Commentary

Attribution, Interpretation, and Integrity in Online Research-Based Communication

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Abstract

Communicators have a role as standard setters in developing research-based land-grant public education products. This paper presents a rationale for communicators to help authors of public education materials understand the importance of attribution in their role as interpreters of research for their target audiences. It is also important for authors of public education materials to understand and follow best practices in documenting reference sources. These concepts are important not just in traditional publications but also when working in new media and online formats.

Keywords

attribution, creative integrity, research-based public education, science communication

Introduction

Communicators (publishers in all media) and content specialists who produce research-based public education materials are increasingly working in online media formats that do not commonly indicate attribution and reference information as rigorously as do typical research-based publications. As communicators, we must uphold standards of attribution and citation, no matter what medium we use. Understanding and promoting the educator's role as interpreter in the scientific process can help communicators maintain the integrity (we are what we say we are) of research-based public education delivery.

What Does "Research-based" Mean?

Land-grant university public education efforts are commonly referred to as research-based. This is sometimes misunderstood to mean that land-grant education products are "The Truth," as in a set of facts that are *so true* that they are not authored by anyone (or that the author does not need to be indicated because audiences just want factual information and do not need to be aware of "the messenger").

In fact, it is through the author's interpretation of research that information becomes useful. Land-grant faculty are uniquely positioned to communicate research findings in ways that are useful to target audiences because of their understanding of both the content area and the audiences

served. To transform data and research into useful communications products involves a process of interpretation.

Paul Grobstein (2005) reminds us that science is not so much a claim of truth as it is a series of incrementally improved interpretations. As new observations are made, existing interpretations must be reexamined and revised.

We can look to numerous examples of how human understanding undergoes continual improvement through refinement of scientific interpretations. For example, soil conservation scientists in the 1940s and '50s interpreted data available at that time to support the notion that *draining* wetlands was a sound conservation practice. Over time, scientists gathered more data and updated their interpretations to conclude that *protecting* wetlands was actually a better conservation practice (Biebighauser, 2007).

Another example relates to one of the best-known educational communication models, the food pyramid. Since the late 1800s, the United States Department of Agriculture (USDA) has issued dietary guidance. The agency regularly updates its dietary guidelines and "food groups" to reflect advancements in the science of nutrition as new data and interpretations become available. As part of this process, the USDA has revised the food pyramid numerous times and recently replaced it with the "Choose My Plate" model (USDA, 2011). The food pyramid and "My Plate" are clearly not absolute, timeless "Truths," but rather conceptual interpretations created by qualified science educators to both reflect best knowledge to date and present this knowledge in a way that target audiences can understand and use it.

The need to revise materials to better reflect advances in understanding is well known in the land-grant public education field. For example, Extension materials commonly have referred to pesticide usage and thus require regular revision to reflect changes in regulations and scientific knowledge. Extension organizations that once provided instructions on the use of DDT and other hazardous chemicals now provide guidance that reflects current regulations and an improved understanding of sustainable agricultural and gardening practices (Stone & Anderson, 2009).

Because land-grant educational materials reflect an author's understanding of the content and its significance at a particular place and time, attention must be given to clearly indicating the source of the information (references), who is making the interpretation (attribution), and when (date).

Common Challenges

References and attribution—two important elements that contribute to the integrity of research-based educational materials, as discussed above—are sometimes compromised in contemporary online educational media. Here are several examples:

- Social media. Extension and agricultural research organizations have migrated some of their communications activities to social media sites, where great numbers of potential users visit (Kinsey, 2010). While using social media can be a very effective strategy for engaging audiences, the way it is done affects whether the integrity between content and its source is maintained or compromised. In some cases, organizational accounts with names such as "Extension Service-Scott County" are used within social media applications; while this may be a very practical approach, creating a generic organizational "source" of information can contribute to losing recognition of the educator as an individual, an interpreter between the science and the audience.
- Resources maintained by communities of practice (such as wikis). "Knowledge commons" and community-maintained informational resource sites are now widely used, but many of

these sites do not offer a rigorous means of attribution, citation, or accountability. Communities of practice can be a very effective way to prioritize, produce, and vet content. The attribution and citation practices of communities, however, can vary widely. Many eXtension communities of practice, for example, do an excellent job of ensuring that the source of content is clearly labeled. Some communities of practice, however, may not be aware of the importance of listing authors and references. Communicators can help educate and point to examples of best practices.

- Organizational and program websites. Perhaps the most ubiquitous case of attribution loss occurs with Web page content on typical organizational websites. When organizations present information on the Web, the common practice or de facto standard is to omit the names of content authors; it is assumed that the information presented is general, represents the organization, is true, and does not need reference to research sources. We struggled with this question in a recent redesign of the Oregon State University Extension Service website. Some Web pages (for example, those introducing program areas) clearly present information that does not require attribution. Other pages include content from sources where attribution was important (for example, an article that was originally written for a magazine where a byline is significant). The Web developers were inclined to omit attribution as it is not a Web standard to list the author of Web pages. The editors involved argued that if we are publishing interpreted science, then we need to maintain best practices for attribution even if that is not common practice.

Conclusions and Implications

Delivering research-based education through new media can support and strengthen the land-grant university's "research-based" reputation when we follow two basic principles of creative integrity: (1) acknowledging authors' role as informed translators of research findings into information that is useful to their audiences and (2) referencing the sources that shape the authors' understanding. Land-grant communication offices can help content specialists understand the importance of these basic building blocks of effective science communication.

Encourage authors with whom you work to present themselves not as a fact delivery service but rather as informed translators of research findings into information that is useful to their audiences. Also, guide authors to follow best practices in reference documentation. Our land-grant communications should demonstrate (by referencing relevant sources) that the author's understanding is based on research. Science is a living conversation as scientists test and revise interpretations based on observations to date. Thus, referencing (dialoguing with) relevant work is an essential part of the language of communicating science (Anderson-Wilk, 2010). A clearly defined documentation of sources is necessary for science communication to live up to its reputation for delivering research-based information.

About the Authors

Mark Anderson-Wilk was publishing leader for the Extension and Experiment Station Communications department at Oregon State University from January 2009 until January 2012, when he passed away. He was an editor and director of publications for various academic presses and journals for over 10 years before coming to OSU, and an ACE award-winning publication designer and communications innovator.

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