Exploring Epistemological Stance as a Potential Communications Bias in the Agricultural Communications Classroom

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Need for Innovation/Idea

Agricultural communications instructors spend a great deal of time inculcating in undergraduates the habit of identifying bias in the media. They discuss such concepts as framing theory, agenda setting theory, and confirmation bias, in part, to help future agricultural communications practitioners recognize their own biases and better communicate across difference (Telg et al., 2022). However, in science communications, of which agricultural communications is arguably a sub-discipline (Gibson et al., 2021; Parrella et al., 2023), there is a baked-in set of biases related to a communicator's epistemological stance. A communicator's assumptions about what is knowable will logically influence their interpretation of scientific findings and, in turn, how they communicate those findings to the public.

The natural sciences have historically favored positivism (Davis, 2024) in the philosophical traditions of Ayer (1962) and later Popper (1963). Under this common-sense view of science, science is considered objective, value neutral, not normative, and independent of social mores (Koster & Kuper, 2020). The knowledge generated is disinterested and universal. A communicator who holds these philosophical assumptions would likely assume all that's left is to transmit this new knowledge to an eager public (i.e., the knowledge deficit or transmission models), or, in a pinch, to persuade them through dialogue of the veracity of the findings (i.e., the engagement models) (Akin & Scheufele, 2017). "The common-sense view is linked to the transmission model of science communication. Science presents the truth about the world…the communications professional, as a transmitter, [formulates] a message for a passive receiver with the purpose of either informing or educating…" (Koster & Kupper, 2020, pp. 20-21).

However, according to most other epistemological stances, science is, in fact, subjective, value-laden, normative, and influenced by social mores (Koster & Kuper, 2020). The abovementioned communications models "are limited in their ability to resolve the often contentious and politicized debates that tend to surround the communication about science in the real world" for the simple reason that they often don't acknowledge that it's up for debate (Akin & Scheufele, 2017, p 26). The innovative idea discussed in this poster abstract is simply to expose students to the concept of epistemology as a potential blind spot, or bias, in how they communicate about science through an active classroom activity.

Steps

This innovative idea takes the form of an active learning-style lecture (Hood, 2017) in an in-person 4000-level agricultural communications course. The activity is part of a lecture occurring early in the semester titled "The Science Part of Science Communication" where the goal is to discuss competing views of science and how those views often unconsciously influence the communications models employed by practitioners. Concepts related to this lecture are the following three communications models: deficit/transmission, engagement, and communication in context (Akin & Scheufele, 2017).

First, the instructor explains the concept of an epistemology using definitions, etymology, and examples. Second, students take an online assessment that poses 20 philosophical questions. Students receive their results immediately and are classified as either mostly positivist, post-positivist, constructionist, or subjectivist (Davis, 2024). Third, students assemble with their epistemological matches for a jigsaw-type (Jamaluddin et al., 2023) activity. Each group is given

a succinct packet of information on their respective epistemological stances and asked to read it, synthesize the main points on flipchart paper, and identify which of the communication models might logically emanate from their stance. Fourth, each group then explains their epistemological stance and accompanying communication model in turn to the class. The instructor fills in any missing information and makes corrections when necessary. Fifth, the instructor debriefs by posing questions, such as the following: "What stance do you think your animal science/plant science/history/economics professors favor?" "What stance do you think is commonly held by agricultural communications practitioners you know?" Finally, students are provided with a recent press release announcing a new scientific advancement at Auburn University, in this case, a study explaining why it's more efficient to not let broiler chickens see the sun. Students are asked to discuss with a buddy which communication model best describes the article, which is the likely epistemological stance of the author, and how it's likely perceived by the public. Groups share their thoughts, and the instructor affirms or amends their positions.

Results to Date/Implication

The concept of an epistemology is, admittedly, difficult for many undergraduates to grasp. However, students have responded favorably to this exercise for a few reasons. Students like the "personality test" aspect of the online assessment. They enjoy learning how they relate to their peers in this new way. They enjoy better understanding why, perhaps, the reason most preferred the natural sciences over the humanities may be explained by an aversion to an epistemological stance (e.g., most were positivists and have little tolerance for the notion that there may be more than one right answer). They enjoy knowing each other's stances, but they do struggle to understand one another's stances.

The implication of this exercise is that students identify not only their own communications biases, but also the biases of larger agricultural communications efforts. Most problematic is that the positivist epistemological stance, so common in our class, assumes a value neutral, independent view of objective science that lends itself to a transmission model of communication (Koster & Kupper, 2020). However, many consumers, legislators, regulators, and other stakeholders do not subscribe to this stance and are employing values, moral frameworks, and subjective judgements when making decisions related to science that directly impact agriculture (Koster & Kupper, 2020). Communications practitioners must identify their own epistemological biases to better communicate across differences.

Future Plans/Advice to Others

One issue with the activity was that approximately 91% (N=21) of the students were positivists, which left the groups mismatched in size. With a large overlap between an internal locus of control and tenants of positivism we expect that this is common in colleges of agriculture (McKibben et al, 2023) and recommend instructors be prepared to fill in the missing epistemologies themselves. We also recommend using a follow-up reflective writing prompt one week after the lesson asking students to reflect on learning of their epistemological stance and how it might have unconsciously influenced their own writing (Fryer-Edwards et al., 2006).

Costs/Resources Needed

This activity has virtually no cost. Resources needed beyond standard classroom equipment are succinct handouts explaining each epistemology, sample press releases on recent scientific findings, and flipchart paper.

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