 year  | 1                            |
| 1-5 years         | 2                            |
| 6-9 years         | 7                            |
| 10-14 years       | 5                            |
| 15 or more years  | 5                            |

2. In each population, who was employed in Tech Comm following graduation?

| <b>years</b> | <b>job title following graduation (all who answered both questions)</b> |
|--------------|---|
| Less than 1  | 27-3042 Technical Writers   |
| 1-5          | 11-2021 Marketing Managers  |
| 1-5          | 27-3041 Editors   |
| 6-9          | 11-2021 Marketing Managers  |
| 6-9          | 13-1151 Training and Development Specialists                            |
| 6-9          | 27-1024 Graphic Designers   |
| 6-9          | 27-3041 Editors   |
| 6-9          | 27-3042 Technical Writers   |
| 6-9          | 41-0000 Sales and Related Occupations                                   |
| 10-14        | 19-0000 Life, Physical, and Social Science Occupations                  |
| 10-14        | 27-0000 Arts, Design, Entertainment, Sports, and Media Occupations      |
| 10-14        | 27-3041 Editors   |
| 10-14        | 27-3042 Technical Writers   |
| 10-14        | 27-3042 Technical Writers   |
| 15+          | 11-0000 Management Occupations  |
| 15+          | 11-2031 Public Relations and Fundraising Managers                       |
| 15+          | 27-3042 Technical Writers   |
| 15+          | 43-9031 Desktop Publishers  |

3. In each population, who is currently employed in Tech Comm?

| <b>years</b> | <b>tech comm today?</b> | <b>job you have today?</b>                      |
|--------------|-------------------------|---|
| Less than 1  | Yes                     | 27-3042 Technical Writers                       |
| 1-5          | Yes                     | 11-2021 Marketing Managers                      |
| 1-5          | <b>No</b>               | 15-0000 Computer and Mathematical Occupations   |
| 6-9          | Yes                     | 27-3041 Editors                                 |
| 6-9          | <b>No</b>               | 51-0000 Production Occupations                  |
| 6-9          | <b>No</b>               | 11-0000 Management Occupations                  |
| 6-9          | Yes                     | 11-0000 Management Occupations                  |
| 6-9          | Yes                     | 11-0000 Management Occupations                  |
| 6-9          | Yes                     | 27-3042 Technical Writers                       |
| 10-14        | Yes                     | 11-0000 Management Occupations                  |
| 10-14        | Yes                     | 27-3042 Technical Writers                       |
| 10-14        | Yes                     | 11-9033 Education Administrators, Postsecondary |
| 10-14        | Yes                     | 11-2011 Advertising and Promotions Managers     |
| 10-14        | Yes                     | 27-3042 Technical Writers                       |
| 15+          | Yes                     | 43-9031 Desktop Publishers                      |
| 15+          | Yes                     | 25-1122 Communications Teachers, Postsecondary  |
| 15+          | Yes                     | 27-3031 Public Relations Specialists            |
| 15+          | <b>No</b>               | 27-3041 Editors                                 |

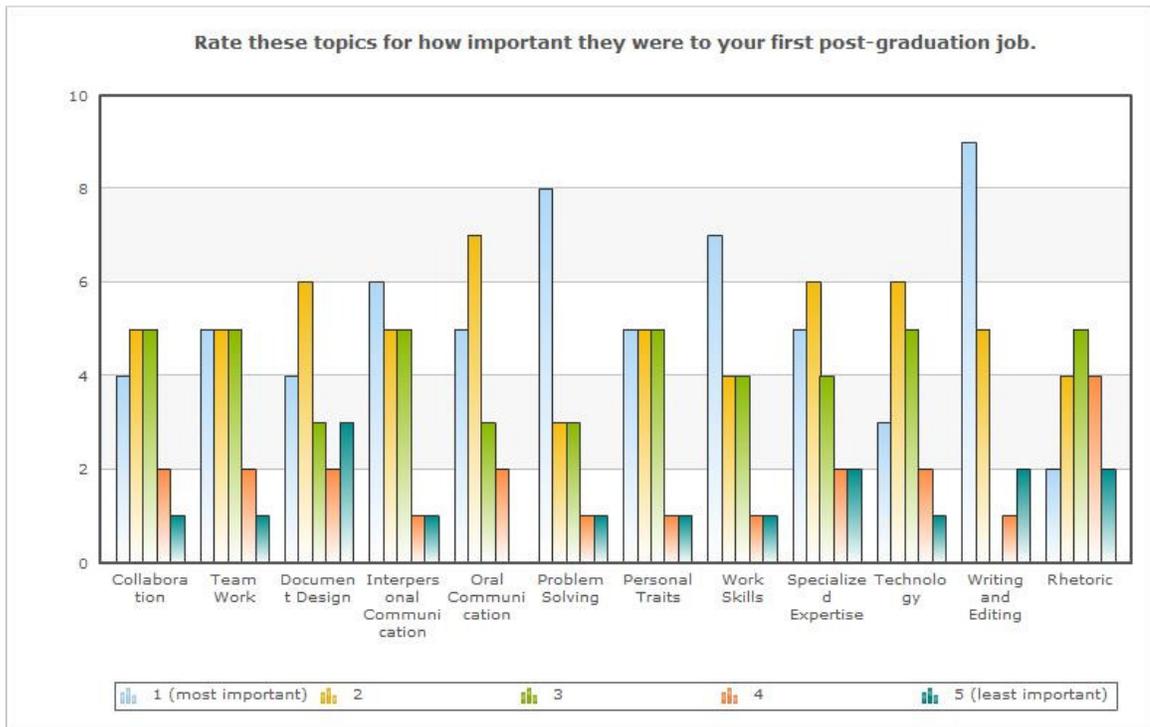
4. In each sub-population (e.g. different workplace sectors by BLS Occupation; different disciplines),
- Which felt more prepared for work tasks (NJIT Core Competencies) assigned?
  - Which felt less prepared for work tasks assigned?

| <b>years in tech comm?</b> | <b>job today</b>   | <b>How prepared for your first job?</b> |
|----------------------------|--|---|
| 1-5                        | 11-2021 Marketing Managers   | Well Prepared                           |
| 6-9                        | 11-0000 Management Occupations                                     | x                                       |
| 6-9                        | 11-0000 Management Occupations                                     | Very Well Prepared                      |
| 6-9                        | 11-0000 Management Occupations                                     | Very Well Prepared                      |
| 10-14                      | 11-0000 Management Occupations                                     | Prepared                                |
| 10-14                      | 11-2011 Advertising and Promotions Managers                        | Very Well Prepared                      |
| 10-14                      | 11-9033 Education Administrators, Postsecondary                    | Very Well Prepared                      |
| not worked in tech comm    | 19-0000 Life, Physical, and Social Science Occupations             | Well Prepared                           |
| 1-5                        | 15-0000 Computer and Mathematical Occupations                      | x                                       |
| 15+                        | 25-1122 Communications Teachers, Postsecondary                     | Prepared                                |
| not worked in tech comm    | 27-0000 Arts, Design, Entertainment, Sports, and Media Occupations | Prepared                                |
| Less than 1                | 27-3042 Technical Writers  | Well Prepared                           |
| 6-9                        | 27-3041 Editors  | Prepared                                |
| 6-9                        | 27-3042 Technical Writers  | Well Prepared                           |
| 10-14                      | 27-3042 Technical Writers  | Prepared                                |
| <b>10-14</b>               | <b>27-3042 Technical Writers</b>                                   | <b>Not Well Prepared</b>                |
| 15+                        | 27-3031 Public Relations Specialists                               | Well Prepared                           |
| 15+                        | 27-3041 Editors  | Well Prepared                           |
| 15+                        | 43-9031 Desktop Publishers   | Well Prepared                           |

5. In each sub-population (e.g. different workplace sectors; different disciplines),
- Which feel more prepared for work tasks assigned today?
  - Which feel less prepared for work tasks assigned today?

**Refer to Question 4 responses.**

6. Which topic or topics (NJIT Core Competencies) did populations and/or sub-populations rate highest for work?



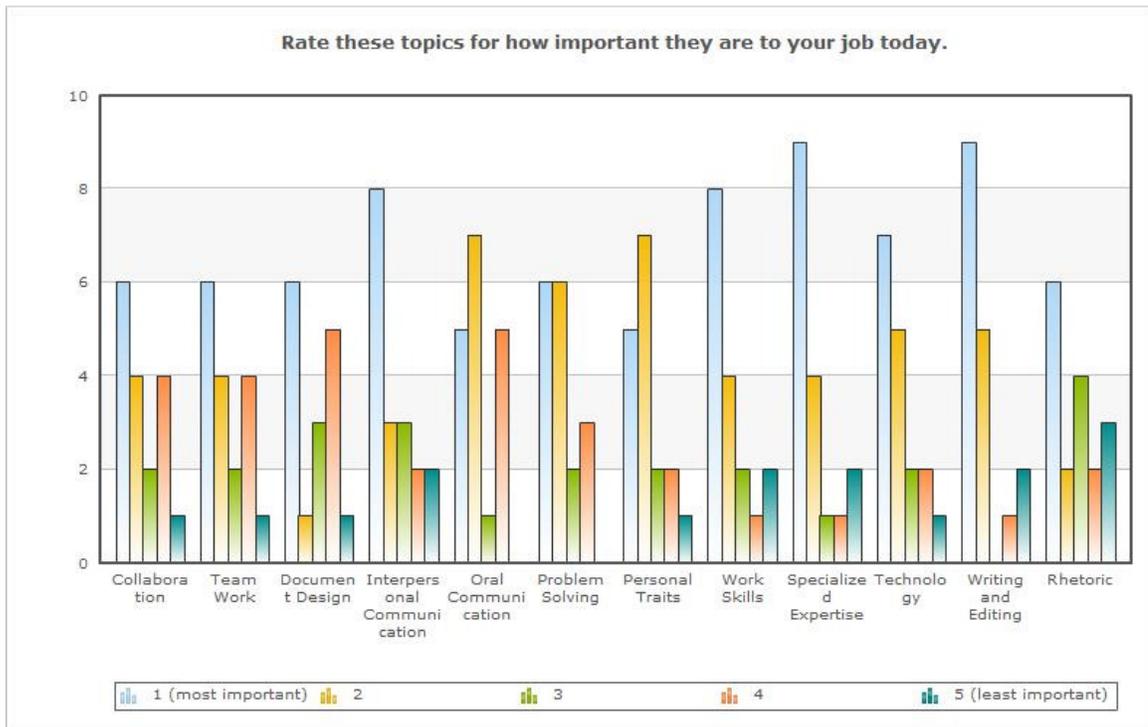
Writing and Editing is the topic rated highest most often.

7. Which topic or topics did populations and/or sub-populations rate lowest?

Rhetoric is the topic rated lowest most often.

|   |
|---|
| 2-votes to remove: Team Work, Personal Traits                 |
| 1-vote to remove: Collaboration, Interpersonal Comm, Rhetoric |

8. Which topic or topics did populations and/or sub-populations rate highest for subsequent years of work (work today)?



Writing and Editing with Specialized Expertise closely following.

9. Which topic or topics did populations and/or sub-populations rate lowest for subsequent years of work?

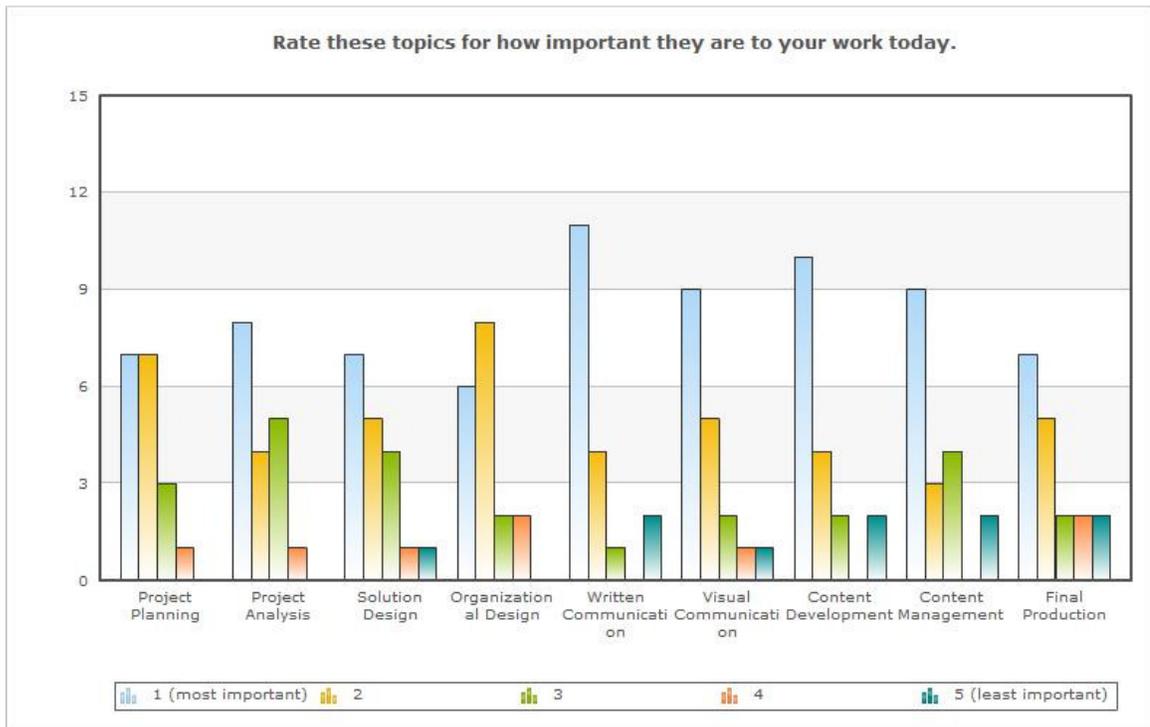
Oral Communication with Personal Traits closely following.

10. Is there a difference between key topics in the first years of work compared to subsequent years of work?

|                             | Grad      | Now       |
|-----------------------------|-----------|-----------|
| Collaboration               | 10 at 2-3 | 10 at 1-2 |
| Team Work                   | 9 at 1-2  | 10 at 1-2 |
| Document Design             | 9 at 1-2  | 8 at 3-4  |
| Interpersonal Communication | 10 at 1-2 | 11 at 1-2 |
| Oral Communication          | 12 at 1-2 | 11 at 1-2 |
| Problem Solving             | 11 at 1-2 | 12 at 1-2 |
| Personal Traits             | 10 at 1-2 | 12 at 1-2 |
| Work Skills                 | 11 at 1-2 | 12 at 1-2 |
| Specialized Expertise       | 9 at 1-2  | 13 at 1-2 |
| Technology                  | 10 at 2-3 | 12 at 1-2 |
| Writing and Editing         | 14 at 1-2 | 14 at 1-2 |
| Rhetoric                    | 9 at 2-3  | 8 at 1-2  |

Yes, Collaboration, Technology, and Rhetoric become more important in later years while Document design appears to lose importance.

11. Which topic or topics (Emerging Competencies) did populations and/or sub-populations rate highest for current work?



Written Communication

12. Which topic or topics did populations and/or sub-populations rate lowest for current work?

Organizational Design closely followed by Final Production

**APPENDIX B**  
**SURVEY QUESTIONS**

The following pages contain screenshots of the entire live survey.



## Mapping MS-PTC Programmatic Core Competencies to Emerging Professionalization Standards: Are Our Students Fully Prepared?

Answers marked with an asterisk ( \* ) are required.

### OVERVIEW

Please read the following carefully.

**RESEARCH STUDY:** You have been asked to participate in a research study under the direction of Dr. Nancy W. Coppola, faculty, Dr. Norbert Elliot, faculty, and Faye Newsham, student.

**PURPOSE:** Thank you for taking the time to complete this survey that explores the preparation students of the Professional and Technical Communication (PTC) program receive at NJIT and what skills defined in emerging professional standards for technical communication are important on the job. This survey is being conducted by a graduate student at New Jersey Institute of Technology in the PTC Masters program. Responses from this survey will be used to validate the successes of the NJIT MS-PTC programs in preparing students for working in the fields of Technical Communication and validate emerging professionalization standards.

**DURATION:** Your participation in this survey is entirely optional and voluntary. The survey should take about 15 minutes to complete.

**PROCEDURES:** All responses will be kept confidential and will only be used for research purposes. Any identifying information will be kept separately from your responses.

**PARTICIPANTS:** I will be one of about 30 participants in this study.

**RISKS/DISCOMFORTS:** I will be asked about my past and current work but no personally identifiable information will be collected. There also may be risks and discomforts that are not yet known.

**INDIVIDUAL TO CONTACT:** If I have any questions about my treatment or research procedures, I understand that I should contact the principal investigator at:

- Dr. Nancy Coppola, [nancy.w.coppola@njit.edu](mailto:nancy.w.coppola@njit.edu)
- Dr. Norbert Elliot, [norbert.elliott@njit.edu](mailto:norbert.elliott@njit.edu)
- Faye Newsham, [fn25@njit.edu](mailto:fn25@njit.edu)

If I have any addition questions about my rights as a research subject, I may contact:

Judith Sheft, IRB Chair  
New Jersey Institute of Technology  
323 Martin Luther King Boulevard  
Newark, NJ 07102  
 (973) 596-5825  
[sheft@njit.edu](mailto:sheft@njit.edu) / [irb@njit.edu](mailto:irb@njit.edu)

#### AGREE TO PARTICIPATE

Please read through the following conditions and click **Yes**, below, to accept.

- I am at least 18 years of age.
- I understand that my participation is voluntary and that data from this survey will be used for project purposes only.
- I understand that all responses will be kept strictly confidential and I will not be identified in any reporting of the results but that as an online participant in this research, there is always the risk of intrusion by outside agents (i.e., hacking). The minimum necessary information is collected to reduce this risk.
- I understand that the contents of this survey are confidential and disclosure or reproduction of any portion of the survey is prohibited.
- I understand confidential is not the same as anonymous. Confidential means that my name will not be disclosed if there exists a documented linkage between my identity and my responses as recorded in the research records. Every effort will be made to maintain the confidentiality of my study records. If the findings from the study are published, I will not be identified by name. My identity will remain confidential unless disclosure is required by law.
- I understand that my IP addresses may be used in conjunction with the date/time stamp for filtering out duplicate entries.
- I fully recognize that there are risks that I may be exposed to by volunteering in this study which are inherent in participating in any study; I understand that I am not covered by NJIT's insurance policy for any injury or loss I might sustain in the course of participating in the study.
- I fully understand my rights as explained to me and that this consent ends at the conclusion of this study.

All of my questions regarding this form or this study have been answered to my complete satisfaction. I agree to participate in this research study. \*

- Yes, I accept
- No, I decline (please exit the survey once you have answered.)
- No, I decline but would like to share why. (please exit the survey once completed)

Participant Name:

Date (MM/DD/YYYY): \*

Exit

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**SCREENING QUESTIONS**

Are you a graduate of the NJIT Masters of Science in Professional and Technical Communication program? \*

- Yes
- No

What year did you graduate? \*

What was your job title following graduation? (selections are based on the Bureau of Labor Statistics Occupations, please select a topic which encompasses or includes your job):

Do you or have you worked in the tech comm profession? \*

- Yes
- No

What area of Tech Comm do you work in? (please select the closest match from these BLS Occupational areas) \*

How many years have you worked in tech comm? \*

Are you employed in tech comm today? \*

- Yes
- No

What is the type of job you have today?

Please specify your job title for the job type selected above. \*

Are you a member of a professional organization related to Tech Comm? \*

- |   |   |
|---|---|
| <input type="checkbox"/> American Marketing Association   | <input type="checkbox"/> International Digital Media Alliance                               |
| <input type="checkbox"/> American Medical Writers Association   | <input type="checkbox"/> International Society for Performance Improvement                  |
| <input type="checkbox"/> American Society of Business and Publication Editors                               | <input type="checkbox"/> Media Communications Association-International (MCA-I)             |
| <input type="checkbox"/> American Society of Indexers   | <input type="checkbox"/> National Academy of Television Arts & Sciences                     |
| <input type="checkbox"/> American Society of Journalists and Authors  | <input type="checkbox"/> National Association of Television Program Executives (NATPE)      |
| <input type="checkbox"/> American Society of Newspaper Editors  | <input type="checkbox"/> National Writer's Union  |
| <input type="checkbox"/> Association for Computing Machinery, Inc. Special Interest Group for Documentation | <input type="checkbox"/> Professional Communications Society (IEEE)                         |
| <input type="checkbox"/> Broadcast Education Association (BEA)  | <input type="checkbox"/> Society for Technical Communication's National Organization        |
| <input type="checkbox"/> Digital Video Professional Association   | <input type="checkbox"/> Women in Communication, Inc. (WICI)                                |
| <input type="checkbox"/> HTML Writers Guild   | <input type="checkbox"/> Writer's Source  |
| <input type="checkbox"/> International Association of Business Communicators                                | <input type="checkbox"/> NOT A MEMBER OF ANY PROFESSIONAL ORGANIZATION RELATED TO TECH COMM |
| <input type="checkbox"/> International Communication Association  | <input type="checkbox"/> Other (Please Specify)   |
| <input type="text"/>  |   |

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## LOOKING BACK

We are interested in how well you feel the MS-PTC program prepared you for the workplace.

How prepared for your first post-graduation job did the NJIT MS-PTC degree make you?

The NJIT degree or certificate remains important to my work today.

Rate these topics for how important they were to your first post-graduation job.

|                             | 1 (most important)       | 2                        | 3                        | 4                        | 5 (least important)      |
|-----------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Collaboration               | <input type="checkbox"/> |
| Team Work                   | <input type="checkbox"/> |
| Document Design             | <input type="checkbox"/> |
| Interpersonal Communication | <input type="checkbox"/> |
| Oral Communication          | <input type="checkbox"/> |
| Problem Solving             | <input type="checkbox"/> |
| Personal Traits             | <input type="checkbox"/> |
| Work Skills                 | <input type="checkbox"/> |
| Specialized Expertise       | <input type="checkbox"/> |
| Technology                  | <input type="checkbox"/> |
| Writing and Editing         | <input type="checkbox"/> |
| Rhetoric                    | <input type="checkbox"/> |

Rate these topics for how important they are to your job today.

|                             | 1 (most important)       | 2                        | 3                        | 4                        | 5 (least important)      |
|-----------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Collaboration               | <input type="checkbox"/> |
| Team Work                   | <input type="checkbox"/> |
| Document Design             | <input type="checkbox"/> |
| Interpersonal Communication | <input type="checkbox"/> |
| Oral Communication          | <input type="checkbox"/> |
| Problem Solving             | <input type="checkbox"/> |
| Personal Traits             | <input type="checkbox"/> |
| Work Skills                 | <input type="checkbox"/> |
| Specialized Expertise       | <input type="checkbox"/> |
| Technology                  | <input type="checkbox"/> |
| Writing and Editing         | <input type="checkbox"/> |
| Rhetoric                    | <input type="checkbox"/> |

Were there tasks that you needed in your first post-graduation job that you were not prepared for?

- Yes
- No

If you answered yes to the previous question, please tell us what tasks that you needed in your first post-graduation job that you were not prepared for.

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### PLANNING FOR THE FUTURE

We are also interested in how you feel about emerging professionalization standards and how they might prepare today's students for the workplace.

Rate these topics for how important they will be to a first, post-graduation job for students today.

|                       | 1 (most important)       | 2                        | 3                        | 4                        | 5 (least important)      |
|-----------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Project Planning      | <input type="checkbox"/> |
| Project Analysis      | <input type="checkbox"/> |
| Solution Design       | <input type="checkbox"/> |
| Organizational Design | <input type="checkbox"/> |
| Written Communication | <input type="checkbox"/> |
| Visual Communication  | <input type="checkbox"/> |
| Content Development   | <input type="checkbox"/> |
| Content Management    | <input type="checkbox"/> |
| Final Production      | <input type="checkbox"/> |

Rate these topics for how important they are to your work today.

|                       | 1 (most important)       | 2                        | 3                        | 4                        | 5 (least important)      |
|-----------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Project Planning      | <input type="checkbox"/> |
| Project Analysis      | <input type="checkbox"/> |
| Solution Design       | <input type="checkbox"/> |
| Organizational Design | <input type="checkbox"/> |
| Written Communication | <input type="checkbox"/> |
| Visual Communication  | <input type="checkbox"/> |
| Content Development   | <input type="checkbox"/> |
| Content Management    | <input type="checkbox"/> |
| Final Production      | <input type="checkbox"/> |

Most or all of these topics are important to my work today.

Are there topics you feel are missing from this list that are important to Technical Communication work?

- Yes
- No

Describe topics you feel are missing from the above list if you answered "Yes."

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Considering the list of NJIT core competencies, which key competencies belong within written communication?

- |  |  |
|--|--|
| <input type="checkbox"/> Collaboration               | <input type="checkbox"/> Personal Traits       |
| <input type="checkbox"/> Team Work                   | <input type="checkbox"/> Work Skills           |
| <input type="checkbox"/> Document Design             | <input type="checkbox"/> Specialized Expertise |
| <input type="checkbox"/> Interpersonal Communication | <input type="checkbox"/> Technology            |
| <input type="checkbox"/> Oral Communication          | <input type="checkbox"/> Writing and Editing   |
| <input type="checkbox"/> Problem Solving             | <input type="checkbox"/> Rhetoric              |

Considering the same list of NJIT core competencies, which key competencies belong within visual communication?

- |  |  |
|--|--|
| <input type="checkbox"/> Collaboration               | <input type="checkbox"/> Personal Traits       |
| <input type="checkbox"/> Team Work                   | <input type="checkbox"/> Work Skills           |
| <input type="checkbox"/> Document Design             | <input type="checkbox"/> Specialized Expertise |
| <input type="checkbox"/> Interpersonal Communication | <input type="checkbox"/> Technology            |
| <input type="checkbox"/> Oral Communication          | <input type="checkbox"/> Writing and Editing   |
| <input type="checkbox"/> Problem Solving             | <input type="checkbox"/> Rhetoric              |

Considering the list of NJIT core competencies, which key competencies belong within content development?

- |  |  |
|--|--|
| <input type="checkbox"/> Collaboration               | <input type="checkbox"/> Personal Traits       |
| <input type="checkbox"/> Team Work                   | <input type="checkbox"/> Work Skills           |
| <input type="checkbox"/> Document Design             | <input type="checkbox"/> Specialized Expertise |
| <input type="checkbox"/> Interpersonal Communication | <input type="checkbox"/> Technology            |
| <input type="checkbox"/> Oral Communication          | <input type="checkbox"/> Writing and Editing   |
| <input type="checkbox"/> Problem Solving             | <input type="checkbox"/> Rhetoric              |

Still considering the same list of NJIT core competencies, which do not fit into the emerging competencies at all?

- |  |  |
|--|--|
| <input type="checkbox"/> Collaboration               | <input type="checkbox"/> Work Skills           |
| <input type="checkbox"/> Team Work                   | <input type="checkbox"/> Specialized Expertise |
| <input type="checkbox"/> Document Design             | <input type="checkbox"/> Technology            |
| <input type="checkbox"/> Interpersonal Communication | <input type="checkbox"/> Writing and Editing   |
| <input type="checkbox"/> Oral Communication          | <input type="checkbox"/> Rhetoric              |
| <input type="checkbox"/> Problem Solving             | <input type="checkbox"/> All fit               |
| <input type="checkbox"/> Personal Traits             |  |

[Exit](#)

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### THANK YOU

Your responses are much appreciated.

Please provide your name and email address in order to be entered into the random drawing for a free year of web hosting (web domain registration included, if needed). You may exit without providing this information and thank you for your participation.

[Exit](#)

[Back](#)

[Submit](#)

## **APPENDIX C**

### **PROFESSIONAL ASSOCIATIONS AND ORGANIZATIONS**

The following is a list of applicable associations and organizations compiled by simple web search for use within the survey tool.

- American Marketing Association
- American Medical Writers Association
- American Society of Business and Publication Editors
- American Society of Indexers
- American Society of Journalists and Authors
- American Society of Newspaper Editors
- Association for Computing Machinery, Inc. Special Interest Group for Documentation
- Broadcast Education Association (BEA)
- Digital Video Professional Association
- HTML Writers Guild
- International Association of Business Communicators
- International Communication Association
- International Society for Performance Improvement
- Media Communications Association-International (MCA-I)
- National Association of Television Program Executives (NATPE)
- National Writer's Union
- Professional Communications Society (IEEE)
- Society for Technical Communication's National Organization
- Women in Communication, Inc. (WICI)
- Writer's Source
- NOT A MEMBER of any professional organization related to Tech Comm

## **APPENDIX D**

### **CLASSIFICATION OF INSTRUCTIONAL PROGRAMS CODES**

List of applicable Classification of Instructional Programs (CIP) codes. CIP 09 is the main Communication, Journalism, and Related Programs code. All sub-codes relate to the applicable Technical Communication work and education. Many of the 09 CIP codes relate to the applicable labor codes.

**Table D.1** CIP Code List

| <b>CIP Code</b> | <b>Title</b>                                    | <b>Definition</b>  |
|-----------------|---|--|
| 09              | COMMUNICATION, JOURNALISM, AND RELATED PROGRAMS | Instructional programs that focus on how messages in various media are produced, used, and interpreted within and across different contexts, channels, and cultures, and that prepare individuals to apply communication knowledge and skills professionally.  |
| 09.0100         | Communication, General                          | A program that focuses on the comprehensive study of communication, and that spans the study of mass communication/media studies, old and new media technologies, social and political applications, and speech communication and rhetoric. Includes instruction in interpersonal, group, organizational, and intercultural communication; theories of communication; critical thinking, argumentation, and persuasion; written communication; printed, electronic, and digital media; rhetorical tradition and criticism; media, society, and culture; consequences and effects of mass media; media social science and criticism; and quantitative and qualitative methods of inquiry. |
| 09.0101         | Speech Communication and Rhetoric               | A program that focuses on the scientific, humanistic, and critical study of human communication in a variety of formats, media, and contexts. Includes instruction in the theory and practice of interpersonal, group, organizational, professional, and intercultural communication; speaking and listening; verbal and nonverbal interaction; rhetorical theory and criticism; performance studies; argumentation and persuasion; technologically mediated communication; popular culture; and various contextual applications.  |
| 09.0102         | Mass Communication/Media Studies                | A program that focuses on the analysis and criticism of media institutions and media texts, how people experience and understand media content, and the roles of media in producing and transforming culture. Includes instruction in communications regulation, law, and policy; media history; media aesthetics, interpretation, and criticism; the social and cultural effects of mass media; cultural studies; the economics of media industries; visual and media literacy; and the psychology and behavioral aspects of media messages, interpretation, and utilization.   |
| 09.0199         | Communication and Media Studies, Other.         | Any instructional program in communication and media studies not listed above  |

| CIP Code | Title   | Definition  |
|----------|---|---|
| 09       | COMMUNICATION, JOURNALISM, AND RELATED PROGRAMS           | Instructional programs that focus on how messages in various media are produced, used, and interpreted within and across different contexts, channels, and cultures, and that prepare individuals to apply communication knowledge and skills professionally.   |
| 09.0908  | Technical and Scientific Communication                    | A program that focuses on the communication of technical and scientific knowledge to a variety of audiences through print, video, and digital media; and that prepares individuals to function as technical writers and editors, documentation developers, web designers, and usability specialists. Includes instruction in scientific and technical writing and editing, graphic and information design, web design, audience analysis, document usability and field testing, publications management, and applications to specific technical fields.               |
| 23.1303  | Professional, Technical, Business, and Scientific Writing | A program that focuses on professional, technical, business, and scientific writing; and that prepares individuals for academic positions or for professional careers as writers, editors, researchers, and related careers in business, government, non-profits, and the professions. Includes instruction in theories of rhetoric, writing, and digital literacy; document design, production, and management; visual rhetoric and multimedia composition; documentation development; usability testing; web writing; and publishing in print and electronic media. |

## **APPENDIX E**

### **SURVEY RESOURCES**

Data was needed during the construction of the survey. The following data supplied information for the survey directly or indirectly.

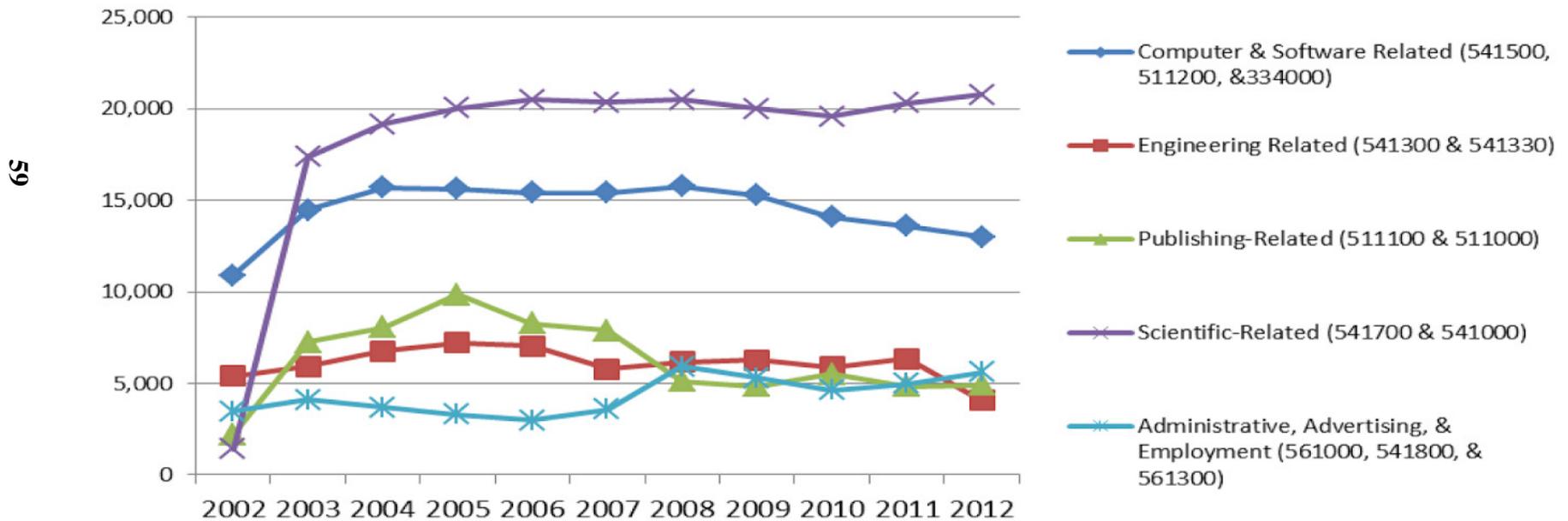
Table E.1 and Figure E.1 show how broad the field of Technical Writing is. This information helped determine the breadth necessary for the job listings noted in Table E.2.

Table E.2 is the list of all Bureau of Labor Statistics (BLS) Standard Occupational Classifications (SOCs) annotated to indicate how important each is in technical communication. The annotation was applied by the author.

**Table E.1** Industries Employing Technical Writers

|  | 2002   | 2003   | 2004   | 2005   | 2006   | 2007   | 2008   | 2009   | 2010   | 2011   | 2012   |
|--|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Computer & Software Related (541500, 511200, & 334000)               | 10,920 | 14,470 | 15,690 | 15,630 | 15,420 | 15,430 | 15,770 | 15,280 | 14,100 | 13,590 | 13,020 |
| Engineering Related (541300 & 541330)                                | 5,420  | 5,930  | 6,780  | 7,230  | 7,050  | 5,780  | 6,190  | 6,270  | 5,890  | 6,370  | 4,070  |
| Publishing-Related (511100 & 511000)                                 | 2,220  | 7,280  | 8,070  | 9,870  | 8,290  | 7,910  | 5,140  | 4,840  | 5,530  | 4,860  | 4,910  |
| Scientific-Related (541700 & 541000)                                 | 1,410  | 17,390 | 19,170 | 20,040 | 20,480 | 20,370 | 20,490 | 20,000 | 19,580 | 20,310 | 20,760 |
| Administrative, Advertising, & Employment (561000, 541800, & 561300) | 3,480  | 4,100  | 3,700  | 3,310  | 3,010  | 3,580  | 5,940  | 5,310  | 4,640  | 4,990  | 5,620  |

Source: Bureau of Labor Statistics, National, 2002-2012 (<http://stat.bls.gov/oes/tables.htm>)



**Figure E.1** Industries Hiring Technical Writers. The table and figure show how widely diverse the jobs that employ Technical Writers are. Technical Writers are a sub-set of the Technical Communication workforce. (Armstrong)

**Table E.2** BLS 2010 SOCs with Annotation for Value to Technical Communication

|    |                        |
|----|------------------------|
| x  | Main topics            |
| y  | sub topics of interest |
| yy | key sub topics         |

| Type | BLS ID  | BLS Title  | Value |
|------|---------|--|-------|
| x    | 11-0000 | Management Occupations   | 2     |
| y    | 11-1011 | Chief Executives   | 2     |
| y    | 11-2011 | Advertising and Promotions Managers  | 2     |
| y    | 11-2021 | Marketing Managers   | 2     |
| y    | 11-2031 | Public Relations and Fundraising Managers                                      | 2     |
| y    | 11-3021 | Computer and Information Systems Managers                                      | 2     |
| y    | 11-3131 | Training and Development Managers  | 2     |
| y    | 11-9033 | Education Administrators, Postsecondary  | 2     |
| y    | 11-9041 | Architectural and Engineering Managers   | 2     |
| x    | 13-0000 | Business and Financial Operations Occupations                                  | 1     |
| y    | 13-1151 | Training and Development Specialists   | 3     |
| y    | 13-1161 | Market Research Analysts and Marketing Specialists*                            | 3     |
| x    | 15-0000 | Computer and Mathematical Occupations  | 1     |
| y    | 15-1150 | Computer Support Specialists   | 2     |
| y    | 15-1179 | Information Security Analysts, Web Developers, and Computer Network Architects | 3     |
| x    | 17-0000 | Architecture and Engineering Occupations                                       | 1     |
| x    | 19-0000 | Life, Physical, and Social Science Occupations                                 | 1     |
| x    | 21-0000 | Community and Social Service Occupations                                       | 1     |
| x    | 23-0000 | Legal Occupations  | 1     |
| x    | 25-0000 | Education, Training, and Library Occupations                                   | 2     |
| yy   | 25-1122 | Communications Teachers, Postsecondary   | 4     |

**Table E.2** BLS 2010 SOCs with Annotation for Value to Technical Communication (continued)

| Type | BLS ID  | BLS Title   | Value |
|------|---------|---|-------|
| y    | 25-1191 | Graduate Teaching Assistants  | 2     |
| y    | 25-3011 | Adult Basic and Secondary Education and Literacy Teachers and Instructors | 2     |
| y    | 25-3021 | Self-Enrichment Education Teachers  | 2     |
| x    | 27-0000 | Arts, Design, Entertainment, Sports, and Media Occupations                | 2     |
| y    | 27-1021 | Commercial and Industrial Designers                                       | 2     |
| y    | 27-1024 | Graphic Designers   | 2     |
| y    | 27-3022 | Reporters and Correspondents  | 2     |
| y    | 27-3031 | Public Relations Specialists  | 2     |
| yy   | 27-3041 | Editors   | 4     |
| yy   | 27-3042 | Technical Writers   | 4     |
| y    | 27-3043 | Writers and Authors   | 3     |
| y    | 27-3091 | Interpreters and Translators  | 3     |
| x    | 29-0000 | Healthcare Practitioners and Technical Occupations                        | 1     |
| y    | 29-1127 | Speech-Language Pathologists  | 2     |
| x    | 31-0000 | Healthcare Support Occupations  | 1     |
| x    | 33-0000 | Protective Service Occupations  | 1     |
| x    | 35-0000 | Food Preparation and Serving Related Occupations                          | 1     |
| x    | 37-0000 | Building and Grounds Cleaning and Maintenance Occupations                 | 1     |
| x    | 39-0000 | Personal Care and Service Occupations                                     | 1     |
| x    | 41-0000 | Sales and Related Occupations   | 1     |
| x    | 43-0000 | Office and Administrative Support Occupations                             | 1     |
| y    | 43-9022 | Word Processors and Typists   | 2     |
| y    | 43-9031 | Desktop Publishers  | 2     |
| y    | 43-9081 | Proofreaders and Copy Markers   | 2     |

**Table E.2** BLS 2010 SOCs with Annotation for Value to Technical Communication (continued)

| <b>Type</b> | <b>BLS ID</b> | <b>BLS Title</b>                                  | <b>Value</b> |
|-------------|---------------|---|--------------|
| x           | 47-0000       | Construction and Extraction Occupations           | 1            |
| x           | 49-0000       | Installation, Maintenance, and Repair Occupations | 1            |
| x           | 51-0000       | Production Occupations                            | 1            |
| x           | 53-0000       | Transportation and Material Moving Occupations    | 1            |

("Standard Occupational Classifications (SOC) Major Groups.")

## **APPENDIX F**

### **ANALYSIS VARIABLES / CODE BOOK**

The analysis variables identified here make up the code book for the survey instrument.

**Table F.1** Analysis Variables for Screening and Job Information Questions

| Excel File Tab | Excel File Column | ID   | Question  | Analyses Type   | Variable Type |
|----------------|-------------------|------|---|---|---------------|
| Screening      | B                 | S-Q1 | Are you a graduate of the NJIT MS-PTC program or certificate?               | Counts / %s - (Yes/No)  | Independent   |
| Screening      | C                 | S-Q2 | What year?  | Counts / %s - Years (1994-2014)   | Independent   |
| Job Info       | C to AZ           | J-Q1 | What was your job title following graduation?                               | Counts / %s - for each BLS SOC and "other" (weighted)   | Dependent     |
| Job Info       | BA                | J-Q2 | Do you or have you worked in the tech comm profession?                      | Counts / %s - (Yes/No)  | Dependent     |
| Job Info       | BC to CH          | J-Q3 | What area of Tech Comm do you work in?                                      | Counts / %s - for each BLS SOC (weighted)   | Dependent     |
| Job Info       | CJ                | J-Q4 | How many years have you worked in tech comm?                                | Counts / %s<br><ul style="list-style-type: none"> <li>• I have not worked in tech comm</li> <li>• Less than 1 year</li> <li>• 1 -5 years</li> <li>• 6 -10 years</li> <li>• 11-15 years</li> <li>• More than 15 years</li> </ul> | Dependent     |
| Job Info       | CK                |      | J-Q5. Are you employed in tech comm today?                                  | Counts / %s - (Yes/No)  | Dependent     |
| Job Info       | CL to EJ          |      | J-Q6. What is the type of job you have today?                               | Counts / %s - for each BLS SOC (weighted), "Involuntarily Unemployed," and "Retired"  | Dependent     |
| Job Info       | EK                |      | J-Q7. Please specify your title   | Counts / %s - text  | Independent   |
| Job Info       | EL, EM            |      | J-Q8. Are you a member of a professional organization related to Tech Comm? | Counts / %s - for each organization listed in Appendix C, other, or none  | Dependent     |

**Table F.2** Analysis Variables for Looking Back Questions

| Excel File Tab | Excel File Column | ID   | Question   | Analyses Type   | Variable Type |
|----------------|-------------------|------|--|---|---------------|
| Looking Back   | B                 | B-Q1 | How prepared for your first post-graduation job did the NJIT MS-PTC degree make you? | Counts / %s – <ul style="list-style-type: none"> <li>• Very Well Prepared</li> <li>• Well Prepared</li> <li>• Prepared</li> <li>• Unprepared</li> <li>• Not Well Prepared</li> <li>• Very Unprepared</li> </ul>   | Dependent     |
| Looking Back   | C                 | B-Q2 | NJIT degree or certificate remains important to my work today.                       | Counts / %s – <ul style="list-style-type: none"> <li>• Very Strongly Agree</li> <li>• Strongly Agree</li> <li>• Agree</li> <li>• Disagree</li> <li>• Strongly Disagree</li> <li>• Very Strongly Disagree</li> </ul>   | Dependent     |
| Looking Back   | E to P            | B-Q3 | Rate these topics for how important they were to your first post-graduation job.     | Counts / %s – scale 1-5 <ul style="list-style-type: none"> <li>• Collaboration</li> <li>• Team Work</li> <li>• Document Design</li> <li>• Interpersonal Communication</li> <li>• Oral Communication</li> <li>• Problem Solving</li> <li>• Personal Traits</li> <li>• Work Skills</li> <li>• Specialized Expertise</li> <li>• Technology</li> <li>• Writing and Editing</li> <li>• Rhetoric</li> </ul> | Dependent     |

| <b>Excel File Tab</b> | <b>Excel File Column</b> | <b>ID</b> | <b>Question</b>   | <b>Analyses Type</b>  | <b>Variable Type</b> |
|-----------------------|--------------------------|-----------|---|---|----------------------|
| Looking Back          | R to AC                  | B-Q4      | Rate these topics for how important they are to your job today.   | Counts / %s – scale 1-5 <ul style="list-style-type: none"> <li>• Collaboration</li> <li>• Team Work</li> <li>• Document Design</li> <li>• Interpersonal Communication</li> <li>• Oral Communication</li> <li>• Problem Solving</li> <li>• Personal Traits</li> <li>• Work Skills</li> <li>• Specialized Expertise</li> <li>• Technology</li> <li>• Writing and Editing</li> <li>• Rhetoric</li> </ul> | Dependent            |
| Looking Back          | AD                       | B-Q5      | Were there tasks that you needed in your first post-graduation job that you were not prepared for?  | Counts / %s - (Yes/No)  | Dependent            |
| Looking Back          | AE                       | B-Q6      | If you answered yes to the previous question, please tell us what tasks that you needed in your first post-graduation job that you were not prepared for. | Text  | Dependent            |

**Table F.3** Analysis Variables for Looking Forward Questions

| Excel File Tab  | Excel File Column | ID   | Question   | Analyses Type  | Variable Type |
|-----------------|-------------------|------|--|--|---------------|
| Looking Forward | B to K            | F-Q1 | Rate these topics for how important they will be to a first, post-graduation job for students today.     | Counts / %s – scale 1-5 <ul style="list-style-type: none"> <li>• Project Planning</li> <li>• Project Analysis</li> <li>• Solution Design</li> <li>• Organizational Design</li> <li>• Written Communication</li> <li>• Visual Communication</li> <li>• Content Development</li> <li>• Content Management</li> <li>• Final Production</li> </ul> | Dependent     |
| Looking Forward | M to U            | F-Q2 | Rate these topics for how important they are to your work today.   | Counts / %s – scale 1-5 <ul style="list-style-type: none"> <li>• Project Planning</li> <li>• Project Analysis</li> <li>• Solution Design</li> <li>• Organizational Design</li> <li>• Written Communication</li> <li>• Visual Communication</li> <li>• Content Development</li> <li>• Content Management</li> <li>• Final Production</li> </ul> | Dependent     |
| Looking Back    | V                 | F-Q3 | Most or all of these topics are important to my work today.  | Counts / %s – <ul style="list-style-type: none"> <li>• Very Strongly Agree</li> <li>• Strongly Agree</li> <li>• Agree</li> <li>• Disagree</li> <li>• Strongly Disagree</li> <li>• Very Strongly Disagree</li> </ul>  | Dependent     |
| Looking Forward | W                 | F-Q4 | Are there topics you feel are missing from this list that are important to Technical Communication work? | Counts / %s - (Yes/No)   | Dependent     |
| Looking Forward | X                 | F-Q5 | Describe topics you feel are missing from the above list if you answered "Yes."                          | Text   | Dependent     |

**Table F.4** Analysis Variables for Emerging Questions

| Excel File Tab | Excel File Column | ID   | Question  | Analyses Type   | Variable Type |
|----------------|-------------------|------|---|---|---------------|
| Emerging       | B to N            | E-Q1 | Considering the list of NJIT core competencies, which key competencies belong within <b>written communication</b> ?     | Counts / %s – <ul style="list-style-type: none"> <li>• Collaboration</li> <li>• Team Work</li> <li>• Document Design</li> <li>• Interpersonal Communication</li> <li>• Oral Communication</li> <li>• Problem Solving</li> <li>• Personal Traits</li> <li>• Work Skills</li> <li>• Specialized Expertise</li> <li>• Technology</li> <li>• Writing and Editing</li> <li>• Rhetoric</li> </ul> | Dependent     |
| Emerging       | O to AA           | E-Q2 | Considering the same list of NJIT core competencies, which key competencies belong within <b>visual communication</b> ? | Counts / %s – <ul style="list-style-type: none"> <li>• Collaboration</li> <li>• Team Work</li> <li>• Document Design</li> <li>• Interpersonal Communication</li> <li>• Oral Communication</li> <li>• Problem Solving</li> <li>• Personal Traits</li> <li>• Work Skills</li> <li>• Specialized Expertise</li> <li>• Technology</li> <li>• Writing and Editing</li> <li>• Rhetoric</li> </ul> | Dependent     |

| Excel File Tab | Excel File Column | ID   | Question   | Analyses Type  | Variable Type |
|----------------|-------------------|------|--|--|---------------|
| Emerging       | AB to AN          | E-Q3 | Considering the same list of NJIT core competencies, which key competencies belong within <b>content development</b> ? | Counts / %s – <ul style="list-style-type: none"> <li>• Collaboration</li> <li>• Team Work</li> <li>• Document Design</li> <li>• Interpersonal Communication</li> <li>• Oral Communication</li> <li>• Problem Solving</li> <li>• Personal Traits</li> <li>• Work Skills</li> <li>• Specialized Expertise</li> <li>• Technology</li> <li>• Writing and Editing</li> <li>• Rhetoric</li> </ul>                    | Dependent     |
| Emerging       | AO to BB          | E-Q4 | Still considering the same list of NJIT core competencies, which do not fit into the emerging competencies at all?     | Counts / %s – <ul style="list-style-type: none"> <li>• Collaboration</li> <li>• Team Work</li> <li>• Document Design</li> <li>• Interpersonal Communication</li> <li>• Oral Communication</li> <li>• Problem Solving</li> <li>• Personal Traits</li> <li>• Work Skills</li> <li>• Specialized Expertise</li> <li>• Technology</li> <li>• Writing and Editing</li> <li>• Rhetoric</li> <li>• All Fit</li> </ul> | Dependent     |

**APPENDIX G**  
**LITERATURE SEARCH**

This appendix contains a listing of all literature located that relates to this topic. Search terms and results are included.

**Database:** Communication & Mass Media Complete

**Search Terms:** work and education, communication

**Results:** 67 unique applicable items

Alexander III, Elmore R. "Creating and Maintaining Operative Work-Experience Programs: A Student's Perspective." *Bulletin of The Association of Departments & Administrators in Speech Communication* 12 (1975): 26-27. *Communication & Mass Media Complete*. Web. 12 Oct. 2013.

Applegate, James L. "Engaged Graduate Education: Skating to Where The Puck Will Be." *Spectra* 37.9 (2001): 2-5. *Communication & Mass Media Complete*. Web. 12 Oct. 2013.

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Carliner, Saul. "The Three Approaches to Professionalization in Technical Communication." *Technical Communication* 59.1 (2012): 49-65. *Communication & Mass Media Complete*. Web. 12 Oct. 2013.

"Certification: Meeting an Industry Need." *IEEE Communications Magazine* 47.2 (2009): 6-8. *Communication & Mass Media Complete*. Web. 12 Oct. 2013.

Cleary, Yvonne. "Discussions about the Technical Communication Profession: Perspectives from the Blogosphere." *Technical Communication* 59.1 (2012): 8-28. *Communication & Mass Media Complete*. Web. 12 Oct. 2013.

Cunningham, Stuart, and Ruth Bridgstock. "Say Goodbye to the Fries: Graduate Careers In Media, Cultural and Communication Studies." *Media International Australia (8/1/07-Current)* 145 (2012): 6-17. *Communication & Mass Media Complete*. Web. 12 Oct. 2013.

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Dorazio, Patricia. "Professional Advisory Boards: Fostering Communication and Collaboration between Academe and Industry." *Business Communication Quarterly* 59.3 (1996): 98-104. *Communication & Mass Media Complete*. Web. 12 Oct. 2013.

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**Database:** ERIC

**Search Terms:** technical communication, workforce

**Results:** 2 unique applicable items, 2 duplicative items

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**Database:** ERIC

**Search Terms:** communication in education, workforce

**Results:** 1 unique applicable item, 4 duplicative items

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**Search Terms:** technical writing, technical communication, workforce

**Results:** 0 unique applicable items, 3 duplicative items

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