

# Field day: a case study examining scientists' oral performance skills

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## Abstract

Communication is a complex cyclic process wherein senders and receivers encode and decode information in an effort to reach a state of mutuality or mutual understanding. When the communication of scientific or technical information occurs in a public space, effective speakers follow a formula for content delivery. Participant observation of 11 presentations during a 2009 Field Day and content analysis of videotaped faculty and scientists' oral performances generated suggested best practices: distribution of keyword outline of content/findings, use of a microphone, highlighting importance of presentation during introductory and concluding content, and using scientific and laymen's terminology concurrently.

## Key Words

Oral performance, non-scientific community, communication.

## Introduction

Saito *et al.* (2006) support that comprehension of the indigenous knowledge of soils by local farmers is critical for "success or failure of agricultural development" (p. 64). The authors make the argument that if researchers understand how the audience they intend to serve makes sense of information; they are more likely to use the information if it is presented in a manner they understand. Conversely, indigenous knowledge can serve a useful purpose if "documented" or "extracted" through detailed local-level work (Howes and Chambers 1980; Farrington and Martin 1988; Warren 1990). Researchers from the University of Bergen approach the relationship between the designer (scientist) and user (farmer/community) and the knowledge design, testing and distribution environment from a systems perspective. Dea and Scoones (2003) assert

- [D]ifferent understandings of soils and their management are seen to be bound up
- with the contexts within which knowledge about soils are created – the networks of actors
- engaged in building knowledge, the settings within which ideas about soils are tested
- and examined, the wider assumptions and beliefs that different people have (461).

The scholars advance the correlation between power, control over people's lives and knowledge. From a communication perspective, Dea and Scoones aptly capture the essence of Shannon's (1948) information model of communication which evolved to the Shannon-Weaver model (1949, 1963) and depicts communication as information processing; information that reduces uncertainty for the receiver. More recent studies have refuted aspects of the model while other studies have embellished key components of the model such as noise, message, channel, encoding, decoding, etc. In the communications discipline, effective communication is achieved when a receiver decodes a message in the manner the sender intended despite noise and transmission device. This mutual interpretation of information or the symbols used to express ideas builds on a foundation which evolves with age and experience yielding knowledge, and thus, the ability to interpret and use information which ultimately extends knowledge. The complexity of the experiences and depth and breadth of the knowledge positions the communicator to be effective at different degrees of interaction. When scholars and practitioners interact with community residents, there is a need to speak in the vernacular of the audience. An audience analysis is a tool communication scholars promote in the instruction of public speaking to empower the speaker to craft messages designed for the intended audience. In essence, the speaker's effort to ascertain the demographic and psychographic characteristics of an audience with whom effective communication is desired, prior to interaction, influences message design, and therefore, the ability to share information designed to enhance knowledge of a phenomenon (Lucas 2008). To ascertain if scientists conduct effective audience analyses and deliver content in a manner suitable for knowledge enhancement, a qualitative content analysis of videotaped recordings of presentations at a community education event was conducted.

## **Methods**

### *Participant Observation*

In order to ascertain if scientists conduct effective audience analyses and deliver content in a manner suitable for knowledge enhancement, the first data collection effort involved participant observation of an event advertised in two area newspapers. The Field Day tour, hosted by two state's University Research Extension Centers, featured presentations contributed by United States Department of Agriculture, Applied Research Services scientists, cooperating farmers and industry representatives and the two state's University Extension faculty. The presenters explained research field studies, research outcomes, and impact to the agricultural community of farming practices, pending legislation, and economics associated with import/export of crops. Participants boarded tractor-pulled platform seating flats and were chauffeured through fields with approximately 15 minute stops where presenters showcased the research products/findings of USDA scientists and faculty, and extension agents. There was a distance of approximately 20 to 30 feet between the audience and the presenter. To kick-off Field Day Activities, local and state government officials and Farmers' interest group representatives offered brief presentations that weren't included in the analyses. The presentations were videotaped. The researcher also scribed notes about the presentations that included: assessment of delivery components and content; general reaction to the delivery of information, and its' likelihood to enhance knowledge.

### *Analysis*

After the presentations, the researcher transcribed her field notes yielding 44 pages of single spaced data regarding the performance attributes of the speakers, presentation content, audience reaction and information imparted. A code sheet outlining the components of effective presentations was devised and used as a coding instrument for the 150 minutes of analyzed footage. The results of the coding are displayed in Table 1, Evaluation of components of a public presentation.

## **Results**

Eleven presenters offered more than 100 attendees 15 minutes of information-rich content. The general presentation format included an introduction of the speaker, formal presentation and question and answer components. The presenters were predominately male (9) with two female presenters serving as the book ends for the presentations. Two presentations featured teams; one same gender team and one mixed gender team. The topics covered during the presentation focused on two areas designed to 1) enhance knowledge of agricultural management practices, and, 2) specific crop knowledge enhancement. The agricultural management practices topics included: irrigated cropping systems, management of high value horticultural crops, delayed nitrogen fertilizer, alternative crops, disease management, and oilseeds for biodiesel/biobased products and corn/small grains for ethanol. Specific crop topics included: sugarbeet crop and outlook, safflower research and management, durum research and development, spring wheat varieties and development, and barley varieties and development.

### *Oral Presentation Assessment*

Participants learned the name, expertise, and topic of the presentation from an independent coordinator traveling with the group and assigned the task of keeping time. The majority 90.9% of speakers explained what information would be covered in their discussion, why the information was important to the listener, and then discussed the content. Few of the presenters recapped the content and reinforced why the presentation was important. Less than half of the presenters offered visuals to support their message or created a handout for the audience; some may have assumed that the actual crop served as a visual; however, when an audience member is exposed to significant content in a short period of time, handouts and visuals aid recall of the information. Of the 11 presenters, 18.2% used a microphone/speaker combo to address the group. Several presenters asked the audience if they could be heard with ease to which the audience appeared mixed; however, the presenter didn't use the available technology. Several of the participants had notebooks and were observed jotting down notes during particular presentations. All presenters wore comfortable clothing (jeans, cotton shirts with their affiliation over the right shirt pocket, work boots, and many wore hats being the name of the organization for which they spoke to protect them from the July sun. Less than 36.4% of the presenters appeared uncomfortable with the group as was evidenced by the ability to maintain eye contact, respond to questions and move about while speaking. The actual rate of speech was problematic in less than half of the presentations. Vocal variety was strong. The use of scientific terminology coupled with laymen's definitions was evident in more than 75% of the content. However, the audience was diverse demographically and with respect to affiliation. Therefore, more consistency with use of terminology would

be beneficial. The two predominant themes that emerged from the general presentations were 1) community building, and, 2) research results leading to advice for productive farming and economic practices.

**Table 1. Evaluation of components of a public presentation.**

Component	Observed	Not Observed	Recommendation
Introduction			It would be beneficial to use the attention getter to support why the presentation has relevance. Do you want to ensure that your farm will be sustainable beyond 2050?
Attention Getter			
Name	90.9%	9.1%	
Credibility statement			
Reason to Listen			
Outline discussion topics			
Body			
Mainpoints	100%		
Evidence			
Conclusion			To aid the audience with retention of critical information, cycle back to the reason to listen and recap mainpoints.
Recap mainpoints	36.4%	63.7%	
Reinforce reason to listen			
Visualization			No consistency in style, content or format. Consider single approach
Keyword outline/poster	45.5%	54.6%	
Performance			Rate and volume of speech were the areas most problematic; all speakers should use a microphone and time their presentation to ensure a slower paced delivery.
Maintained eye contact			
Vocal Variety	63.7%	36.4%	
Rate of speech			
Volume of speech			

#### *Themes: community and bonding from productive farming and economic practices*

All of the presenters made reference to the importance of the information they were sharing to the vitality and growth of the community through farmers' ability to remain economically stable by altering agricultural practices involving selection of seed type, yield enhancement, water requirements, and disease management. Researchers also credited either the ARS or the Research Extension Center for collaborations. One presenter stated, "We are working together to make our vision a reality." This message was consistent from local to regional to national relationships in government as well as government, university and community interdependency.

#### **Conclusion**

Participant observation of 11 presentations during a 2009 Field Day and content analysis of videotaped faculty and scientists' oral performances generated suggested best practices: distribution of keyword outline of content/findings, use of a microphone, highlighting importance of presentation during introductory and concluding content, and using scientific and laymen's terminology concurrently. The findings suggest the participants' knowledge of the relative information was enhanced.

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