The Evolution of an Advanced Communication Skills Course

James Friauf, Michael McGeen
Milwaukee School of Engineering

Abstract

With industry leaders constantly citing the need for and importance of effective communication skills, educators must ensure our engineering curriculum does meet this end. Is a single, mandatory public speaking course sufficient to prepare students for the expectations and demands of the workplace? Is the traditional speech course, with speeches typically delivered from behind a podium, an adequate preparation for the communication requirements of the professional engineer?

An effective alternative is to use the basic speech course as a prerequisite for an advanced, upper level communication skills course. This upper level course focuses on effective communication practices with the expectations of a technical audience and setting. The course is taught by a team of technical communication and architectural engineering faculty and coordinated with a capstone design course.

Students are organized into small groups to present to their technical design solutions in a setting that attempts to simulate professional/client interaction.

I. Introduction

Providing a rationale for a college speech class is easy. Survey after survey of business leaders reinforces the opinion that effective communication skills are imperative for professional success and promotion. Ask managers to identify the top five skills they look for in new hires and *communication skills* is a given for that list. Often, it is number one. As educators we reinforce this idea, telling our students how important communication skills are in terms of getting a job. And we are right. What we may fail to do, however, is really explain *why* those communication skills are so important in the professional setting, why those skills are important to the day-to-day functioning of an engineer.

Why is the engineer with strong communication skills more effective, and thus more important to his/her company, than the engineer with weaker communication skills? Simply put, business is communication. Strong communication skills are necessary to do one's job. New project ideas are offered to a department manager. Information is shared among professional colleagues. Customers are persuaded to buy your product or service. Work teams negotiate job responsibilities and roles. Preliminary and final designs are presented to a client. While multiple mediums exist to present information, engineers must, at some time, still meet face to face with a client, a colleague, a subordinate, or a superior and explain their ideas. The competent engineer or business professional must effectively communicate with both internal and external customers.

Why the need to improve this course?

Most universities, one hopes, still require at least a basic speech class. If tradition is followed in these courses, students get up behind a lectern and deliver a four- to six-minute speech to persuade, to inform, to demonstrate, or to entertain on a topic of their choice. The topic may certainly be a technical subject, but more often, topics lean toward subjects of personal interest such as music, sports, hunting, travel…and even body piercing.

While the basic speech course does serve to meet important objectives, the fact remains that in their professional lives, these individuals (students) may never again deliver a speech from behind a lectern. Instead, their presentations will come seated around a table in team meetings, across a desk in a sales presentation, or walking through a job site (in hard hat and boots) with a developer or contractor sketching rough drawings of the intended HVAC system on scraps of dry wall. Clearly, a freshman level speech class with its traditional lecture and performance format doesn't fully prepare students for the communication demands of the professional engineer.

What is needed then is a course that still addresses basic communication skills while elevating the course requirements and context to something other than *Speech II*. This course should present a multidisciplinary perspective, should afford the opportunity for teamwork, and must put students into presentation settings that simulate professional situations.

In an article titled "Typical Lectures Fail Students," Leonhard Bernold, civil engineering professor at North Carolina State University, argues that "90% of learning in traditional lecture situations takes place outside the classroom."[2] Bernold also cites an ABET directive that engineering schools give students the "ability to function in multidisciplinary teams."[1] Bernold contends that "it's impossible to 'teach' multidisciplinary teamwork, creative problem-solving and so on in a course with tests and homework. We need multidisciplinary teaching teams to model how to work together, and to demonstrate how course material cuts across many engineering subdisciplines as in the real world."[2]

II. Course History and Evolution

Milwaukee School of Engineering (MSOE) prides itself on its *application orientation* and preparation of job-ready graduates. This philosophy permeates all degree-granting programs at MSOE culminating with senior design projects. With the demands and inherent problems associated with senior design team projects, the Architectural Engineering and Building Construction Department of MSOE in 1976 instituted a one-quarter course in advanced communication (EN 441). The early focus of this course was on audio-visual communication or techniques of using various media to present technical information. However, basic communication principles such as audience analysis, selecting and organizing information, nonverbal communication, and delivery were also important components of this course.

This course was taught by a team of technical communication (General Studies Department) and architectural engineering (Architectural Engineering and Building Construction – AE/BC) faculty and coordinated with an architectural design course that ran concurrently. The General Studies professor's role was to bring expertise in communication theory and practice with the

AE/BC professor providing the professional application of communication skills. The course met twice a week for two hours each class. One class each week was designated a *lab* session. The ten-week quarter was divided with each instructor responsible for one half of the course content. This division has taken the form of five weeks each, every other week, or the most recent pattern of each instructor taking one day of the week.

A corequisite course for this communication class was Architectural Design (AE 431). To date, this requisite remains the same.

The Early Years

In the early stages of this course, the quarter was split in half with each instructor taking five weeks of the course with some overlap for team presentations. This approach made sense, but the reality was a rather disjointed and disconnected course. The General Studies instructor did his thing and the AE/BC instructor did his. One problem was the communication instructor's lack of knowledge of the presentation demands of the engineering professionals in this field. So, the communication professor followed a traditional model for an advanced speech course assigning different modes of speeches (inform, demonstrate, persuade) and again asking students to stand behind the podium and deliver speeches. Students were encouraged to choose topics from their professional fields, but more often than not they regurgitated the same topics found in an introductory speech course. Unfortunately, early versions of this course *earned* the label "Speech II."

The architectural engineering segment of the course focused on the professional application of communication skills. Students were introduced to the types of presentations they were likely to make as professionals and the media appropriate for these presentations. There were class visits by guest speakers (contractors, engineers, architects), visits to professional offices, and the instructors shared their own experiences. In addition to the lecture/discussion, the students were working on design projects (Architectural Design) with a requirement of presenting these designs to prospective "clients" (the course faculty and professionals from outside the institution). The faculty team came together only to review the preliminary and final design presentations.

Mid-Life Crisis

Approximately five years ago, the instructors teaching this course and the AE/BC department chair recognized they were not meeting the goals and objectives of the course. They began to work toward a more coherent course.

The course instructors and AE/BC department chair met and identified three broad topic areas to be covered in this course: presentation medium, presentation/communication theory, and presentation contexts (situations). Presentation medium and presentation theory had always been part of the course and remained so. The teaching of various presentation media would expand as the presentation technology changed (i.e. PowerPoint, electronic white boards). The key change needed to come in the types of presentations students were giving. The entire course and all presentations should reflect the professional expectations of AE/BC graduates. At this point in

the evolution of the course, the instructors chose to model the presentations after the progression of a professional/client relationship.

It was also decided to better integrate the work students were doing in the Architectural Design course into this presentation skills course. Since the design course ran concurrently with the presentation skills course, design projects were used as content material for presentations. The class divided into teams. Each student team was to take on the identity of a building construction firm (Design/Build, Engineering, Architects, General Contractor only, etc.). Over the course of four presentations, the teams introduced/sold their firms to the client, and presented rough, preliminary, and final designs to the "client" (Presentation Skills faculty).

We like to think of this phase of course evolution as the "parallel track" period. We now had parallel courses running side by side, occasionally crossing paths or even joining tracks. The quarter class time was still split in half, with the instructors teaching every other week or one class each week. The parallel tracks were at least running in the same direction, and the instructors again came together to review the major team presentations. However, there remained a separation, albeit a smaller one, between the two sides of the course. The communication side was still too focused on general communication issues, unable (or unwilling) to make a strong connection to the professional side of the course. The technical knowledge of the communication instructor was still an issue [we will, however, come to see that technical ignorance as a plus], but the issue now seemed to be more one of domain than of knowledge. "My job (communication professor) is to teach the basics of effective presentation skills. Your job (AE/BC professor) is to apply those skills to the real world." These domains needed to merge.

Where are we today?

The course is still team taught by faculty from General Studies and AE/BC with each instructor bringing his or her expertise to the class. However, the realization that both instructors should not only complement each other, but should indeed reinforce each other about the same issues has brought this course closer to the ideal. For a course like this to be successful, the teaching team must indeed function as a team. Each instructor must have the experience, understanding, and knowledge of each other's domains to be truly effective. The communication professor need not also be a structural engineer, but he/she must appreciate the special requirements and challenges of a professional/business presentation. The engineering faculty must understand the basic foundations of effective communication.

Remember the statement above regarding the technical ignorance of the communication professor being a plus? It is much easier for technical experts in a given field to present to other technical experts in that field. They share the same jargon, the same symbols, and the same knowledge base. The challenge comes when the technical expert must communicate with the non-technical person. While a teaching team from the same engineering department sounds appealing, the team of technical expert and intelligent, but technically challenged colleague, makes for a strong learning experience for the students and the instructors. This combination of technical and non-technical audience forces students to simplify and clarify their ideas for a diverse audience.

The course continues to draw from the Architectural Design course for team projects, and the instructors have maintained the professional/client relationship model for the format of presentations. As the course syllabus shows, the instructors have cut the number of formal presentations to three. Four formal presentations were difficult to accomplish in MSOE's ten-week quarter system. We have moved closer to fully integrating the communication and engineering sides of this course through course assignments, lecture material, and in-class activities. Below are examples of current assignments:

Formal Presentations:
- Presentation #1 (week5) - Your firm is interviewing for a new construction project. This year we used the high rise condo project we were designing in AE431. This presentation was given on Power Point in teams of three. The building type was familiar to all of the students because we covered these issues in AE431. Along with the Power Point presentation each team presented an office portfolio. Again, we used material that was researched in AE431. The portfolio required a brief history of their firm, a brief description of projects included, a list of clients, honors and awards their firm has won, and a brief bio of the principals.

- Presentation #2 (Week 7) - Your firm is to present preliminary design ideas for this project. This requires the use of one of the team member's preliminary sketches and study model. We talk about different graphic techniques in EN441 and it is expected that students will polish up some of the bubble diagrams so they look more professional. This meeting is more informal in nature. Students are free to bring a roll of drawings and "walk" us through the building.

- Presentation #3 (week 10) - Final Presentation of the high-rise condo project. Students are expected to polish up the drawings that were presented in AE431. The meeting takes place in front of the original clients (Friauf and McGeen) as well as the other "investors" in this project who have not seen any of the preliminary work.

Impromptu presentations:

- Client visit – This exercise takes place the week following the first formal presentation to the client (Introduce Firm). At the beginning of class, the instructor announces that the client has called their firm and has questions from the meeting last week. He is in his car and will be at their office in fifteen minutes. Each team meets and chooses one area from their previous presentation to discuss. They must then prepare a short (5-10 minute) presentation for the client.

- Site walk-through – This exercise may occur anytime during the quarter. Presently, the MSOE great room (a large open space housing the Student Center) is used as the setting for this presentation. At the beginning of class, the instructor gives the following instructions: "I am a client with a space similar to the MSOE Great Room. Walk me through this space. Tell me about structural and environmental elements or general construction issues. I will ask questions as needed."

Presentation Critiques:
- ❑ Students are required to attend and report on two outside presentations. Students may use any of the UWM School of architecture visiting lectures, Zoning Board of Appeals presentations or other presentations around campus. Required things, like this week's lecture in Advanced Steel, are not allowed. Each report must be at least one page and not more than two pages. Students should comment on the room, lighting, temperature, type of presentation, visual aides, comfort level of the speaker... etc. In other words, all of the things we talk about in EN441.

Where are we headed?

As the instructors look forward to again teaching this course in the fall of 2001, they are confident that the course is on firm footings. Some considerations for the next offering of EN 441 include:

- ❑ *Identify team meeting time in the course schedule.*
  This could be open time or instructors would assign specific tasks for the groups to accomplish (i.e. to develop presentation objectives, create a graphic story board for a presentation).
- ❑ *Expand the "client team" with representatives from the professional/business community.*
  The instructors could draw from AE/BC graduates working in the Milwaukee area.
  This larger audience allows for professional feedback to the students and forces the teams to plan for a more diverse audience.
- ❑ *Plan additional collaborative teaching activities.*
  Right now, the two instructors work fairly independently of each other as far as actual classroom teaching. Both instructors introduce the class at the beginning of the quarter and they join as "client" for presentations. Otherwise, they do not teach class sessions together.
- ❑ *Increase the number of impromptu presentation opportunities.*
  This should be a "hands-on" course with more of a workshop approach. Impromptu exercises such as those described above allow students to practice the skills and concepts presented in the course. Impromptu speaking opportunities also build the skill of thinking on your feet.
- ❑ *Incorporate poster critique activity.*
  In this activity, posters from past student presentations are brought into class. Students are then asked to judge these posters across a set of criteria. This informal activity generates a great deal of interaction and feedback from the students. They know a good, and bad, presentation board when they see one. This allows them to articulate their perceptions.

Some final thoughts:

This course has always been a work in progress and it will continue to be that. The instructors must develop new skills and knowledge as presentation technology continues to change. Great advances have been made in the way architects and engineers are collaborating with design teams as well as clients. New "web" based tools for delivering construction documents as well

as video conferencing of design review meetings are changing the way the construction industry is doing business. The instructors must continue to work toward a true collaborative effort in the teaching of this course to keep up with these changes. In addition to teaching the media for presenting information, the instructors remain steadfast in their belief that students must also understand the basic concepts and theories of effective communication. This course provides students the opportunity to apply and see that theory in action.

III.   Course Syllabus

EN 441   Professional Presentation Techniques

This course emphasizes persuasion, theories of communication, and the techniques of making presentations to small and medium sized groups in industry. In addition, this course stresses effective communication, organization and development of ideas, the proper use of communication media, the use of various visual aids, and the performance of professional quality presentations. The student will complete the course knowing how to plan, design, deliver, and evaluate presentations in a business environment.

COURSE OBJECTIVES

After successful completion of this course, the student should be able to:

·   Explain the significance of effective communication in professional settings.
·   Identify methods of audience analysis and discuss the need for audience analysis.
·   Plan a professional presentation.
·   Develop clear learning objectives for presentations.
·   Deliver a professional quality presentation.
·   Utilize visual aids in a professional manner.

CLASS POLICIES

·   Attendance is required. You are the audience for your classmates. Be here.
·   Be prepared to discuss course material during class time.
·   Written assignments will be accepted in class on the designated due date to receive full credit. One full letter grade will be deducted for each late day.

GRADING
Presentations   Papers and Graphics
Intro Firm to Client   Presentation Critiques
Preliminary Design
Present Final Design

Tentative Schedule

Week	Day	Topic
1	1	Course Introduction The Nature of Technical Presentations Managing Nervousness (Individual Introductions: 1-2 minute presentation)
	2	Introduction of Architectural component The Office Brochure (Portfolio of work)
2	1	Form teams Presentation Drawings vs. Working Drawings Personal bio Company bio
	2	Computer-based (PowerPoint) presentations
3	1	Organizing the presentation Working in teams
	2	Introducing your Company
4	1&2	**Presentations: Introduce Firm to Client** **15 minutes per team**
5	1	Delivering the presentation Impromptu exercises
	2	Review presentation comments Moving from design graphics to presentation graphics in the least amount of time.
6	1	Diagramming techniques
	2	Delivery exercises Room set-up
7	1&2	**Presentations: Preliminary Design to Client** **15 minutes per team**
8	1	Dealing with Questions Impromptu exercises
	2	Use of web sites as a communication tool.
9	1	Workshop – Critiques of past presentations Checklist for graphics
	2	Putting it all together
10	1&2	**Presentations: Present Final Design to Client** **15 minutes per team**

Bibliography

1. Accreditation Board of Engineering and Technology (ABET). Criteria for Accrediting Engineering Programs, 2000-2001. November , 1999.

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JIM FRIAUF
Jim Friauf is an Associate Professor at MSOE where he has taught communication courses since 1989. Jim has a B.A. and M.A. in Communication from the University of Wisconsin-Milwaukee, and he has taken additional graduate courses in rhetoric and composition and adult education. In addition to teaching, Jim has provided communication skills training for the business and non-profit community. He has worked with the J.F Ahern Company (Fond du Lac, WI); Rockwell Collins (Cedar Rapids, Iowa); Oilgear (Milwaukee); the American Institute of Architects (Wisconsin Chapter), Milwaukee Area Directors of Hospital Volunteer Services, and Children's Services Society of Wisconsin.

MICHAEL MCGEEN
Michael McGeen is an Associate Professor of AE&BC at MSOE. He is active in the Rapid Prototyping Center at MSOE. Professor McGeen is a registered Architect with a Masters degree in Architecture from the University of Wisconsin – Milwaukee