Narrative Poster

Science Communicator Identity Practices and Predictors: A Faculty Survey

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Introduction

Science communication, conceptually defined as sharing specialized knowledge or research outcomes with people outside academia (Burns et al., 2003), has become increasingly needed for public benefits (Treise & Weigold, 2022). Still, only a few faculty and researchers assume the responsibility of communicating science (Dunwoody & Ryan, 1985). Identity, which influences human responses to the social world and precedes many human actions (Burchell & Holden, 2009), has often been ignored in understanding faculty's challenges with communicating science. The current study fills the gap by examining the variables that predict science communicator identity (i.e., how one sees oneself as a science communicator; Robnett et al., 2015) among faculty at one large, land-grant university.

Theoretical Framework

The Communication Theory of Identity (CTI) guided the current study (Hecht et al., 1993). CTI explains how an individual develops a sense of identity through articulating different levels of identity formation processes (Shin & Hecht, 2017). In CTI, identity is not seen as a product of communication, nor communication as a product of identity; rather, CTI expresses the mutual influences of communication and identity by viewing identity as communication (Hecht, 1993; Hecht et al., 1993; Hecht et al., 2003). Specifically, communication is a performance of identity (Shin & Hecht, 2017). Thus, in the current study, it is expected that communicating science will be a performance of science communication identity.

Methods

A cross-sectional survey design was used to elicit information from participants. The data collection instrument was developed with three CTI components: personal (e.g., science communication self-efficacy), enacted (e.g., frequency of engagement in science communication), and relational (e.g., institutional and mentor support; Shin & Hecht, 2017). Most of the questions were on a 5-point Likert scale. The study's conceptual definition of science communication was included in the survey to aid participants' understanding. Participants were recruited through an email sent to the college faculty listserv. An additional email was sent twice to the department heads requesting that they forward the survey to their faculty. The data was collected over a period of three weeks. Sixty-two usable responses (~31% response rate; ~200 faculty population) were collected from the population comprising all faculty ranks and all nine departments in the College of Agriculture and Life Sciences (CALS) at [University]. Descriptive analysis was used to analyze participants' demographic information while inferential statistics were conducted using a multiple linear regression analysis and ordinary least squares as the estimation method to account for variables that enhance science communication identity.

Results

Descriptive analysis of the data revealed that 70% of participants had 11+ years of academic experience (excluding graduate school), with approximately 50% men and 50% women, and 86.21% identified as white. Table 1 presents the descriptive statistics summarizing the relationships among the variables in the regression model, showing that perceived responsibility, confidence, public interest, subjective norms, mentors' support, and subjective norms influence science communication identity.

Table 1

Means, Standard Deviations, and Pearson r Correlations Among Variables (N = 62)

	M	*SD*	1	2	3	4	5	6
Responsibility (1)	3.83	.88	1					
Confidence (2)	3.69	.69	.49***	1				
Public interest (3)	3.81	.78	.61***	.37**	1			
Mentors (4)	3.33	.98	.30*	.14	.28*	1		
Subjective norms (5)	3.78	.72	.59***	.27*	.54***	.38**	1	
Science communicator identity (6)	3.49	.84	.56***	.44***	.32**	.33**	.61***	1

Note. *** indicates $p < .001$; ** indicates $p < .01$; * indicates $p < .05$.

The regression model accounted for 51.75% of the variance in science communicator identity (adjusted $R^2 = 47.44\%$; see Table 2). The model explained a statistically significant amount of variation in the dependent variable ($F(5, 56) = 12.01$, $p < .001$). Each additional point in perceived responsibility is associated with a statistically significant average increase in science communicator identity of .296 ($t(56) = 2.27$, $p = .027$); each additional point in confidence is associated with a statistically significant average increase in science communicator identity of .288 ($t(56) = 2.21$, $p = .031$); and each additional point in subjective norms is associated with a statistically significant average increase in science communicator identity of .525 ($t(56) = 3.64$, $p = .001$).

Table 2

Results from the Regression Model with Science Communicator Identity as the DV (N = 62)

Predictors	Science Communicator Identity (α = .84)			
	B (S.E.)	*t*	*p*	*β*
Intercept	.047 (.546)	-.09	.931	--
Responsibility (α = .89)	.296 (.130)	2.27	.027	.309
Confidence (α = .85)	.288 (.130)	2.21	.031	.237
Public interest (α = .91)	-.241 (.132)	-1.83	.072	-.225
Mentors (α = .94)	.082 (.087)	.95	.347	.096
Subjective norms (α = .85)	.525 (.144)	3.64	.001	.449

Note. α represents the Cronbach alpha coefficient.

Conclusions and Recommendations

The findings demonstrate that personal perceptions and academic environment, including perceived public interest and mentors, influenced faculty's claiming of a science communicator identity. The results have implications for science communication advocacy and training in higher education. First, since perceived responsibility and subjective norms increased science communicator identity, it is recommended that faculty job descriptions and contracts include a focus on public dissemination of scientific knowledge. Second, increased support (e.g., grants, promotion structures) for science communication from mentors and higher education organizations is suggested. Third, faculty's confidence in communicating science might be boosted through training in science communication. Finally, fostering public interest in science through publicly relevant scientific research and expansion of science communication media outlets to those used by the target audience is essential to the continued development of science communicator identity among faculty.

References

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