

The Impact of an Agricultural Communications Course on Perceived Communication Abilities

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Introduction and Need for Research

Prior research has suggested many reasons why students have perceived discomfort speaking in various settings, including a fear of being judged, physiological responses, lack of confidence in the topic being presented, and lack of practice or preparation (Grieve et al., 2021). While the literature has indicated anxiety is diminished for students with greater academic achievement (Menzel & Carrell, 2009), and those who have additional training and preparation for individual speeches (Raja, 2017), work has not examined the impact of a course on students' perceived communication abilities. The agriculture, food, and natural resources (AFNR) industry faces a variety of challenges and misinformation; developing advocates who can communicate verbally and through other mass efforts is essential to overcoming these stigmas (Kurtzo et al., 2016). Given the lack of literature focusing on the impact of AFNR communication coursework on perceived communication abilities, and the need for strong advocates and communicators for the AFNR industry, there is a clear need for this study, which is aligned with the advancing public knowledge of AFNR systems research value in the AAAE research agenda. The purpose of this study was to evaluate the impact of a semester-long AFNR communication course on students' perceived abilities. Objectives were to: 1) assess students' perceived communication competence at the start of the semester, and 2) evaluate changes in their perceptions at the end of the course.

Theoretical Framework

Self-efficacy theory evaluates one's perceived belief in their ability to succeed in tasks (Bandura, 1977). This study evaluated students' self-efficacy in competencies related to communicating in specific audiences and settings. Self-efficacy has been examined widely in agricultural education scholarship, and is established through: (a) *performance outcomes*, attributed to achievements in a competency, (b) *verbal persuasion*, or encouragement from others related to a competency, (c) *physiological feedback*, gained from feelings received in performing the competency, and (d) *vicarious experiences*, gained through watching others perform a competency (Bandura, 1977). While engaging in small course sections with applied communications instruction, students built self-efficacy via peer and instructor feedback, and real-world experiences (e.g., performance outcomes; verbal persuasion) and seeing one another develop skills (e.g., vicarious experiences; physiological feedback) (Bandura, 1977; Schunk, 2012).

Methods

The frame for this IRB-approved study was a census of Iowa State University students in a fall 2025 AFNR communications course; 43 students participated and 41 provided usable responses. McCroskey and McCroskey's (1988) instrument was utilized because it was deemed highly reliable ($\alpha = 0.92$; Nunnally, 1978). The instrument consisted of 12 items among seven constructs; three related to the audience (i.e., strangers, acquaintances, friends), and four related to the setting (i.e., public, meeting, group, dyadic). Each item consisted of a communication task associated with both an audience and a setting (e.g., "present a public talk to a group of strangers"), and asked respondents to provide a score from 0 (i.e., completely incompetent) to 100 (i.e., completely competent) for each task. The instrument was distributed via Qualtrics using Dillman's (2014) tailored design at the beginning and at the end of the semester; 27 respondents were female (62.79%), 14 were male (32.56%), and two did not disclose their sex (4.65%). Identification codes were assigned to responses to protect respondents' true identities (Creswell & Creswell, 2018). Analysis included descriptive statistics, and having received enough participants ($n = 41$), paired samples *t*-tests were conducted to assess changes over time.

Results

Regarding objective 1, students reported the greatest perceived competence communicating with their friends ($\bar{x} = 92.10$; $\sigma = 8.04$), and perceived the least in communicating with strangers ($\bar{x} = 71.73$; $\sigma = 15.22$). They also perceived the greatest competence in a dyadic setting ($\bar{x} = 86.89$; $\sigma = 8.80$), intermediate competence in group ($\bar{x} = 84.44$; $\sigma = 11.51$) and public settings ($\bar{x} = 81.02$; $\sigma = 12.09$), and the least competence in meetings ($\bar{x} = 75.70$; $\sigma = 11.97$). Objective 2 showed while students still perceived the greatest competence communicating with friends ($\bar{x} = 94.10$; $\sigma = 8.37$), and the least with strangers ($\bar{x} = 80.70$; $\sigma = 12.94$), the average scores increased in all audience areas. The same was true for settings; when evaluating the average scores for each of the settings, the rankings remained the same, but the scores increased in each area. Paired samples *t*-tests also revealed statistical significance in each of the seven constructs (see Table 1).

Table 1

Students' Perceived Communication Competence at the Start and End of the Course

Audience or Setting	Pre		Post		df	p
	\bar{x}	σ	\bar{x}	σ		
With Strangers	71.73	15.22	80.70	12.94	40	< 0.001*
With Acquaintances	82.22	12.04	87.59	10.44	40	< 0.001*
With Friends	92.10	8.04	94.10	8.37	40	0.042*
Public Setting	81.02	12.09	85.77	12.26	40	0.007*
Meeting Setting	75.70	11.97	83.88	12.36	40	< 0.001*
Group Setting	84.44	11.51	88.95	8.45	40	0.004*
Dyadic Setting	86.89	8.80	91.23	7.57	40	<0.001*

* Denotes statistical significance at $p < 0.05$

Conclusions, Implications, and Recommendations

The purpose of this study was to evaluate the impact of a semester-long AFNR communication course on students' perceived communication abilities. Findings from objective 1 indicated students had some degree of perceived competence related to communication at the start of the course; this may be based on prior training (Raja, 2017) or their perceived level of efficacy from prior feedback or mentorship (Bandura, 1977). Objective two showed the course still increased students' perceived competence across each of the three audiences and the four settings, with the greatest perceived competence settings being dyadic ($\bar{x} = 91.23$; $\sigma = 7.57$) and group settings ($\bar{x} = 88.95$; $\sigma = 8.45$). Statistical significance was achieved in each of the seven areas evaluated; this may suggest the course was associated with increases in perceived competence (Bandura, 1977), so students are confident to address key AFNR communication barriers (Kurtzo et al., 2016).

For research recommendations, qualitative work should explore students' perceived self-efficacy throughout the semester after presentation opportunities, using written reflections or interviews (Bandura, 1977). Quantitative work may utilize biometric data points, such as blood pressure or heart rate, to evaluate how communicating to different audiences or settings may influence these factors, and how this may adjust with additional training during the semester (Bandura, 1977; Grieve et al., 2021). For professional practice, communication training experiences should be integrated into as many courses as possible, as students gained perceived competence throughout the semester. Given this additional competence, students might be more confident in their AFNR advocacy abilities (Bandura, 1977), and to bridge the farmer-consumer gap (Kurtzo et al., 2016).

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