Research Poster

Collaborative Science Narratives: Faculty Experiences Working with Budding Agricultural Communicators in a Project-Based Learning Course

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Introduction and Conceptual Framework

In the past two decades, several published research studies have focused on agricultural communication program (ACP) curriculum and student skills. As the agricultural communication field grows, it benefits from efforts at clarifying, identifying and unifying the field (Irani & Doerfert, 2013; Irlbeck & Buck, 2017), as well as evaluating and updating curriculum (Leal, et al., 2019; Corder & Irlbeck, 2018). Doerfert and Miller (2006) emphasized curricula must evolve with changes in the workplace to best prepare tomorrow's experts, the core of ACPs. Leal et al., (2019) suggested ACPs engage students in activities requiring them to build social skills by implementing group work, presentations and projects with minimal direction. To develop their 21st Century science communication skills, budding agricultural communicators should gain experience working with scientists to develop messaging and communication products about critical agricultural and natural resource issues (Loizzo et al., 2018).

In ensuring ACP curricula are up to date, Irani and Doerfert (2014) noted the importance of employing innovative instructional design and pedagogical approaches. One experiential-learning focused innovation is project-based learning (PjBL), which engages students to address real world issues, often focused on science and society. Student drive their learning through inquiry, working collaboratively to research and create their own real-world projects. Through PjBL students learn responsibility, independence and discipline (Bell, 2010). PjBL has been employed in ACPs previously, as well as in science communication programs (Loizzo et al., 2018; Luisi et al., 2019). The purpose of this research project, which addresses AAAE NRA RPA 4 – Meaningful, Engaged Learning in All Environments, was to understand faculty collaborator experiences in working with students in a digital science communication course.

Methodology

As part of a series of new courses in an existing ACP, the lead researcher developed and taught a PjBL course at Cal Poly, a four-year institution in the West. Student teams were paired with faculty members in the college of agriculture to create digital science communication projects focused on educating online audiences about faculty research. Directions on project structure and content were broad to allow for student voice and choice (Loizzo, et al., 2018). The course instructor served as learning facilitator, while faculty scientists functioned as clients for student projects, which were published on a digital science communication platform.

The study described in this abstract focused on faculty scientists to understand their experiences working with students in a science communication focused PjBL course. Semi-structured interviews were conducted with faculty scientists via Zoom to investigate three areas: scientists' experiences working with student science communicators, scientists' perceptions of the student project interview process, and scientists' perceptions of the project outcome. The research protocol was approved by the lead researcher's Institutional Review Board. Interviews were recorded, and transcripts provided by the video platform were checked for accuracy by the lead researcher who also served as course facilitator using Loizzo et al.'s (2018) rationale and methods. Both researchers coded transcripts using Saldaña's (2009) procedures.

Findings

Seven interviews were conducted, representing all of the faculty scientists who participated. Given the areas of investigation, three themes emerged from the data: a) Navigating

logistics and communication throughout the interview process; b) The scientist-student collaboration *sparked science interest and learning*; and c) Final projects included some scientific information, within a larger *narrative structure to humanize scientists*. Throughout the interviews, all faculty scientists commented about students' abilities handling the *logistics and communication* components of the project and interview process. Several noted students were efficient, effective and communicative in arranging the interview, source-checking and the final approval process. Contrastingly, some student teams struggled mightily in this area, and faculty noted these challenges. Faculty scientists also described their own logistical challenges in managing to incorporate student meetings into their busy schedules, but also communicated their positive perceptions of the final projects and enjoyment of the overall experience. Several scientists mentioned specifically enjoying the visible *spark of science interest and learning* students displayed, noting specific instances where students showed interest and excitement at learning about research projects and the potential impact of results. Additionally, the concept of struggling to learn how to translate scientific jargon into language for non-expert audiences emerged across the interviews. Several mentioned while they are aware this is an important skill, they have little experience with it and tend to struggle. Finally, a theme *humanizing the scientists* emerged in the data. One scientist discussed surprise at students' interest in and incorporation of their path to becoming a scientist and faculty member in their chosen discipline in the project. Another mentioned their pleasure that students heard and understood how important their origin story was in leading them to the research they conduct today.

Conclusions and Recommendations

In an age when ACPs are growing and science communication is increasingly important, this research indicates cause for optimism and illustrates opportunity. Findings demonstrate faculty interest and willingness to collaborate in using human interest angles and stories to communicate about scientific research, previously identified as helpful in focusing the public's attention on important scientific topics (Jebril, Vreese, Dalen, & Albæk, 2013; Valkenburg, Semetko, & De Vreese, 1999). Silva and Bultitude (2009) noted despite the increasing need for training for scientists to communicate with non-expert audiences, there is a general lack of it. Whether scientist participants in this study had access to training in the past or not is unknown; however, indications are faculty scientists see this as an area they can and wish to improve in, creating opportunities for partnerships among faculty scientists and ACPs to work with aspiring agricultural communicators using innovative experientially-focused pedagogical approaches.

Second, faculty scientists indicated their pleasure and enjoyment in participating in the process working with student teams. Feedback about project results were universally positive, indicating scientists' excitement and enthusiasm despite experiencing challenges. All indicated willingness to participate in future projects, providing an opening for future use of PjBL-focused collaborations to help students in ACPs examine real-world problems and build important skills (Leal et al., 2019). Insights from faculty scientists regarding logistics and communication challenges in working with student science communicators indicates potential for improvement in directing students' projects using PjBL approaches. Agricultural communication faculty will want to carefully balance directiveness and learning facilitation with student voice and choice as noted by Loizzo et al., (2018).

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