

2019

## Online versus Face-to-Face Public Speaking Outcomes: A Comprehensive Assessment

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### Recommended Citation

Broeckelman-Post, Melissa A.; Hyatt Hawkins, Katherine E.; Arciero, Anthony R.; and Malterud, Andie S. (2019) "Online versus Face-to-Face Public Speaking Outcomes: A Comprehensive Assessment," *Basic Communication Course Annual*: Vol. 31 , Article 10. Available at: <https://ecommons.udayton.edu/bcca/vol31/iss1/10>

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## **Cover Page Footnote**

This study was funded by a 4-VA Collaborative Research Grant. The authors would like to thank Allister Nelson for helping to separate video files and grade speeches during the data compilation stage of this project.

## Research Article

# Online versus Face-to-Face Public Speaking Outcomes: A Comprehensive Assessment

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### Abstract

*In an attempt to meet rising student demand and cost-effectively deliver instruction, colleges and universities are offering more online courses. Despite the increasing growth of the online format, there remains a question of the effectiveness of this instructional delivery method. We evaluated the relative effectiveness of a public speaking course in both the online and the traditional face-to-face formats at a large, public university in the mid-Atlantic region. A series of MANOVAs were run to test the differences in performance and other student growth indicators between course formats. While the students in the online courses demonstrated higher behavioral engagement, the majority of indicators were similar across formats. The technology might explain the observed differences in online courses, which permits students to correct mistakes and re-record a presentation before submitting it, or the larger withdrawal rate which may selectively remove those students who may have done poorly in either format. Implications for future research and practice are presented.*

*Keywords: communication competence, face to face, online, public speaking performance, public speaking anxiety*

Whether public speaking can and should be taught online has been the subject of much debate over the past two decades. Many faculty have expressed reservations about teaching public speaking and other communication courses online (e.g., Helvie-Mason, 2010; Hunt, 2012; Miller, 2010), and one study found that many communication faculty do not believe that some types of courses—including interpersonal communication, public speaking, and writing—should ever be taught online (Vanhorn, Pearson, & Child, 2008). Ward (2016) argues “the question is *not* can the course be offered online, but rather *should* it be offered online,” and claims that online and face-to-face (FTF) courses are not the same thing (p. 222).

However, as Lisa Goodnight states in the introduction to *The Basic Communication Course Online: Scholarship and Application* (Goodnight & Wallace, 2005), “the debate over whether the basic communication course should be taught online is over” (p. 1). Whether faculty like it or not, many universities are working to build fully online degree programs and degree completion programs. If an introductory communication skills course is a general education requirement, then an online version of that course must also be created in order for those online degree programs to exist. Faculty are often faced with the choice of building the online course themselves or having it built for them, and we argue that it is better to have disciplinary experts build and assess the effectiveness of online courses. Furthermore, providing an option to take a public speaking course online can provide access to a communication course for students who might otherwise live too far from a university, such as in dual-enrollment programs (Westwick, Hunter, & Chromey, 2018), following extreme weather crises (Helvie-Mason, 2010), and for students who have careers, families, and other responsibilities (Miller, 2010). Non-traditional students—typically defined as those students who delayed college enrollment, are enrolled part-time, are financially independent, are employed full-time, have dependents, are single parents, and/or are GED recipients (Choy, 2002)—might benefit especially from the online public speaking format.

Despite the increasing prevalence of online public speaking courses, there has not yet been a study that provided a comprehensive evaluation comparing the effectiveness of fully online and FTF public speaking courses. The goal of this study is to examine whether there are differences between online and FTF public speaking courses in speech performance, course performance, and self-report communication competence and anxiety.

## Literature Review

### Prevalence and Challenges of Online Education

Allen and Seaman (2014) indicated that about a third of all enrolled college students had taken at least one online class, and 6.7 million students said they had taken an online course at some point in their academic career. This rapid growth and the continuing increase in online course offerings at universities, colleges, community colleges, and even fully online institutions across the globe make it important to better understand online teaching and learning (McGee, Windes, & Torres, 2017). Universities offer online courses to students for a variety of reasons. For example, the cost is appealing to administrators, and it offers another way to meet the demands of increased student enrollment (Tichavsky, Hunt, Driscoll, & Jicha, 2015). Additionally, there has been tremendous growth in non-university online course offerings through programs such as Khan Academy, Massive Open Online Courses (MOOCs), and Coursera, to name a few examples.

Though fully online courses are now available in every corner of the educational market, there are numerous challenges associated with fully online courses. Some of the biggest challenges are high drop and low attrition rates (Bawa, 2016). Between 40% and 80% of students drop out of online classes (Smith, 2010), which is much higher than in FTF courses (Jaggars, 2011), and online courses have a 10-20% higher failed retention rate than FTF courses (Herbert, 2006). There are also greater challenges with student motivation (Heyman, 2010), and because online classes are highly self-directed, low motivation can have a direct impact on retention (Bawa, 2016). Additionally, Wladis, Conway, and Hachey (2015) explain that students' characteristics such as gender, ethnicity, academic preparedness (e.g., grade point average and experience with online courses), and non-traditional student traits can impact dropout rates. In their study on STEM courses offered online at a community college, Wladis et al. (2015) found that the online environment was better suited for older students (24 and older) than for younger STEM students, and that women are at a higher risk of dropout in online STEM courses.

While many students appreciate the flexibility of online courses, particularly if they are trying to maintain jobs outside of school, students also report struggling with the lack of face-to-face interactions with instructors (Shin & Lee, 2009), and this lack of direct social interaction could be contributing to lower retention rates (Allen, 2006). Although it can be challenging to create community in online courses, some

scholars have offered strategies for enhancing student interaction and immediacy (Conaway, Easton, & Schmidt, 2005), including recommendations for nonverbal immediacy behaviors that can help to enhance student online engagement (Dixon, Greenwell, Rogers-Stacy, Weister, & Lauer, 2017) and ways to create a more interactive online presence (Tichavsky et al., 2015).

### **Online Public Speaking**

Research has further explored some of the challenges that are specifically associated with developing an effective online public speaking course. Vanhorn et al. (2008) surveyed faculty and found that most of the most common challenges associated with teaching fully online communication courses include transforming the course content to an online platform, time management and workload, technology challenges, student motivation, communicating with students online, obtaining appropriate institutional support, and maintaining motivation as faculty. Similarly, Miller (2010) explores the challenges that online public speaking courses pose for students, noting that while online courses offer greater flexibility, they are a type of student-controlled learning that require greater personal discipline and motivation.

Ward (2016) surveyed the strategies that faculty use to implement an online public speaking course and found a wide range of ways that public speaking courses are being implemented online. Some online instructors utilize video content, discussion boards (both synchronous and asynchronous), quizzes, and recorded student speeches. For speech recordings, instructors reported that their students used phones, tablets, digital cameras, or laptops with built-in cameras. Some instructors require students to record their speeches in front of an audience and vary in their preference in a number of audience members and audience member minimum age, and about half of instructors require students to use PowerPoint or some other presentation software during their recorded speech.

Teaching public speaking online has raised many questions about whether skills can be effectively developed in an online format. Though Ward (2016) explains that there is a gap in knowledge about how to effectively teach a skills-based course online, researchers across numerous fields have explored the most effective ways to teach other types of skills online, including active listening (Cheon & Grant, 2009), negotiation (Cockburn & Carver, 2007), music performance (Pike & Shoemaker, 2015), and clinical social work (Wilke, King, Ashmore, & Stanley, 2016).

Only one previous study has compared the quality of public speaking performances given in online and FTF courses (Clark & Jones, 2001), and that study found only trivial differences in the quality of the speeches. However, students enrolled in the online course in that study delivered their speeches on campus, not online, and technology for delivering online presentations has changed dramatically over the past 17 years. Because no study to date has evaluated the effectiveness of speeches delivered online versus those delivered in a FTF course, and because little if any research has been published on the overall success of public speaking students in fully online courses, this study will test the following hypotheses:

H1: There is a difference in public speaking performance between FTF and online public speaking courses.

H2: There is a difference in course performance between FTF and online public speaking courses.

H2a: There is a difference in final exam grades between FTF and online public speaking courses.

H2b: There is a difference in final course grades between FTF and online public speaking courses.

H2c: There is a difference in grades of D and F and withdrawals (DFW rates) between FTF and online public speaking courses.

### **Communication Competence and Anxiety**

Even though this assessment is focused on evaluating two formats of a public speaking course, Ward et al. (2014) argue that seven competencies should be achieved by any introductory communication course, regardless of context. These competencies include “monitoring and presenting your self, practicing communication ethics, adapting to others, practicing effective listening, expressing messages, identifying and explaining fundamental communication processes, and creating and analyzing message strategies” (p. 1). More recently, a team of introductory communication course directors and scholars worked together with the Social Science Research Council to establish a set of six Essential Competencies for

public speaking students, building upon the work of the National Communication Association (2015) Learning Outcomes Project and the Social Science Research Council Measuring College Learning Project for Communication (Kidd, Parry-Giles, Beebe, & Mello, 2016). The essential outcomes for public speaking include “create messages appropriate to the audience, purpose, and context, critically analyze messages, demonstrate self-efficacy, apply ethical communication principles and practices, utilize communication to embrace difference, and influence public discourse” (Broeckelman-Post & Ruiz-Mesa, 2018, p. 7-8).

Previous studies have often relied on measures of public speaking anxiety and self-perceived communication competence to show a reduction in public speaking anxiety and gains in communication competency in introductory communication courses (e.g., Broeckelman-Post & Pyle, 2017; Westwick, Hunter, & Haleta, 2015; Westwick et al., 2018). These self-report measures—typically including the Personal Report of Communication Apprehension (PRCA-24, McCroskey, 1982), Personal Report of Public Speaking Anxiety (PRPSA, McCroskey, 1970), and Self-Perceived Communication Competence (SPCC, McCroskey & McCroskey, 1988) — evaluate an individual’s confidence in their ability to communicate in a variety of communication situations, but the Self-Perceived Communication Competence measure (McCroskey & McCroskey, 1988) does not fully capture the breadth of communication competencies that public speaking courses should achieve.

Additionally, since many public speaking courses attempt to build interpersonal and group skills through the integration of peer workshops that can help to provide feedback and build community (Broeckelman-Post & Hosek, 2014), some indication of those interpersonal and group communication skills should be included in any assessment of communication competence that is based on self-report measures. Because the Communication Competence Assessment Instrument (Rubin, 1985) and the Interpersonal Communication Competence Scale (Rubin & Martin, 1994) better capture outcomes such as “utilize communication to embrace difference” through the ICCS dimension of empathy, “demonstrate self-efficacy” through the ICCS dimension of assertiveness, and “create messages appropriate to the audience, purpose, and context” through CCAI items such as, “When giving a speech, I thoroughly express and fully defend my positions on issues,” these measures will be used to evaluate growth in communication competence.

Previous studies have only been able to evaluate the impact of online and face-to-face courses in separate semesters or through cross-sectional studies that did not account for individual student growth over the course of the semester. Thus,



research that compares the overall levels of public speaking anxiety and communication competence as well as the change over the course of the semester is still needed. In order to provide this more detailed assessment, this study will test the following hypotheses:

H3: There is a difference in the change in self-report competence measures over the course of the semester between FTF and online public speaking courses.

H3a: There is a difference in the change in CA over the course of the semester between FTF and online public speaking courses.

H3b: There is a difference in the change in CCAI over the course of the semester between FTF and online public speaking courses.

H3c: There is a difference in the change in ICCS over the course of the semester between FTF and online public speaking courses.

### **Student Engagement**

Student engagement is defined as “the quality of the effort students themselves devote to educationally purposeful activities that contribute directly to the desired outcomes” (Hu & Kuh, 2002, p. 555). Mazer (2012) and Reeve (2013) have both developed multidimensional measures of engagement, and because Reeve’s measures include the cognitive and emotional dimensions that are included in Mazer’s (2012) Student Interest Scale, Reeve’s work will be used in this study.

According to Reeve (2013), there are four dimensions of engagement, including behavioral, affective or emotional, cognitive, and agentic. Behavioral engagement is considered involvement in academic and social or extracurricular activities (Fredricks, Blumenfeld, & Paris, 2004; Skinner & Belmont, 1993) and has also been said to include “positive conduct, effort, and participation” (Appleton, Christenson, & Furlong, 2008, p. 370). Researchers have differed over specific language (Appleton et al., 2008), but this component of engagement has generally indicated overt, observable action by the student that demonstrates personal investment in the learning process. Affective engagement is the emotional connection students have with the teacher, fellow students, and the school. It has been described as having two

broad components – students’ affective connection to learning, such as positive affect, interest, anxiety (Appleton et al., 2008), and their sense of belonging derived from the learning environment (Lawson & Lawson, 2013). Cognitive engagement involves the intellectual investment students make to learn the course material. It can involve cognitive processes such as “thoughts about school,” which has been characterized as a psychological investment, and “in the moment,” or deeper-level study and self-regulation (Lawson & Lawson, 2013, p. 436). Cognitive engagement also includes students’ thinking about how the course material might impact their lives, and how they might use the information gained (Mazer, 2013).

The fourth dimension, agentic engagement, was proposed more recently (Jang, Kim, Reeve, 2016; Reeve, 2013; Reeve & Tseng, 2011). Agentic engagement describes a set of proactive behaviors that students take to shape their environment and facilitate their learning. It was defined as “students’ constructive contribution into the flow of the instruction they receive” (Reeve & Tseng, 2011, p. 258). Agentic engagement is a proactive stance that students take toward their learning and reflects a self-initiated pursuit of mastery. It includes actions such as asking questions, letting the teacher know what the student needs to improve his/her learning, communicating the student’s interests to the teacher, and making recommendations to improve the class (Reeve, 2013). In this study, we used a 4-dimensional structure of engagement including the agentic engagement component. Agentic engagement may have more salience for the college student population as the more experienced and mature students might be better situated to proactively take charge of their learning environment. Engagement is malleable (Fredricks et al., 2004) in response to both classroom (Mazer, 2013) and environmental (Lawson & Lawson, 2013) influences, making the specific characteristics of the online learning context an important area of study.

Engagement is related to motivation and student achievement. Greater engagement is associated with higher levels of academic achievement. These results may be related to the satisfaction of basic psychological needs as described in self-determination theory (SDT; Ryan & Deci, 2017). SDT states that there are three basic psychological needs: the need for autonomy, or being the agentic force in our own lives, the need for competency, or being able to engage with the world around us effectively, and the need for relatedness, or feeling connected with others and having a sense of belonging (Ryan & Deci, 2017). Studies within SDT have shown that engagement is enhanced with greater autonomy support (Jang et al., 2016). Teacher behavior that supports student autonomy is defined as “the delivery of

instruction through an interpersonal tone of support and understanding” (Jang et al., 2016, p. 28), and includes providing choices, encouraging students to pursue their interests, and being responsive. Teacher behavior, along with other course characteristics, have been under-investigated as they pertain to student autonomy in the online learning environment. Because engagement is a necessary condition for and one of the best indicators of learning (Kuh, 2009), it is important to find out whether course format impacts student engagement, so we pose the following hypothesis:

H4: There is a difference in student engagement between FTF and online public speaking courses.

## Method

### Participants

This study was conducted at a large public Mid-Atlantic university. All students enrolled at this university are required to take either a public speaking course or a fundamentals of communication course (includes public speaking, interpersonal communication, and small group communication) in order to meet the general education oral communication requirement. The public speaking course is taught in two formats: a fully face-to-face course that meets either once or twice per week and a fully online course that meets asynchronously and has weekly deadlines. Both the face-to-face (FTF) and online versions of the public speaking course are standardized and use the same syllabus, textbook, assignments, grading rubrics, online resources, and assessment protocol. The public speaking course includes four individual speeches: an introductory speech; a cultural artifact speech; an explanatory speech with an annotated bibliography; and a persuasive speech. Students in the FTF course deliver their speeches live in class, whereas students in the online course record their speeches using their webcam and upload their speech videos to the class discussion board, where the instructor and their classmates can watch and provide feedback on the speeches.

All students who were enrolled in the FTF and online sections of the public speaking course ( $N = 455$ ) during Spring 2018 were invited to participate in this study. Students who did not complete the explanatory speech and final exam were excluded from this analysis since they did not complete the course, and students who

opted out of having their results included in research studies were removed prior to analysis. The DFW rates will provide insight into whether there is a difference in assignment and course completion between the two course formats.

A total of 401 students participated in this study, including 326 (81.3%) who were enrolled in the FTF class and 75 (18.7%) who were enrolled in the online course. The mean age for all participants was 20.16 years ( $SD = 3.82$ ). For gender, 55.9% ( $N = 167$ ) reported that they were male, 42.8% ( $N = 128$ ) female, 0.7% ( $N = 2$ ) transgender, and 0.7% ( $N = 2$ ) preferred not to disclose. The largest proportion of students (47.2%,  $N = 141$ ) were in their first year, 23.7% ( $N = 71$ ) sophomores, 16.1% ( $N = 48$ ) juniors, and 13.0% ( $N = 39$ ) seniors. For ethnicity, 41.9% of participants ( $N = 168$ ) reported that they were white or Caucasian, 17.2% ( $N = 69$ ) Asian, 8.7% ( $N = 35$ ) black or African-American, 5.5% ( $N = 22$ ) Hispanic or Latino/a, 6.0% ( $N = 24$ ) Middle Eastern or North African, 0.5% ( $N = 2$ ) American Indian or Alaska native, 0.5% ( $N = 2$ ) Native Hawaiian or Pacific Islander, and the remaining 19.7% ( $N = 79$ ) of participants did not complete the pre-course survey or chose not to disclose. Of students who completed the pre-course survey, 67.2% ( $N = 201$ ) are L1 English speakers (English is their first language), 26.1% ( $N = 78$ ) are Generation 1.5 speakers (students who speak another language at home but have had at least three years of English dominant education; Perin, De La Paz, Piantedosi, & Peercy, 2017), 5.4% ( $N = 16$ ) are L2 English speakers (non-native English speakers who are fluent in oral English; Perin et al., 2017), and 1.3% ( $N = 4$ ) were not sure which linguistic category best described them.

## Procedure

All students who were enrolled in the FTF and online public speaking courses were required to complete an online pre-course survey and post-course survey as a course assignment. Both surveys included self-report measures, which are described in more detail below. The pre-course survey also included demographic items. The pre-survey was available during the first two weeks of the semester, and the post-survey was available during the last two weeks of the semester. Additionally, gradebooks and attendance records were collected from all course instructors. At the end of the semester, the pre-course survey, post-course survey, gradebooks, and attendance records were matched at the individual student level and merged into a single SPSS database, and students who selected to opt out of having their data

included in research analyses were deleted from the data set prior to analysis, per IRB instructions.

Instructors were asked to record all students' explanatory speeches, and those video recordings were then split into individual speech video files. Both courses have identical explanatory speaking assignments that require students to explain a concept related to their major or intended career to a non-expert audience, and this assignment occurs approximately three-fourths of the way into the semester. Individual speech video files were split into groups by course type and checked for clear audio and visualization of the student. From a total of 244 video-recorded speeches, 132 speeches were selected using a stratified random sampling technique. Sixty-seven videos were collected from the FTF course format (40%) and 65 videos were collected from the online class format (89% of video recordings). To obtain intercoder reliability, 16 speech videos were viewed and graded together by four expert coders during the grading training session. The coders were all experienced basic course instructors. Each had received extensive training in speech grading and each had previously graded at least 300 speeches; some had graded well over 1,000 speeches in classes that they had taught over several years. Once the graders achieved intercoder reliability of Krippendorff's (2011)  $\alpha = .83$ , the remaining video files were randomly assigned to the four graders and evaluated individually. Speech performance grades, both for the speech overall and for five different aspects of the speech (introduction, body, conclusion, overall impression, and delivery) were merged with the complete SPSS dataset by matching student ID numbers, and then all individually identifying information was removed, per IRB instructions.

### Instrumentation

**Speech performance.** Speech performance was measured using an adapted version of the inter-institutional public speaking performance grading rubric that was developed as part of a 2017 NCA Advancing the Discipline Basic Course Assessment Project, *A National-Level Assessment of Core Competencies in the Basic Course*<sup>1</sup>. Because we were grading videos of speeches instead of outlines, we removed the outline portion of the rubric and added a delivery section (Appendix A).

**Course performance.** Course performance was measured using four outcomes: attendance, final exam score, final course grade, and DFW rates (earned a D or F or

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<sup>1</sup> Grant team members: Melissa Broeckelman-Post, Lindsey Anderson, Andrew Wolvin, Angela Hosek, Cheri Simonds, John Hooker, Joshua Westwick, Karla Hunter, Kristina Ruiz-Mesa, and LeAnn Brazeal

withdrew after the drop deadline). Attendance was calculated as a proportion of classes attended in order to account for different course meeting patterns; for instance, a student who attended 26 out of 28 class meetings received a score of .93. Both courses had a 100-point multiple-choice final exam that was completed online using the Respondus online exam proctoring software, and each exam had an even distribution of exam items across chapters and across the first three levels of Bloom, Engelhart, Furst, Hill, & Krathwohl's (1956) taxonomy of cognitive learning. The final course grade was the total number of points that the student earned out of the possible 1000 total points for each class. DFW rates were obtained from the registrar's office for each section of the course.

**Engagement.** Engagement was measured using Reeve's (2013) Student Engagement Scale (SES), which includes four dimensions: Behavioral, Agentic, Cognitive, and Emotional. This scale includes 21 items measured on a 7-point Likert scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). This scale includes items such as "I pay attention in this class" (Behavioral Engagement) and "During class, I ask questions to help me learn" (Agentic Engagement). In our study, this measure had a reliability of  $\alpha = .96$  in the pre-test and  $\alpha = .96$  in the post-test for the overall measure,  $\alpha = .85$  in the pre-test and  $\alpha = .87$  in the post-test for Behavioral Engagement,  $\alpha = .89$  in the pre-test and  $\alpha = .89$  in the post-test for Agentic Engagement,  $\alpha = .85$  in the pre-test and  $\alpha = .86$  in the post-test for Cognitive Engagement, and  $\alpha = .89$  in the pre-test and  $\alpha = .90$  in the post-test for Emotional Engagement.

**Communication apprehension.** Communication Apprehension was measured using McCroskey's (1982) Personal Report of Communication Apprehension (PRCA-24). This measure includes four sub-scales: Group Discussion, Interpersonal, Meetings, and Public Speaking. This scale includes 24 items measured on a 5-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). This scale includes items such as "I feel relaxed when giving a speech" (Public Speaking) and "Ordinarily I am very tense and nervous in conversations" (reverse-coded, Interpersonal). In our study, this measure had a reliability of  $\alpha = .97$  in the pre-test and  $\alpha = .95$  in the post-test for the overall measure,  $\alpha = .90$  in the pre-test and  $\alpha = .86$  in the post-test for Group Discussion,  $\alpha = .91$  in the pre-test and  $\alpha = .89$  in the post-test for Meetings,  $\alpha = .91$  in the pre-test and  $\alpha = .85$  in the post-test for Interpersonal, and  $\alpha = .90$  in the pre-test and  $\alpha = .87$  in the post-test for Public Speaking.

**Interpersonal communication competence.** Interpersonal communication competence was measured using Rubin and Martin's (1994) Interpersonal Communication Competence Scale (ICCS). This measure includes 30 items measured on a 5-point Likert scale ranging from 1 (*almost never*) to 5 (*almost always*). Example items include "I am comfortable in social situations" and "I communicate with others as though they're equals." In our study, this measure had a reliability of  $\alpha = .89$  in the pre-test and  $\alpha = .89$  in the post-test.

**Communication competence.** Communication competence was measured using Rubin's (1985) Communication Competency Assessment Instrument (CCAI). This measure includes 19 items measured on a 5-point Likert scale ranging from 1 (*never*) to 5 (*always*) (the original version of this scale has 1 (*always*) and 5 (*never*), but we reversed scale to be consistent with other scales in our survey). Example items include "When giving a speech, I can be persuasive when I want to be" and "I am unable to tell whether or not someone has understood what I have said" (reverse-coded). In our study, this measure had a reliability of  $\alpha = .86$  in the pre-test and  $\alpha = .86$  in the post-test.

## Results

### Public Speaking Performance

To test H1 to find out whether there was a difference in public speaking performance for the explanatory speech between the face-to-face and online public speaking courses, a MANOVA with one independent variable (course type) and six dependent variables (total score, introduction, body, conclusion, overall impression, and delivery) was conducted. Multivariate tests showed that there was no effect for course,  $F(5, 126) = 1.14, p = .34$ , indicating that there was no significant difference in speech performance between the FTF and online public speaking course. See Table 1.

### Course Performance

Next, to test H2, a MANOVA with one independent variable (course type) and two dependent variables (final exam score and final course grade) was conducted to find out whether there was a difference between the online and FTF public speaking courses in student performance. Box's M test for the equality of covariances was not significant at the .001 level,  $F(3, 245099.85) = 0.60, p = .61$ , so Wilk's Lambda values were used. Multivariate tests showed that there was not a significant main effect for

course,  $F(2, 398) = 1.42, p = .24$ , which indicates that there are no differences in student course performance between the FTF and online public speaking course. However, a report of the number of students who earned Ds, Fs, and Ws indicated that the DFW rate for the FTF course was 12%, whereas the DFW rate for the online course was 22%. H2a and H2b were not supported, but H2c was supported.

### Self-Report Competence Measures

In order to test H3, a within-subjects MANOVA with one between-subjects factor (course type) and three within-subjects factors (CA, ICCS, and CCAI) was conducted to determine whether there were changes in these self-report competence measures over time, as well as whether there were between-subjects differences. Box's M test for the equality of covariances was not significant at the .001 level,  $F(21, 18834.67) = 2.33, p = .001$ , so Wilk's Lambda values were used. Multivariate tests showed a significant main effect for time,  $F(3, 190) = 3.98, p = .009, \eta_p^2 = .06$ , power = .83, but not for course type,  $F(3, 190) = 2.57, p = .06$ , nor for the time by course type interaction,  $F(3, 190) = 1.24, p = .30$ . Univariate within-subjects effects for all three of the dependent variables were significant. Over the course of the semester, students reduced their levels of CA,  $F(1, 192) = 7.70, p = .006, \eta_p^2 = .04$ , power = .79, and increased their levels of ICCS,  $F(1, 192) = 9.22, p = .003, \eta_p^2 = .05$ , power = .86], and CCAI,  $F(1, 192) = 9.60, p = .002, \eta_p^2 = .05$ , power = .87. Because there were no between-subjects effects by course type, H3, H3a, H3b, and H3c were not supported. However, these results show that both courses are reducing CA and increasing ICCS and CCAI as expected.

### Engagement

In order to test H4, a MANOVA with one independent variable (course type) and five dependent variables (overall engagement, behavioral engagement, agentic engagement, cognitive engagement, and emotional engagement) was conducted to find out whether there was a difference between online and FTF public speaking courses in student engagement. Box's M test could not be computed, so the more conservative Hotelling's Trace values were used. Multivariate tests showed a significant effect for course type,  $F(4, 256) = 2.68, p = .03, \eta_p^2 = .04$ , power = .74. Univariate tests of between-subjects effects were significant for behavioral engagement,  $F(1, 259) = 4.50, p = .04, \eta_p^2 = .02$ , power = .56, but there were no significant differences between online and FTF courses for any of the other types of



engagement. Students enrolled in the online course ( $M = 5.57$ ,  $SD = 1.13$ ) had slightly higher levels of behavioral engagement than students enrolled in the FTF course ( $M = 5.16$ ,  $SD = 1.27$ ), so H4 was partially supported.

### Discussion

The goal of this study was to provide the most comprehensive evaluation of online and face-to-face public speaking courses to date, and overall, the results show that both courses have similar outcomes for students. In sum, students in the online course had slightly higher levels of behavioral engagement and higher DFW rates. However, there was no difference between the two formats in public speaking performance, final exam performance, course grades, public speaking anxiety, communication competence, or interpersonal communication competence.

The public speaking situation was different for the online and FTF students, so the lack of significant difference should be considered within these different contexts. Students in the FTF course gave their speeches live in front of an audience of their classmates, so they had a single opportunity to give their speech and were limited to using a single notecard. Students in the online course, however, uploaded videos of their speeches to the discussion board for their classmates to watch and write peer evaluations. It is possible that students in the online course recorded their speech multiple times before uploading a final version that they believed represented their best effort. Based on their eye movements in the video recordings, it also appears highly likely that many of the students were using their computer screen as a teleprompter and reading from a manuscript while recording their speech using their webcam. Although the lack of significant differences between the course formats suggests that both courses are helping students learn the process of developing and delivering presentations equally well, this does not necessarily mean that both courses are preparing students for the same types of presentations equally well since the FTF course is synchronous and the online course is asynchronous. Instructors should consider requiring both asynchronous and synchronous presentations in both FTF and online courses to prepare students for both speaking contexts since students might encounter both in the workplace. Furthermore, considering the likelihood that most people will give online presentations using WebEx, Adobe Connect, GoToMeeting, Google Hangouts, and a variety of other types of software in their careers or other courses, it might be a good idea for all public speaking courses to intentionally start incorporating synchronous online presentations, regardless of the format in which the course is taught. Future research should

evaluate whether online and FTF courses prepare students equally well for synchronous online presentations as well as synchronous in-person presentations.

Even though the final exam grades and final course grades were statistically identical in both course formats, the nearly double DFW rate in the online course gives a bit of a pause. The students who were included in all of these analyses successfully completed the course, so the students who earned a D, F, or W are unlikely to be represented in this study. We do not know what factors led to students failing the course or dropping the course after the drop deadline, but ultimately, we are comparing slightly different populations of students at the end of the semester since the DFW rate was higher for the online courses. While the 22% DFW rate in the online course is much lower than the 40-80% drop rates for online courses found in previous studies (Smith, 2010), there are ethical implications that must be considered when deciding whether to offer a large number of fully online courses, particularly since some groups of students are more likely to drop or fail an online course (Wladis et al., 2015).

The results in this study regarding PSA, CCAI, and ICCS are consistent with what we would expect from previous research, though with slightly more positive findings for online courses. This study found that students in both online and FTF courses decreased in PSA, which is consistent with previous findings (Hunter, Westwick, & Haleta, 2014; Westwick et al., 2015; Westwick et al., 2018). However, whereas this study found the same reduction in PSA for all students, regardless of course format, previous studies showed a smaller decrease in public speaking anxiety in the online course (Westwick et al., 2015; Westwick et al., 2018) than in a face-to-face public speaking course (Hunter et al., 2014). Additionally, whereas previous research has shown that face-to-face courses led to a stronger increase in communication competence than online courses (Westwick, Hunter, & Haleta, 2016), this study showed the same increase in both communication competence and interpersonal communication competence for students in the online and face-to-face courses.

Taken together with these studies, our findings suggest that online public speaking courses can be just as successful in decreasing communication anxiety and increasing communication competence, but we echo Westwick et al.'s (2018) argument that course design and instruction matter. Whereas Westwick et al. (2016) note that the social nature of face-to-face classes might be lost in an online course, and they recommend finding ways to “replicate the culture, support, and feedback that may increase students’ SPCC [communication competence]” (p. 79), in the

courses tested in this study, we believe we might have found a way to do that. Both the online and FTF versions of the public speaking course in this study included two peer workshops prior to each speech, one in which students gave each other feedback on their outline and one in which students uploaded a practice video and gave each other feedback on their delivery. Additionally, students watched and provided peer feedback on their classmates' performances after the final speech videos were uploaded. One other aspect of these courses that might have added to the sense of community is that the courses began with students giving introductory speeches in which they shared a little bit about how their past has shaped them, shared a concrete object that functions as a metaphor for who they are now, and described their goals and dreams for the future. It is possible that this constant interaction and the weekly accountability to complete and submit work also led to higher levels of behavioral engagement. Because every part of each student's contributions are visible and graded by the instructor in an online course, unlike discussions and activities in FTF courses, it is much harder for students to engage in social loafing in an online course than in a FTF course and still earn a high grade in the course. While it is impossible to know for certain whether these course elements were ones that made a difference for building community, enhancing student engagement, and helping students build a stronger sense of their communication competence, it is possible that these elements made a contribution to those patterns of growth for students who successfully completed the course as well as the higher DFW rates for the online course. Future research should explore the impact of different types of assignments and interactions among students in online courses.

Although the slightly higher level of behavioral engagement in the online course should not be over-interpreted since the effect size was very small, the slightly higher levels of behavioral engagement and similar levels of engagement overall are good news since previous research has found that motivation and engagement can be especially difficult challenges in online courses. The online version of public speaking, specifically, offers students a unique opportunity to observe, emulate, and practice using technology (Zimmerman & Kitsantas, 1997, 2002), but these important components of skill development must be thoughtfully adapted to the online learning environment. For example, students are assigned videos to watch, which affords them the chance to pause, rewind, and play as many times as they need, an option that is unavailable in most traditional face-to-face class structures. This observation opportunity should be guided by objectives, deliberately assessed, and reflected upon, with the reflections being a graded activity. Students observe

public speaking skills and then emulate them. Since online classes require students to upload recordings of their speeches, students have the opportunity to watch themselves, evaluate their performance, and re-record, which fosters public speaking practice. For this step of the skill-building process to be effective, it must be accompanied by instructor feedback. Constructive, encouraging, and frequent feedback in the early stages of skill development can make a big difference in student motivation and self-esteem (Zimmerman & Kitsantas, 2002). Since success in online courses requires self-regulation, encouragement through constructive feedback may support retention if it promotes student motivation. Students need to be self-motivated and facilitate their own learning in an online setting, but if these skills are acquired through the support of a skilled online instructor, they are transferable to other courses and future careers.

One of the limitations of this study was sample size. Because this department offers far fewer sections of the online public speaking course than the FTF public speaking course, we had unequal group sizes. This might have made it difficult to detect differences between groups that would be easier to see with larger, equal group sizes. Another limitation was that the online course was taught by fewer instructors than the FTF course, and while all instructors went through the same training program and had previously taught the course in the FTF format, it is possible that there are undetectable instructor effects. Technological difficulties with some of the recordings also limited the total number of speech videos from which we could select, which meant that we ultimately graded a much larger proportion of the speeches from the online course than from the FTF course. Future researchers could overcome this challenge by collecting speech videos from multiple semesters or by offering more sections of the online course when data is being collected.

### **Conclusion**

This study provided a comprehensive assessment of online and FTF public speaking courses and found that there were negligible differences between the course formats in students' public speaking performance, course performance, public speaking anxiety reduction, enhanced communication competence, and student engagement. Course design, instruction, and classroom interaction are undoubtedly important, but when these elements are implemented well, it is possible for an online public speaking course to be just as successful as a FTF public speaking course while also providing access to students who might not otherwise have the opportunity to build these skills.

### Acknowledgments

This study was funded by a 4-VA Collaborative Research Grant. The authors would like to thank Allister Nelson for helping to separate video files and grade speeches during the data compilation stage of this project.

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**Table 1**  
**Means and Standard Deviations for all Variables**

Variable	Face to Face					Online				
	<i>N</i>	<u>Pre</u> <i>M</i>	<i>SD</i>	<u>Post</u> <i>M</i>	<i>SD</i>	<i>N</i>	<u>Pre</u> <i>M</i>	<i>SD</i>	<u>Post</u> <i>M</i>	<i>SD</i>
Total Speech Score	67			84.41	7.79	65			86.01	8.06
Introduction	67			8.24	1.15	65			8.59	1.22
Body	67			41.87	5.29	65			42.88	5.51
Conclusion	67			7.74	2.12	65			8.11	1.89
Overall Impression	67			8.98	0.69	65			7.74	2.12
Delivery	67			17.58	1.20	65			17.28	2.16
Final Exam	326			80.30	11.91	75			79.05	12.53
Course Grade	326			870.88	85.43	75			852.59	87.58
PRCA <sup>b</sup>	154	64.77	20.04	61.79	19.43	40	69.33	25.14	64.18	23.49
ICCS <sup>b</sup>	154	108.69	15.35	111.12	17.21	40	108.95	15.63	113.35	14.86
CCAI <sup>b</sup>	154	74.25	8.86	75.19	10.87	40	74.75	9.99	78.60	8.26
Engagement Total	207			4.97	1.24	54			5.16	1.10
Behavioral Engagement <sup>a</sup>	207			5.16	1.27	54			5.57	1.13
Agentic Engagement	207			4.88	1.33	54			4.98	1.16
Cognitive Engagement	207			5.15	1.30	54			5.42	1.27
Emotional Engagement	207			4.76	1.49	54			4.79	1.32

FTF = face-to-face course format. Online = online course format. SD = Standard Deviation. Total score, Introduction, Body, Conclusion, Overall, and Delivery refer to speech performance grades. Final Exam is the score students received on the course final examination. Course Grade is the total number of points students received out of a possible 1000 points for the course, including all graded assignments and examinations. PRCA

T1 = scores for Personal Report of Communication Apprehension in the pre-course survey; PRCA T2 = scores for Personal Report of Communication Apprehension in the post-course survey; ICCS T1 = scores for Interpersonal Communication Competency in the pre-course survey; ICCS T2 = scores for Interpersonal Communication Competency in the post-course survey; CCAI T1 = scores on the Communication Competency Assessment Instrument in the pre-course survey; CCAI T2 = scores on the Communication Competency Assessment Instrument in the post-course survey. All engagement scores are from the post-course survey.

a = Significant difference between face-to-face and online formats ( $p < .05$ )

b = PRCA, ICCS, and CCAI were all significantly different between pre-course (T1) and post-course (T2) surveys ( $p < .05$ )

## Appendix A: Explanatory Speech Rubric

INTRODUCTION (10)	Absent	Poor	Good	Excellent
<b>Attention getter</b> (C) is present, (B) uses a meaningful narrative, quotation, statistic, or question that is related to the topic, and (A) is creative, original, and highly motivating				
<b>Background and audience relevance</b> (C) some background information about the topic is provided, (B) the significance of the topic is firmly established, and (A) topic is clearly connected to this specific audience				
<b>Speaker credibility</b> (C) speaker provides a reason for choosing the topic, (B) explains why they care about the topic, and (A) explains why they have compelling experience or expertise in this area				
<b>Thesis</b> (C) is identifiable (B) is clear, complete, single declarative sentence, and (A) uses carefully chosen language that sets the tone and direction for the speech				
<b>Preview</b> (C) tells the audience what main points will be discussed, (B) uses signposts, is concise, and flows into the body, and (A) uses creative, carefully worded phrasing				
BODY (50)	Absent	Poor	Good	Excellent
<b>Main Points</b> (C) are identifiable and support the thesis, (B) are well developed using a variety of support materials and (A) are supported by distinct, clearly worded and supported sub-points				
<b>Evidence and Support</b> (C) the required # of sources have been used for evidence and sources have been orally identified (B) material furthers the argument and a link between the evidence and the claims has been provided, and (A) evidence demonstrates a thorough and rich understanding of the topic				
<b>Organization</b> (C) has an identifiable organizational pattern, (B) includes sub points with a logical pattern, and (A) uses concise, parallel, and creative phrasing				
<b>Language</b> (C) is appropriate for the audience and occasion, (B) is clear, accurate, and succinct, and (A) is powerful, vivid, imaginative, and creative				
<b>Transitions</b> (C) speaker indicates when they are moving to each new main point, (B) and has an effective summary, signpost, and preview in <b>each</b> transition, and (A) include pauses, gestures, or movement to reinforce/emphasize the transition				
<b>Sources</b> (C) the author (source, if author unavailable) and date of information have been provided, (B) the sources are placed just before the information being cited, and are relevant to the topic, and (A) sources are reputable, fully cited, and include evidence of source credibility				
CONCLUSION (10)	Absent	Poor	Good	Excellent
<b>Signals conclusion</b> (C) transition to the conclusion is indicated (B) using a clear signpost (A) that is reinforced through creative language or delivery				
<b>Reviews purpose/thesis and main points</b> (C) the main points have been briefly noted (B) are not just a restatement of the opening preview or thesis, and (A) synthesize the information from the body of the speech in a creative way				
<b>Memorable close</b> (C) 1 last sentence is provided after review that closes speech, (B) uses a rhetorical device related to the topic, that signals the end of the speech, and (A) a link has been provided to the attention getter and/or closing thought in a creative way				
OVERALL IMPRESSION (10)	Absent	Poor	Good	Excellent
<b>Topic</b> (C) is appropriate for this assignment and context, (B) is clearly related to the student's personal experiences or provides relevant information to the audience, and (A) made a genuine contribution to the knowledge of the speaker and the audience				
<b>Adapted to Audience</b> (C) speech is appropriate for and considerate toward all members of the audience, (B) is clearly adapted for this specific audience and context, and (A) incorporates specific characteristics of the audience throughout the presentation				
<b>Was informative</b> (C) yes, (B) information was easy to understand, and (A) added interesting new information to the audience's body of knowledge				
DELIVERY (20)	Absent	Poor	Good	Excellent
<b>Extemporaneous:</b> (C) reads heavily from notecards or manuscript throughout the speech, (B) occasionally reads portions of the speech from notecards, (A) student refers to notecards occasionally, but notecard use does not interfere with delivery				
<b>Vocal Delivery:</b> (C) speaker can be heard and understood throughout speech, and (B) vocal delivery conveys enthusiasm for the topic and keeps audience attention, and (A) vocal delivery engages audience and commands the attention of the room throughout speech <i>Pronunciation, Articulation, Volume, Pitch, Rhythm, Rate, Tone, Vocalized Pauses</i>				
<b>Nonverbal Delivery:</b> (C) attempts to use gestures, movement, and facial expressions a few times during the speech but may include a few distracting movements (swaying, rocking, repetitive motions, etc.) (B) speech uses gestures, movement, and facial expressions during the speech that at times complement the message, (A) speech uses intentional and effective gestures, movement, and facial expressions to enhance the speech, enhance credibility, and maintain audience attention <i>Apparel, Posture, Facial Expressions, Gestures, Movement</i>				
<b>Eye Contact:</b> (C) speaker looks at audience a few times during the speech, (B) makes eye contact with some audience members during significant portions of the speech, (A) makes eye contact with all members of the audience throughout the speech				
<b>Total Score: ____</b>				