
AC 2012-3518: ATLAS SHRUGGED: ASSESSING COMMUNICATION AND GLOBAL COMPETENCE SKILLS IN A TECHNICAL WRITING COURSE

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Atlas Shrugged: Assessing Communication and Global Competence in a Technical Writing Course

In Ayn Rand's dystopian novel *Atlas Shrugged*, two of the characters are at one point discussing the legendary figure Atlas, who in mythology holds the world on his shoulders. One character asks the other what he would advise Atlas do with an increasingly heavy burden, and that character indicates he would suggest Atlas shrug. The inference of course, is that should Atlas do so, the world would slide off his stalwart shoulders, sending every human being on it into certain oblivion. It's a hyperbolic metaphor, but there are doubtless any number of college professors who feel a bit like Atlas these days, with tightening budgets, shrinking resources and growing expectations in terms of outcome and assessment. Many engineering and technology programs focus on preparing the student to perform the technical tasks required of them upon graduation, counting upon the general humanities education of the freshman and sophomore years to provide the liberal arts basis for such necessities as global awareness and professional communication competence. This paper will explore one university program's attempt to assess both global and communication competence using a required technical writing course normally taken in the Junior year, and how that course is attempting to meet these two required competencies, and a number of others surrounding professional communication. The paper will detail the organization of the overall course, along with its objectives, and explain the assessment tools and outcomes used to measure global and communication competence. It will also address the challenges of focusing on two outcomes while still trying to meet the myriad other outcomes required by the course, and possible solutions.

Global Competence, Communication and the Technical Writing Course

The term global competence has become more familiar to scholars and teachers in engineering and technology, although the concept and familiarity with it certainly crosses disciplinary boundaries. Deardorff notes that across the disciplines, there are variations of a term meant to define the same thing: producing students that can work and live competently outside their own culture. The phrase global competence has been adopted in engineering and technology fields, while intercultural competence, cultural competence, multiculturalism, cultural intelligence and even global citizenship are used elsewhere [1]. Regardless of its label, the idea that universities have a responsibility to promote understanding of other cultures has become something of a buzzword in higher education. Lutz noted that "more and more institutions of higher learning adopt global awareness as part of their strategic plans and QEP" [2]. It is in fact a strategic plan at the university in question that first brought the notion of global competence to bear on the Technical Writing course discussed.

It is interesting to note that in reviewing the literature on global competence in higher education, a rather discipline specific dichotomy emerges. The scholarship published in non-engineering and technology journals tends to emphasize the definition of global competence itself and a rather idealized vision of the globally competent learner as "one who recognizes the geopolitical and economic interdependence of our world; understands the non-universality of culture, religion and values, is committed to global, lifelong learning...accepts the importance of all peoples..." among other things [2]. The literature in engineering and technology tends to

emphasize global competence as a way to make students more mobile in careers and focuses on specific ways to reach that idealized vision – in other words, not surprisingly, practical application. There is discussion of the benefit of requiring a second language or international studies courses or study abroad and, also not surprisingly “Doing some of these or all of these? How long, how much, in what combination or proportion?” [3]. It’s perhaps the quintessential difference between the liberal arts and engineering/technology scholars: where one asks why, the other asks how. Regardless, the multitude of conversations and options regarding what to call global competence and how to address it indicates that as of yet, there is no consensus on either issue. And there is yet another salient point. In many engineering curricula, adding coursework in global studies is difficult because of “the highly sequenced and content-demanding nature of the curriculum” [3]. This is also a factor frequently cited as to why more technical writing coursework is not part of an engineering/technology curriculum.

Professional or technical writing and communication, along with global competence, is a so called ‘soft skill’ that both practitioners and scholars have deemed important to the success of students. The discussion on this issue has been going on for *decades*. In the October-December 2011 issue of *Technical Communication Quarterly*, Wright et al examines the history of technical writing via an annotated bibliography of technical writing articles that stretches back to 1952. A 1955 article printed in the *TWE Journal* notes that “by 1965, the need for engineers who are skilled communicators will be at least four times greater than in 1955” [4]. This statement still resonates today. ABET accreditation places increased emphasis on “the ability to communicate a technical concept clearly and concisely [5] and scholars and practitioners have repeatedly noted that engineering graduates have “competency gaps” in communication [6]. The discussion revolving around writing and communicating in the technical fields has not only been ongoing, but detailed. Ironically enough, an article published in 2010 [7] in an international journal argues for a training program for engineers that includes teaching the engineer how to analyze a potential audience...something that is taught in that technical writing course that cannot ‘fit’ into the curriculum. But the technical fields are not alone in worrying about writing and communication skills. Many universities utilize a writing across the curriculum or WAC model to ensure all students, regardless of major, become better writers. WAC models have been a presence in academia for decades.

Inflexible course schedules and competency gaps aside, the question becomes can a single course address both global competence and writing competence? The answer is a *qualified* yes. The course being discussed here is Technical Writing, a junior level, required course for all technology, computer science and construction management majors. The course has been part of the curriculum for over a decade and had been taught by a faculty member from within the technology systems department; that faculty member might or might not have a background in technical writing. In 2008, however, the Department of Technology Systems instituted a search for a full time technical writing instructor with a background specifically in technical writing. The person hired was, at the time, finishing a PhD in English with a concentration in Technical and Professional Discourse. Coming from an English Department based program, the instructor was well grounded not only in technical writing, but in areas such as rhetoric, discourse studies and intercultural factors in discourse. This ‘grounding’ in English and writing brought a perspective into the department that was not present before; in many ways, it was interdisciplinary in nature, having a faculty member with a non-technology background in the department. Once the instructor completed the PhD, the position was awarded tenure track status,

which further solidified, at least perceptually, the importance of both writing and alternative disciplinary viewpoints within the department.

Originally, the Technical Writing course was devised as a way to teach students the kind of technical communication they would utilize in their more technical workplaces; the standard business communication course offered in the English department did not align with the kind of writing and communicating these students would have to do on the job. The objectives, or course competencies, of the course are listed on the syllabus for the course. They are reproduced below.

Course Competencies: The course is designed to prepare students in the skills and techniques necessary to prepare effective, efficient written material for the workplace. Upon successful completion of the course the student will:

- Understand the differences between technical writing and lyrical writing.
- Be acquainted with important ethical and legal issues pertaining to technical writing.
- Be able to analyze and write for a particular audience.
- Have basic editing skills.
- Be able to imbed charts, tables, and graphs appropriately into the text.
- Understand the important considerations for doing persuasive technical writing.
- Recognize the importance of completeness and attention to detail in technical writing.
- Be adept at drafting business letters, memos, and descriptive documents.
- Know how to prepare an effective resume and how to critique resumes of others.
- Understand the basic techniques of technical report preparation.
- Be aware of proven techniques for making effective oral presentations [8].

The prerequisites for the course are two English composition courses typically taken in the freshman and sophomore years. The Technical Writing course requires students to write 14 documents, make an oral presentation and put together a final portfolio of ten revised documents over the course of the semester. Each week's writing assignment relates directly to the content taught that week. Table 1 shows the course schedule and assignments in brief.

Week	Assignment	Topic for the week
1	Technical Document Analysis	What is Technical Writing?
2	Code of conduct	Ethical and Legal Issues
3	Audience Analysis	Audience, Purpose, Strategy
4	Research Article	Research
5	Graphs	Graphics
6	Page Design	Page Design
7	Claim Letter	Business letters
8	Technical Description & Extended Definition	Definitions & Descriptions
9	Job Application Letter & Resume	Resumes, cover letters and the job search
10	Memo with Instructions	Memo/Instructions
11	Proposal	Proposals
12	Technical Report	Technical Reports
13	Oral Report	Oral presentations
14	Portfolios serve as final exam	PORTFOLIO REVIEW

Table 1: Schedule and Assignments for Technical Writing Course

Initially, the pedagogical focus is on the foundation elements of technical writing; issues that impact all technical writing regardless of the format it takes. Since students often cannot define technical writing, or often limit their definition to manuals or assembly directions, the first week focuses on what makes a piece of writing ‘technical.’ Students are often surprised to learn the menu on their laptop or phone is a form of technical writing, as is a stop sign. To further cement the ideas discussed in class, the first assignment is for students to find a piece of technical writing or communication that they come across in everyday life, and then write a brief paper describing what makes that item technical writing based on the characteristics discussed in class. Week two focuses on the legal and ethical issues in technical writing. Topics such as copyright, trademark and the fair use exception to copyright are covered. Ethical issues and theories of ethics are also discussed, with that content culminating in a case study on Nazi

technical documentation. The assignment for week two asks students to locate a code of ethics that governs their particular discipline, and an ethical transgression that led to injury, death or charges of negligence. The paper they write applies the code to the chosen transgression in an effort to teach students how to apply a written code to a 'real world' situation. Week three focuses on audience analysis. Students are taught to recognize different types of audiences, and particular techniques to communicate with those different types of audiences. The assignment attached to this week requires students to locate a piece of technical writing, and then write an audience analysis of that document. Again, the focus is on having the students apply what they have learned.

In terms of the first three assignments, the goal is not only to teach the students how to apply particular content. It is also to familiarize students with a new way of writing. Many of these students have written the typical composition papers or research papers before entering the Technical Writing class, but most have not had experience writing the more compact, concise documents that comprise technical writing in general. For that reason, the first three assignments are relatively small in terms of the point value, and students are not penalized for grammar, spelling, clarity or conciseness. The instructor uses the track changes function in Word to note where mistakes were made, and to suggest alternatives. In this way, students see where they are making mistakes and can correct them without a heavy penalty. After the third assignment, grammar, spelling, clarity and conciseness do count, and the point value of each assignment steadily increases, but the student has had three weeks to revise and alter his or her writing method and is more prepared when the more detailed and higher value assignments begin.

The fourth week focuses on research, both primary and secondary forms as well as issues such as plagiarism and proper citation of sources. The assignment for this week is for students to locate an innovation in their field, and find three reliable sources of information on the innovation. Students then write a paper explaining the innovation itself, and evaluate the three resources they have chosen based on content taught in class. This assignment becomes the basis for a proposal and a technical report written later in the semester, and students are urged to both choose a topic that will support more detailed inspection and sources that are comprehensive.

After the fourth week, the focus turns to the more common forms of technical writing. In the fifth through the tenth week, the topics covered are graphics, elements of page design, business letters, memos and e-mails, definitions and descriptions, resumes, cover letters and the job search and instructions. For each week of material, the student is asked to write a paper that directly applies the content learned. For the graphics and page design assignments, students are given statistics and content, and have to arrange that content in graphic form. For the business letter, definition and description assignments, the student chooses to write about a topic of interest to him or her in the student's individual discipline. This is intentional; from a pedagogical standpoint, it helps the students learn to write for their particular profession, and it shows them how the content learned in class directly applies to their future profession. The assignment attached to the content on instructions asks students to write a memo that includes a specific set of instructions. This assignment allows students to learn how to craft clear, proper instructions. It also is geared toward a particular multicultural audience, which will be explained in more detail later.

By the time the student reaches the 11th week of class, the writing has grown progressively longer and more detailed. In the 11th and 12th week of class, students learn about

proposals and technical reports, and use the topic from their earlier research assignment to craft both a proposal and technical report. The technical report includes a component of each of the previous assignments – graphics, a definition and a description are all required – and so students can learn how these individual pieces of technical writing can function together to form a different whole. In the 13th week of class, the content focuses on oral presentations, and students present a five minute oral report on the topic of their technical report. The final week of class is spent reviewing material for the final project, which is a portfolio of the student's *corrected* work. Throughout the semester, students receive their assignment back with fairly extensive feedback from the instructor. For the final project, students have to make corrections to and revise ten of the documents written during the semester, and compile those ten documents into a portfolio that is turned in during finals week. From a writing pedagogy standpoint, this allows students to learn through revision, and provides a benchmark for examining whether or not student writing improves over the course of the semester. The original assignment is compared against the revised and corrected assignment placed in the portfolio; in this way the instructor can gauge writing improvement from the first version to the final version.

In addition to being a required course, the Technical Writing course is also a writing intensive course. The university in question has a writing across the curriculum program, and all students regardless of major are required to take a certain number of writing intensive courses in order to graduate. Writing intensive courses are approved initially by a university level faculty committee tasked with administering writing intensive offerings and dealing with writing intensive issues campus wide. In order to qualify as writing intensive, a course must substantially use writing either as an outcome or a method or both. The Technical Writing course in question uses *only* writing as a basis for student grades because writing is a skill learned through practice and application. There are no conventional quizzes, midterms or tests. Students write each and every week, and the written assignments comprise the basis for grading in the class.

Assessing Communication and Global Competence

In 2008, the university at large began to explore 'ongoing assessment.' Each academic program was asked to identify individual, specific outcomes, and methods to assess those outcomes on a regular basis. Academic units all across campus were encouraged to think critically about what knowledge, skills and attitudes successful students displayed. Identifying those traits then allowed faculty to create a set of traits or skills that all students within the program should attain by the time they graduate. Those skills or traits then were set as outcomes that each program could strive for. In the Department of Technology Systems, one of the skills faculty identified as important for students was *the ability to communicate effectively*. Having identified the outcome, the next step was to identify a particular way to measure whether or not students were able to communicate effectively, and thus the Technical Writing course became an assessment method for the effective communication outcome. Later, the university unveiled a vision for the institution's future. This rather detailed vision was culled down to two primary strategic directions: Education for a New Century and The Leadership University. Academic units were asked to review this vision plan and choose an additional outcome for each program that aligned with one of the strategic directions. All five of the programs within the Department of Technology Systems, along with the Construction Management Department, chose to pursue an outcome aligned with the Education for a New Century goal. The five programs within the Department of Technology Systems are Design, Industrial Technology, Industrial Distribution

and Logistics, Industrial Engineering Technology and Information and Computer Technology. The Education for a New Century vision focused on preparing students to participate in a global economy by making those students aware of how different societies and organizations often inter-relate, preparing students to interact and appreciate different people, customs and cultures, and helping students engage with other cultures and people. The university compiled five objectives that define its vision of Education for a New Century. The outcomes are:

1. Recognizes the global interdependence of societies, economies and environmental systems and the implications of his or her actions on the wider global environment, including the natural earth environment.
2. Understands how cultural beliefs, values and sensibilities shape people's perceptions and impact global decisions and actions.
3. Uses disciplinary concepts to explain how global and local issues are interconnected.
4. Communicates, interacts and works positively with individuals from other cultural groups.
5. Evaluates global issues and events from multiple perspectives and applies critical thinking skills to address global challenges [9].

Each program was asked to choose one of these five objectives, adopt it as an outcome, and define specific methods to assess it. All of the programs in the department, as well as the Construction Management program chose objective 5, *evaluates global issues and events from multiple perspectives and applies critical thinking skills to address global challenges*.

Because the content in the Technical Writing course fundamentally deals with both communication and communicating with multiple cultures, it was identified as a method of assessing both the effective communication and the global outcomes. Within each outcome, two separate methods of assessment had to be identified. For the effective communication outcome, the first method of assessment was the final grade a student earned in the Technical Writing course. A separate required course was used as the second method of assessment. Using final grades as measures of assessment is sometimes questioned because final grades can be impacted by qualitative measures such as behavior, and because final grades are not seen as reliable measures of assessment. However, the outcome is *measuring effective communication*, and in the Technical Writing course, the body of work the students produce is fairly large – 14 different papers, an oral presentation and a final portfolio that contains ten revised documents. Each assignment is graded individually based on an accompanying rubric and given a numeric score, and then the portfolio is given a numeric score that is based on how well the student applied the feedback given to revise the documents. Aside from attendance, there are no other factors that influence a student's grade other than their writing and communication work throughout the semester. In this case, a final grade is representative of the entire body of work a student accrues in Technical Writing, which, it could be argued, is a better means of assessing overall ability, at least in this particular case. However, as noted, the university requires two methods of assessment for each outcome. The second measure of assessment for the effective communications outcome is taken from an entirely separate course, which should ameliorate concerns about reliability.

For the global issues outcome, however, both methods of assessment had to come from the Technical Writing course, which required some revision. Each week of material taught in the

class includes a component on cultural considerations. For instance, when the topic of graphics is covered, students are taught to address multicultural issues. From a fundamental standpoint, one of the reasons graphics are effective in technical writing is precisely because they often communicate better than text to a multicultural audience. A company can save time and money by using a graphic that will communicate a concept to multiple audiences as opposed to translating text to several different languages. Issues such as differences in reading patterns, literacy levels, varying ways of giving instruction, whether the culture is low context or high context, de-emphasizing details that are not universal (for instance, electrical plugs do not look the same in every country), the symbolic meaning of color and caution in portraying people are all addressed. Each week, the particular multicultural considerations that apply to that week's content are taught, and the assignment connected with that content is then reviewed and graded with those considerations in mind. Once a student learns the material, he or she is expected to apply it not only to the current assignment, but to all assignments that follow, therefore each assignment more or less becomes a test of how well these ideas are applied throughout the course of the semester. Other cultural differences that are discussed include differences in religion, technology use, prosperity, diet, modes of dress, treatment of women and the importance of education. Careful use of language is also stressed; the idioms and slang we as Americans use so freely often does not translate well into another language, which can leave a non-American confused. If a student then uses idioms or slang in any subsequent assignment, points are taken away for that error. Because cultural awareness is embedded throughout the course, and because a student's grade on each assignment is impacted by how well those considerations are applied, the final grade in the class was deemed appropriate for one of the methods of assessment. Again, as with the effective communication outcome, using the entire body of work the student produces in the class is seen as a more complete measure than selecting one singular method of assessment.

Unlike the effective communication outcome, however, the second method of assessment for global competence was not being drawn from an entirely different class. The Technical Writing course thus required that a second, completely separate method that specifically assessed global competence be devised. One of the 14 documents students are asked to write is a memo with an embedded set of instructions. The premise of the assignment is that the student is working in a management position in his or her chosen profession and witnesses employees undertaking a task in a manner that can cause injury or damage to the company's product or reputation. The student then writes a memo that includes purpose, background, discussion and action sections, and includes a specific set of instructions for going about the task the correct way. In order to create a second method of assessment for the global competence outcome, the audience for this particular memo was stipulated to be a group of employees that spoke English as a second language. The rubric for this assignment is detailed in Figure 1.

MEMO ASSIGNMENT: Build this memo around a set of instructions. One day while you were at work you noticed something that could be potentially damaging to you, your co-workers or the company facility. (This can be something you have actually seen, or you may make up an appropriate scenario.) Because of your managerial position you need to address the issue.

1. You will write a memo meant to address a group of coworkers **that speak English as a second language** – therefore, you will have to craft your document carefully so that the audience will understand. Review the strategies for communicating with multicultural audiences. Remember these include, but are not limited to, choosing words carefully, making sure your sentences are short, direct and clear, and removing any slang or idioms in your writing.
2. Give brief background information to let your coworkers know why this situation is an issue and why it is important to you.
3. Then discuss what the current situation is-what happened or what you noticed that you felt you needed to say something.
4. Give specific instructions on the proper way to do the task. Indent the instructions, and give them a lead in.
5. Include necessary introductory information:
 - why the task is done (if it isn't obvious)
 - when the task should be carried out (if there is a specified time to do it)
 - who is to carry out the task (if a designated or certified person must carry out the task)
 - what safety measures must be taken and why
 - what items or tools will be necessary to carry out the task
6. Make a numbered list for the steps of the procedure.
7. Conclude the instruction with appropriate information.
8. Indicate exactly what action coworkers are to take with this information. Include who is to do what, and when. Or you may indicate that you will take the action. Be sure to indicate what action you will take in regard to this information, what you will do, and when.

Figure 1: Memo Assignment Rubric

The memo with instructions assignment requires students to learn content in three areas. First, students are presented with more detailed information about the individual components of a business memo. Memos as a form of communication are covered in general terms earlier in the semester, but in this module sections such as the purpose statement, background, discussion and action sections are more fully detailed. Next, students learn the intricacies of writing instructions.

This includes an overview of how to draft instructions. As always, students begin by analyzing audience and purpose, and are asked to consider the background and skill level of the audience, as well as the particular language skills of the audience, both in terms of literacy and speaking English as a second language. The concept of usability testing to ensure that the instructions ‘work’ is also explored. The design of the document is also important, and students learn to consider these questions: What do your readers expect? Do you need multiple instructions for multiple audiences? What language should you use? Will the reading environment impact the document design? In terms of designing individual pages, you need to decide if you should you make your pages multilingual. If so, will you use simultaneous or sequential design? Will readers be anxious about using the information? Is the environment an issue? Have you clearly related graphics to corresponding text?

The particulars of designing for safety are also covered. There is an examination of OSHA, ANSI and ISO guidelines for communicating risk, as well as when the use of words such as Danger, Warning, Caution and Note are appropriate. The colors that correspond to each of these words are also explored. Students are taught to consider where instructions and safety information should be placed, and how to make it prominent and easy to read. Students are also taught what particular issues should be addressed in the draft, and those particular issues are reviewed in the bullets below item five on the rubric students are given before writing the assignment. These bullets can be seen below item five in Figure 1. Once these general issues are addressed, the focus turns to best practices for writing individual steps in instructions. Students are taught to use sequential numbers for each step, as well as the imperative mood to write each step. There is a discussion of feedback statements, and when such a statement might be appropriate to place within a step.

Finally, students review the techniques for cross cultural communication that they have learned in previous weeks of the semester, and are reminded to employ those strategies in writing the memo assignment. In the first class of the week, and every week throughout the semester, the instructor gives the student a detailed rubric for the upcoming assignment, and then goes over each item in the rubric and how it relates to the content that will be covered in class. For the memo assignment, that means not only learning the cross cultural concerns that impact designing and drafting instructions, but reviewing the cross cultural considerations taught in previous weeks. Again, the rubric for this particular assignment can be seen in Figure 1.

Assessing Success

The university’s assessment activities also required the department set specific benchmarks that defined success; in other words, what grade on these particular assignments constitutes the learning outcome being met. This has engendered some discussion among faculty. The benchmarks have initially been set at 60% for the final grade measures, and 65% for the memo with instructions assignment. Sixty percent, and 65% for that matter, is a D. On the one hand, a D is considered a below average grade, so how could earning it be considered successful? On the other hand, students at the university are not required to get anything higher than a D to pass the Technical Writing class, and across the board at the institution, a D is considered a passing grade for undergraduates. A department can adopt a higher standard, but only one program within the department has done that thus far. In that case, a final grade of C or higher is considered successful. The question becomes, should the benchmark be set higher than the overall academic standard at the institution itself? If the university accepts a D as successful

in terms of not requiring the student to repeat the course, then does it follow that individual programs should also accept a D as a benchmark for success? This idea is one that is already raising questions and engendering discussion, and it is likely that the 60-65% benchmark will be raised as faculty within the individual programs come to a consensus on what actually constitutes ‘success.’

Thus far, data has been gathered for one academic year. Data were gathered during the 2010-11 academic year and summer 2011. Students were identified by major, and the grades for the memo assignment and the technical writing course were compiled. In all, data characterizing 105 students comprising 6 different majors were summarized—see Table 2.

Major	Memo: Proportion of Majors Earning Passing Grade	Final Grade: Proportion of Majors Earning Passing Grade
Construction Management	94% (51/54)	96% (52/54)
Design	100% (6/6)	85% (5/6)
Industrial Technology	91% (10/11)	100% (11/11)
Industrial Engineering Technology	33% (1/3)	66% (2/3)
Industrial Distribution and Logistics	68% (13/19)	95% (18/19)
Information & Computer Technology	75% (9/12)	92% (11/12)

Table 2: Assessment Data for Communication and Global Competence Outcomes

Once the benchmarks for the various majors have been calculated, faculty within each program consider the results. For evaluating the effective communication outcome, faculty consider the question of whether or not the results indicate that students have developed an ability to communicate effectively in a variety of formats, to a variety of audiences. For the global competence outcome, faculty consider the success of both the memo assessment and the final grade assessment by asking the following questions: How well did technology students adopt the strategies and suggestions for communicating across cultures? Did each student meet the minimum criteria for a passing grade? How well did technology students communicate clearly with multiple audiences, including those from other cultures? Once those questions are considered in context of the results, faculty must decide if or how action should be taken to change the assessment tools, teaching methods or both to refine the assessment process. The results themselves indicate that a majority of students in each major are meeting the benchmarks. However, a number of factors influence that assumption. First, the ongoing assessment has just begun, and given that the data only contains one year’s worth of results, it is too early to make assumptions about what the data truly indicates. Second, the pool of students in certain low

population majors is understandably small, and therefore statistically inconclusive. And finally, and most importantly, the benchmarks themselves are set at the 60-65% mark, and so it is not surprising that the majority of students have met them, and perhaps also not helpful in terms of indicating what should or should not be changed in terms of assessment. The assessment will have to continue over the course of several years in order to yield significant data, and the benchmarks will more than likely have to be raised in order to provide truly reliable assessment. Another factor that could impact assessment processes is the adoption of a university wide Quality Enhancement Plan or QEP that will focus specifically on improving student writing. This QEP is still in the planning stages, but indications are it will stress writing improvement at the freshman and sophomore level, which may yield more prepared students for the junior and senior level Technical Writing course.

Conclusion

Initially, it was overwhelming to consider adding these outcomes and their assessment to the Technical Writing course. The class is already considered writing intensive, and teaching the class requires a considerable amount of devotion and time to grading papers and providing instructive, quality feedback to students. The global competence outcome was especially intimidating in the sense that the term global competence is rather nebulous and ill defined and because the expertise and background of the professor was in technical writing, not global education or cross cultural education. In reviewing the research about global competence in higher education however, that seems to be a common theme, as most faculty at postsecondary institutions rely not on the body of research on teaching global competence, but on discussion between faculty members [1]. Reviewing the literature was extremely helpful however, and raised some wonderful arguments for placing the global outcome assessment in the Technical Writing course in the first place.

Experts in the concept of global competence suggest two ways of instilling it in students; embedding it into the overall curriculum and urging co-curricular activities like study abroad [1]. If technology and engineering curriculums discourage adding specific courses dealing with communication and global competence, then students might also not have time for co-curricular activities. Which means embedding the information within the curriculum is the better choice for these fields. Educators that focus on global competence especially caution STEM programs from relying on one course or one assignment within a course – perhaps from the liberal arts electives a student takes in the freshman and sophomore years – to provide global competence and urge STEM scholars to include global issues in multiple courses over the course of the undergraduate education [1]. From that perspective, measuring global competence in Technical Writing seems to be a good fit. First, because Technical Writing is a required Junior level course within the major, and second, because global competence itself is defined by at least one scholar as “effective and appropriate behavior and communication in intercultural situations” [1]. If that’s the case, where better to teach intercultural communication than in a class that focuses on analyzing audience and assessing what strategies should be employed in situations where culture may impact communication? The research on global competence also recommends using more than one measure to assess success, and stresses the importance of being flexible and committed [1] which mirrored both the university requirements and the discussions among faculty regarding changing success benchmarks and carefully monitoring student success over a period of years.

The assessment of both global competence and effective communication in the Technical Writing course has been underway for one academic year, and will continue for several more. Collecting the data and compiling it does take considerable time, as will adjustments or changes that the data indicate need to be made in the future. Now that the specific assessment measures and benchmarks have been identified, the collection of the data is added to the traditional pre and post semester work to streamline the effort; in other words, student majors are noted on course rosters and an additional column is added into the professor's grade book for easy notation of the specific benchmarks as the semester progresses. Now that collecting and tabulating the data has become part of the 'system,' attention can turn to how to further fine tune the assessment measures to yield better data and ultimately results.

In retrospect, the initial trepidation over measuring these outcomes in the Technical Writing course has given way to a sense that the course is a good 'home' for the assessment. One of the most rewarding results of this endeavor is the opportunity to have the pedagogy and the content of the course 'reaffirmed' so to speak. So often when we are confronted with new assessment standards, we tend to immediately focus on what we will have to add or change in order to make the assessment, instead of focusing on *what we are already doing* to help our students attain these skills. The truth of the matter is, it is often not the 'outcomes' that have to be developed within our programs, it is the assessment – we are merely examining new ways to *measure* content and outcomes that have been a part of our programs *all along*.

Bibliography:

1. Deardorff, D. K. (2011). Assessing Intercultural Competence. *New Directions for Institutional Research* (149), 65-79.
2. Lutz, J. A. (2010). Points of Departure: Becoming Global Citizens Without Leaving Home. *Teaching in Higher Education* , 715-720.
3. Lohmann, J., Rollins, H. A., & Hoey, J. J. (2006). Defining, Developing and Assessing Global Competence in Engineers. *European Journal of Engineering Education* , 31 (1), 119-131.
4. Wright, D., Malone, E., Saraf, G., Long, T., Egodapitiya, I., & Roberson, E. A History of the Future: Prognostication in Technical Communication: An Annotated Bibliography. (2011, Ed.) *Technical Communication Quarterly* , 20 (4), 443-480.
5. Lengsfeld, C. S., Edelstein, G., Black, J., Hightower, N., Root, M., Stevens, K., et al. (2004, January). Engineering Concepts and Communication: A Two Quarter Course Sequence. *Journal of Engineering Education* , 79-85.
6. Martin, R., Maytham, B., Case, J., & Fraser, D. (2005). Engineering Graduates' Perceptions of How Well They Were Prepared for Work in Industry. *European Journal of Engineering Education* , 30 (2), 167-180.
7. Abersek, B., & Abersek, M. K. (2010). Development of Communication Training Paradigm for Engineers. *Journal of Baltic Science Education* , 99-108.

8. Dunn, C. (2012, January). ITEC 3290 Technical Writing Syllabus.
9. Education for a New Century. (2009, March). *Institutional Planning and Research* . Greenville, NC: East Carolina University.