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# Can You Hear Me Now? Assessing Students' Classroom Communication Preferences via a Telephone Conference Activity

Sharon G. Heilmann, Air Force Institute of Technology

## Abstract

Telephone conference presentation delivery was compared to face-to-face classroom delivery in an undergraduate business course setting to assess whether concern over presenting in front of the class and/or gender impacted presentation mode preference. After completing a classroom exercise, students (n=102) were surveyed and asked to compare delivery methods from two courses, one requiring a telephone conference and the other requiring a face-to-face classroom presentation, in terms of perceived effectiveness, feedback, teamwork, instructor cues, preparation time, and overall comfort. Independent sample t-test results indicated respondents who worried about presenting in front of the class believed the telephone conference format required more attention to verbal presentation quality, and they also worried more about presenting in the telephone conference format than respondents who did not worry about presenting in front of the class. In terms of gender, female respondents indicated more attention to visual aid was required during the teleconference format, believed the teleconference presentation format allowed for the same opportunity for feedback from the instructor as the formal presentation, were more likely to indicate they were concerned about speaking in front of the classroom during formal presentations, and were also more concerned about speaking during the teleconference than male respondents. Overall, results indicated the teleconference activity was perceived to be a practical alternative to the traditional face-to-face delivery method; however, females' perceptions of discomfort across both delivery formats warrant further study.

The views expressed in this paper are those of the author and do not reflect the official policy or position of the United States Air Force, Department of Defense, or the United States Government.

**Keywords:** Teleconference, face-to-face communication, oral communication, media richness

## Introduction

Generation Y (GenY) is the term describing the 72 million individuals born between 1977 and 1994 (Morton, 2002), and they are making their presence known as they matriculate into undergraduate colleges and universities across the country. The U.S. Department of Education reports first-time freshmen enrollment increased 22% from 1993 to 2007, and enrollment in post-secondary degree granting institutions are projected to increase through the year 2018 (Husser & Bailey, 2009). Enrollments of Gen Ys are reaching historic highs (Gronbach, 2009) due to the projected increase of 25- to 29-year-olds in the population (Husser & Bailey, 2009). Juxtaposed with the incoming student population are 1.7 million post-secondary teachers reported in the workforce in 2008 (Bureau of Labor Statistics, 2010), with many beginning their teaching careers in the 1960s and 1970s as a response to increased enrollments of baby boomers (Bureau of Labor Statistics, 2010). Projected employment in post-secondary education is expected to grow by 15% between 2008 and 2018, so students will be exposed to faculty members who have spent most of their years teaching an arguably different type of student as well as faculty members new to teaching. Different from baby boomers (born between 1946-1964) and Generation Xers (born from late 1960s to 1980), members of Gen Y have been characterized as being comfortable with challenging what they are told, having short attention spans, being incredibly technically competent, and not responding well to traditional classroom lecture presentation formats (Eisner, 2004; Morton, 2002). To bridge the gap between what is offered and what is being sought in the classroom, instructors in varied disciplines continue to adapt their course curricula to provide meaningful learning for their pupils.

As the supply of college graduates exceeds demand for their skills, hiring managers enjoy the benefit by raising the bar for applicants. MSNBC cited a 2009 National Association of Colleges and Employers (NACE) survey indicating only one-fifth of college graduates had a job upon graduation (Johnson, 2009). Workplace surveys consistently indicate one of the most in-demand and valuable skills of employees is effective communication skills. Responding to this demand, colleges have emphasized communication outcomes across disciplines, specifically oral presentations, for decades (Pineda, 1999).

Oral presentations often instill fear of public speaking, boredom from audience members, and challenging instructor-led discussion following the presentations. In spite of oral presentation fears, or perhaps because of them, many undergraduate courses require deliverables designed to assess oral communication skill. To attract students to such class deliverables, they may be presented with statistics indicating employers seek and reward effective communicators, and for the most part, students understand the relationship between improving their communication skills and increasing future employment potential. Can educators do more to hone students' communication skills? Are face-to-face presentations reflective of what future employers will ask graduates to do? Slipping away are the days of frequent travel where an idea is pitched to a potential client or where geographically dispersed teams meet at a central location. In lieu of face-to-face communication, increasing numbers of organizations have turned to technology solutions such as video teleconferencing, video broadcast, web conferencing, and internal collaboration sites to support communication requirements. As an example, the Environmental Protection Agency (EPA) is seeking to reduce travel costs by increasing videoconference capability utilization (Office of Management and Budget FY2012). The EPA is projecting a \$4M savings in 2012 and \$25M savings from 2011-2015. Costs of these information technology (IT) solutions vary widely, depending upon the equipment, conference space, call length, dial-in access, etc., required; however, these costs are lower than travel involving airline fares, hotel accommodations, and daily expenses (Cisco, 2010). In addition to travel-related cost savings, a Cisco (2010) study indicated teleconferencing improves work-life balance, affords faster decision making, and enhances environmental responsibility focus by reducing carbon emissions by reducing air travel. From an educational feasibility perspective, equipping classrooms with IT equipment is cost prohibitive, as technology might obsolesce before installation is completed.

The use of communication technology in educational environments is prevalent in the IT literature (i.e., King & Xia, 1997; Powell, Picolli, & Ives; 2004; Sahay, 1997). In their work on media synchronicity theory (MST), Dennis, Fuller, and Valacich (2008) offered a comparison of 10 types of media (p. 15) and their respective capabilities. Dennis et al. (2008) described capabilities of transmission velocity, parallelism, symbol sets, rehearsability, reprocessability, information transmission, information processing, and synchronicity. (See Dennis et al. and Shannon & Weaver, 1949, for a detailed discuss of MST and communication capabilities).

Specifically relevant are the differences between face-to-face and telephone conference media in terms of parallelism, symbol sets, and synchronicity. Parallelism describes the number of simultaneous transmissions supported by the media that can occur. Face-to-face is categorized as “medium” while telephone conference media is “low” on this capability (Dennis et al., p. 15). Symbol sets represent “the number of ways in which a medium allows information to be encoded for communication” (p. 11). Face-to-face communication (few to many symbol sets) provides the opportunity for verbal and non-verbal communication, while telephone conferences do not support non-verbal communication (few symbol sets). Finally, synchronicity, defined by Dennis et al. as “the extent to which the capabilities of a communication medium enable individuals to achieve synchronicity” (p. 7), where synchronicity is a “state in which individuals are working together at the same time with the same focus” (p. 7). Face-to-face and telephone conference media are considered to have high and medium synchronicity, respectively. The Dennis et al. piece is of particular interest given the communication modes used in this study effort.

Studies involving the use of IT in the classroom can also be found in the education literature. As an example, Miller, Martineau and Clark (2000) suggested instructors need to re-examine curricula presentation styles to keep pace with technological innovation as well as students’ technological expectations. So what is an instructor in a course filled with Gen Ys who are facing a competitive employment landscape to do while working within budgetary and IT constraints of academia? A potential solution to this question is the subject of this research, which focused on using a basic communication technology, a telephone conference, in an educational environment.

Paalhar (2004) cited fear of public speaking as the highest ranked fear, primarily because of the anxiety resulting from a lack of confidence resulting from comparisons of an individual’s public speaking abilities with referent others. Tannen (2001) studied male and female classroom behavior extensively, and she suggested behaviors involved in speaking and being in front of the class come more naturally and are reinforced socially more for males than females. Tannen (2001) also suggested American socialization patterns reinforce males taking control and speaking, while women are socialized to avoid the spotlight. Owlle (2010) found gender impacted comfort with public speaking, such that males reported a higher comfort level than

females. Given the timeliness of considering IT solutions in the workplace, educational environments, and academic literature, the following hypotheses were tested:

**Hypothesis 1:** Students' comfort with speaking in front of the class will impact perceptions of presentation format preference.

**Hypothesis 2:** Student gender will impact perceptions of presentation format, such that females will prefer the teleconference format over the face-to-face format compared to their male counterparts.

## Method

Participants were undergraduate management majors enrolled in an introductory management course at a medium-sized academic institution in the western United States. The final project for the course involved 3- and 4-person teams analyzing a case study and providing a written paper as well as presenting results in a 20-minute telephone conference format to the instructor. Each team provided electronic copies of presentation materials to the instructor prior to their respective presentations. Each team member was required to participate; however, each team could decide level of contribution of its participants. The students occupied a designated room and initiated the telephone conference with the instructor, who was situated in a separate room, at a designed time. The instructor provided computer access, room access, and appropriate telephone usage and dialing instructions for each team. Teams were required to be present only during their scheduled teleconference times.

Three instructors who taught the introductory management course participated in the telephone conference exercise. Two of the instructors taught one section, and the third instructor taught two sections. Across the four sections, 123 students, comprising 32 teams, participated in the teleconference exercise. In addition to the introductory management course during this academic quarter, all 123 students were also taking an introductory accounting course that also required teams to make oral final presentations to the class in a face-to-face presentation format standard in most classrooms. Instructors evaluated the teams on quality of case analysis, team management, telephone conference management (i.e., speaker introductions prior to participating, ensuring both instructor and student group advance slides at the same time), and

overall presentation quality (i.e., voice quality, use of verbal fillers) using a standard rubric across all sections. Instructors evaluating the oral presentations in the introductory accounting course used a similar rubric; however, face-to-face communication skill was evaluated rather than telephone conference presentation.

After all telephone conference and face-to-face presentations were completed, students voluntarily completed a 16-item critique to compare their telephone conference experience in the introductory management course to their formal presentation experience in the introductory accounting course. A 5-point Likert-type scale anchored by Strongly Disagree (1) to Strongly Agree (5) was used. From the 123 participants in the teleconference exercise, 108 surveys were completed, yielding an 88% response rate. Of the 108 respondents, there were 6 seniors and 102 juniors. In order to make the group more homogenous, the 6 surveys completed by seniors were removed from the analysis. The effective response rate used for analysis was 83%.

## Results

Participants were asked to identify their gender, class standing, and sizes of their presentation groups in the introductory management and accounting courses, respectively. Males and females comprised 82.4% (n=84) and 17.6% (n=18) of respondents, respectively. The majority of students (88%, n=90) in the introductory management course worked in teams of four, while the majority of students in the accounting course 49% (n=50) worked in teams of four, and 43% (n=44) worked in teams of three. Variance in instructor style may have impacted the experiential aspect of the teleconference activity; however, data comparisons across instructor sections indicated no significant differences across sections. The means and standard deviations of the 16 items are presented in Table 1.

**TABLE 1: Descriptive Statistics for Survey Items**

Survey Item	N	Mean	St Dev
1. The telecon presentation format was more time consuming (from an individual perspective) to prepare for than I expected.	102	2.59	.85
2. The telecon presentation format was more time consuming to prepare (from an individual perspective) for than the formal presentation format.	102	2.53	.74
3. The telecon presentation format was more time consuming to prepare for (from a group perspective) than I expected.	102	2.74	.90
4. The telecon presentation format was more time consuming to prepare (from a group perspective) for than the formal presentation format.	101	2.63	.89
5. The telecon presentation format required more attention to verbal presentation quality than the formal presentation format.	102	3.87	.82
6. The telecon presentation format required more attention to visual aid presentation than the formal presentation format.	101	2.90	1.19
7. The telecon presentation format required more attention to nonverbal cues (i.e., voice quality, tone) of the receiver (instructor) than the formal presentation format.	101	3.92	.94
8. The telecon presentation format allowed for the same opportunity for feedback from the instructor than the formal presentation format.	101	3.83	.76
9. I felt as though the telecon presentation format required more teamwork prior to the presentation than the formal presentation format.	101	3.12	.88
10. I felt as though the telecon presentation format required more teamwork during the presentation than the formal presentation format.	101	3.57	.88
11. I felt hindered by the quality of my (individual) presentation participation in the telecon presentation format compared to the quality of my presentation participation in the formal presentation format.	101	2.67	.94
12. I enjoy formal presentations in a classroom environment.	101	2.66	1.07
13. I worry about speaking in front of the classroom during formal presentations.	101	2.53	1.16
14. I was concerned about speaking during the telecon presentation.	101	2.67	1.18
15. I felt like I could focus more on the presentation during the telecom format since I did not need to be concerned about a formal presentation of the material in front of my classmates.	101	3.73	.84
16. The telecon presentation format was appropriate for the management case presentation.	101	4.29	.74

To address hypothesis one, subjects were grouped into two categories using Item 13 (see Table 1), which asked participants to identify the extent to which they worried about speaking in front of the classroom during formal presentations. Of the 102 respondents, 23 indicated they agreed



or strongly agreed with this question, and 59 respondents indicated they disagreed or strongly disagreed. The No-Worry group (n=59) comprised the participants who indicated they did not worry about presenting in front of the class, and the Worry group (n=23) comprised the participants indicating they worried about presenting in front of the class. Independent sample t-tests for each of the 16 items were computed, and results are depicted in Table 2.

Statistically significant results were reported for items 5, 12, 13, and 14 (indicated by \* in Table 2). Respondents in the Worry group indicated the teleconference format required more attention to verbal presentation quality (item 5) than those in the No Worry group. No Worry group respondents also indicated they enjoyed formal presentations in a classroom environment (item 12) more than the Worry group. Worry group respondents indicated they worried about speaking in front of the classroom during formal presentations (item 13) and were more worried about speaking during the telecom presentation (item 14) than those in the No Worry group. Given the statistically significant findings for items 5, 12, 13, and 14, there is moderate support for hypothesis one.

**TABLE 2: Independent Sample T-Test Results for Hypothesis 1**

Question	Group	Mean	St Dev
	No Worry =1, Worry = 2		
Q1	1	2.46	.84
	2	2.83	1.03
Q2	1	2.56	.79
	2	2.52	.79
Q3	1	2.63	.85
	2	2.70	1.02
Q4	1	2.54	.86
	2	2.65	.98
Q5 <sup>*b</sup>	1	3.83	.83
	2	4.17	.58
Q6	1	2.90	1.21
	2	2.96	1.22
Q7	1	4.00	.93
	2	3.83	1.19
Q8	1	3.78	.74
	2	3.91	.79
Q9	1	3.08	.93
	2	3.13	.87
Q10	1	3.73	.85
	2	3.43	.95
Q11	1	2.76	.95
	2	2.30	1.02
Q12 <sup>*a</sup>	1	3.00	1.02
	2	1.91	.90
Q13 <sup>*a</sup>	1	1.69	.46
	2	4.30	.47
Q14 <sup>*b</sup>	1	2.31	1.12
	2	3.91	.67
Q15	1	3.59	.81
	2	3.96	.93
Q16	1	4.20	.76
	2	4.43	.73

No Worry Group (Group 1; n=59) Do not worry about speaking in front of the classroom during formal presentations. Worry Group (Group 2; n=23) Do worry about speaking in front of the classroom during formal presentations

\* $p < .05$ , <sup>a</sup>=equal variances assumed, <sup>b</sup>=equal variances not assumed

Hypothesis two was also tested using independent sample t-tests, using gender as the grouping variable. Independent sample t-tests were computed comparing the 16 items by gender (84 males, 18 females), resulting in four statistically significant comparisons (items 6, 8, 13, and 14). Compared to males, female respondents indicated more attention to visual aid was required during the teleconference format (item 6), believed the telecom presentation format allowed for the same opportunity for feedback from the instructor as the formal presentation (item 8), were more likely to indicate they were concerned about speaking in front of the classroom during formal presentations (item 13), and were also more concerned about speaking during the teleconference (item 14). Results provided in Table 3 support hypothesis 2, indicating gender did appear to impact perceptions of presentation format preference.

**TABLE 3: Independent Sample T-Test Results for Hypothesis 2.**

Question	Gender		Mean	Std Dev	Question	Gender		Mean	Std Dev
	Males=1	Females=2				Males=1	Females=2		
Q1	1		2.60	.852	Q9	1		3.11	.812
	2		2.56	.856		2		3.17	1.150
Q2	1		2.57	.716	Q10	1		3.52	.846
	2		2.33	.840		2		3.83	.985
Q3	1		2.75	.863	Q11	1		2.69	.896
	2		2.67	1.085		2		2.61	1.145
Q4	1		2.70	.880	Q12	1		2.69	1.023
	2		2.33	.907		2		2.56	1.294
Q5	1		3.86	.838	Q13 <sup>*b</sup>	1		2.40	1.081
	2		3.94	.725		2		3.17	1.339
Q6 <sup>*a</sup>	1		2.78	1.169	Q14 <sup>*a</sup>	1		2.48	1.108
	2		3.44	1.149		2		3.56	1.097
Q7	1		3.89	.988	Q15	1		3.69	.795
	2		4.06	.639		2		3.94	.998
Q8 <sup>*b</sup>	1		3.76	.790	Q16	1		4.31	.661
	2		4.17	.514		2		4.17	1.043

Males (n=84); Females (n=18)

\* $p < .05$ , <sup>a</sup>=equal variances assumed, <sup>b</sup>=equal variances not assumed

## Discussion

The purpose of this study was to evaluate whether students' preferences of presentation format (face-to-face or telephone conference) were impacted by comfort with speaking in front of the class or by gender. Results were generally supportive of both hypotheses.

In this study, students were provided an experiential learning opportunity, as discussed by Svinicki and McKeachie (2011), using real-world situations, problems, equipment or actions to the extent possible in the course. Though the technology used was neither elaborate nor cutting edge, students were exposed to and were required to deal with real-world scenarios (i.e., poor telephone reception quality). Students were also not provided with a grading rubric for the presentation portion of the assignment, as the researcher did not want to lead the students. Providing too much information regarding expectations would reduced students' learning opportunities for seemingly basic items such as realizing the value of numbering the presentation slides, introducing speakers, and making verbal progress checks to ensure the instructor was following and on the correct slide. This approach was consistent with advice from an often-cited piece by McKeachie (1987), who found students who develop their own projects achieved more in learning skill, had greater motivation for future learning, and were more interested in the content area. Further, Kuh and Hu (2001) reported a positive relationship between perceived vocational preparation and students' use of technology in the classroom environment.

Females surveyed were more likely to report being uncomfortable with both the face-to-face and teleconference presentation formats than their male counterparts; and interestingly, females appeared to be more concerned about speaking in the teleconference format than during face-to-face presentations. This finding could be attributed to perceived ease of use of the technology (Venkatesh, & Morris, 2000) or perceptions that males might dominate the presentation discussion (Gallos, 1995); however, such conclusions are beyond the scope of the current data set.

The survey items that did not produce statistically significant results, to include levels of team work, visual aids, nonverbal cues, and instructor feedback, did provide insight into potential

differences between face-to-face and telephone conference media and symbol sets and synchronicity. Since respondents did not indicate they considered the lack of nonverbal cues or visual aids as hindrances to the presentations, perhaps the disparity between perceptions of available symbol sets is not quite as far apart as research (e.g., Dennis et al., 2008) indicates. Similarly, lack of statistically significant differences in terms of time requirements and teamwork required between the two presentation modes might indicate further consideration of the perceptions of synchronicity between face-to-face and telephone conference media.

### **Limitations and Future Research Directions**

All data were collected via a self-report instrument administered up to one week after respondents' participation in both the teleconference and formal presentations in their management and accounting courses, respectively. Memory effects may have impacted responses. Further, surveys were administered to each section by the respective instructor. All instructors were provided the same information in terms of presenting and evaluating the teleconference activity. Team size varied between the two presentation formats and might have impacted perceptions of time and teamwork. Some students worked in 4-person teams in the teleconference format in the management course and 3-person teams in the presentation format for the accounting course. Data regarding presentation grades across the two presentation modes in the two courses were not captured, so respondent performance analysis could not be analyzed. Finally, to ensure anonymity, respondents were not asked to provide their grade point averages, but performance-related information would be a useful analysis perspective.

Future research should consider analysis regarding gender-related comfort with presentations and IT format. The current study made a first step in identifying gender-related differences of perceived comfort of using a teleconference presentation format, but further study is required to illuminate potential contributors of the discomfort (i.e., lack of comfort with the change of activity, and/or concern over voice quality). Additionally, using the teleconference format with geographically dispersed students (i.e., assign students to separate rooms equipped with appropriate automated technology) could prove valuable, as students would need to manage more processes such as speaker roles and presentation order, handling of questions and ad hoc material to be presented. Other learning outcomes could include students managing how to

establish credibility with their “client”, identifying team leadership, and improving active listening skills. Instructors in courses designed to have multiple presentations could alternate between teleconferencing and face-to-face presentations and compare communication outcomes between formats. Future studies could also assess whether students with similar self-reported public speaking fears tend to select one another as teammates for a teleconference and a face-to-face presentation or perhaps students may pay more attention to the speaking skills of others prior to team selection.

This study illustrates the value of enhancing classroom activities as well as identified future research areas related to gender-related perceptions of communication in the classroom environment. Overall, introducing a new “old technology” into the core undergraduate management course served the students, instructors, and future employers while also meeting intended course objectives.

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