Who Are They? The Internal Factors Associated with the Science Communication Identities of Extension Professionals

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Introduction/Conceptual Framework

The Cooperative Extension Service (CES) is a critical vehicle for sharing nonformal education and research from land-grant universities with people and communities (Seevers & Grahm, 2012). If CES is the vehicle, Extension professionals are the drivers of relationships and communication within communities to ensure that scientific information is communicated in ways that are relevant and meaningful to their audiences (Kurtzo et al., 2019). These individuals must rely on new media channels and social trends to determine how to broadcast their messages widely to all constituents. Understanding the audience and proactively framing information for them is important to increase buy-in (Jenkins et al., 2020). An individual who identifies as a science communicator is more likely to take action to increase the quality and personalization of their communication (Baram-Tsabari & Lewenstein, 2017). Longnecker's (2016) integrated model of science communication considers an individual's identity as a science communicator as vital, "a sense of identity affects engagement with information – whether we receive it, how we process it and what use we make of it" (p. 5). The major components of this model include identity, engagement, communication, facts, and social norms. For this study, we concentrated on exploring the eight factors related to identity: affect, awareness, understanding, skills, behavior, attitudes, beliefs, and values (Longnecker, 2016). Identity as a communicator can be an addition or expansion of one's current professional identity; the new identity as a communicator can help broaden their reaches in their discipline (Baram-Tsabari & Lewenstein, 2017). Therefore, our purpose was to explore how [University] extension professionals identify as science communicators based on the eight factors of identity from Longnecker's (2016) model.

Methods

Following a census survey of [University] CES professionals with advanced degrees (N = 131), we employed a stratified purposive sample based on district representation, rural and urban county type, and preferred communication type. We conducted 12 Zoom interviews with an adapted protcol from Parrella and Leggette's (2020), based on Longnecker's (2016) model. The questions to address each factor were as follows: understanding (three questions), affect (one question), values (two questions), awareness (one question), skills (three questions), behavior (two questions), attitudes (two questions), and beliefs (two questions).We transcribed interviews verbatim and deconstructed into meaning units (Yin, 2011). Two researchers used an iterative process to provide rigor and increase credibility of the coding and meaning making process (Creswell, 2014). We utilized a constant comparative method through open coding followed by axial coding for meaning making (Yin, 2011). The meaning making process resulted in five themes: continual development, technology, research dissemination, evaluation & motivation, and community relationships. This analysis process included stratifying the meaning units, previously coded, for each theme based on the factor the interview question was developed to explore.

Results

Interviewees frequently discussed continual development. In the understanding factor, individuals noted the importance of being a science communicator, but continuing to adapt. In the awareness factor, some shared their resources for reaching new people and developing skills. In the behavior factor, they expanded on new skills, platforms, and connections they could make to increase their communication skills. In the attitudes factor, individuals indicated they can become more reliable and better assets when they continue to grow and increase their skills.

Individuals discussed technology throughout many facets of the interview. In the understanding factor, they indicated being a science communicator was having the means to share information. In awareness, they shared how they can utilize technology as a resource, but it can also serve as a barrier. In the skills factor, respondents identified that different audiences are more receptive to different types of technology. Lastly, they discussed technology in the attitude factor as a means to increase their impact as science communicators.

In the interviews, they also mentioned research dissemination throughout. In the understanding factor, they discussed dissemination of information heavily as a science communicator's role. In the affect factor, they indicated providing access to useful and application information as a motivation for them. They identified values, such as being reliable and trustworthy They believed they play a key role in science communication. In the skills factor, individuals shared it is their job to provide information that can be easily understood and used to their constituents. In the attitudes factor, respondents noted they can make a significant impact by fulfilling their responsibility as a reliable source of the information. In the beliefs factor, individuals noted their key role in discussing scientific information with the public.

They discussed evaluation and motivation in multiple places during the interviews. In the understanding factor, individuals noted their passion for wanting to make an impact. Similarly, the affect factor included conversations about their motivation as science communicators to benefit their communities. This sentiment was also discussed during the values factor. The skills factor included discussion on how different audiences have different needs, and it is necessary to evaluate those and deliver meaningful content. In the attitudes factor, they indicated the opportunity to make positive impacts in their community and science fields. In the beliefs factor, they indicated communicating information to their communities is a valued part of their position.

They talked about community relationships under many factors. In the understanding factor, they discussed how their role is to enable the transfer of information through relationships. In the affect factor, they indicated their motivation to communicate based on relationships and the impact they can have. In the values factor, they said they had the responsibility to connect and maintain relationships to fulfill their job descriptions. In the attitudes factor, respondents discussed how they establish relationships by being trustworthy sources in order to fulfill their roles and impact their community. In the beliefs factor, they indicated that discussing information and research in their communities was important to them.

Conclusions and Recommendations

Each individual had their own understanding of what it meant to be a science communicator and how they fit into that realm (Longnecker, 2016). However, we uncovered each of Longnecker's (2016) internal identity factors were present in the five emergent themes of continual development, technology, research dissemination, evaluation & motivation, and community relationships. By understanding these shared themes, we can begin to unpack larger meaning on how to utilize Longnecker's (2016) model to help CES professionals better understand their identity as science communicators. These findings lend to the improvement on trainings for CES to increase their competencies as science communicators. Missing from this study is the viewpoint of the constituents. Additional research is needed to understand how constituents view their CES as science communicators and their ability to meet their needs.

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