

PCST 2018 - Round table discussion – summary report

Theme: Stories – Techniques of science communication

Title: Supporting science communicators – new approaches

In this round table discussion, we discussed how challenges and opportunities in science communication can be met with innovative tools, which share a deep commitment to dialogue and audience-centered techniques.

Five stories were shared as a basis for the following group discussions (10 to 15 enthusiastic participants formed our audience).

1. Ayelet Baram-Tsabari (Technion – Israel Institute of Technology, Israel)

Helping scientists and science communication instructors improve vocabulary use when communicating with non-experts

Can scientists learn to talk about their research without using too many technical terms? One of the obstacles to avoiding jargon is that scientists suffer from “the curse of knowledge” – they simply do not remember not knowing what they now know as experts. To help them recognize which words are jargon and should be avoided or explained when engaging with the public, we created a program that automatically identifies terms the average person may not know. In a recent paper published in the journal PLoS One, the free of charge and scientist-friendly De-Jargonizer is introduced. Once a text is uploaded or pasted, the algorithm color codes words in the text as either frequent or intermediate level general vocabulary, or jargon. This is based on frequency of the words on an internet news site, designed and written for the public. The corpus will be updated periodically, and can be expanded to include other sources and languages.

When we compared 5,000 pairs of lay summaries, written for a wide audience, and their corresponding academic abstracts published in the journals PLoS Computational Biology and PLoS Genetics. Results showed that lay summaries indeed include less jargon (10%) than academic abstracts (14%) on average; however, research previously showed that for adequate comprehension, readers need to be familiar with 98% of the words. Therefore, the recommended level of unfamiliar words, i.e. jargon, is 2% – much lower than the percentage found in the lay summaries.

2. Lotta Tomasson (Vetenskap & Allmanhet, Sweden)

VA’s digital platform, the [Science Communication Toolbox](#), was constructed with an aim to help and inspire researchers and science communicators to use different types of communication activities

When the toolbox was created in 2011, VA’s ambition was to share what we had learned through several years of coordinating the annual European Researchers’ Night events in Sweden (ForskarFredag). With the toolbox we wanted to provide science communication stakeholders with inspiration and advice on a

broad variety of science communication formats and activities. However, at present it is underused. To date, the most visited page of the toolbox is the printout page, where visitors can access a printable version of the platform. This raises the question whether a digital platform really was the best choice to share experiences in science communication. VA is currently exploring options to update, develop and promote the toolbox.

3. Liesbeth de Bakker (Utrecht University, Netherlands)

A Teaching and Learning Lab – studying communication and learning from up close

The TLL is a new teaching and research facility at the Freudenthal Institute of Utrecht University in the Netherlands. It is mainly used as a space in which you can experiment with new didactic or communication approaches, both by changing teaching or communication methods as well as by changing the actual physical context, by placing all tables and chairs according to your needs, for instance a conference set up or a classroom set up. Tables can also be adapted in height, to facilitate discussions and group work.

Mobile, interactive white boards are present, which can be used for instruction as well as for presentation and communication purposes. Recently they were used for long distance e-learning projects: one on mathematics with students from Indonesia, and one on physics with students from Surinam. Also an interactive wall is present, ideal for brain storm sessions and student group work. Via computers one adds post its and other information documents or drawings to the interactive wall. Once the information is on the wall it can be shifted around and worked with as desired.

Such new tools, as well as the production and availability of short video clips, are ideal ingredients for the transition from traditional, classical educational methods to ‘blended learning’ and online learning. Presumed advantages are higher motivation levels as people choose to do it themselves and in their own time. And it breaks down walls, it reaches groups outside the campus.

At Utrecht University in the TLL these new blended techniques are studied for effectiveness using an elaborate camera and microphone system. This system can be focused on different levels, both from above as well as on face or table level. This enables the researcher to observe unobtrusively what’s happening in education or communication situations on an individual level, in duos, in small groups or full (class)room discussions. One example is using the camera system to closely observe what is exactly happening in a physics lesson on sound and loudness. One set of cameras can register the bird’s eye view. Others follow what the students do during the lesson, how they use their digital notebooks, or what they write down on their forms and when.

In addition to studying educational situations, research projects are in the making, intending to use this camera and microphone system to study the complex process of discussion going on in an experimental dialogue setting, similar to ones found in science museums for effectiveness.

4. Dacia Herbulock (Science Media Centre (NZ) - Victoria University of Wellington, New Zealand)

Reaching out to scientists with micro training sessions at science conferences

The Science Media Centre has worked on developing a new "micro" training format for interactive communication between scientists and the public. It targets hard-to-reach scientists who are less inclined to seek out science communication training. It offers brief, intensive feedback sessions with individuals during scientific conferences, breaking down entrenched attitudes about who needs this training and why.

5. Caroline Wehrmann (Delft University of Technology, Netherlands)

New times need new interactive and collaborative approaches

In the Netherlands new experimental approaches are tested out in which practitioners, science communication experts and students work together to analyze complex science and society interactions and related problems. As teams they develop strategies and tools to find solutions in Dutch 'C-labs'.

General outcome of the session

After the short presentations the round table discussion proceeded for about 20 minutes. The main conclusion was that the tools presented previously could benefit a lot if we would implement them on each other's products. So for instance ask a Dutch C-lab to analyse problems we have with our innovations, such as the fact that the Swedish tool kit is less successful than hoped for in terms of getting scientists to engage with the public. It was also suggested to use the Teaching and Learning Lab to precisely study what's going on during the New Zealand scientists' micro media training. And of course we all could offer the de-jargonizer as a tool for our scientists-in-training.