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A 14-Year Empirical Analysis of Undergraduates' Pre- and Post-Test Scores in Three Introductory Communication Courses: Lessons Learned for Pedagogy and Assessment

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Cover Page Footnote

Sherwyn P. Morreale (Ph.D. University of Denver 1989) is a professor of communication, University of Colorado Colorado Springs. She acknowledges and appreciates the collaboration and contributions of the co-authors.

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Research Article

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Abstract

Conducting long-term assessment of the impact of students' participation in introductory communication courses is an important endeavor for enhancing pedagogy and understanding the contribution of communication instruction to the student experience. This 14-year study reports data from a campus-wide assessment program extending from 2004 to 2018. The study analyzed a large sample of undergraduate students' self-reported pre- and post-test scores on critical variables related to student outcomes in three introductory communication courses. The variables examined were demographic characteristics, self-esteem and communication apprehension in both the public speaking course and the business communication course, and self-esteem and willingness to communicate in the interpersonal communication course. Across the 14-year period, 93% of the results of pre/post comparison scores showed a significant increase in students' self-perceived levels of self-esteem and

willingness to communicate and a significant decrease in communication apprehension ($p < .001$). The usefulness of the results are discussed. Four general conclusions for engaging in introductory course assessment are outlined, along with specific lessons learned and best practices for consideration by basic course directors and faculty.

Keywords: basic communication courses, assessment, self-esteem, communication apprehension, willingness to communicate

Introduction

Over recent years, scholars have underscored the importance of communication skills and consequently the importance of communication education. A thematic analysis of 679 articles from a wide variety of academic and popular sources from 2008 to 2015 provided support for the centrality of the discipline's content and pedagogy (Morreale et al., 2017). Recent studies from other fields also affirm the relevance of acquiring communication skills. In a 2017 literature review, Ravindranath (2017) highlighted the importance of soft skills, including communication, and called for their inclusion in both the BA and MBA curriculum. The Princeton Review (2019) recently compiled a list of the top ten college majors based on research about job prospects, alumni salaries, and popularity. Communication(s) was second on the list, just behind computer science.

Indeed, communication education is widely recognized as a critical area of students' intellectual and skill development and that development often begins in some iteration of the introductory communication course. The number of colleges and universities that require undergraduates to take an introductory communication course as part of general education has grown steadily, from 50.2% in 2004, to 60.5% in 2010, to 79.4% in 2015 (Morreale et al., 2015). Given this growth, a recent synthesis of research about the introductory communication course noted that "the development of longitudinal studies is needed in basic course research" (Joyce et al., 2019, p. 24). The present study is a response to this call in that it examines trends in course outcomes over time and the impact of students' participation in introductory communication courses. If the need for these skills is high—and it is—are we doing all we can to assess the impact of communication education and our pedagogical choices?

Working with data from 2004 to 2018, researchers at a mid-size western university continually analyzed undergraduate students' self-reported pre/post-test scores on demographic and other critical variables indicative of students' affective experiences in three different iterations of the introductory communication course. The communication department involved in this study considers the introductory public speaking course, which fulfills the campus oral communication requirement, as the primary introductory course. An interpersonal communication course and a business communication course also serve as introductory courses, depending on a student's major.

The affective variables examined in these three courses were and still are self-esteem and communication apprehension in both the public speaking course and business communication course, and self-esteem and willingness to communicate in the interpersonal course. These variables were selected because they were deemed capable of impacting students over their lifetimes, through cultivating personal resilience and the ability to push personally beyond boundaries to achieve better outcomes (Lee et al., 2012). Additionally, when the department assessment program was re-envisioned for the introductory courses, these variables were what faculty teaching the three courses hoped to influence, in addition to enhancing students' knowledge and skills in each course. Directors of the three introductory courses were and still are charged with reviewing data resulting from the assessment processes and collaborating with instructors and faculty to examine course structures and content, text selection, and training for current and new faculty. The department also uses these data each year as part of its annual college and university assessment report and university-wide program review reports. Program review for the department occurs once every seven years.

The purpose of this study is two-fold: to make public the results of the communication department's assessment activities over the 14-year span, and to discuss how those activities have affected pedagogical and other decisions about the entire curriculum, and the introductory communication courses in particular. Specifically, three research questions are investigated:

1. Do students in the three basic, introductory communication courses (i.e. public speaking, business communication, interpersonal communication) demonstrate significant improvement in self-esteem, communication apprehension, and

willingness to communicate, across the 14-year study period of archived data?

2. If there is significant improvement, is there any significant difference in degree of improvement in the measured variables (i.e. self-esteem, communication apprehension, and willingness to communicate) in each of the introductory courses from year-to-year, across the 14-year study period?
3. Is there any significant difference in improvement in self-esteem, communication apprehension, and willingness to communicate, based on students' race/ethnicity or gender, across the 14-year study period?

Theoretical Foundation

Theoretical rationale for investigating the three research questions and for assessing self-esteem, communication apprehension, and willingness to communicate in the three introductory courses is provided by scholarly discussions in two disciplines related to the nature of communication competence and to social-emotional learning theory. In the communication discipline, it has been argued that communication competence should be viewed as a function of three factors—motivation, knowledge, and skills (Spitzberg, 1983)—with some scholars choosing to include a fourth component in that model, communication ethics (Littlejohn & Jabusch, 1982). From that perspective, learning to communicate competently is more likely to occur when a student is motivated to communicate, is knowledgeable about communication, and develops the needed skills to communicate in the particular context. Self-esteem, communication apprehension, and willingness to communicate are considered critical aspects of the motivational/affective domain of communication competence.

In psychology, research has reinforced the importance of affective learning, with a distinct concern for social-emotional learning (Weissberg et al., 2015). Social-emotional learning is explained as the process through which learners acquire and effectively apply the knowledge, attitudes, and skills necessary to understand and manage emotions, set and achieve positive goals, and make responsible decisions (Aperture Education, 2020). One recent study found that social-emotional learning

has positive long-term effects, helping students in areas like college completion and future earnings (Stringer, 2017). Students with training in this type of affective learning generally scored higher academically than their peers three and a half years later, had six percent higher graduation rates, and reaped lifelong monetary benefits (Stringer, 2017).

The faculty in the communication department responsible for this empirical study are committed to the importance of affective learning as a critical component of teaching and learning about communication in their introductory courses. While they had processes in place for assessing knowledge and skills, they desired to better understand the impact on students of instruction in those courses, particularly regarding self-esteem, communication apprehension, and willingness to communicate. Their approach to assessing those three variables is now explicated.

Methods

The communication department reviewed various research designs available for assessing the affective domain of student learning in their introductory communication courses. The department used a pre/post-test design, which is intended to analyze students' self-reported scores on instruments that assess the variables of interest in the three lower-division introductory communication courses (i.e. public speaking, business communication, interpersonal communication). The three foci of this assessment effort were: to compare student improvement on three relevant communication instruments within three introductory communication courses; to analyze any potential long-term differences in the degree of improvement on the three instruments in those courses; and to determine whether the degree of improvement would be affected by students' race/ethnicity or gender.

Assessment Instruments

Data were taken from archives of students' pre/post scores on the following scales: Self-Esteem (RSE; Rosenberg, 1965), Personal Report of Communication Apprehension (PRCA-24; McCroskey, 1978) and Willingness to Communicate (WTC; McCroskey & Richmond, 1987). The three instruments were selected because of their strong psychometric properties and demonstrated reliability across multiple studies (Chao et al., 2017; Morreale et al., 1995; Morreale et al., 1998) and because they lessened concerns related to response bias in self-reporting (Chan, 2009; Ones et al., 1996). Most importantly, these instruments assess important aspects of the affective domain of communication competence (Littlejohn & Jabusch, 1982;

Spitzberg, 1983), and they are what faculty teaching the three courses expect to impact but cannot evaluate with in-class written tests or by observing and evaluating student performance.

Independent variables included students' age at time of test, race/ethnicity, gender, course, instrument, and academic year. Dependent variables involved pre/post scores on the measures of self-esteem, communication apprehension, and willingness to communicate. Additional dependent variables were computed depending on the type of analysis required (e.g., degree of change between pre/post scores).

Self-Esteem. Students' self-reporting of their own sense of self-esteem was measured with Rosenberg's Self-Esteem Scale (RSE, 1965). Ten statements pertaining to self-worth and self-acceptance are included in the measure, which uses a four-point scale ranging from "strongly agree" to "strongly disagree." The RSE demonstrates internal consistency and stability as well as concurrent, predictive, and construct validity (Rosenberg, 1979). Unlike the other two instruments used in this study, this self-esteem scale is not as well known in the communication discipline though it is often discussed and used in studies in the psychology discipline. For example, self-esteem is described by psychologists as a relationship between competence and worthiness that integrates the dimensions of cognition and affect (Mruk, 2013).

Communication Apprehension. Trait-like communication apprehension was measured with McCroskey's Personal Report of Communication Apprehension (PRCA-24). This 24-item, 5-point Likert-type scale has been used extensively in apprehension research and has consistently demonstrated high reliability and predictive validity (McCroskey, 1978). The PRCA-24 measures self-perceived levels of communication apprehension in four contexts: conversations, group discussions, meetings, and public speeches.

Willingness to Communicate. Students' willingness to communicate was measured using the Willingness to Communicate Scale (WTC), which has demonstrated high reliability and validity (McCroskey, 1992). This 12-item instrument is designed to measure an individual's predisposition toward approaching or avoiding the initiation of communication in four contexts (public speaking, meetings, groups, and dyads) and with three types of receivers (strangers, acquaintances, and friends).

Participants

Participants were undergraduate students at a mid-sized western university enrolled in one or more of three introductory communication courses from 2004–2018: an introductory public speaking course; a lower level business communication course; and/or an interpersonal communication course. Eliminating duplication of students enrolled in more than one of these three courses yielded 9707 unique cases for demographic analysis (Female 53%, Male 45%, Other < 1%; White 68%, Latinx 13%; Black 4%; Asian/Pacific Islander 4%; Two Plus 3%; Other/Missing 7%; American Indian and Non-Resident Alien, each fewer than 1%; MAge = 21.45, SD = 5.16). For analysis, American Indians and Non-Resident Aliens were combined into the Other Ethnicity category. Students who selected more than one ethnicity were grouped into the Two-Plus category to analyze pre-post gains through paired t-tests. These demographic groups were derived from the current category system used by the university's Office of Institutional Research, though it should be noted students were given the option to select Two-Plus as a specific ethnicity category starting in 2011.

This study assumed participants were generally representative of the undergraduate learner population at this university, since these courses are common electives for most majors.

Procedure

Students in each of the three courses were required to visit an on-campus communication center within the first two and last two weeks of the semester as part of the course requirements, which included completing two assessment measures during each visit, related to the particular course. Students in public speaking and business communication completed the RSE and PRCA instruments. Those in interpersonal communication completed the RSE and the WTC instruments. Pre/post scores from these three courses were matched with corresponding demographic information from the Registrar's Office. All identifying student information was removed before providing access to the researchers. Specific student level variables included:

1. Age
2. Race/Ethnicity
3. Gender

4. Semester the course was taken
5. Cumulative GPA (at the beginning of the semester in which the student was enrolled in the course)

Fall and spring semesters were combined to create an academic year (AY). Summer courses were combined into a single category since these courses occurred in an eight-week time frame as opposed to the traditional 16-week time period, and the differentiated time periods may have influenced the results. Table 1 presents a summary of participant characteristics for each course across the study period.

Table 1
Participant Characteristics

	Interpersonal Communication		Business Communication*		Public Speaking	
	n=5585	Percent	n=1861	Percent	n=3783	Percent
Gender						
Female	3059	55	958	52	1911	50
Male	2398	43	880	47	1799	48
Did not provide	128	2	23	1	73	2
Ethnicity						
White	2605	47	856	46	1876	49
Latinx	582	10	125	7	413	11
Two Plus	206	4	21	<1	134	4
Black	198	4	43	2	140	4
Asian/Pacific Islander	174	4	46	2	130	3
Non-Resident Alien	44	< 1	13	< 1	33	1
American Indian	25	< 1	8	< 1	9	< 1
Did not provide	1618	31	756	40	1048	27

Note. *The Business Communication Course is referred to on campus as Oral Communication in the Workplace.

Data Analysis

Data analysis occurred in two phases. The first phase used paired t-tests to compare pre/post scores by course for each instrument and each year of available data to examine whether students showed statistically significant improvement in their self-esteem, communication apprehension, and willingness to communicate. Phase two analysis involved computing the difference between the pre/post score to examine year-by-year changes for each course using one-way analysis of variance (ANOVA). Games Howell was used for post-hoc analysis because it is designed to compensate for violations of normality and homogeneity of variance (HOV). Effect sizes were calculated using either Cohen's *d* (1988) if the sample sizes were relatively equal, or Hedges *g* to account for unbalanced samples sizes (Lakens, 2013). Effect sizes offer additional information about "the magnitude of the difference between the levels of the independent variable" (Leech et al., 2015, p. 94). Effect sizes less than .2 can be interpreted as smaller than typical, between .2 and .5 as typical, between .5 – 1.0 as larger than typical, and greater than 1.0 as much larger than typical (Leech et al., 2015). Paired t-tests and one-way analysis of variance (ANOVA) also were used to compute and compare the difference in improvement between pre/post scores, based on students' race/ethnicity and gender. Additionally, the average cumulative GPA was calculated for each academic year and, using paired t-tests, compared to the previous year to look for possible statistically significant changes in student GPA that might confound interpretation of the study's results.

Results

The first research question focused on student improvement in pre/post scores on three different assessment instruments, across the 14-year study. Results from t-tests demonstrated that participants generally experienced statistically significant improvement in their self-reported esteem, communication apprehension, and willingness to communicate across all three courses for each year data were available. That improvement evidenced a significant increase in self-esteem and willingness to communicate and a significant decrease in communication apprehension, but for a few exceptions. Specifically, all but six of the pre/post comparison scores for all the instruments in all three courses were statistically significant at the $p < .001$ level. Of these six instances, two of the instruments had fewer than 15 cases for analysis; two of the instruments were significant at the $p = .001$ level; one instrument was significant at the $p = .011$ level; and one instrument was not significant ($p = 0.439$). In that particular instance, students did not show statistically significant change in the

academic year 2017/2018 on the WTC instrument ($p = .439$). Further evaluation of this specific subset revealed a number of outlying scores; however, even after removing those outliers, the significance level did not change. Tables 2 and 3 show the complete t-test results, by course, for all years of available data.

Table 2
Year-by-Year Comparison for Interpersonal Communication and Business Communication Course

Academic Year (AY)	Interpersonal Communication						Business Communication*					
	Rosenberg Self-Esteem (RSE)			Willingness to Communicate (WTC)			Rosenberg Self-Esteem (RSE)			Personal Report of Communication Apprehension (PRCA)		
	t	df	p	t	df	p	t	df	p	t	df	p
AY 04/05	4.70	108	***	3.51	107	.001	4.23	12	.001	3.81	12	.003
AY 05/06	9.88	355	***	7.76	350	***	4.75	67	***	7.60	70	***
AY 06/07	6.96	345	***	7.21	342	***	6.18	178	***	9.13	181	***
AY 07/08	8.17	402	***	8.76	404	***	6.75	217	***	12.38	218	***
AY 08/09	8.90	350	***	5.96	358	***	8.56	242	***	12.29	243	***
AY 09/10	9.83	397	***	7.75	406	***	4.73	260	***	13.74	269	***
AY 10/11	9.38	314	***	6.23	320	***	6.45	185	***	9.86	184	***
AY 11/12	8.38	252	***	5.42	261	***	-	-	-	-	-	-
AY 12/13	10.70	282	***	7.77	285	***	-	-	-	-	-	-
AY 13/14	8.63	276	***	7.79	282	***	-	-	-	-	-	-
AY 14/15	8.01	225	***	6.61	227	***	-	-	-	-	-	-
AY 15/16	6.28	192	***	5.11	197	***	-	-	-	-	-	-
AY 16/17	7.10	205	***	3.86	206	***	-	-	-	-	-	-
AY 17/18	4.92	217	***	0.78	219	.439	-	-	-	-	-	-
Summer	8.36	207	***	7.58	209	***	7.79	108	***	11.33	104	***

Note. *The Business Communication Course is referred to on campus as Oral Communication in the Workplace.

*** p < .000

Table 3
Year-by-Year Comparison for Pre/Post Scores for Public Speaking

Public Speaking						
Academic Year (AY)	Rosenberg Self-Esteem (RSE)			Personal Report of Communication Apprehension (PRCA)		
	t	df	p	t	df	p
AY 04/05	4.10	53	***	-	-	-
AY 05/06	8.08	251	***	15.16	243	***
AY 06/07	8.71	216	***	12.76	218	***
AY 07/08	10.26	232	***	14.13	238	***
AY 08/09	10.42	226	***	16.58	227	***
AY 09/10	6.46	152	***	12.39	152	***
AY 10/11	4.95	153	***	12.02	159	***
AY 11/12	4.00	122	***	6.54	129	***
AY 12/13	3.44	141	***	7.49	146	***
AY 13/14	3.45	133	.001	7.99	135	***
AY 14/15	4.61	132	***	9.92	134	***
AY 15/16	7.46	176	***	2.58	177	.011
AY 16/17	3.94	237	***	7.98	246	***
AY 17/18	5.04	185	***	7.94	190	***
Summer	6.55	253	***	14.55	252	***

Note. *** $p < .000$

The second research question centered on potential year-to-year changes across the three introductory communication courses, related to the degree of improvement in self-esteem, communication apprehension, and willingness to communicate. Results are presented by course.

Public Speaking Course

Beginning with the Rosenberg Self-Esteem Scale, an analysis of variance showed significant differences in year-by-year improvement for students' self-esteem (Rosenberg Self-Esteem) from AY 05/06 to AY 17/18 ($F(14, 2676) = 2.43$, $p = .002$), but the effect size was quite small ($\eta^2 = .013$). The academic year AY 08/09

showed the greatest degree of improvement in self-esteem, whereas AY 11/12, AY 12/13, and AY 16/17 demonstrated the lowest three years of change in self-esteem. Students in Fall 2007/Spring 2008 (AY 07/08) showed a statistically significantly greater degree of improvement than students in AY 16/17 ($p < .05$, $d = .35$) with moderate effect size. In contrast, students in AY 16/17 showed the lowest degree of change from all other years ($M_{diff} = .9034$, $SD = 3.53$). Additional statistically significant differences were seen between AY 08/09 and AY 11/12 ($p = .02$, $d = .40$), AY 12/13 ($p = .030$, $d = .39$), and AY 16/17 ($p = .001$, $d = .42$).

Using the Personal Report of Communication Apprehension (PRCA), analysis of variance (ANOVA) showed a statistically significant difference between academic years ranging from AY 05/06 to AY 17/18 ($F(13, 2659) = 55.23$, $p < .000$) with a small effect size ($\eta^2 = .21$). Students completing the PRCA during the period from Fall 2011 to Spring 2018 showed less improvement in communication apprehension than prior years. Table 4 shows the mean differences, by year, for the two instruments.

Table 4
Year-by-Year Comparison of Degree of Change for Public Speaking Instruments

Academic Year (AY)	Public Speaking			Personal Report of Communication Apprehension (PRCA)		
	Rosenberg Self-Esteem (RSE)					
	N	Mdiff	SD	N	Mdiff	SD
AY 04/05	54	1.70	3.05		-	-
AY 05/06	252	1.50	2.96	244	-11.35	11.69
AY 06/07	217	1.87	3.16	219	-10.60	12.29
AY 07/08	233	2.06	3.07	239	-10.79	11.81
AY 08/09	227	2.39	3.46	228	-13.10	11.93
AY 09/10	153	1.69	3.24	153	-11.24	11.22
AY 10/11	154	1.52	3.81	160	-12.31	12.96
AY 11/12	123	1.09	3.02	130	-7.58	13.22
AY 12/13	142	1.03	3.56	147	-8.03	12.99
AY 13/14	134	1.35	4.53	136	-9.33	13.63
AY 14/15	133	1.59	3.97	135	-8.33	9.76
AY 15/16	177	1.76	3.13	175	-5.68	29.39
AY 16/17	238	.90	3.53	247	-6.42	12.65
AY 17/18	186	1.49	4.03	191	-6.45	11.22

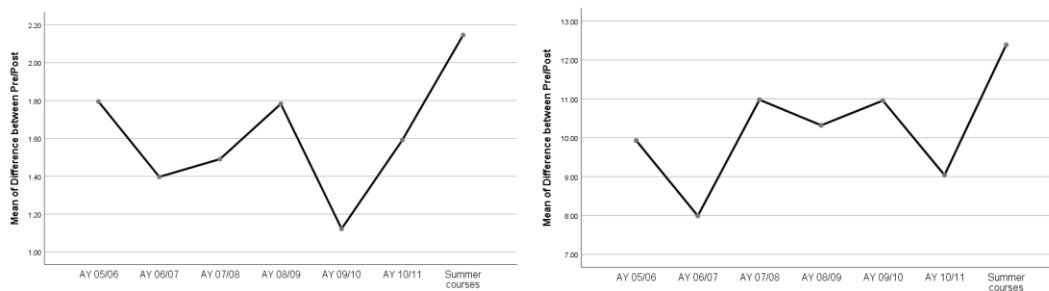
Business Communication Course

The Rosenberg Self-Esteem (RSE) scale and the Personal Report of Communication Apprehension (PRCA) were also administered in the business communication course but for a shorter time span (AY 05/06 - AY 10/11). During this six-year period, no statistically significant difference in degree of change was seen (year-to-year) for the RSE ($F(6, 1257) = 1.61, p = .141$) or the PRCA ($F(6, 1275) = 2.08, p = .053$). The yearly mean change for communication apprehension shows the lowest level of change occurred in AY 06/07 ($M_{diff} = 7.99, SD = 11.81$) and the most improvement occurred in the aggregated summer courses ($M_{diff} = 12.39, SD = 11.21$). A side-by-side comparison of the mean plots for the RSE and PRCA shows the trend for both instruments (Figure 1).

Figure 1

Year-by-Year Comparison of M_{diff} for Self-Esteem (left) and Personal Report of Communication Apprehension (right) from the Business Communication Course

Interpersonal Communication Course



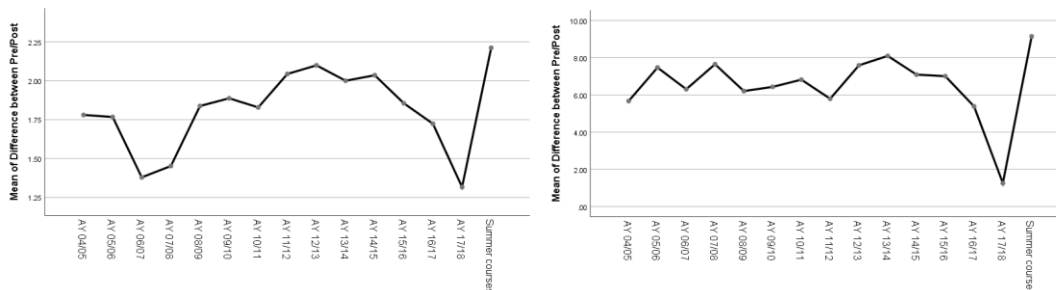
Students in the interpersonal course also completed the Rosenberg Self-Esteem scale, as well as the Willingness to Communicate (WTC). No statistically significant difference was seen in mean change in students' self-esteem across the research period ($F(14, 4141) = 1.38, p = .152$); however, a pronounced dip during AY 17/18 represented the lowest mean change across all years ($M_{diff} = 1.31, SD = 3.95$). Although the mean score changes in AY 17/18 for student self-esteem were not statistically significantly different from other years (including aggregated summer courses), it does parallel a similar drop in mean change for student scores on the willingness to communicate instrument.

In contrast to the RSE results, an analysis of variance exposed a statistically significant difference regarding students' willingness to communicate (WTC) between academic years ranging from AY 04/05 to AY 17/18 as well as aggregated summer courses ($F(14, 4187) = 2.15$, $p = .008$, $\eta^2 = .007$), but the overall effect size was quite small. Post-hoc tests showed statistically significant mean differences between AY 07/08 and AY 17/18 ($p = .041$, $g = .32$), and between AY 13/14 and AY 17/18 ($p < .032$, $g = 3.87$). Students completing the WTC during AY 17/18 showed the least improvement ($M_{diff} = 1.26$, $SD = 24.01$, $p = .032$, $g = 3.87$) whereas students in the aggregated summer courses experienced the most improvement ($M_{diff} = 9.14$, $SD = 17.47$, $p = .009$, $g = .37$).

A side-by-side comparison of the mean plots for the RSE and WTC shows that although students demonstrated statistically significant improvement in their self-esteem during AY 17/18, the means plot for RSE reveals a dip in mean change similar to what was observed for students' WTC. Figure 2 offers a visual illustration of the pre/post score mean differences for both instruments (RSE and WTC).

Figure 2

Year-by-Year Comparison of M_{diff} for Self-Esteem (left) and Willingness to Communicate (WTC) (right) from the Interpersonal Communication Course



Race/Ethnicity and Gender

The third research question considered whether any statistically significant differences in improvement in self-esteem, communication apprehension, and willingness to communicate were observed, based on students' race/ethnicity or gender, across the 14-year study period. Analyses using paired t-tests were run for each course, by instrument, comparing the "change differences" between gender

groups and among racial/ethnic groups. Most analyses evidenced statistically significant improvement, for all students, for all instruments, for all courses, for all ethnic groups and both genders.

With respect to ethnicity, most ethnic groups showed statistically significant improvements on the three instruments administered across the three courses. However, six observations revealed that certain ethnic groups in either the public speaking or the business communication course did not experience statistically significant improvement on one or more of the instruments administered.

Within the public speaking course, students classified as Other Groups ($t = 1.91$, $p = .064$) or Two Plus ($t = .88$, $p = .38$) showed no statistically significant improvement in communication apprehension (PRCA). Similarly, within the business communication course, students classified as Other Groups also showed no statistically significant improvement in communication apprehension ($n = 15$, $t = 2.04$, $p = .06$). In the same course, three groups showed no statistically significant improvement in self-esteem: Blacks ($n = 25$, $t = .78$, $p = .45$), Other Groups ($n = 14$, $t = .73$, $p = .48$), and Two Plus ($n = 7$, $t = 1.77$, $p = .13$). Note that sample sizes for students in the Other Groups (which includes American Indians and Non-Resident Aliens) and Two Plus categories are too small from which to draw any valid conclusion at this time. Table 5 summarizes the t-test values for all ethnic groups in these two courses.

Table 5
Pre/Post Scores for Business Communication and Public Speaking Courses by Ethnicity

Business Communication		Pre-Test		Post-Test			
PRCA	N	Mean	SD	Mean	SD	t	p
White	624	63.84	17.96	53.38	16.90	19.30	< .000
Latinx	86	63.94	17.24	51.44	14.76	8.55	< .000
Asian/Pac. Isl.	32	64.53	19.01	51.72	20.46	4.95	< .000
Black	25	60.76	21.14	52.40	16.04	2.77	0.011
Other Groups*	15	57.87	13.53	50.80	18.99	2.04	0.061
Two Plus	7	57.71	13.24	41.57	8.14	3.94	0.008
Did not provide	516	62.78	18.30	53.40	17.04	18.21	< .000
RSE	N	Mean	SD	Mean	SD	t	p
White	614	32.80	4.42	34.55	4.27	12.43	< .000
Latinx	87	32.80	3.74	34.48	3.88	4.89	< .000
Asian/Pac. Isl.	31	31.87	4.42	34.77	4.00	0.72	< .000
Black	25	34.64	4.24	35.24	4.48	0.78	0.445
Other Groups*	14	34.43	4.11	35.14	3.74	0.73	0.477
Two Plus	7	35.29	3.68	37.00	3.56	1.77	0.127
Did not provide	509	33.00	4.62	34.40	4.39	9.98	< .000

Public Speaking		Pre-Test		Post-Test			
PRCA	N	Mean	SD	Mean	SD	t	p
White	1274	65.12	19.33	59.14	22.59	12.91	< .000
Latinx	278	66.65	19.29	65.52	23.06	3.94	< .000
Asian/Pac. Isl.	97	66.30	18.26	61.63	20.34	2.80	0.006
Black	89	67.82	20.87	63.92	23.33	2.13	0.036
Two Plus	88	66.65	21.10	68.23	24.73	-0.88	0.381
Other Groups*	35	64.00	18.05	58.03	22.98	1.91	0.064
Did not provide	764	61.77	17.89	50.75	16.76	25.29	< .000
RSE	N	Mean	SD	Mean	SD	t	p
White	1263	32.50	4.66	34.08	4.70	15.37	< .000
Latinx	270	32.51	4.86	33.91	5.39	5.52	< .000
Asian/Pac. Isl.	100	30.19	4.25	33.92	4.87	5.44	< .000
Two Plus	87	31.69	4.73	33.18	4.85	3.00	< .000
Black	85	32.35	4.84	33.79	4.62	3.36	.001
Other Groups*	35	32.09	4.93	33.83	4.97	2.90	.007
Did not provide	816	33.04	4.32	34.78	4.40	15.85	< .000

Note. *The category Other Groups includes American Indian and Non-Resident Alien

Regarding any gender differences, results from paired t-tests demonstrated that males and females experienced statistically significant improvement in self-esteem and communication apprehension in both the public speaking and business communication course, and statistically significant improvement in self-esteem and willingness to communicate in the interpersonal communication course, all at the $p < .000$ level.

To explore differences in ethnicity and gender more thoroughly, six separate ANOVAs on ethnicity (White, Black, Asian/Pacific Islander, Latinx, and Other Ethnicity that included American Indian, Two Plus, and Non-Resident Alien) and six independent t-tests on gender (male and female) were conducted on the pre-test, post-test, and difference scores for each instrument in each course. The goal was to ascertain whether students, based on gender or ethnicity, entered the course with existing differences or finished the course with different levels of communication apprehension, self-esteem, or willingness to communicate.

Public Speaking Course

Beginning with the public speaking course, no statistically significant differences were found among the five ethnic groups on the PRCA pre-test, but statistically significant differences were seen for post-test scores ($F(4,1836) = 3.66, p = .006, \eta^2 = .008$) and degree of change scores ($F(4, 1835) = 3.66, p = .008, \eta^2 = .007$). However, because the overall effect size was quite small, it is difficult to draw any meaningful conclusion. Regarding the Rosenberg Self-Esteem scale, Asian/Pacific Islander students demonstrated statistically significantly lower pre-test $F(4, 1835) = 6.13, p < .001, \eta^2 = .13$ and post-test scores $F(4, 1836) = 5.07, p < .001, \eta^2 = .11$ than students classified as White, Black, and Latinx, but there were no statistically significant differences in degree of change. These effects sizes were smaller than typical.

When examining gender, statistically significant differences were observed on the PRCA for both the pre-test ($t = 6.08, p < .000, d = .21$) and post-test ($t = 6.63, p < .000, d = .16$), but not for degree of change. Females demonstrated higher anxiety than males on both the pre-tests and post-tests of communication apprehension. Regarding self-esteem, females scored lower than males on the RSE pre-test ($t = 5.46, p < .000, d = .21$) and post-test ($t = 3.91, p < .000, d = .15$). No statistically significant differences were observed for degree of change in self-esteem. Complete

results for the PRCA and RSE scores in the public speaking course can be seen in Tables 6 and 7.

Table 6
Comparison of PRCA Pre-Test, Post-Test, and Change Scores in the Public Speaking Course

Ethnicity	N	Pre-Test		Post-Test		Degree of Change	
		M	SD	M	SD	Mdiff	SD
White	1274	65.12	19.33	59.12	22.59	5.97	16.52
Latinx	278	66.65	19.29	62.52	23.06	4.13	17.49
Other Groups*	123	65.49	20.24	65.33	24.59	0.57	16.82
Asian/Pac. Isl.	97	66.30	18.26	61.63	20.34	4.67	16.45
Black	89	67.82	20.87	63.92	23.33	3.90	17.26
Gender	N	M	SD	M	SD	Mdiff	SD
Female	1395	66.30	18.33	59.09	20.29	7.19	15.74
Male	1230	62.33	19.62	55.57	23.01	6.48	15.92

Note. *The category Other Groups includes American Indian, Non-Resident Alien, and Two Plus

Table 7
Comparison of RSE Pre-Test, Post-Test, and Change Scores in the Public Speaking Course

Ethnicity	N	Pre-Test		Post-Test		Degree of Change	
		M	SD	M	SD	Mdiff	SD
White	1263	32.50	4.66	34.08	4.70	1.58	3.65
Latinx	270	32.51	4.86	33.92	5.28	1.40	4.17
Other Groups*	122	31.80	4.71	33.37	4.88	1.57	3.50
Asian/Pac. Isl.	100	30.19	4.25	31.92	4.87	1.73	3.18
Black	85	32.35	4.84	33.79	4.62	1.44	3.94
Gender	N	M	SD	M	SD	Mdiff	SD
Female	1411	32.09	4.64	33.83	4.67	1.73	3.41
Male	1244	33.07	4.52	34.54	4.74	1.47	3.67

Note. *The category Other Groups includes American Indian, Non-Resident Alien, and Two Plus

Business Communication Course

Data from the business communication course showed no statistically significant differences among ethnic groups on the PRCA pre-test, post-test, or degree of change. Although ANOVA data from the Rosenberg Self-Esteem scale showed differences in pre-test scores ($F(4, 773) = 2.45, p < .05, \eta^2 = .013$), the effect sizes were too small to draw reasonable conclusions. No differences were observed in post-test scores or degree of change.

When examining gender with independent t-tests, statistically significant differences were observed on the PRCA for both the pre-test ($t = 6.08, p < .000, d = .34$) and post-test ($t = 6.63, p < .000, d = .37$), but not for degree of change. Females demonstrated higher anxiety than males on both the pre-test and post-test of communication apprehension. Regarding self-esteem, females scored lower than males on the RSE pre-test ($t = 3.37, p < .001, d = .19$) and post-test ($t = 3.94, p < .000, d = .15$). No statistically significant differences were observed for degree of change in self-esteem. Complete results for the PRCA and RSE scores in the business communication course can be seen in Tables 8 and 9.

Table 8
Comparison of PRCA Pre-Test, Post-Test, and Change Scores in the Business Communication Course

Ethnicity	N	Pre-Test		Post-Test		Degree of Change	
		M	SD	M	SD	Mdiff	SD
White	624	63.84	17.96	53.58	16.90	10.25	13.27
Latinx	86	63.94	17.25	51.44	14.76	12.50	13.56
Asian/Pac. Isl.	32	64.53	19.01	51.72	20.46	12.81	14.65
Black	25	60.76	21.14	52.40	16.04	8.36	15.12
Other Groups*	22	57.82	13.12	47.86	16.69	9.95	13.13
Gender	N	Pre-Test		Post-Test		Degree of Change	
		M	SD	M	SD	Mdiff	SD
Female	701	66.06	18.25	56.02	17.34	10.04	12.90
Male	605	60.04	17.30	49.90	15.78	10.14	12.63

Note. *The category Other Groups includes American Indian, Non-Resident Alien, and Two Plus

Table 9
Comparison of RSE Pre-Test, Post-Test, and Change Scores
in the Business Communication Course

Ethnicity	N	Pre-Test		Post-Test		Degree of Change	
		M	SD	M	SD	Mdiff	SD
White	614	32.80	4.42	34.55	4.27	1.75	3.49
Latinx	87	32.80	3.74	34.48	3.88	1.68	3.20
Asian/Pac. Isl.	31	31.87	4.42	34.77	4.00	2.90	3.16
Black	25	34.60	4.24	35.24	4.48	0.60	3.86
Other Groups	21	34.71	3.90	35.76	3.70	1.05	3.29
Gender	N	M		SD		Mdiff	
		M	SD	M	SD	Mdiff	SD
Female	695	32.54	4.44	34.10	4.32	1.55	3.28
Male	593	33.38	4.43	35.03	4.19	1.66	3.43

Note. *The category Other Groups includes American Indian, Non-Resident Alien, and Two Plus

Interpersonal Communication Course

Data from the interpersonal communication course showed no statistically significant differences among ethnic groups on the Willingness to Communicate (WTC) pre-test, post-test, or degree of change. Regarding Rosenberg Self-Esteem (RSE) scores, although ANOVA analysis identified statistically significant differences on pre-test scores between groups ($F(4, 2883) = 4.48, p < .001, \eta^2 = .006$), the negligible effect size suggests these differences may be the result of the large sample size as opposed to any meaningful variation (Sullivan & Feinn, 2012). A similarly small effect size was observed for the post-test ($F(4, 2883) = 3.87, p = .004, \eta^2 = .005$), thus limiting interpretation. There were no statistically significant differences in degree of change scores.

When examining gender with independent t-tests, statistically significant differences were observed on the WTC for both the pre-test ($t = 3.04, p = .004, d = .10$) and post-test ($t = 3.89, p < .000, d = .12$), but not for degree of change. Females demonstrated higher scores than males on pre-test and post-test. As with other results, the small effect size suggests that statistical significance is more related to sample size than real differences between males and females. Self-esteem scores using independent t-tests showed that females scored lower than males on the RSE

pre-test ($t = 7.64, p < .000, d = .24$) and post-test ($t = 7.03, p < .000, d = .22$). No statistically significant differences were observed for degree of change in self-esteem. Tables 10 and 11 display the complete results for the WTC and RSE scores in the interpersonal communication course.

Table 10
Comparison of WTC Pre-Test, Post-Test, and Change Scores
in the Interpersonal Communication Course

Ethnicity	N	Pre-Test		Post-Test		Degree of Change	
		M	SD	M	N	M	SD
White	2011	66.90	18.80	73.22	19.82	6.32	17.32
Latinx	439	66.35	20.45	73.24	21.56	6.89	20.33
Other Groups*	200	66.35	20.84	72.73	23.06	6.37	19.16
Black	148	65.17	23.54	70.45	24.84	5.28	25.87
Asian/Pac. Isl.	144	64.64	20.29	73.28	20.44	8.64	22.73
Gender	N	M	SD	M	N	M	SD
Female	2381	66.37	19.81	72.80	21.06	6.43	19.17
Male	1737	68.22	18.47	75.26	18.70	7.04	17.16

Note. *The category Other Groups includes American Indian, Non-Resident Alien, and Two Plus

Table 11
Comparison of RSE Pre-Test, Post-Test, and Change Scores in the Interpersonal
Communication Course

Ethnicity	N	Pre-Test		Post-Test		Degree of Change	
		M	SD	M	N	M	SD
White	1968	31.47	5.10	33.23	5.42	1.76	3.76
Latinx	435	31.99	5.55	34.13	5.72	2.13	3.50
Other Groups*	200	30.73	5.37	32.82	5.48	2.09	4.04
Black	143	32.22	5.22	34.04	4.97	1.83	3.75
Asian/Pac. Isl.	142	30.33	5.91	32.72	6.67	2.38	4.84
Gender	N	M	SD	M	N	M	SD
Female	2352	31.26	5.93	33.10	5.81	1.85	3.79
Male	1728	32.70	5.96	34.45	6.33	1.75	3.89

Note. *The category Other Groups includes American Indian, Non-Resident Alien, and Two Plus

Examining the data across instruments shows that even though statistically significant differences were observed among ethnic groups, the effect sizes were quite small and likely the result of the large sample size instead of true variations in group scores. Gender differences, however, did exhibit a consistent pattern. In all cases, females scored higher for apprehension than males on the PRCA pre-test and post-test but showed no statistically significant differences in degree of change. Females scored lower than males for self-esteem on the RSE pre-test and post-test with no statistically significant difference in change scores. Although the effect sizes were still small, they do indicate both a statistically significant and meaningful difference in self-assessment.

Discussion

The most significant contribution of this study is that it confirms how longitudinal assessment data can contribute to our understanding, both short-term and long-term, of the impact on student learning of our pedagogical efforts in introductory communication courses. The basic course directors and faculty teaching in the three introductory courses have continuously explored and used the data presented here to examine and reexamine course content and pedagogy. The results clearly demonstrate the consistent, positive impact of introductory course instruction on undergraduate students and the value of communication education despite differences in faculty, students, and course pedagogy. The three introductory courses in this study demonstrated statistically significant positive impacts on most students' self-reported esteem, communication apprehension, and willingness to communicate with some inevitable variability by course and semester. Thus, these findings show support for the continued inclusion of introductory communication courses as requirements in the undergraduate communication curriculum and in general education.

In addition to the usefulness of the results for advocating for the discipline's introductory courses, other observations about the anticipated outcomes of this study and some unexpected outcomes are worth noting. Of interest are any unexpected variabilities in results across the years, as well as any statistically significant dips in students' self-reported scores on any assessment instrument in any particular course. While the assessment results may not fully explain such variabilities, any unexpected findings can and should be examined and discussed by all departmental stakeholders. In this study, several specific findings for each of the

courses illustrate the types of questions department chairs and faculty might ask when unexpected results appear in longitudinal data over the years.

Public Speaking Course

In the public speaking course, the data pointed to significant differences in year-by-year improvement in students' self-esteem; similarly, analysis showed significant differences among academic years in students' communication apprehension scores. The basic course director and those teaching the public speaking course need to look closely at such unexpected results over the years and ask how and why the differences may have occurred. For example, did students' decreases (less improvement) in communication apprehension from Fall 2011 through Spring 2018 reflect changes that occurred related to instructor training procedures, course structure, and changes in instructional materials? Is there a need for more training aimed at consistency of instruction across sections of the course and across academic years? At the time of this writing, no data were available to determine whether levels of communication apprehension saw statistically significant change in subsequent semesters. Additionally, the existing data do not permit analysis of whether any pedagogical changes in the course influenced the higher levels of apprehensiveness, but the three-year span suggests the importance of understanding a variety of variables that may influence the student experience.

Business Communication Course

In the business communication course, by comparison to the public speaking course, the results pointed to no statistically significant differences in degree of change and improvement, year-by-year, in students' reported self-esteem or communication apprehension. In this case, the basic course director and faculty teaching this course need to collaborate with those involved in the undergraduate curriculum to consider how and why two of the department's introductory courses, using the same assessment instruments, experienced varying levels of consistency across the years.

Interpersonal Communication Course

In the interpersonal communication course, the data on two assessment instruments, self-esteem, and willingness to communicate, call attention to two unexpected results about which the basic course director and faculty should raise

questions. A dip in self-esteem scores, specifically during AY 17/18, represented the lowest mean changes across the entire research period. Also, AY 17/18 was the only instance in which students did not show statistically significant improvement in willingness to communicate. Again, the basic course director and the faculty teaching this course need to ask why: What unique set of influencing factors in AY 17/18 may have influenced lower degrees of improvement, by comparison to other years?

Finally, scores in both the interpersonal course and business communication course showed slight variations across the 14 years, but of some interest was the statistically significantly greater improvement in summer courses. This finding may indicate the need to ask questions about how the condensed timeframe of summer course(s) contrasts with longer timeframes, in order to better understand the influence of time sequencing on the student experience.

Race/Ethnicity and Gender

Regarding race and ethnicity, the results showing the introductory communication courses are having a positive impact on students, with little differences based on race/ethnicity or gender, represent a highly positive outcome. That said, some findings regarding differences in students' degree of improvement in communication apprehension and self-esteem, based on race/ethnicity, are of interest. Regardless of the relatively small sample sizes of the Other Groups and Two Plus groups, these students did not demonstrate statistically significant improvement in communication apprehension in the public speaking and business communication courses or self-esteem in the business course. Similarly, Black students showed no statistically significant improvement in self-esteem in the business communication course. This finding is confounded by the results of an earlier study (Chao et al., 2017) that questioned whether the Rosenberg Self-Esteem instrument assesses Black students effectively. That study indicated that the fit between the RSE and Black students was not strong unless some questions could be added to widen the "ruler" on the higher self-esteem side. Given this study's similar finding, department faculty are revisiting the choice of the RSE as an appropriate assessment instrument for their introductory courses.

While these findings cannot be interpreted by the data available in this study, the reported differences are real, and they highlight the exact type of unexpected results that longitudinal assessment is designed to bring forward. Why are some students, perhaps based on their ethnicity, having different experiences with communication

apprehension and self-esteem than others in a particular course? Is the different experience a function of their ethnicity or of the content or pedagogy in these courses? The basic course directors and faculty teaching in these courses are examining questions such as these, particularly by comparison to other students' self-reported decreases in communication apprehension and increases in self-esteem in the same courses. Lastly, and also importantly, the finding of no differences in degree of improvement across the three introductory courses, based on gender, speaks well for instruction in these courses.

Clearly, the complexity of the assessment data just reported underscores the importance of and need for long-term research to inform choices and decisions about course content and curriculum, as well as course length. Asking the right questions and long-term analysis of the impact of instruction in introductory communication courses will provide important assessment data for communication programs, general education, and related decision-making by faculty and administrators. Faculty in this communication department meet at the end of each academic year, review the results of the assessment process, and ask questions and develop data-driven answers and approaches to continue to improve their three introductory courses. Over the 14-year period, the department was one of only a few departments to have its assessment report accepted each year without revision based, in part, on the quality of the data presented. Additionally, longitudinal data, like that presented here, were regularly utilized in the department's program review. Program reviewers also commented favorably on the consistent data collection process conducted by the department.

Conclusion and Lessons Learned for Pedagogy and Assessment

The results of this study should be viewed as support for the communication discipline's criticality for the education of all students across the academy, including those taking a course of study in the communication department. The power of this study is the presentation of rare long-term data that are spread across three different types of introductory communication courses and which support communication faculty's beliefs in the positive impact of the discipline on students' affective growth and development. Students' perceived sustained improvement in self-esteem and willingness to communicate, coupled with a reduction in communication apprehension, speaks to the importance of basic or introductory communication courses for all students, regardless of academic major.

Five general conclusions for engaging in introductory course assessment now are outlined:

1. The data provided in this study support the importance of departmental introductory communication courses that provide an opportunity to impact the affective domain of students' intellectual and skill development.
2. Assessment in the affective domain should be added to other more traditional cognitive and behavioral forms and approaches to assessing student learning in introductory communication courses.
3. Those assessment efforts should not be considered simply a data collection process. Rather, they should be the impetus for continuous improvement. While this point seems obvious, mandated data generation sometimes tends to overtake the real purpose of assessment, which is to enhance teaching and learning.
4. Year-to-year comparisons of all assessment data in the introductory courses should be used to provide departments and basic course directors the opportunity to reflect annually and to explore the assessment results in collaboration with colleagues instructing in the courses.
5. Finally, the data provided in this study, and any assessment data generated in any communication department, can and should be used to support inclusion of introductory communication courses in the general education curriculum and to validate the need for continuing support of the discipline's introductory courses.

In addition to these general conclusions, this study's findings also suggest a variety of specific lessons learned and best practices for basic course directors and faculty that could easily translate to other departments and universities. The specific lessons learned have resulted in the framing of the following baseline questions regarding course content, pedagogical practices and training, actionable steps toward improvement, and affective learning.

When reviewing their own assessment data, basic course directors should ask baseline questions related to how course content is framed and perhaps should be changed:

- Is course content consistent across sections, with common learning objectives rooted in theory?
- Is course content adapted to students' needs, presently, and in preparation for their future careers?

- Is course content, and assessment thereof, updated regularly, as deemed necessary by instructors and the department?

Basic course directors should ask additional questions related to pedagogy and instructor training:

- Do the pedagogical practices include extensive training for instructors prior to the semester, informed by the results of course-based assessment activities?
- Do the pedagogical practices include regular meetings with instructors to ensure consistency of content delivery in the classroom or online?
- Are new hires adequately trained and therefore committed to the course objectives?

Basic course directors also should join with colleagues each year to review the assessment results, discuss any year-to-year variabilities, and ask some of the following exploratory questions, with the goal of developing actionable steps for improving the course:

- Which aspects of the course, in general, should be maintained and which should be changed from the last offering?
- What aspects of the course should be changed, given any varying impact, based on student demographics?
- Do the course and the department have an opportunity to participate in campus-wide assessment programs?

Finally, basic course directors should ask questions specifically related to assessment in the affective domain of student learning:

- How can the approach to assessing affective learning in the introductory course be used to complement existing approaches to assessing knowledge and skills?
- Are the present assessment instruments appropriate and useful for assessing student learning in the affective domain or should some be discontinued, and others added?
- Do the assessment instruments provide the necessary feedback to help students decrease apprehension and increase self-esteem or should additional feedback be provided by course instructors?

This study represents the results of one communication department's assessment efforts that are used to positively affect pedagogical decisions, not only in three introductory communication courses, but across the department's entire curriculum. Based on the findings presented here, the authors have suggested conclusions that

can be drawn and lessons that can be learned about introductory course assessment, which can lead to long-term best practices. Finally, the authors presented guiding questions about assessment in the introductory course that can be asked by course directors and communication departments at all institutions. The introductory communication course can be a powerful, transformative teaching and learning experience. While all courses deserve regular and long-term assessment for the purpose of continuous improvement, as Beebe (2013) suggests, the introductory course in communication is the “front porch” to the discipline, and it is well positioned to address the need for communication education for all students across the academy.

Limitations

Two major limitations may have affected the results of this research study. First, the instruments used assess the affective dimension of communication competence, not the behavioral dimension. Second, pre/post scores were used, meaning that students who did not complete one component or the other were not included in the analysis. It may well be that the subset of students who did not take the posttest or complete the course are somehow statistically significantly different from students who completed both pre/post measures.

References

- Aperture Education (2020). *What is social emotional learning?*
<https://apertureed.com/dessa-system-2/what-is-sel/>
- Beebe, S. (2013). Message from the president: ‘Our front porch.’ *Spectra*, 49(2), 3-22.
- Chan, D. (2009). So why ask me? Are self report data really that bad? In C. E. Lance, & R. J. Vandenberg (Eds.), *Statistical and methodological myths and urban legends: Doctrine, verity and fable in the organizational and social sciences* (pp. 309-335). Rutledge.
https://ink.library.smu.edu.sg/sooss_research/544/
- Chao, R. C.-L., Vidacovich, C., & Green, K. E. (2017). Rasch analysis of the Rosenberg self-esteem scale with African Americans. *Psychological Assessment*, 29(3), 329-342. <https://psycnet.apa.org/record/2016-28484-001>

- Cohen, J. (1988). *Statistical power and analysis for the behavioral sciences* (2nd ed.). Lawrence Erlbaum.
<http://www.utstat.toronto.edu/~brunner/oldclass/378f16/readings/CohenPower.pdf>
- Joyce, J., Kritselis, A., Dunn, S., Simonds, C., & Lynn, B. (2019). Synthesizing the current state of the Basic Communication Course Annual: Furthering the research of effective pedagogy. *Basic Communication Course Annual*, 31, Article 5.
<https://ecommons.udayton.edu/bcca/vol31/iss1/5/>
- Lakens, D. (2013). Calculating and reporting effect sizes to facilitate cumulative science: A practical primer for t-tests and ANOVAs. *Frontiers in Psychology*, 4, 863.
<https://www.frontiersin.org/articles/10.3389/fpsyg.2013.00863/full>
- Lee, T.Y., Cheung, C.K., & Kwong, W. M. (2012). Resilience as a positive youth development construct: A conceptual review. *Scientific World Journal*, 390450.
<https://www.hindawi.com/journals/tswj/2012/390450/>
- Leech, N. L., Barrett, K. C., & Morgan, G. A. (2015). *IBM SPSS for intermediate statistics*. Routledge. <https://psycnet.apa.org/record/2014-37173-000>
- Littlejohn, S. W. & Jabusch, D. M. (1982). Communication competence: Model and application, *Journal of Applied Communication Research*, 10(1), 29-37.
[10.1080/00909888209365210](https://doi.org/10.1080/00909888209365210)
- McCroskey, J.C. (1978). Validity of the PRCA as an index of oral communication apprehension. *Communication Monographs*, 45, 192-203.
<https://psycnet.apa.org/record/1980-00108-001>
- McCroskey, J. C. (1992). Reliability and validity of the Willingness to Communicate Scale. *Communication Quarterly*, 40(1), 16-25.
<https://doi.org/10.1080/01463379209369817>

- McCroskey, J.C. & Richmond, V.P. (1987). Willingness to communicate. In J. C. McCroskey & J. A. Daly (Eds.), *Personality and interpersonal communication* (pp. 129-156). Sage.
http://www.jamescmccroskey.com/publications/bookchapters/008_1987_C3.pdf
- Morreale, S. P., Hackman, M. Z., & Neer, M. R. (1995). Predictors of behavioral competence and self-esteem: A study assessing impact in a basic public speaking course. *Basic Communication Course Annual*, 7, Article 11.
<https://ecommons.udayton.edu/bcca/vol7/iss1/11/>
- Morreale, S. P., Hackman, M. Z., & Neer, M. R. (1998). Predictors of self-perceptions of behavioral competence, self-esteem, and willingness to communicate: A study assessing impact in a basic interpersonal communication course. *Basic Communication Course Annual*, 10, Article 7.
<https://ecommons.udayton.edu/bcca/vol10/iss1/7/>
- Morreale, S. P., Myers, S. A., Backlund, P. M., & Simonds, C. J. (2015). Study IX of the basic communication course at two- and four-year U.S. colleges and universities: A re-examination of our discipline's 'front porch.' *Communication Education*, 65, 338-355. <https://doi.org/10.1080/03634523.2015.1073339>
- Morreale, S. P., Valenzano, J. M., & Bauer, J. A. (2017). Why communication education is important: A third study on the centrality of the discipline's content and pedagogy. *Communication Education*, 66, 402-422.
<https://doi.org/10.1080/03634523.2016.1265136>
- Mruk, C. J. (2013). Defining self-esteem as a relationship between competence and worthiness: How a two-factor approach integrates the cognitive and affective dimensions of self-esteem. *Polish Psychological Bulletin*, 44(2), 157-164.
<https://psycnet.apa.org/record/2014-00571-005>

- Ones, D. S., Viswesvaran, C., & Reiss, A. D. (1996). Role of social desirability in personality testing for personnel selection: The red herring. *Journal of Applied Psychology*, 81(6), 660-679. <https://psycnet.apa.org/record/1996-06918-004>
- Ravindranath, S., (2017). Soft skills in project management: A review. *The IUP Journal of Soft Skills*, 10(4), 16-25.
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3079336
- Rosenberg, M. (1965). *Society and the adolescent self-image*. Princeton University Press.
<https://press.princeton.edu/books/hardcover/9780691649443/society-and-the-adolescent-self-image>
- Rosenberg, M. (1979). *Conceiving the self*. New York: Basic Books.
https://openlibrary.org/works/OL4097248W/Conceiving_the_self
- Spitzberg, B. H. (1983) Communication competence as knowledge, skill, and impression. *Communication Education*, 32(3), 323- 329.
<https://doi.org/10.1080/03634528309378550>
- Stringer, K. (2017). Social-emotional learning boosts students' scores, graduation rates, even earnings, new study finds.
<https://www.the74million.org/article/social-emotional-learning-boosts-students-scores-graduation-rates-even-earnings-new-study-finds/>
- Sullivan, G. M., & Feinn, R. (2012, September). Using effect size - or Why the p value is not enough. *Journal of Graduate Medical Education*, 4(3).
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3444174/>
- The Princeton Review. (2019). Top 10 College Majors.
<https://www.princetonreview.com/college-advice/top-ten-college-majors>
- Weissberg, R. P., Durlak, J. A., Domitrovich, C. E., & Gullotta, T. P. (Eds.). (2015). Social and emotional learning: Past, present, and future. In J. A. Durlak, C. E. Domitrovich, R. P. Weissberg, & T. P. Gullotta (Eds.), *Handbook of social and emotional learning: Research and practice* (pp. 3-19). The Guilford Press.