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Studying students' opinions : using surveys in writing program assessment

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STUDYING STUDENTS' OPINIONS:
USING SURVEYS IN WRITING PROGRAM ASSESSMENT

By

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A REPORT

Submitted in partial fulfillment of requirements for the degree of

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Rhetoric and Technical Communication

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This report, "Studying Students' Opinions: Using Surveys in Writing Program Assessment," is hereby approved in partial fulfillment of the requirements for the Degree of MASTER OF SCIENCE IN RHETORIC AND TECHNICAL COMMUNICATION.

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Abstract

Administrators of writing programs are regularly faced with the problem of assessing the learning that students gain in their coursework. Many methods of assessment exist, but most have some problems associated with them related to the amount of time it takes to perform the study or the scope of the knowledge gained relative to number of participants or volume of information collected. This pilot study investigates the use of surveys of student opinion for their potential to assess composition instruction at Michigan Technological University. The primary goal of this pilot study is to test the effectiveness of using data collected in surveys to make recommendations for improvement of the composition program at Michigan Tech. The report concludes with recommendations for additional study and refinements to the instruments used.

Introduction

During a meeting of Graduate Teaching Instructors for the general education course UN 2001 Composition in the Fall 2010 term at Michigan Technological University, the discussion turned to “improving the program.” Repeatedly throughout the meeting, instructors would propose various changes to the curriculum, for instance, alternative textbooks to use or new ways to focus the class or how much emphasis to place on written, oral, or visual composition. Often these statements were supported with a comment like, “My students say that the textbook is” or “Using newspaper articles is engaging, according to my students.” Sitting in the meeting, adding my own comments about “what my students think,” I realized an inherent problem with our decision making—we had little supportable evidence of what students did say, think, or want in relation to UN 2001 or any other course at Michigan Tech.

When an instructor said, “My students say X,” my follow-up questions would be “What do they mean by that?” And, “Who says it? All of your students, some of your students, one or two students that complained, the few students you favor, or the only one you are ever able to actually talk to outside of class?” We often repeat “what our students say,” but these comments are at best anecdotal evidence. Meanwhile, we are trying to make decisions about the direction of the program from exactly this type of evidence because we have few other sources, and those we have, like the portfolio assessment, offer a possibly limited view of the overall program in relation to the rest of the university.

While not the sole source of information for the UN 2001 Composition program, there was a reason the meeting had been called in the first place—in lieu of better sources for information, decisions about the direction of the program needed to be made, with some form of rationale. The study described in this report investigates whether self-reported data collected via a student survey could be a viable alternative to relying on anecdotal evidence. Surveys are hardly a new method of collecting opinions. Their use is wide-spread in many disciplines both in and out of academe.

Composition vs. Communication

Throughout the rest of this report, I will be alternating *composition courses* and *communication courses* and *composition instruction* and *communication education* at Michigan Tech. There is some debate as to what should or could be classified as “communication studies” and “composition studies.” In academia, and specifically within Michigan Tech’s Department of Humanities, composition and communication are distinct disciplines with unique histories, practices, and theoretical foundations, so the two terms are not interchangeable. But in common usage, people often refer to *communication skills* as being vital for success. You can attend seminars, take classes, or use self-help guides to “improve your communication skills.” Also, for an average person discussing “composition” conjures up images of writing. Even if someone were to be composing a speech, they are likely to be imagining writing it out.

As this study involves designing surveys to be given to students from all across campus, I used “communication” as my preferred term. I offered survey participants definitions of *written communication*, *oral communication*, *visual communication*, and

other communication. These definitions were produced out of informal focus group sessions with graduate teaching instructors of UN 2001 to limit my own personal bias and can be found in Appendix A. They were made to be as all-encompassing as possible and throughout the rest of my text, unless otherwise specified, I intend to use the terms to include as much as possible. For example, courses that add to communication education at MTU include any that improve students understanding and usage of appropriate skills, be they mechanical engineering labs with extensive report writing, political science classrooms that grade student-led discussion, or humanities classes in speech.

Communication Education at Michigan Tech

Like most universities in the United States, Michigan Tech offers students many opportunities to take courses that improve their ability to communicate via written, oral, visual, and other forms of communication. I will discuss four major categories in this report: general education courses, communication-focused courses, capstone courses, and what I call unintentionally communication-intensive courses.

General Education

Michigan Tech's General Education Requirements include a number of components. Students are expected to take four University Wide (UN) classes, two of which have a stronger "college-English" focus and two of which have a stronger "social science" focus. UN 1001 Perspectives on Inquiry is a course designed to teach students college-level critical thinking, reading and composition skills ("Course Descriptions"). UN 2001 Composition (formerly named Revisions) introduces students to the fundamentals of applying aspects of rhetoric such as purpose, audience, context, ethos,

logos, and pathos, to written, oral, and visual composition (“Course Descriptions”). As two courses required of almost all students at MTU that explicitly are designed to introduce students to college-level composition, UN 1001 and UN 2001 offer a large number of classes and students available to be assessed (according to Michigan Tech’s Banweb service, in the 2010-2011 Academic Year, over 50 UN 1001 classes were offered with a capacity of 20 students each in the Fall term and 23 in the Spring term; over 40 UN 2001 classes were offered, each with a capacity of 20 students). Because of the first-year composition class nature of these two courses, and the large number of potential students to survey, UN 1001 and UN 2001 were ideal classes to include as part of my study.

Students are also required to take 15 credit hours of Humanities, Arts, and Social Sciences (HASS) courses and 16 credit hours of Science, Technology, Engineering, and Mathematics (STEM) courses in addition to their other required courses. These HASS and STEM courses offer opportunities for students to become more well-rounded and improve skills that may be considered outside of their major.

Communication-Focused

In addition to dedicated courses for the Scientific & Technical Communication degree program offered through MTU’s Department of Humanities, which has an extensive list of offerings that can improve students’ communication skills, the humanities and fine arts departments offer courses for non-majors that focus on teaching these skills to students. Also, some programs, like Chemical Engineering, offer their own discipline-specific writing classes.

HU 3120 Technical & Scientific Communication is one such course that is explicitly designed for non-STC majors. It is taught for a more general audience, and often either required or strongly recommended as an ideal candidate for meeting an engineering or science student's HASS requirements. For these reasons, and because of the convenience of the course being taught in my own department, commonly by graduate instructors, HU 3120 was one of the courses included in my survey study.

Capstone

Almost every degree program at Michigan Tech requires the students to pass a capstone course in their senior year that not only tests students' abilities but also pushes their skills to the highest potential. Mechanical engineering students spend one full year in MEEM 4901 (Fall Term) and MEEM 4911 (Spring Term) working on a solution to a real-world engineering problem, commonly working with a sponsor ("Course Description"). They ultimately produce a long paper detailing their work and a poster for the Undergraduate Student Expo, as well as engaging in numerous other activities that could be considered as testing and improving their communication skills. For these reasons, and because it is the largest single degree major at Michigan Tech, I chose to include these students in my current survey study.

Unintentionally Communication-Intensive

Any course that demands more of a student, that pushes a student to write better, present more strongly, create more persuasive visuals, or otherwise engage in communication, helps to improve a student's overall skills and can thus be considered as part of their communication education while attending MTU. These improvements may

come in the form of extensive writing assignments in labs or non-major courses taken to meet HASS or STEM requirements, or could be a happy accident of having a particularly hard grader in a major-specific course who pushes students to produce more than the minimum. A number of questions on the surveys that I conducted investigate these non-traditional courses that may have improved students' communication skills.

The Transfer of Knowledge

Assessment of writing programs can take many forms with varying foci. While I was interested for my study in student opinion of the composition program and various classes related directly or indirectly to it, the specific area of interest for my research connects to whether I would be able to collect opinions from students about what skills they were able to transfer from their earlier studies (for example, UN 1001 and UN 2001) to their later communication needs (HU 3120 and MEEM 4911) and whether they feel prepared for their future careers because of skills gained at Michigan Tech or elsewhere.

James Paul Gee in his list of thirty-six learning principles describes the transfer principle as follows:

Learners are given ample opportunity to practice, and support for, transferring what they have learned earlier to later problems, including problems that require adapting and transforming that earlier learning. (Gee 211)

Transfer, then, is a student's ability to take skills and knowledge learned in one area and apply them to solve problems in later work. It is a primary goal for most educators that what they are teaching today will help a student in the future.

If a Michigan Tech senior in MEEM 4911 writing their final report remembers to consider context and audience or applies the CRAP (visual contrast-repetition-alignment-

proximity) principles from Robin William's *The Non-Designers Design Book* to their poster design, they are transferring knowledge that was most likely gained or reinforced in their sophomore year while taking UN 2001. This would be considered by most to be the intention of having students take courses like UN 1001 and UN 2001 in their first two years of college: to improve the work they produce in their later years at Tech.

The issue of what students do learn and then transfer to their later studies is of great interest to those in composition programs. Current research on the transfer of knowledge has been investigated through various methods. The three that I will focus on are longitudinal studies, focus groups, and portfolio assessments. Research done in each of these three areas will be reviewed. I also compare my own proposed survey design to show how it overcomes difficulties these other methods face.

Longitudinal Studies

In the field of research of writing programs, Nancy Sommers, the self-described "custodian of the oldest writing program in America" ("The Case for Research"), worked as the Director of the Expository Writing Program at Harvard. Sommers has argued, in numerous pieces published in *College Composition and Communication*, *College English*, and elsewhere, the need for research into composition instruction at universities. A key piece of her work has been the idea of the collection of hard data to make supported claims, rather than relying on the kind of commonly used anecdotal evidence I was concerned about in my opening story ("The Case for Research" 510).

In reporting on their work with the Harvard Study of Undergraduate Writing, Sommers and co-author Laura Saltz discuss the multi-year process of tracking over 400 students from the incoming class of 2001 using annual surveys (Sommers and Saltz 126).

Of the participants, 65 had been chosen at random to meet with investigators for additional annual interviews and were asked to bring examples of their writing from the previous year. A massive volume of rich data was thus collected, over many years, requiring an equally massive amount of effort to organize, analyze, and interpret. It would be hard to come up with a much more comprehensive method of collecting data than the one used here.

There are some points, however, to consider. This study was performed at one of the premiere universities in the United States. It surely had a substantial budget and involved the participation of not just hundreds of student-participants but also the effort of numerous researchers to collect and analyze the data. The study produced invaluable data that has helped to shape the writing program at Harvard today and will likely continue to do so for years to come. A study like the one Sommers and Saltz conducted, as valuable as it could be to composition instruction at MTU, is impractical to consider as it is unlikely Michigan Tech could afford the kind of budget needed or marshal the resources applied to bring it to fruition. A study that could be considered for Michigan Tech would be one performed by Elizabeth Wardle.

Elizabeth Wardle has reported preliminary results of her own longitudinal study at the University of Dayton in Ohio which tracked seven students from her first year composition course in the Fall 2004 term throughout the rest of their time at the university (Wardle 70). Her primary means of collecting data were through focus groups and interviews with the participants, while also collecting representative writing from her students over the many years they attend school. Compared to the Harvard study,

Wardle's research would be of a scope and scale that MTU could handle but even she points out that the extremely small sample size of seven students is problematic.

Both studies also suffer from the predicament of whether they are assessing the program as it is today or as it was when they started their research. In the four to five years it takes most undergraduate students to complete their coursework, the programs themselves will have likely altered from things like changes to the faculty, to textbooks used or editions of the same text, to the method of instruction or the changes of the students themselves. Studying concurrently multiple years' worth of students over the long-term compounds the issue of resources needed to manage the inflow of information.

The survey method I have tested and am proposing overcomes these limitations of time and scale by taking a cross-section of students at a single moment but who would have been exposed to the writing courses over a span of time. By sampling students from many class levels, the researcher will get opinions from multiple years of students, all of whom likely took the courses at different times.

Additionally, as the survey would be designed to be given at the same time, researchers would collect a massive volume of information, but with properly designed surveys and well-worded questions, months or even a year could be spent to analyze a limited amount of data and make recommendations from those results to the program more quickly than if all the data were to be compiled. In addition, if the survey were given regularly (annually or every term, for instance) data would be usable as a longitudinal study but still qualified for immediate consideration.

Focus Groups

Wardle's use of focus groups recurred over several years, producing longitudinal data. Focus groups are more commonly used in a single instance or term. One study to use focus groups like this was the second phase of research by Dan Fraizer.

In Fraizer's work, a convenience sample of 112 first-year composition students and teachers were surveyed as phase one of a two-phase study (Fraizer 39). The primary goals of the first phase were to "get a sense" of the perceptions of the first-year course from students and instructors and to facilitate the selection of participants for the second phase. For the second phase, eight participants were selected to continue in the study. Those selected engaged in four additional meetings, first as a single large group, then individually with Fraizer, then in small groups of three or four and finally again as a single large group, all in the span of a single term. Notes were collected from these four interactions and participants were selected by: showing willingness to on their surveys, having a diverse fall schedule, and being in different composition courses so that a larger amount of the overall program would be included.

Linda Bergmann and Janet Zepernick employed focus groups in their study of knowledge transfer at the University of Missouri-Rolla (Bergman and Zepernick 127). In their study, four initial focus groups were formed from students enrolled in the College of Arts and Sciences, the School of Engineering, and/or the School of Mines and Metallurgy, one group being formed from each discipline and a fourth composed from all three. Two additional focus group sessions were held after the initial study; composed of participants from the first study, these focus groups tried to clarify questions raised in the

first round of meetings. For this study focus groups were the primary method of assessing transfer as perceived by different students across disciplines.

A strength of using focus groups is that you are able to have an engaging conversation that can evolve as it occurs and in turn, the data collected from such engagement can be especially rich in detail. Though many problems exist with focus groups, for instance, group sessions being derailed by divergent conversation or discussion becoming led by only a few of the most verbose students, another specific concern becomes again a matter of scope and scale.

To assess the program fully, it would be desirable to have as many student participants as possible from the classes being assessed. Fraizer mentions that he tried to control for this in his selection for focus group participation (Fraizer 44). A selection process that might work at Michigan Tech to assess UN 2001 would start with one participant from each section taught in a given semester. To get an even richer view, and to possibly control for having selected the “outlier” from each class, it may be desirable to include at least one additional student from each class.

Now there are over forty participants all getting together to carry on one conversation about UN 2001. Or, they would need to be broken up into smaller groups, which then leads to concerns of balancing groups equally and evenly. Increasing or decreasing the number of students in the focus groups compounds these issues until either there are too many students to handle and collect opinions from or there are too few students to adequately represent the entire program.

A cross-sectional survey such as the one I am proposing could be administered to all the students currently enrolled in a course. The pilot survey itself was designed to be

short enough that it would not be too great a burden for students to complete, but attempted to collect the kind of engaged responses that you would most likely get out of focus group meetings. Also the survey, being static in the questions it asks, has little chance of being “off-topic” as could happen in focus group discussion.

Portfolio Assessment

It has become a fairly common practice to include the use of portfolios of student work when considering assessment of a class. Generally collected at the end of a term and about only a single course, these portfolios offer a rich resource for study and assessment of a program, but by their design are generally limited to offering a detailed picture of essentially only a single class at the end of a single term. Comprehensive portfolios, constructed of work across a student’s individual career at an institution are not unheard of, but suffer possibly from including too much information for analysis.

Michigan Tech’s current form of assessment for UN 2001 does include a portfolio assessment. Every student currently taking UN 2001 is expected to compose an electronic version of their portfolio to include samples of their written, oral and visual compositions created for the UN 2001 class (“UN 2001 Digital Portfolio Guidelines”). From each class, two portfolios are selected at random to be examined and assessed using a set of questions chosen by the Director of Composition Program and her two graduate assistants (Kitalong). Graduate students review each portfolio answer the questions, the results of which are summarized and presented in an annual report by the Director (Kitalong).

This assessment offers a detailed look into student learning in UN 2001 at MTU and offers the program a chance for annual re-evaluation by inspecting students own work from the class. Sommers in her study collected example work from students, and as

with her study, both Michigan Tech's portfolios and Sommers' collection offer a mountain of information to tackle each time assessment is made. Seeing actual student work can be incredibly valuable, but assessing that work takes time. And there are other concerns as well.

Part of the strength of the portfolio assessment currently used for UN 2001 is that it comes from a single program that can be fairly regulated. Specific and clear course goals exist ("Educational Goals for UN 2001"). The Director's expectations about the course can be explicated for all instructors individually. Assignments in general meet minimum requirement for inclusion in the portfolio, and it can be anticipated that those assignments fit into specific categories. If a portfolio assessment were used outside of just a single class, instead being an on-going study and collecting work from students over their time at Michigan Tech, there are concerns about what students might include.

An engineering student, in a single term, might have nothing but STEM courses focused on mathematical calculation rather than essay writing. For such a student, the "best example" of his or her writing in a given term or year could mean formulaic lab reports or technical documents. Out of the context of the specific class the writing sample is from, especially when rigid formatting was required, the example papers included could by their nature not inherently reflect the "best work" the student could produce. To counter this, assignment sheets and student reflections to explain some context of the assignments could be included, but this continues to increase the amount of text to analyze for assessment.

Additional Considerations

Additional methods of program assessment exist, of course. They are too extensive and varied to include here. Instead, I focus on longitudinal studies, focus groups and portfolio assessments because of their recent use to investigate the transfer of knowledge from earlier composition courses to later work or because of other ways they are relevant to my current work. In this sense, two additional pieces of context are worth discussing: how these and other studies have employed surveys compared to my own proposed and tested design, and recent outreach efforts that highlight a growing desire for this kind of research, specifically here at Michigan Tech.

Outreach at Michigan Tech

As part of his on-going duties as the current Associate Coordinator for the Composition Program, graduate student Kevin Cassell has recently undertaken an Outreach Project (Cassell). Initially, Cassell intended to speak with faculty members from all across campus to inform them of the kind of work that is being done in UN 2001 and to collect their feedback concerning how the theories and practices taught in UN 2001 are employed by students in their later work. By the end of his research, he had only met with three departments (Mechanical Engineering, Forestry, and Chemical Engineering), but he had received such an overflow of interest that he had to cut his efforts short. He found in the faculty of these departments a strong interest and concern for the quality of student writing at Michigan Tech.

As programs across campus evaluate the quality of the education their students receive, the question of non-technical knowledge and how to improve it without reducing

the amount of time spent on those major-specific theory courses can become a serious concern.

Cassell also mentions in his findings work by a graduate of the Rhetoric and Technical Communication program from MTU, Roxanne Gay. As part of her dissertation work, Gay surveyed students at Michigan Tech and faculty at numerous institutions to develop an understanding of the perception that engineering students are “bad writers” and how this perception by faculty may be a kind of self-fulfilling prophecy in that it potentially de-motivates students in their writing (Gay). Her results are intriguing and should be considered in any future work when assessing student opinion and assessing the quality of the education Michigan Tech students are receiving with their degrees.

Both Cassell’s recent outreach and Gay’s dissertation work point, I believe, to a growing exigence: a concern about the quality of the communication education at MTU. All parties involved, including those faculty members who may not traditionally consider communication to be the main focus of their courses, are beginning to want a form of assessment to help them inform how they can enhance the quality of the education they are offering at Tech.

Why Surveys

In reviewing the types of research and assessment currently used to investigate transfer, surveys were often employed, but rarely as the main thrust of the research. Instead, they more commonly were used to set up preliminary groups or to assess general attitudes before starting a second phase. Sommers, who did rely heavily on surveys for part of her research, augments them with interviews and collected writing samples, and

her surveys are designed to be compared over a long period of time, rather than to one another (Sommers and Saltz).

The research in surveys I have investigated and am proposing here would instead produce a detailed snap-shot of student opinion across campus. A similar study to my own, found well after I had performed my own and missed during my original searches because it was a conference paper, not a journal article, had been performed by Judith and Peter Mercier. In their research, they had surveyed 297 college students in their junior and senior years using a Likert-type questionnaire, investigating specifically what skills they felt they had learned in their first-year composition classes and which they had learned while in their discipline-specific courses (Mercier and Mercier). Though my own research was not informed by their work, their outcomes help to support the goals I was seeking to find, though our specific methods differed. My research is guided by various goals, detailed below.

Goals

The current research is a pilot study to examine whether a student opinion survey of a cross-section of students in multiple classes across the curriculum could provide information that would be useful for the assessing of written, oral, and visual communication education at Michigan Technological University.

Specific goals for this study include:

Effectiveness of Survey Method

- To test whether both close-ended and open-ended questions can be used together to provide a rich source of information in student survey answers.
- To investigate if students would be motivated to provide useful feedback in the medium of a survey that enhances current assessments.

Recommendations to Improve the Teaching of Communication

- To understand how gathered information could be used to improve the teaching of written, oral, and visual communication at Michigan Technological University.
- To examine whether student responses on surveys can offer evidence of the transfer of knowledge and skills learned in earlier communication courses to later communication needs.

Methods

With input from my advisor, I designed and conducted two survey studies related to assessing student opinion of communication education at Michigan Technological University. The first study elicited a series of paper surveys from four different classes across MTU's campus during the Spring 2011 term. The second study was designed with insight from the first study and focused on an online survey for a single class at Michigan Tech during the Summer 2011 term.

All surveys were conducted in accordance with Michigan Tech's Institutional Review Board (IRB) guidelines. Exempt status was granted due to the nature of the study since the information collected would be difficult to trace back to individuals without names and contact information.

All surveys included simple instructions and a list of definitions for various terms used in the surveys. The four terms defined for use in the survey were Written Communication, Oral Communication, Visual Communication, and Other Communication. The definitions provided included as many examples as were possible from as wide a range of possibilities to try to be as inclusive as possible. The specific definitions listed were drafted in conference with my advisor and then confirmed in informal focus groups with fellow UN 2001 instructors. The definitions, as listed on the surveys, can be found in the example survey included in Appendix B.

Mary Sue MacNealy's *Empirical Research in Writing* was a primary text used as a reference in constructing my surveys. Her chapter on surveys is the source of most

terms and definitions I use in describing by surveys and I used her checklists to refine my questions and layout (MacNealy, 148-175).

First Study

General Design of Questions and Survey

The surveys were designed to be printed off and handed out in a classroom and filled out in less than twenty minutes time during a class period in the final two weeks of regular classes. A combination of close-ended and open-ended questions were included on the survey. The close-ended questions generally used an 11-point rating scale (0 to 10) that was similar in design to a 5-point Likert scale, assessing if students strongly agreed or disagreed with a question or statement. Close-ended questions were included to pilot test the value of such questions on a survey of this type, despite the fact that the sample would lack statistical significance because the population sizes are too small and the survey population was a convenience sample rather than a random sample.

Close-ended questions were generally written to prompt the student to consider or think about a related open-ended question. For instance, a question may ask, "In your opinion, how much do you believe UN 1001 has improved your communication skills?" Answers were first provided on a 0- to 10-point scale, with 0 representing "My skills did not improve at all," and 10 representing "My skills improved significantly." This question would be followed by the open-ended question, "Why do you feel this way?" The close-ended question prompts the students to consider their opinion of the class, which they would then justify in responding to the open-ended question. Large 10-point

and 11-point scales were used to allow for more nuanced answers rather than forcing students into fewer categories and responses.

Open-ended questions were my primary interest in these surveys and made up a large portion of the data collected. One of the primary concerns about using surveys is that they are most commonly used to collect quantitative data (like answers on a Likert scale). One of the key goals of my pilot study was to investigate if students would provide detailed enough responses to open-ended questions that those answers could then be analyzed for constructive comments about the nature of the courses being surveyed.

Courses Included in First Study

In my first study, I designed surveys to test the effectiveness of using surveys as a method of assessing student opinion in all four target classes taught in the Spring 2011 term at Michigan Technological University; UN 1001 Perspectives on Inquiry, UN 2001 Composition, HU 3120 Technical and Scientific Communication, and MEEM 4911 Senior Capstone Design II.

UN 1001 and UN 2001 are university-wide general education courses that all MTU students are expected to take to graduate. In UN 1001 Perspectives on Inquiry, students are expected to research, write and present at the academic level on a topic within the focus of the class. It is designed for incoming freshman and is generally taken in a student's first year at Michigan Tech. The course is most MTU student's first exposure to college-level writing and presenting and was included in my survey because of this.

The second course included in my survey was UN 2001 Composition. Generally taken in a student's second year at MTU, UN 2001 is designed to provide students with

exposure to applying rhetoric. The course is explicitly designed to be a follow up to UN 1001 and to be taken in a student's second year at Michigan Tech. This course, and a conversation between instructors of the course, is what prompted these studies in the first place, and represents the second central exposure all students should have to learning communication skills. That is why this course and its students were included in the first study.

HU 3120 Technical and Scientific Communication is commonly taken by students across campus. Some programs even require it or similar courses to be taken by all of their majors. It offers students a chance to study technical communication theory and practice it in their work. The course builds on the rhetorical strategies first taught to students in UN 2001.

Though not required like UN 1001 and UN 2001, HU 3120 was included in my study because of the large number of students, from many different majors across campus, who take the course. It also specifically is designed to exclude students in their freshman or sophomore years, who could possibly be in UN 1001 or UN 2001 ("Course Descriptions").

The final course surveyed in my first study was MEEM 4911 Senior Capstone Design II. As one of the largest degree programs offered at Michigan Tech, the capstone course offered by the Department of Mechanical Engineering–Engineering Mechanics provided a large number of students to potentially survey. Also, as with all capstone courses, the class is explicitly designed to be taken in a student's final term at Michigan Tech, and most students will have already taken UN 1001, UN 2001 and HU 3120 (if they were ever going to take it) as well as completed any other classes that may have

helped to improve their communication skills while attending Michigan Tech. The course is designed as a follow up to MEEM 4901 in which students work in teams to provide a real-world engineering solution to a company that they contract with. The final report and poster presentation can be considered as representing a student's final major compositions and tests of their communication skills. I wanted to test whether surveys could assess whether students in their senior year were thinking back to skills taught and learned in UN 1001 and UN 2001.

Surveys were designed with the assumption that UN 1001, UN 2001, HU 3120 and MEEM 4911 would be taken sequentially. As such, survey questions were customized for each class, so that later courses like MEEM 4911 and HU 3120 would explicitly ask students about earlier courses like UN 1001 and UN 2001.

Sections of the Survey

Each survey followed a similar design, being broken up into three main sections: Past Experiences, Current Experiences and Future Expectations. In addition to these three areas, a demographic survey collected information like the participants' age, ethnicity, major, and year in school. The cover sheet included an Informed Consent write-up, as well as the instructions and definitions. An example of the survey for students in MEEM 4911 is included in Appendix B. This specific survey was included as it has the greatest number of questions. The other surveys are similar, with only the class-specific questions being excluded or moved from Previous to Current Experiences.

The questions in the section of the survey on Past Experiences were designed to elicit the degree to which students believed themselves to be strong communicators, and where they believed they had learned the communication skills that they already

possessed. Questions asked about experiences in high school, college, and outside of school, for instance, in extracurricular activities like sports or work.

The second main section of the survey was Current Experiences. Students were asked how much they believed their current class had improved their skills and invited to explain their answers. This section of the first study surveys also included six questions taken from the National Survey of Student Engagement (NSSE), a nationally recognized survey. I included six questions that inquired into students' experiences with writing and delivering oral presentation while in college. The intention was that the results from this survey could be compared to the national survey to possibly contrast MTU student experience with the experiences of students at other universities around the country.

The Future Expectations section of the survey was designed to question students' opinions about how important the four major areas of communication (Written, Oral, Visual and Other) that were given as definitions at the beginning of the survey, would be in their future careers and how well prepared they felt that Michigan Tech had made them for their future careers, both in terms of communication as well as in technical background. This was accomplished, again, with a combination of close-ended and open-ended questions.

Administration of the First Study

After receiving IRB approval to conduct this study, I developed a convenience sampling of Michigan Tech students by contacting one instructor of each target course. . For UN 1001, one class taught by Dr. Robert Johnson was surveyed of the nine sections offered that term. For UN 2001, two classes taught by graduate student Kate Aho were surveyed of the nineteen taught that term. For HU 3120, one class taught by graduate

student Jess Juntunen was surveyed of the six sections offered that term. And all twenty sections of MEEM 4911 taught by Dr. William Endres were surveyed.

Class	Class Title	Sample Size (n)	Students Enrolled in Class (N)	Survey Modality	Time to Complete
UN 1001	Perspectives	18	25	Face-to-Face	10 – 25 minutes
UN 2001	Revisions	22	24	Face-to-Face	10 – 20 minutes
HU 3120	Tech & Science Comm	0	24	Online	Time not tracked
MEEM 4911	Senior Design	45	89	Face-to-Face	10 – 30 minutes

Surveys for UN 1001, UN 2001, and MEEM 4911 were conducted in-person and in-class during the final two weeks of the Spring 2011 term. Prior to each session, I printed off enough paper copies for each class, made sure to have additional pens and pencils to hand out, and brought with me a notebook to write comments and observations.

The first survey performed was of the MEEM 4911 class on April 12, 2011 during Week 13. This was the last meeting of their class and only about half of the 89 students enrolled in the class attended. Dr. Endres spent the first half hour of the class period discussing final notes to students about finishing their degrees at MTU. He then introduced me, spoke for a few minutes on the importance to the MEEM department for this kind of research as they assess their program, and left with his two teaching assistants. I handed out the survey to the students who were present, and of the forty-six

in class that day, forty-five participated in the survey. Students took between ten and thirty minutes to complete the surveys handed out. (See Table 1 for details).

The second set of surveys were conducted in Ms. Aho's two UN 2001 classes on April 14th, 2011 during Week 13. Two classes were surveyed, rather than one, because both had lower than the average number of students enrolled and combined were more equal to a normal class of twenty. Both classes were surveyed after a brief ten minute activity by the instructor. Of the eight students present in the first class and fourteen present in the second class, all participated in the survey. Students took between ten and twenty minutes to complete the surveys handed out. (See Table 1 for details)

The third survey conducted was of Dr. Johnson's UN 1001 class on April 21st, 2011 during Week 14, the last day of regular class for the students. During the first ten minutes of class Dr. Johnson discussed what was going to be happening that day and introduced me to the students. As before, I handed out surveys to the students present and read the Informed Consent, Instructions and Definitions, taking their participation in the survey as consent to be surveyed. Of the eighteen students present, all eighteen participated in the study. (See Table 1 for details)

Most students took between ten and twenty minutes to complete the survey, with two students taking an additional five minutes. Before the last two were finished, Dr. Johnson began to set up for the next portion of the class, and many of their classmates chatted, possibly distracting those who were still taking the survey.

The procedure to introduce the students to the survey was essentially the same for each class. I first read the students the Informed Consent, Instructions and the Definitions on the second page (see Appendix B for an example survey). Students then began to fill

out the survey, their participation in the survey being taken as consent. Students took between ten and thirty minutes to fill out the survey and no students had any questions during that time. I numbered the surveys in the order I collected them and thanked each student as they turned them in to me.

Paper copies of surveys for HU 3120 were produced, but Jessica Jutunen and I were unable to find an appropriate timeslot for the class to take the survey. In consultation with my committee, I decided to invite the students to complete the survey via email. A Word document version of the survey was prepared and the instructor forwarded an email I had written. The students had more than a week to complete the survey. Of the twenty-four students registered for the class, none returned completed surveys. A discussion of this fact and its possible implications can be found in the Discussion below. (See Table 1 for details.)

The failure to get even one survey from students enrolled in HU 3120 influenced my decision to conduct a second study.

Second Study

Rationale for Second Study

While assessing the data collected from the first study, a number of insights into how to better design the survey “next time” became apparent. In addition to testing whether various changes to the design and content of the survey could increase the amount of useful data collected, having failed to collect even one survey from students in HU 3120 produced a hole in my dataset. My advisor and I decided then that I would perform a second study, this time focusing only on students in HU 3120 and conducted

online rather than in-person, on paper. Departmental access to a SurveyMonkey.com account was used to produce the initial survey and provide the initial analysis of the data.

Online Versus On Paper

The online survey was organized the same as the paper version. It began with an Informed Consent and Instructions. The main areas of Past Experiences, Current Experiences, and Future Expectations remained mostly intact. Both close-ended and open-ended questions were similar to the first study. What changed was how questions were presented with supporting information to help make the questions clearer to participants.

In the paper survey, the information was presented on three or four continuous pages. In contrast, in the online survey, related questions were grouped together on eight different screens, with similar questions kept together, though asking, for instance, about a different aspect of communication or class. Information necessary to answering a question, such as definitions of the various types of communication, was provided with the question about that topic rather than at the beginning, reducing the chance that respondents would forget it by the time they answered the question.

Some questions were removed and others were broken up into more parts. The two major sets of questions that were removed completely were a set that tried to produce a list of previous experiences and the NSSE questions in the current experience section. The listing of important experiences was instead replaced with a listing of the common responses from the first survey. This was done because the original strategy produced a lot of data that was not useful as answers were often generic and the real purpose had been to try to prompt students to consider more than just the obvious. This same goal was

accomplished with listings of suggested ideas for sources of experience with communication skills.

The NSSE questions were excluded because they did not fit the overall style of the survey, having been written for a completely different study. The NSSE survey questions were written so as to reduce the number of possible responses, which then makes data more concise, which is valuable when a study is performed on as large a scale as the NSSE is. The questions generally had only four to five possible answers, and this led to students' answers seeming sporadic in comparison with the close-ended questions written specifically for the survey. The scales either had large numeric differences between answers (for instance, categories for "number of papers written of 20 or more pages" were 0, 1-4, 5-10, 11-20 or more than 20) or were completely subjective to the reader's understanding (for instance, available answers to "how many times have you made a class presentation?" were Never, Sometimes, Often, or Very Often.) In short, the data produced by them was so out of context with respect to the original NSSE data that the information would likely not be comparable. This idea, that writing assessment should be locally produced rather than adopted from an external source and then applied to the specifics of an institution, is a known concern in assessment (Gallagher).

In general, all questions, especially ones that would originally have been only close-ended like the NSSE questions, were given spaces for additional comments so that students might elaborate beyond the 11-point scales provided. The intention was to allow enough space so that those students interested in sharing their thoughts would have enough space to make their comments, despite the generally constrained nature of online surveys.

Administration of the Second Survey

The second survey was designed to be emailed as a link to students enrolled in the Summer 2011 Track A sessions of HU 3120. I contacted the instructors of the summer courses with a mass email that included a form letter they could forward to their students. Only one instructor, Dr. Marika Siegel, confirmed that she sent the email and link for the survey on to their students. Her class happened to be conducted fully online.

The link was activated for two weeks, the final week of the semester and the week following it. Of the possible summer students in Dr. Seigel's section that could have taken the survey ($N = 16$), only six participated ($n=6$). The online program used, SurveyMonkey, had some built-in methods of analysis that were used first before being added to a database similar my previous study.

Results

Over sixty pages of survey results, including answers to all close-ended questions and full transcriptions of all answers to open-ended questions, were collected. Presented here are representative results that relate to specific goals of this report. I chose these specific responses to these specific questions, primarily from the MEEM 4911 survey and about UN 1001, not to try to make unambiguous comment about the class but because as a representative sample of the range of responses given, I was able to say the most with the smallest set of results. In this section, student responses to open-ended questions are presented as they were written, with punctuation, spelling and grammar errors as close as possible to how they appeared on the original page.

A limited expansion of the results can be found in Appendices C and D when it was deemed necessary to show more possible results. Digital copies of the full results and other research materials are available for interested parties through me or my advisor, Karla Saari Kitalong. What is presented here is only a small fraction of the total data produced but it serves as a strong example of the kind of responses given on the surveys. These specific questions/responses were chosen from the many possible not because I intend to make specific comments about UN 1001, per se, but these specific responses show the breath of the types of responses students provided.

Though all results reported here for HU 3120 come from my second study, the surveys were so similar that their statistics are included alongside my other three surveys. When results were analyzed by including and excluding results from the HU 3120 survey, averages and other statistics rarely adjusted.

Effectiveness of survey method

As noted earlier, the study was designed to assess whether a survey method would be effective in producing the kinds of data that could be used meaningfully for program assessment. Evidence that the goal of testing if and how close-ended and open-ended questions could be used together is supported by showing how comparisons between average scores of student opinion of classes correlates to the kinds of comments they make, and how those comments, regardless of length, can offer some insight into student opinion of the program.

For each set of questions, two sets of descriptive statistics were compiled that were designed to work in conjunction. Generally, these questions were about students' previous or current experiences with specific classes. The first set of statistics calculated average scores (mean) of all responses to surveys. Students who did not response (n/a) were not counted in this initial average. The adjusted mean of each score calculates the average score assuming that those non-responses are equal to zero. The median, mode, and standard deviation are based on non-responses not being counted. Rarely would it have made a large difference, which is supported by the fact that most means and adjusted means were similar to one another. Table 2 represents data from Question 5 of the MEEM 4911 surveys, "In your opinion, how much has UN 1001 improved your communication skills?" Results were scored on a scale of 0-10, with 0 being "Not at all" and 10 being "significantly" (see Table 2).

Table 2: Responses to Question 5 on MEEM 4911 Survey	
<i>In your opinion, how much do you think UN 1001 improved your communication skills?</i>	
0 = "My skills did not improve at all" : 10 = "My skills improved significantly"	
Mean (Average Overall)	2.9
Number of non-responses (n/a)	5
Adjusted Mean (n/a = 0)	2.6
Median	2
Mode	2
Standard Deviation	2.3
Lowest Value Response	0
Highest Value Response	9

A second quantitative measure of student response regarding these close-ended and open-ended questions is word count of answers given. After Question 5, a follow up Question 6, asks, "Why do you feel this way?" Similarly to the analysis of the scores to questions like Question 5, average word counts, with and without counting non-responses as zeros, have been calculated. Rarely would counting the non-responses as zero have a large impact on the overall average word count of each question or the overall word count of entire surveys. See Table 3 for an example of statistics of word counts of the follow-up question to Question 5 about UN 1001, "Why do you feel this way?"

Table 3: Word count for Question 6 on MEEM 4911 Survey	
<i>Why do you feel this way? [about UN 1001?]</i>	
Mean (Average Overall)	17
Number of non-responses (n/a)	6
Adjusted Mean (n/a = 0 words)	15
Median	18
Mode	11
Standard Deviation	7.4
Lowest Value Response	5
Highest Value Response	35

These results are typical of most answers given on surveys in both studies. The overall averages, for all four surveys combined and for each individual survey are reported below (see Table 4). Numbers in parentheses are the overall scores when word count averages are weighted by the number of participants per survey (sample size = n).

	Overall	UN 1001	UN 2001	HU 3120	MEEM 4911
Mean	16 (15)	13	15	24	14
Adjusted Mean	12 (11)	11	11	14	11
Sample Size (n)	91	45	22	6	18

Below are three short, three average, and three long answers (compared to the mean length of 17 words for Question 6) on Table 5. The text is presented with all errors intact. Particularly difficult errors may be labeled with a [sic] and occasionally include my interpretation of what the author meant to write.

<i>Question 6: Why do you feel this way? [about UN 1001]</i>		
Response #	Response to Open-Ended Question	Word Count
<i>SHORT</i>		
1	I don't even rember [sic] it.	5
7	Wrote papers the same way I always have.	8
13	I feel that the expectations of communication weren't high enough.	10
<i>MEDIUM</i>		
8	Grading didn't represent Quality of work. I could receive an A with 60% effort or 100% effort.	17
12	I already possessed most of the fundamental skills reinforced by UN 1001 thanks to high school academics.	17
21	Because it was the wrong type of writing. Engineers use a curtain [sic] format that isn't taught in these classes.	19

<i>LONG</i>		
26	We did a Few papers and presentations but they were not very help full [sic] to the presentation would be doing in engineering world so was kinda a waste of time.	31
27	I feel it was a repeat from high school. I would benefit more from a technical writing class, or a presentation class.	22
33	The reports were nothing I hadn't done more rigorously in High school. The discussions were fun but there was sort of a lack of structure to them. It depends heavily on the classmates you have.	35

The sentences included on Table 5 were chosen because they represent the generally negative nature of the students comments (Question 5: Mean = 2.9). Some students had at least mildly positive things to say about the class (around 10%). For instance, one student wrote, “It forced me to review & edit my papers & writing.” (Response #32 in Appendix C).

To see a complete listing of all student responses to both Questions 5 and Questions 6 on the MEEM 4911 Survey, please see Appendix C.

Averages alone do not tell the full story. Specific questions on different surveys, regardless of modality (face-to-face or online) had much higher averages, reported below on Table 6. Each entry that is included has survey specific score greater than the overall average of the rest. No MEEM 4911 surveys scored the specific courses above the overall average scores.

Survey Mean	Overall Mean	Survey	Question #	Topic of Question
6.0	5.0	HU 3120	Question 8	UN 1001
8.7	6.4	HU 3120	Question 11	UN 2001
6.8	6.4	HU 3120	Question 13	HU 3120
5.9	5.0	UN 1001	Question 7	UN 1001
5.1	5.0	UN 2001	Question 5	UN 1001

Participants did in general show a willingness to provide long answers when they felt they had something to say. The following table includes the ten longest responses, regardless of survey, and the questions to which they were responding. There is one exception to this inclusion, Response #6 on the online HU 3120 survey gave incredibly long responses (compared to the averages of the survey and overall). Their information is included in Appendix D and can be compared to long responses on the other surveys here. A different entry from an HU 3120 student-participant is included in this list.

Table 7: Longest individual responses given on any survey to any question (excluding HU 3120 Response #6)		
<i>Survey Class : Question</i>		
Response #	Response to Open-Ended Question	Word Count
<i>MEEM 4911: Why do you feel this way? [about MEEM 4901]</i>		
41	MEEM 4901 is perceived by the students as another class. So, they tend to behave like they are in a classroom setting; even if they are sitting with their team, Now, this may not always be the same. I have seen teams with exceptionally good rapport. But I believe that if MEEM 4901/4911 is made to be as difficult as any other Senior mechanical class, students won't find the need to look at this from an exciting perspective. I believe that a student's grade in MEEM 4901/4911 should be based on their attempt and hardwork towards the completion of the project; rather than it's final outcome and such.	108
<i>MEEM 4911 : Why do you feel this way? [about UN 2001]</i>		
37	This class was in a large lecture hall where 90% of students slept, played video games or surfed the web. The class was useless for communication skills. I did get to watch one good movie, The City of God, and that was the only good experience I gathered from that course. By the way this class was an easy A & just a bunch of busy work. <Note: this student is clearly describing different class than UN 2001, most likely UN 1002 World Cultures – it is included here as it is a long answer regardless>	67

<i>UN 2001 : Of the experiences above, which do you think were most influential in improving your communication skills? Why do you think this?</i>		
B20	It would be between FIRST Robotics and DECA. I say these two because in both I was always presenting to judges and others. I communicate with team member engineers, coach, judges, and other officials including Michigan Governor. I learned a lot from these two organizations which have helped me to become a better communicator.	54
<i>MEEM 4911 : Of the experiences above, which do you think were most influential in improving your communication skills? Why do you think this?</i>		
26	Senior Design in high school - we had to due [sic] a 10 pg paper on a research, hands on exeiment [sic], present twice to show what we found out in researching and doing - then Senior Design in college, was able to work on these skills get feed back, and learned a lot from.	52
<i>MEEM 4911 : Why do you feel this way? [about HU 3120]</i>		
36	This is an excellent class. I learned the importance of keeping things simple all the time. This class for me seemed to finally make writing make sense from what we are taught growing up, volume > anything. I believe this is one of the best classes I took while attending Tech.	51
<i>UN 2001 : Why do you feel this way? [in reference to UN 2001]</i>		
B11	Although I am learning lot about Rhetoric a lot of it is basic knowledge. My free elective was Intro to Rhetoric so I am already familiar with Rhetoric. I wish I could have taken a german or Italian or Spanish communication class instead. It would be more challenging, interesting & fun.	51
<i>UN 2001 : Of the experiences above, which do you think were most influential in improving your communication skills? Why do you think this?</i>		
A7	band: forced me to interact with many other students un 2001L small class size, so its somewhat easier to feel relaxed and talk during class senior composition: gave me a definite writing style theater: forced use of visual, oral, and other communication skill I hadn't really used before	48

<i>HU 3120 : Why do you feel this way? [about HU 3120]</i>		
3	It has helped to improve my communication within a project group, but has not really improved my communication with a larger audience. The greatest thing it has helped me expand on is visual communication as we learn how to instruct a user with only pictures and not words.	48
<i>UN 1001 : Of the experiences above, which do you think were most influential in improving your communication skills? Why do you think this?</i>		
14	Getting up in front of people to give a speech or presentation has improved my oral communication skills the most. Every time you become less nervous and you become more conscious of pronunciation, volume, and pacing. Writing papers has done the most for my written comm. skills.	47
<i>MEEM 4911: What, if any, communication skills do you think will be important in your future career? Why?</i>		
36	Oral. How you Talk/ Act/ Deal with people (all kinds of people) I believe and I have experienced is the #1 most important you have to talk to people to be on a team and engineering is all about team work in one form or another.	46
<i>MEEM 4911: Do you think Michigan Tech is adequately preparing you for future career goals ... in terms of technical know-how?</i>		
19	I learned a lot of theory, but would have no idea how to apply it. I don't think I ever got a good understanding of why was learning what I was learning so I had no real understanding of why it was important.	43

Acting as a kind of counterpoint to this, when I performed surveys in the classroom, almost all students present always participated. During my first round of the study, when I ended up needing to make the survey for HU 3120 online and optional, no students responded. Likewise, even in the second round when the survey was much easier to complete (the Word document may have posed a problem for students to fill out), only

thirty percent of the class participated. Making these surveys optional would likely lead to small sample sizes, unless a better incentive is offered.

Recommendations to improve the teaching of communication

Comparing written responses to class specific questions, like those about UN 1001 (see Table 5 and Appendix C for specific entries), patterns can be seen to emerge. Using UN 1001 data from just the MEEM 4911 Survey (Appendix C), categories of student responses can be formed and tabulated (see Table 8).

Table 8: Categorization of student responses to MEEM 4911 Survey about UN 1001			
Nature of Response	# of Responses	% total n	Response #s
Not relevant / Waste of time	9	20%	5, 10, 19, 21, 24, 26, 27 , 28, 30
<i>Positive Comment</i>	7	16%	11, 22, 31, 32, 35, 37, 45
Low standards / Not challenging	7	16%	8, 13, 16, 36, 38, 40, 43
<i>No Answer Given</i>	6	13%	4, 6, 18, 20, 41, 44
Class was too much like high school	6	13%	12, 14, 23, 27 , 33, 34
Nothing new	4	9%	7, 9, 15, 17,
Too Focused on Content	4	9%	29, 39, 42, 45
Other class better	2	4%	2, 3
I don't remember the class	1	2%	1
Did not take the class	1	2%	25
<i>Responses 27 & 45 are listed twice because they fit in two categories</i>			

Specific comments about UN 1001 surveys also show evidence of student transfer (or lack thereof). This is true of all the surveys included in this study. Table 9 includes survey responses that show evidence of student transfer. Additionally, students stating that feel they did not gain anything from a class show a lack of either transfer or at least the awareness of transfer. Surveys included on Table 9 are from the UN 2001, HU 3120

and MEEM 4911 Surveys. All are responding about previous experiences and how they participant feels a class improved their communication skills.

Table 9: Survey answers with evidence of transfer of knowledge	
<i>Class being responded to by the participant</i>	
Class & Response #	Response
<i>Entries in grey imply the student felt they had no transfer</i>	
<i>UN 1001</i>	
UN 2001 - A5	We did my first presentation in the college. It help me learn more about professional communication skill
UN 2001 - A6	The class was a joke. We did absolutely nothing in the way of teaching or improving current skills.
UN 2001 - B10	it was a lot of writing, & helped improve that
HU 3120 - 6	Having to take it first semester of my freshman year, I feel that there wasn't enough time to transition into a College atmosphere and therefore still stuck in the ways of High School where presentations and communication were a bit more lax. The course was an eye-opener on what I had to do in the future, but didn't change much at that point in time.
MEEM 4911 - 22	The class has a lot of paper work and discussion topics. In the class, I learn to communicate with people that have different culture background.
MEEM 4911 - 28	It was useless for me b/c I already knew how to use the library and I had better English skills than the proffesor [sic].
MEEM 4911 - 32	It forced me to review & edit my papers & writing
<i>UN 2001</i>	
HU 3120 - 3	The class taught me how to present to an audience visually in many different ways. It also delved deeply into rhetoric which I had not previously learned before.
HU 3120 - 4	It helped a lot with visual communication and class discussion. Also writing a research paper is always a pain but helpful.
MEEM 4911 - 11	It reinforced structure to my writing as a whole. (I also had a great instructor).
MEEM 4911 - 28	It "opened my eyes" to a more analytical approach to communication.

MEEM 4911 - 34	I had learned how to establish an argument and understand any conclusion set up base on many pieces of strong evidence
MEEM 4911 - 35	It taught us to anayles [sic] my writing for the audience. Also, it taught me to consider the different technqes [sic], ethos, pathos and logos, and when to use them.
MEEM 4911 - 36	I don't even remember what I did in Revisions or what it is about
<i>HU 3120</i>	
MEEM 4911 - 8	The Resume project was useful but the rest of the class was just silly and useless.
MEEM 4911 - 32	It made me more aware of the many types of audiences there are or who may see your work.
MEEM 4911 - 36	This is an excellent class. I learned the importance of keeping things simple all the time. This class for me seemed to finally make writing make sense from what we are taught growing up, volume > anything. I believe this is one of the best classes I took while attending Tech.
MEEM 4911 - 42	Class taught other forms of technical communication besides writing, such as posters, manuals, and instruction sets Had some prior experience with this but not much.

Discussion

In my discussions section, I have written each sub-goal as a question. I then try to answer that question to the best of my ability, using what results I have collected and analyzed. Each goal is its own subsection.

Effectiveness of survey method

My first set of goals were in regard to the effectiveness of using surveys to collect student opinions and if those compiled responses could be used as viable data to improve composition instruction at Michigan Tech. I have two questions related to the effectiveness of the survey method to answer.

Did close-ended and open-ended questions work together?

Compiled data in the Results section helps to show that data correlates between the types of responses given to close-ended questions such as “In your opinion, how much do you think UN 1001 improved your communication skills?” (Table 2) and to open-ended follow up questions such as “Why do you feel this way?” (Table 5 for a truncated list or Appendix C for a complete list). Though I did not perform controlled experiments to see if similar responses could be obtained without a close-ended question prompt, being able to talk about an overall rating and support that rating with specific student feedback shows how these types of data can be used together.

Open-Ended Informs Close-Ended

For instance, on the MEEM Survey, students expressed a generally low opinion of how much UN 1001 improved their communication skills (mean = 2.9). On its own, knowing that students had a low opinion of the class does not offer much insight into why

they hold this opinion. Taking this piece of data and finding supporting explanations offered by students in response to the follow up question, we can create a more detailed view of why students do not feel like UN 1001 is improving their ability to communicate. Table 8, explained below, will explain how these pieces of information can lead to suggestions for improvements to the program.

Close-Ended Informs Open-Ended

Coming at the issue from the other direction, without a quantified answer on the 0-10 scale, we would need to code written responses to be able to make the claim that students in MEEM 4911 have a relatively low opinion of UN 1001. This kind of codification could be done using keywords or phrases, but may not represent student opinion as clearly. This becomes apparent when you compare the nature of student responses to the number value on the 0-10 scale given (see Appendix C for full list of both on one chart). Responses that could be coded as generally positive (example Response #22) have a lower score (5 out of 10 for Response #22) than a student's response that could be coded as generally negative (example Response #16) which rated UN 1001 higher than the other (7 out of 10 for Response #16).

I believe that these two examples, and other sets of related data, show that using both close-ended and open-ended questions together on the survey can give us a richer source of information to work with than either might alone.

Were students motivated enough to provide usable feedback?

One initial concern with using surveys as a method of assessment is that traditionally they use more close-ended questions that rarely allow for much explanation. The other question that comes with this is that when questions are open-ended, would

students give adequately long responses that would be able to offer insight, or would students be unwilling or unable to write as much? Two pieces of evidence presented suggest that even short to average length response can offer insight, and that though the average number of words overall could be considered somewhat low (average = 16, Table 4), answers to some surveys were remarkably longer (Table 7).

Participants' responses on the MEEM 4911 Survey regarding UN 1001 had a close to average overall word count (average = 17, Table 3). Looking at representative samples of these responses, shorter, average and longer-than-average sentences all can offer some insight into the quality of UN 1001 and potential problems students feel exist in its design (Table 5).

Answers as short as five or eight words can show us a broad view of students' opinions of the class as not being memorable (Response #1) or that the class did not challenge students to write differently (Response #7). Average length responses point to the class as not being graded fairly (Response #8) or being too similar to high school to have properly pushed the student (Response #12). Finally, long answers suggest that the class was not relevant to the students' future education (Response #26) or again too similar to high school to have properly challenged the student (Response #27 and #33).

These few categories can be seen as part of the trends revealed by analyzing the text of the responses and coding those answers into categories for comparison (Table 8). The full significance of this kind of information will be explained below while discussing how insights can be garnered with qualitative analysis.

Going back to the issue of student motivation, there is evidence that when students feel they have something to say in response to a question, allowing them ample

space to express themselves may be valuable. By virtue of word count alone, some responses were well outside the normal overall mean (Table 7). At up to 108 words long, to even 43 words for the tenth longest answer on any survey, some participants offered much more detailed responses than their peers. A single participant's set of all much longer-than-average responses to open-ended questions on the HU 3120 online survey also may suggest that students that are able to type in their answers, rather than write them with pen or pencil, may give longer answers overall (Appendix D). The kinds of qualitative benefits of these longer-than-average responses will also be discussed below.

Problems Motivating Students

Related to statistical analysis and student motivation, I would like to point out a specific situation that should inform future studies of this nature. In my first study, due to circumstance, I was unable to perform my fourth survey for HU 3120 in-class face-to-face as I had for my other three surveys. To attempt to gather some data, an alternative online method was developed. No students responded in this situation. Under both conditions, in-class and online, student participation was voluntary, but of the 85 students surveyed in-class, all but one student who attended class that day participated.

Even accounting for concerns of the initial method proposed (a potentially complicated mess involving emailing a Word document back and forth between a student and myself), my second study using a much more convenient format of an online survey still had lower participation (only 6 out of 19 possible students in the class) compared to in-class surveying.

This raises a concern that allowing a survey like this to be only voluntary may result in dismally low participation. To get an adequate response rate for this type of

research, the survey may need to be made a required component of completion of a class. This increases the problems with performing a study like this, but also increases the chance for positive benefits and is addressed in my conclusion and future suggestions later.

Recommendations to improve the teaching of communication

Moving beyond statistical analysis of the results of the surveys, I also produced qualitative results, which though preliminary at best due to limitations of the study (like sample size), show the potential for more in-depth research and possible recommendations for program improvement. Examples from the data above can help to support the twin goals of making suggestions based on survey results to improve composition instruction at Michigan Tech and to show that students may have had some form of the transfer of knowledge from earlier courses to later work.

As with my first set of goals related to statistical analysis, my second set of goals related to actually showing what kinds of insights may be gained by analyzing the content of the data have also been rewritten as questions to be answered.

How could survey data be used to improve courses?

As an example of insights that could be gained, focusing just on the one set of survey data presented here in the Results shown above, it could be suggested that students in MEEM 4911 were strongly dissatisfied with UN 1001. Various reasons were given by participants for their dissatisfaction with the course, from being unfairly graded to being too focused on its specific content. I posit three major responses (Table 8), of this type:

- that the class was not relevant to the students discipline or otherwise a waste of their time (~20%)
- that expectations were too low and the class was not challenging enough (~16%)
- that the class was too much a repeat of things the students had already learned in high school (13%)

Though it would be rash to begin to make sweeping changes to the way UN 1001 is taught from these results alone, especially if only this one survey and single question were being considered, an administrator for the course, trying to consider if the class is meeting the goals they have set out could compare these results of what students are complaining about with the expectations and goals of the course, the results of program assessment, or even the instructors' anecdotes.

There is no need to focus only on the negative feedback given by students. Those who responded favorably to the class may highlight in their responses whether it was related to specific things such as the instructor, the nature of the assignments, the content of the course, the methods of instruction used, or any number of other reasons why participants found the class useful or enjoyable. Using quantitative data from the surveys, trends could be documented by finding those surveyed students who gave higher than average overall scores, then investigate whether it was the students themselves or something about those classes that accounts for the better-than-average score (Table 6). Though not properly controlled for in my own experiment (HU 3120 Surveys scored higher than average more than any other set of surveys; see Table 6), if this survey were more widely attempted, it may lead to similar but stronger results.

What evidence exists for the transfer of knowledge?

I believe we can find evidence for the transfer of knowledge in the relatively positive responses from older students, like those in MEEM 4911, about UN 2001 and HU 3120. Table 9 features a collection of specific survey responses that I argue show evidence that students can report on the types of knowledge transfer from earlier communication-focused courses to their later classwork. All answers on Table 9 were taken exclusively from surveys in which the students had already taken the course, because if they were currently enrolled in the class, their comment would not show evidence of later knowledge transfer but current processing of that knowledge. Included on the table, and highlighted in grey, are responses that can also be considered to reflect that students have not transferred knowledge from earlier course to later work.

While some students may refer to not having learned anything in UN 1001 because “the class was a joke” (Response #A6 on UN 2001 survey) or because they felt they knew everything and were superior in their skills to the teacher (Response #28 on MEEM 4911 survey), others suggest that it was their first experience with professional communication (Response #A5 on UN 2001 survey) or that it was eye-opening to glimpse the level of skill needed to succeed in college (Response #6 on HU 3120 survey).

UN 2001 fares better in general. Key terms from the course goals, “rhetoric,” “audience,” “argument,” “ethos, logos, pathos,” crop up in multiple responses. Students mention it “reinforced structure” into their writing (Response #11 on MEEM 4911 survey) and “opened their eyes” to an analytic approach to communication (Response #28 on MEEM 4911 survey).

Responses like these suggest students could offer evidence in survey responses that is reflective and could be used as evidence of whether students are getting what we want them to out of the courses we are teaching them. A failure to get these kinds of responses then also suggests the alternative: perhaps changes are necessary to the methods used to teach these specific courses. Though my own study is preliminary at best, I believe there is strong evidence that further surveys could be performed and would likely garner valuable data for improving composition courses and possibly others.

Future Work

As a pilot study that intended to test whether surveys could viably be used to assess composition instruction and communication education at Michigan Tech, I feel I performed a solid study with acceptable results. As an assessment tool itself, the study cannot offer any kind of statistical certainty.

That said, the data as it is at least suggests future avenues of investigation. Even without a similar study, follow up focus groups, like those performed by Fraizer, could be an acceptable alternative to, for instance, investigate why students felt the way they do about a course and would help to augment the survey data.

A preferable alternative would be to conduct a full-scale version of this survey. I would argue that it would be conceivable for a small group to produce a similar but stronger survey that may be either more narrowly focused (e.g. to a single course) or more widely aimed at specific courses across Michigan Tech's campus within the kind of budget and time constraints that would be appropriate to a university campus of our size. If designed to be done all at a single time, to produce a large body of data to analyze after the fact, it may help mitigate some of the issues of the on-going demands of longitudinal work. Alternately, with proper resources, this kind of survey could be an integral component in a larger and longer-term study of the quality of composition studies, communication education or even other areas of concern at MTU.

My survey tool was far from perfect. I would suggest some small-scale, preliminary work be done to user-test a number of different options in how questions are presented. Specific suggestions to investigate include:

- Test multiple styles of questions with different wording. For example, test the results of students' answers when the meaning of a number changes: 10 = "Yes, I have strong communication skills" vs. 10 = "I am the best communicator I know"
- Ask what students felt they learned in classes or remember from classes years later. Rather than asking how much a class may have improved their communication abilities, asking what they felt the class was focused on and if those skills were important to what they do now may give stronger evidence of whether students are transferring the knowledge gained from earlier courses to later classes.
- Ask about other technical communication classes besides HU 3120 or where students feel they have learned their communication skills. An example mechanical engineering class that students implied improved their communication skills was MEEM 3000; this course could be included in a future study.
- One specific source of improved communication skills that I did not think to even ask about let alone investigate in my study were the skills students gained in Michigan Tech enterprise programs. Especially because these programs allow for an alternative to traditional capstone courses, they may warrant inclusion in future studies.

Many other alternatives exist for further study. My own work, only partially reported here, could function as a starting place. Future research could be further informed by reviewing a larger amount of the data I have collected. Many different forms of questions were asked about different topics and with different foci. Their results were

not reported here due to limitations of space and scope of this specific report, which was to investigate if a survey could be used for this kind of work, not what it would find.

Conclusion

Despite any particular shortcomings of my own study, I believe it did succeed in providing evidence as a proof-of-concept method of assessment that could offer insight into composition instruction at Michigan Tech. As a stand-alone tool, however, it would likely fail even with improvements like those suggested above. Instead, surveys like the one I have studied here could be used in conjunction with other assessments currently in place, for instance, Michigan Tech's portfolio assessment for UN 2001.

The strength of the portfolio assessment as it is today lies in the fact that it offers a very detailed source of information about a student in a single moment – at the end of UN 2001. As part of all portfolios turned in, a reflection is to be attached that helps assessors of the portfolio to judge the quality of the program to meet its educational goals. However, the portfolio cannot extend beyond that moment. It only records what a student has done and their current thoughts on the class. A cross-section student opinion survey like the one I have tested could give an additional angle of analysis over time.

Another question that could be raised is whether data from a survey like this would only be useful for the few classes directly being assessed in the survey, or could it be applied beyond just composition instruction. Evidence that other people than those immediately involved in the teaching of composition/communication classes could be interested in this type of assessment comes in a few forms.

First and foremost perhaps has been the continued interest from people like Dr. William Endres of the Department of Mechanical Engineering – Engineering Mechanics, who allowed me to survey his Senior Design Capstone course. I believe Dr. Endres could

find real insight for suggestions into how he could improve how and what is taught in courses like MEEM 4901/4911 from my survey data. This is made especially true when you consider that by having surveyed forty-five out of a possible eighty-nine total students, I have a statistically significant percentage of student opinions collected from this one class. The set of data already collected could be viable for analysis.

Kevin Cassell in his Outreach Project found other faculty across campus also interested in this matter. Their concerns and their questions could be used to help design a stronger survey which works with whatever tools for assessment the various departments currently possess. Support from across campus could be beneficial to help bolster greater participation and possibly strengthen the quality of the data.

The survey is by no stretch of the imagination a new concept, and the ways in which I have applied it are not exactly innovative. As a method of assessing communication education it is not the most common, and a study in the particular fashion I have shown to be possible is different from those that I have found used before. For a university of our size I believe it would be an ideal fit, working with those systems of assessment we currently use and providing an enriched view of the state of composition instruction at Michigan Tech today.

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Appendix A

Definitions of Communication Skills

Written Communication:

Writing papers, essays, responses, lab reports, financial reports, journals, diaries, research reports, webcontent (blogs, forum posts, text on websites, etc.), emails, memos, cover letters, resumes, etc.

Oral Communication:

Speaking in public or to small groups, producing presentations using presentation software (Powerpoint, Keynote, Prezi, etc.), speaking with team members, talking to clients, actively listening, participating in focus groups, etc.

Visual Communication:

Creating visuals like posters, artwork, flyers, newsletters, photography, digitally altering images, producing visuals for presentations, etc.

Other Communication:

These could include audience analysis, context analysis, use of rhetorical strategies (ex: ethos, logos, pathos), peer review, interviewing, teamwork, reading body language or mood, etc.

Appendix B

SURVEY IDENTIFICATION CODE: MEEM 4911 _____

Informed Consent

The following survey assesses student experience with improving their communication skills both in and out of the classroom. The present study tests the potential effectiveness of using a survey for this type of research. Your participation in the survey may help future studies of this kind to be more effective and efficient in their design. This survey is being performed as part of a Special Project for the Master's student Lucus Palosaari, Rhetoric & Technical Communication, Master's candidate (Humanities Department).

If you have any questions about this study, please contact the researcher (lapalos@mtu.edu, 906-487-3230). Research involving human participants at Michigan Technological University is carried out under the oversight of the Institutional Review Board (IRB). The Michigan Tech Institutional Review Board has reviewed my request to conduct this research. If you have any concerns about your rights in this study, please contact the Michigan Tech IRB Research Compliance Office, Joanne Polzien, 317 Administration Bldg., phone 906-487-2902 or email jpolzien@mtu.edu.

Your participation in this survey is optional. It will not influence your grade in the class, your academics at the university or in any other way effect you. Your instructor will not have access to your answers and they will not be discussed with your instructor by the investigator of the survey.

Your participation in this survey, in addition to verbal consent with the administrator when performed, will be considered evidence of your willingness to be surveyed. You may at any time skip a question, decline to answer a question or simply stop filling out the survey. No reason need be given and it will not otherwise influence you.

Instructions

This survey can be answered in either pencil or pen. Please try to write clearly and to fully erase any stray marks so that your answers to the questions are clear.

Because part of the study is to test the effectiveness of the survey method, and because these surveys will all be hand-coded, please feel free to make comments outside of the space provided.

SURVEY IDENTIFICATION CODE: MEEM 4911 _____

Communication Skills

Throughout this survey, you will be asked about your "communication skills." For the purposes of this survey, communication skills can include, but is not limited to, the following:

Written Communication: Writing papers, essays, responses, lab reports, financial reports, journals, diaries, research reports, webcontent (blogs, forum posts, text on websites, etc.), emails, memos, cover letters, resumes, etc.

Oral Communication: Speaking in public or to small groups, producing presentations using presentation software (Powerpoint, Keynote, Prezi, etc.), speaking with team members, talking to clients, actively listening, participating in focus groups, etc.

Visual Communication: Creating visuals like posters, artwork, flyers, newsletters, photography, digitally altering images, producing visuals for presentations, etc.

Other Communication: These could include audience analysis, context analysis, use of rhetorical strategies (ex: ethos, logos, pathos), peer review, interviewing, teamwork, reading body language or mood, etc.

SURVEY IDENTIFICATION CODE: MEEM 4911 _____

Previous Experiences

Answer the following questions in relation to your experiences before this current term of college. This can include experiences in high school, extracurricular clubs or activities and work experiences.

1. Do you consider yourself to have strong communication skills? (circle one number)

Yes, I have strong skills 10 9 8 7 6 5 4 3 2 1 0 No, I do not have strong skills

2. What previous experiences do you think have most improved your communication skills? You may provide details as appropriate. If you need additional space, write below. Check all that apply:

High School Experiences	Extra Curricular Activities	College Experiences	Work Experiences
English Courses	Forensic or Debate Teams	UN 1001 Perspectives	ex:
ex:	Theater or Acting	UN 2001 Revisions	ex:
ex:	Student Government	Humanities Class(es):	ex:
ex:	Sports	ex:	ex:
Other Course(s):	ex:	ex:	ex:
ex:	Other Teams or Clubs:	MEEM 4901	ex:
ex:	ex:	Other Courses:	ex:
ex:	ex:	ex:	ex:

Other Experiences: (optional)

3. Of the experiences above, which do you think were most influential in improving your communication skills? Why do you think this?

4. Have you taken UN 1001 Perspectives on Inquiry while attending Michigan Tech?

Yes, I have taken UN 1001 No, I have not taken UN 1001 I am currently taking UN 1001

5. In your opinion, how much do you think UN 1001 improved your communication skills?

My skills improved significantly 10 9 8 7 6 5 4 3 2 1 0 My skill did not improve at all

6. Why do you feel this way?

SURVEY IDENTIFICATION CODE: MEEM 4911 _____

7. Have you taken UN 2001 Revisions (now titled Composition) while attending Michigan Tech?
 Yes, I have taken UN 2001 No, I have not taken UN 2001 I am currently taking UN 2001

a. In your opinion, how much do you think UN 2001 improved your communication skills?

My skills improved significantly 10 9 8 7 6 5 4 3 2 1 0 My skill did not improve at all

b. Why do you feel this way?

8. Have you taken HU 3120 Scientific & Technical Communication while attending Michigan Tech?
 Yes, I have taken HU 3120 No, I have not taken HU 3120 I am currently taking HU 3120

a. In your opinion, how much do you think HU 3120 improved your communication skills?

My skills improved significantly 10 9 8 7 6 5 4 3 2 1 0 My skill did not improve at all

b. Why do you feel this way?

9. Have you taken MEEM 4901 Senior Capstone Design while attending Michigan Tech?

Yes, I have taken MEEM 4901 No, I have not taken MEEM 4901

a. In your opinion, how much do you think MEEM 4901 improved your communication skills?

My skills improved significantly 10 9 8 7 6 5 4 3 2 1 0 My skill did not improve at all

b. Why do you feel this way?

SURVEY IDENTIFICATION CODE: MEEM 4911 _____

Current Experiences

Answer the following four questions in relation to your entire college career. If it would change your answer, you can include experiences you expect to have by the end of the current term.

1. How many papers or reports of the following page length have you written (circle for each)?

20 or more pages:

None 1-4 5-10 11-20 More than 20

Between 5 and 19 pages:

None 1-4 5-10 11-20 More than 20

5 or fewer pages:

None 1-4 5-10 11-20 More than 20

2. How many times have you made a class presentation? (circle one)

Never Sometimes Often Very Often

3. How many times have you prepared two or more drafts of a paper or assignment before turning it in? (circle one)

Never Sometimes Often Very Often

4. How many times have you worked on a paper or project that required integrating ideas or information from various sources?

Never Sometimes Often Very Often

5. Are there any extracurricular activities you engage in that you feel improve your communication skills? (list as many as you like) How do you think they improve your skills?

6. Are you currently enrolled in any other courses that you feel are improving your communication skills (regardless of what major or focus)?

Yes (please list) _____ No

7. In your opinion, how much do you believe MEEM 4911 has improved your communication skills?

My skills improved significantly 10 9 8 7 6 5 4 3 2 1 0 My skill did not improve at all

- a. Why do you feel this way?

SURVEY IDENTIFICATION CODE: MEEM 4911 _____

Future Expectations

Answer the following questions in relation to your expectations for your future academic studies and chosen career field. Refer to the definition of communication skills on the cover page if you need clarification of what is meant by certain terms,

1. How important do you find the following skills related to communication skills:

a. **Written Communication:**

Very Important 10 - 9 - 8 - 7 - 6 - 5 - 4 - 3 - 2 - 1 Not important at all

b. **Oral Communication:**

Very Important 10 - 9 - 8 - 7 - 6 - 5 - 4 - 3 - 2 - 1 Not important at all

c. **Visual Communication:**

Very Important 10 - 9 - 8 - 7 - 6 - 5 - 4 - 3 - 2 - 1 Not important at all

d. **Other Communication:**

Very Important 10 - 9 - 8 - 7 - 6 - 5 - 4 - 3 - 2 - 1 Not important at all

2. What, if any, communication skills do you think will be important in your future career? Why?

3. Do you think that Michigan Tech is adequately preparing you for future career goals?

a. ... in terms of your "technical know-how"?

b. ... in terms of your "communication skills"?

c. ...in other important ways or skills?

SURVEY IDENTIFICATION CODE: MEEM 4911 _____

Biographic Survey

What ethnicity/race do you identify yourself as?

Asian / Pacific Islander _____
 Black / African-American _____
 Latino / Hispanic _____
 Middle Eastern _____
 Indigenous / Native American _____
 White / Caucasian _____
 Multiracial _____
 Other: _____

What year were you born?

I was born in... _____

What gender do you identify yourself as?

Female _____
 Male _____
 Transgender _____
 I prefer not to answer _____

What is your current class standing (as of the beginning of the current term)?

Freshman (00.0 - 29.9 credit hours) _____
 Sophomore (30.0 - 59.9 credit hours) _____
 Junior (60.0 - 89.9 credit hours) _____
 Senior (90.0 or more credit hours) _____
 Graduate Student _____
 Non-Traditional Student _____
 I prefer not to answer _____

What is your major?

Do you speak English as your first language?

Yes _____
 No, my first language is: _____

Appendix C

Complete List of Responses on MEEM 4911 Survey to Question 6			
<i>Question 6: Why do you feel this way? [about UN 1001]</i>			
<i>Question 5: In your opinion, how much do you think UN 1001 improved your communication skills? (on a scale of 0 - 10)</i>			
Response #	Response to Open-Ended Question	Word Count	Responses to Question 5
1	I don't even remember it.	5	1
2	Because Revisions was the class I had to practice speech in.	11	0
3	There wasn't much talking. Presentation skills with Dennis was better.	10	1
4	-	-	-
5	The class did not help me. The topic was not degree related and my communication did not change.	18	2
6	-	-	5
7	Wrote papers the same way I always have.	8	0
8	Grading didn't represent Quality of work. I could receive an A with 60% effort or 100% effort.	17	2
9	There was little talk about proper ways to communicate	9	2
10	They were more focussed on creative writing instead of technical writing	11	1
11	It was a great class, but I was shy at the time, and emphasis was on group discussion.	18	0
12	I already possessed most of the fundamental skills reinforced by UN 1001 thanks to high school academics.	17	2
13	I feel that the expectations of communication weren't high enough.	10	4

14	Seemed a lot like high school classes I had already had	11	2
15	Didn't do too much. A lot of reading though.	9	2
16	It was fairly easy, didn't need to spend much time on the work.	13	7
17	All I had to do was research and write a few papers then give a presentation. Did not really teach me anything.	22	3
18	-	-	7
19	I thought it was a waste of time.	8	0
20	-	-	-
21	Because it was the wrong type of writing. Engineers use a certain [sic] format that isn't taught in these classes.	19	0
22	The class has a lot of paper work and discussion topics. In the class, I learn to communicate with people that have different culture background.	25	6
23	Little communication was required that went beyond that experienced in high school	12	3
24	It was on film. A class that had nothing to do with my major.	14	0
25	I didn't take perspectives because I had A.P. credit from high school	12	-
26	We did a Few papers and presentations but they were not very help full [sic] to the presentation would be doing in engineering world so was kinda a waste of time.	31	2
27	I feel it was a repeat from high school. I would benefit more from a technical writing class, or a presentation class.	22	2
28	It was useless for me b/c I already knew how to use the library and I had better English skills than the proffesor [sic].	24	1
29	Not much communication occurred. One big presentation, a few papers, and some reading. I took the one dealing w/ Abraham.	20	5
30	We did not do any oral communication. Only papers. It is very important to learn what your	31	3

	audience perceives you are trying to say vs. what you want them to think.		
31	in any class where you have to stand up in front of a group and present information, helps.	17	8
32	It forced me to review & edit my papers & writing	11	9
33	The reports were nothing I hadn't done more rigorously in High school. The discussions were fun but there was sort of a lack of structure to them. It depends heavily on the classmates you have.	35	3
34	I took the class in summer and 90% of the class were Chinese students, even the instructor. I felt little difference from my English class back in high school China.	30	2
35	I felt it gave me a better idea of how to reasearch [sic] and document the reasearch [sic] but did not improve any thing ells [sic]	23	5
36	Perspectives is just one class with a lot of writing, I feel like I just put my head down and did it.	22	4
37	This class allowed me to work on group projects in a small class. We learned teaming skills & how to effectively present information.	23	6
38	Don't feel like they improved enough.	6	4
39	I remember the course being less focused on communication and more focused on the content which the lecturer wanted to cover.	21	3
40	We didn't give a lot of presentations. I was a fairly good writer, so that didn't improve much.	18	3
41	-	-	-
42	The class did not teach communication it was more of a lecture course teaching the history of cryptology.	18	0
43	I felt the class curriculum to be below my skill level. It was primarily review, and not very challenging.	19	3
44	-	-	-

45	Perspectives was a good use of communication skills, but was far more focused on the subject matter, which in my case was Mythology.	23	2
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Appendix D

Longest individual responses given on by Student-Participant #6 on HU 3120 Survey		
<i>Question</i>		
Response #	Response to Open-Ended Question	Word Count
<i>Of the types of experiences listed above (high school, college, extracurricular and/or work), which you think were most influential in improving your communication skills? Why do you feel this way? You may list and discuss more than one experience and you can be as specific as you like (name particular courses or activities, etc.)</i>		
6	College and extra-curricular activities helped in ways by just having the repetitious presentations every semester with different Professor's giving feedback. It was a good way to really hone in on what your good at, and work at what you're not, such as saying "um." In the other forms of communication, again, just the repetition of having to do it so often, then being able to apply it to work or student organizations to test how effective you've become.	78
<i>Are there any other specific courses that you have taken while attending Michigan Tech, regardless of focus or department, that you feel significantly improved your communication skills? Please list and discuss as many as you would like below.</i>		
6	Sales and Sales Management was a great course taught by the late Professor Bob Mark in which he had us complete presentations about ourselves and others in less than a minute. This was a great way to really hone in on what you wanted to say and not waste time with "fluff." The purpose was for during career fairs and such, when you meet with a potential employer, you only have that minute to really sell yourself and maintain their interest.	81

<i>Why do you feel this way? [about UN 1001]</i>		
6	Having to take it first semester of my freshman year, I feel that there wasn't enough time to transition into a College atmosphere and therefore still stuck in the ways of High School where presentations and communication were a bit more lax. The course was an eye-opener on what I had to do in the future, but didn't change much at that point in time.	65
<i>In what ways will it be important to you? [Oral Communication]</i>		
6	Unless you work from home, you have to deal with coworkers, bosses, and other members of your job. Being able to effectively communicate your idea, progress, current standing, or anything in general will be important for reasons similar to written skills. You must be able to communicate yourself and make sure everything is going according to what has been laid out.	61
<i>In what ways will it be important to you? [Other Communication]</i>		
6	Understanding what isn't said is just as important. If you are a sales representative and your potential client is sitting there with a stern look and arms folded, his body language is saying "I'm losing or never had interest in this." Therefore you must accurately respond in various ways to try and change that mindset.	55
<i>In what ways will it be important to you? [Visual Communication]</i>		
6	This is job dependent for the most part, but overall not everyone learns as well as others. Some learn best from written, some from oral, but some learn from a visual standpoint and you must keep them in mind as well if you are to keep everyone together.	48