

Educational Technology: Connecting Learning, Teaching and Assessment in a Multi-section Introductory Communication Course.

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Abstract

The Communication Department at University of Dayton implemented a technology enhanced introductory public speaking course. The technology employed in this course includes an assessment website and student use of audio and video equipment for capturing their speech performances outside the classroom. The assessment website measures student learning, public speaking anxiety, student perceptions of communicative competence, and student ability to gather information using the library and the Internet. By requiring students to use the assessment website and submit taped copies of their first speech – given outside of class – to their instructors, a great deal of class time has been saved. In addition, students report feeling less anxious and more confident about their public speaking abilities. In addition, the instructors report clear improvements in speech performance during class. Student attitudes toward public speaking and their perceptions of their own communicative competence have also increased in this program.

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Technology in the classroom and, more broadly, online learning have received much attention in the teaching and learning scholarship of virtually every discipline. In Communication, this research initially focused on the Internet as an information source and the use of computer-mediated communication in teaching and learning. Tracing the trends in the Communication instructional literature, beyond the emphases of the initial studies, is problematical given the rapid expansion of such research (Morreale & Backlund, 2002). However, it is apparent that the role of technology in assessing learning outcomes and in designing and delivering a competency-based curriculum has yet to be examined (Shelton, Lane & Waldhart, 1999).

A central challenge of any campus-wide academic requirement is assessing student learning. This is particularly true for oral communication, reading and writing, and quantitative reasoning requirements. Required courses in these areas have traditionally been conceptualized as foundational or basic skills in general education curricula. As governmental and educational agencies called for standards and assessment of learning outcomes, basic skills courses were redesigned and redefined in terms of competencies (Jones, 1996; Allen, 2002).

Beginning in 1990, accrediting associations required post-secondary institutions to assess “competencies” in a number of foundational areas including oral communication (Morreale & Brooks, 1994). The Southern Association of Colleges and Schools was one of the first regional accreditation organizations to require institutional assessment of student competence in reading, writing, oral communications and

fundamental mathematical skills. Like other higher education accrediting associations, the Southern Association oversees institutional certification for a large number of college and universities. Assessment of oral communication and other core competencies has thus become an institutionalized reality of higher education.

At the University of Dayton, a campus-wide competency program was initiated in 2001. The program includes four competency areas, oral communication, reading and writing, information literacy and quantitative reasoning. Specific skills, knowledge and attitudes are identified for each of the four areas. The program is two-tiered, first, requiring that students develop “general competencies” to successfully make the transition from high school to college and to complete general education courses and, second, “graduation competencies” requiring that students demonstrate mastery of the competencies as they progress through coursework within a discipline. Thus students’ achievement of general competencies is essential to the competency program.

The Department of Communication was charged with defining, delivering and assessing general oral communication competencies for approximately 6,600 undergraduate students in three professional schools – education, business, engineering and in the College of Arts and Sciences. The University of Dayton program delineated oral communication competencies into three content areas, group decision-making, public speaking and interviewing. While we will focus on only one of these areas - public speaking competencies and assessment - it is useful to note that many colleges and universities use public speaking as the only outcome and measure of oral communication competency.

Identification of Assessment Measures

The first step of this process was the identification of relevant and reliable assessment measures. In assessing the public speaking course, two commonly used instruments were identified within the literature. The first measure is the PRCA or personal report of communication apprehension. The PRCA is one of the most commonly employed measures in the field of communication. The PRCA is a 24 – item scale used to measure speaking anxiety and had been employed in 876 published articles and convention papers (Payne and Richmond, 1984). The PRCA measures speaking anxiety in four contexts: the interpersonal or face-to-face context, the small group context, and the public speaking context. Previous research using the PRCA indicates more than adequate internal consistency – Cronbach’s alpha coefficients for the entire 24-item scale are routinely in the .8 to .9 range (McCroskey, Beatty, Kearney & Plax, 1985; Plax, 1985). Calculations of the internal consistency of the four individual contexts, Cronbach’s alpha coefficients in the .7 to .8 range are common (McCroskey, Beatty, Kearney & Plax, 1985; Plax, 1985).

The second instrument employed in the assessment is McCroskey & McCroskey’s (1988) self-perceived communicative competence measure (SPCC). The SPCC is a 12 – item measure that asks respondents to indicate how competent or effective they feel they are in 4 communicative contexts (the interpersonal or face-to-face context, the small group context, the context of meetings, & the public speaking context). In addition, this measure also can be used to determine communicative competence within a range of different types of relationships (e.g., communicating with friends, strangers & acquaintances). Previous researchers using the SPCC report a Cronbach’s alpha

coefficient of .85 (Richmond, McCroskey, & McCroskey, 1989) and as high as .92 using a college student population (McCroskey & McCroskey, 1988) for all 12 items.

Individual contexts and intimacy scales yield internal consistency scores in the .7 to .8 range (McCroskey & McCroskey, 1988).

In addition to determining the relative anxiety of students and their communicative competence, this assessment program also examined student abilities to search, retrieve, and evaluate information. A 5-item multiple-choice instrument was developed for this purpose. This instrument asks students to respond to questions about information available in libraries, specific features of the library at the University of Dayton and basic Boolean search techniques. These items were selected because they are consistent with competency measures being used by Departments across campus to demonstrate required information literacy competencies.

Finally, the assessment program examines student learning. Students were asked to complete an 8-item multiple-choice instrument measuring student knowledge about public speaking. Students were asked to review a speech transcript in order to identify the major parts of a speech a transcript, methods of organizing speeches, and speaking techniques and terminology. The items were taken from the instrument used to evaluate students' speeches in class and also reflect the focus of questions asked on written examinations in the public speaking course (See appendix A for a copy of the instruments used in the assessment).

Pilot Testing the Instruments

A complete pilot test of the instruments was conducted to determine if sufficient internal consistency scores could be obtained from the measures and to determine a

baseline for percentages of correct and incorrect responses for the “Information Search” and “Public Speaking Content” questions. A sample of 109 undergraduate students completed the pilot survey instrument containing the measures described above. Using Cronbach’s alpha, reliability coefficients for the instruments proved to be more than adequate for our assessment project. The reliability coefficient obtained for the overall PRCA was .92 while the individual context reliability coefficients were .88 for anxiety talking in groups, .87 for anxiety talking in meetings, .84 for talking face-to-face, and .86 for public speaking anxiety.

The overall reliability for the communication competence measure was .86 while the individual contexts were slightly lower. Specifically, the reliability for student perceptions of competence in groups was .84, competence in meetings was .81, and competence in public speaking was .79. Given the total sample size (n=109), the reliability coefficients for the instruments indicate more than adequate internal consistency for our assessment measures.

Students were also asked to respond to five questions about library and Internet information searches. The first question, concerning the location of periodicals in the library, was answered correctly by only nine students (8.23%). Item two, focusing on the location of journals in the library, and was answered correctly by only five students (4.6%). Only two students, in the entire sample (1.8%), were able to correctly identify the name of the library consortium the University of Dayton is a member of. Almost 90% of the students knew the purpose of a call number and nearly 25% of the students were able to identify the Boolean search string that would yield the greatest number of results.

Creating the Assessment Website

Effective instruction in public speaking skills and timely and meaningful assessment of student performance is a challenging task. It is necessary to use actual classroom time for teaching and learning activity and to develop an assessment program that reinforces course goals and content, but one that can be employed outside of the classroom. An assessment website was created to minimize the amount of in-class time devoted to conducting assessment of student learning and performance.

The Director of E-learning and other professionals in the University of Dayton Learning and Teaching Center developed an Assessment Website. After students have completed the series of assessment instruments responses are stored online. At the end of each term, the comma-delimited Excel file is accessed through FrontPage and then transferred into SPSS – the Statistical Package for the Social Sciences (version 11.0) for analysis.

The entire data collection process takes place outside of the classroom. Students logon to the assessment website and respond to a series of questions called, “ Assignment One.” Assignment One is actually a pre-test of the measuring instruments described previously. As part of the first assignment students also provide basic demographic information about the students (e.g., gender, major, course instructor). During the last week of class students return to the website and complete Assignment Two or the post-test. Comparison of the pre-test and post-test scores provides evidence of student learning and also course and instructor effectiveness. This allows us to track individual student progress as well as overall course/instructor effectiveness. (See appendix B for screenshots of the website).

Learning outcomes are measured as students' ability to apply course content in an analysis of a public speech. During the first phase of the assessment program, speech transcripts were used. The second phase of our assessment strategy involves digitizing and streaming video to enable students to analyze delivery dynamics as well as speech content. (Data presented here are based on student analysis of a speech transcript.)

Other Technology Employed

In addition to the website, more traditional technology - audio and video – are used to enhance student learning and increase instructional effectiveness. In what may be the first large-scale requirement for audio and video taping of public speaking assignments, students must submit their speech on an audio tape, a videotape, or in some cases, a CD with audio and video. Students are required to record and practice their speech multiple times over the course of a week, re-recording the speech until they are satisfied with their performance on the audio, video or CD record.

This use of technology emphasizes a frequently ignored feature of public speaking instruction and learning – practice. Students not only engage in repeated preparation and rehearsal, they have documentation of their presentation and are able to identify weaknesses and make corrections prior to their in-class, graded presentation. While that may not seem like a significant advantage, anyone who has watched a few hundred speeches can attest to the fact that students typically practice their speech “in their head” and rarely practice actually presenting the speech. By practicing students become more familiar with the content of their speech and become less reliant on their notes. By audio or videotaping their performance they begin to recognize problem areas (e.g., vocal segregates, vocal variety, or that they lack a closing summary of main points).

By allowing students to turn in their speeches on “tape” the instructors can not only tell students that they have a particular problem, but they can actually show the students where the problem occurs on the tape. Finally, by allowing the students to turn in their first speech of the term on audio or videotape, the other students are not forced to sit through essentially the same speech twice within a short period of time. This increases the amount of class time that can be spent on instruction.

Results

One of the most important elements of the assessment is the determination of student attitudes toward public speaking. Hypothesis one stated that students would report enjoying public speaking more after completing the public speaking course. This hypothesis was tested using a paired samples t-test and the hypothesis was supported ($t = 3.229$, $df = 38$, $p < .003$). The mean for public speaking enjoyment during the first week of class was 2.79 and increased to 3.28 by the last week of class (See Table 1).

Table 1 - Paired Samples Test

		Paired Differences				t	df	Sig. (2-tailed)	
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower				Upper
Pair 1	Often enjoy Pre - Often enjoy PS	-.49	.942	.151	-.79	-.18	-3.229	38	.003

A second important consideration is how students perceive their effectiveness as a speaker. Other perceptions of public speaking effectiveness are already available through the traditional feedback process from the instructor. Thus, hypothesis two stated that students would perceive themselves as being more effective in their public speaking efforts at the end of the course. This hypothesis was tested using a paired samples t-test and the hypothesis was supported ($t = 3.411$, $df = 38$, $p < .002$). The mean for public

speaking effectiveness during the first week of class was 3.0 and increased to 3.41 by the last week of class.

Table 2 - Paired Samples Test

Pair		Paired Differences				t	df	Sig. (2-tailed)	
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower				Upper
1	Effective PS Pre - Effective PS Post	-.41	.751	.120	-.65	-.17	-3.411	38	.002

The third goal was the reduction of time spent in class conducting the assessment. After surveying 15 instructors, the average instructor saved approximately 40 minutes of class time each term. Given that the public speaking course is a one-credit course that meets for 750 minutes, a saving of 40 minutes represents just over 5% of the class time. In addition, as students complete the assessment instruments they are also engaging in a review and application of course content, enhancing learning and preparing students for classroom examinations.

The fourth goal of increasing student public speaking skills through the use of the audio or videotaped assignment has also been very well received. Students report their fears of speaking in class are reduced after they have as much practice time under their belt and they are less concerned about being evaluated since they have a much clearer picture about what is expected of them. Students are also less likely to complain about their grades after they have gone over the videotaped presentation with the instructor. While the data supporting this goal is anecdotal at this time, we are working on incorporating these measures into the assessment process.

Discussion

Technology proved to be vital and, indeed, indispensable in our competency-based public speaking curriculum and assessment. Course design, instructional strategies and assessment rely on both web-based technology and more traditional technology. Technology made it possible to connect teaching, learning and assessment.

In addition to providing the opportunity for standardizing the instructions and reducing the time it takes to have the data prepared for analysis, the website removes assessment from the classroom. Moving the assessment process outside the classroom means that more time can be spent on instruction.

Finally, the use of more traditional technology – audio and video – proved to be an effective means to connect teaching, learning and assessment. As the assessment website expands with streaming video, it will be possible for students to view and analyze speeches on-line. With further development and increased capacity, the website will also function as a portal for students to submit their speeches to the instructor. From there students will be able to include a copy of the public speaking skills in their portfolio so prospective employers will be able to see the student's oral abilities.

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Appendix A Assessment Website Measures

1. I enjoy the opportunity to give a speech.
2. I am usually calm and relaxed when I have to give a speech.
3. In public speaking situations, I often decide the speaker is wrong before I hear everything they have to say.
4. In public speaking situations, I often find myself unable to remember any of the details from the speech I just heard.
5. I am an effective public speaker.
6. Current periodicals can be found on which floor of Roesch Library?
7. Bound journals can be found on which floor of Roesch Library?
8. If you need a book that is not available at Roesch Library, you can often find a copy of the book and have it delivered to UD through a consortium of university libraries. That consortium of libraries is called _____.
9. Call numbers of books tell you _____.
10. Which of the following advanced or Boolean search strings would produce the most (largest number) of hits?
11. Which of the following techniques did the speaker employ to gain the attention of their audience?
12. Which of the following techniques did the speaker use to demonstrate the relevance of the topic to the audience?
13. In what paragraph does the speaker provide a preview of main points?
14. Which method of organization did the speaker employ in this speech?
15. Which of the following statements is a transition used in the speech you just read?

16. Which of the following statements best describes the first main point of the speech?

17. Which of the following statements provides evidence the speaker adapted their message to their audience?

18. Which of the following main points was not supported by evidence in the speech?

Assessment Website Screen Shot

