

## **281. Preparing Citizen Scientists: Engaging Through Interactive Media**

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**Abstract.** Use of interactive multi-media is underdeveloped in science among university science students, our future citizen scientists. They will need to produce, evaluate, and critically examine science communication in various modes of interactive media: podcasts, blogs, video, social networking, and internet platforms. We invite conference delegates to discuss how one can teach future scientists to create and interact with others via such “new media”. Our session explores the new skills and insights necessary for scientists who will use these media to engage with scientists and nonscientists as well as the training and research that the field of science communication can offer.

**Keywords:** Interactive media, Blog, Video, Podcast

### **Introduction**

Despite the truism that the internet is now integrated with modern life in many parts of the globe, there is substantial evidence suggesting that its potential for engagement is underdeveloped. Even among ardent users, such as university students, the interactive features of media remain underexplored. In the sciences at universities, future researchers as well as tomorrow’s scientifically literate citizens express an interest in using interactive media (blogs, podcasts, digital video, social networking) to communicate about science, but they are often unsure how to go about it.

Curricula in science communication and in STEM (science, technology, engineering, and mathematics) disciplines have not as yet embraced interactive technology as a topic of teaching, training, or assessment.

We have undertaken a project to explore examples of the use of interactive media to engage students in learning and critical assessment of science and technology. The aim is to produce teaching materials, train lecturers, and evaluate the impact of our materials on student learning. We also seek to develop their ability to critically examine science communication via podcasts, blogs, digital video, social networking, and internet platforms for publishing.

### **Examples of Science in Interactive Media**

The world of science increasingly demands professionals who can represent themselves, their organization, or their cause not only in person and on paper but online. These new technologies provide opportunities for reaching broad audiences, with the added facility for interactivity. One can potentially stimulate dialogue involving scientists, science communicators, and stakeholders ranging from villagers to highly placed government officials.

Scientists are increasingly sharing via blogs and open, electronic, laboratory notebooks.  
Laboratories post

podcasts or enter competitions to see who has the best website or most engaging animation of a scientific process. Doctoral students place videos on YouTube that depict interpretive dances that present their dissertation topics.

Teenagers can follow the Twitter feed of a famous inventor or science fans watch the video of a TED lecture by an accomplished researcher. Citizens can contribute to debate on climate change but can also provide data. They can use their mobile phones to create videotapes depicting instances of environmental pollution or illegal logging. Smart phone apps can register sightings of animals from endangered species. Strategies for prompting action by local government can be shared on blogs and wikis, alerting “fellow travelers” via feeds on Twitter and RSS.

Opportunities for use of such media are easy to conjure, but some sense needs to be made of where things are likely to go and what role science communicators can play in these developments.

### **How Does One Engage Our Future Citizen Scientists With Interactive Media?**

How have university students been contributing to scientific understanding through use of such media? Who are their audiences -- local residents, students elsewhere in the world? How successful have these exercises been? We will share insights from a small group of university science lecturers in Australia who assign their students to create interactive media.

### **What New and Old Skills are Necessary for Engagement Through Interactive Media?**

Determining the aims of a communication effort, analysing the audience, developing suitable strategies, and assessing impact are all familiar undertakings for a science communicator. However, each of these processes changes when one ventures into interactive media.

Some audience segments use these media, and others are left out. As a result, strategies for communicating should accommodate.

The fact that the media are interactive can ease the process of assessing one’s impact, but it can also become more difficult because measures are changing. For example, distribution of 10,000 fliers may be considered less successful than having 10,000 web visitors who remain for 30 seconds or longer, even if only 250 leave comments.

We must reconsider how we teach students to present science, assess the impact of their messages, and respond to replies.

### **What Training and Research on Use of These Interactive Media Can the Field of Science Communication Offer?**

How many of us provide training in use of interactive media—from workshops on creating a web page to guidelines on blogging of science or courses in how to make videos with one’s digital camera? Every science communication degree program in our country has its students learn how to create interactive media. How extensive is this training across institutions elsewhere, and to what extent is it reaching into core science curricula? How is training supported by research on the impact of online communication and dialogue strategies?

As our field is ripe for addressing how future scientists might effectively engage with others through new media, notes on what is said in our session—and ongoing dialogue—will be shared online after the conference at <http://newmediaforscience-research.wikispaces.com>.

### **Acknowledgements**

Support for the research described in this article has been provided by the Australian Learning and Teaching Council Ltd, an initiative of the Australian Government Department of Education, Employment and Workplace Relations. The views expressed in this article do not necessarily reflect the views of the Australian Learning and Teaching Council.

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