

How to Make Your Audience's Neurons Rock!

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Introduction

So you want to engage with your audiences? There is more than a science café. Add spices, excitement, new tools! In general, this year's PCST conference explored new dimensions, like many other conferences around the globe. The top-down style with expert panels are considered old school. The European Union of Science Journalists' association EUSJA along with the German Association of Science Writers TELI contributed to the search with a selection of interactive formats. Some of the ones presented in Istanbul are included here, so the compilation adds up to 21 methods.

Methods

You need an **icebreaker** for a new group? Use a **sociometric line-up** for a warm-up. Ask participants how much on a scale from zero to hundred they do know about the topic of the day; how many of them apply certain methods; what their names are in a line from A to Z (nicknames can turn out very entertaining); where they are from (the floor becomes a map with geographic directions) – and anything the attendees would like to ask one another. Surprise! In a few minutes people feel familiar with each other, you and they have gathered important information about the group and what everyone's desires are. The foundation for a successful seminar is laid.

If you need to present information with the beamer, don't put your audience asleep with the thousandth powerpoint presentation. Experiment with electronic formats and try a **Pecha Kucha**: 20 slides in 20 seconds each, only pictures, *without* text. Thus you avoid the nowadays so common overkill with facts and figures. Keep it simple, short (KISS) and visual. And arrange the slides well, so they deliver a nice story.

This gets us into the middle of **storytelling**. People will love you for it. A hero, an adversary, ups and downs, wealthy & poor, hate & love, the drama of sex & crime. Give your stories the smell of a campfire. Find inspirations with world literature, i.e. the odyssey, 1001 nights or any hollywood

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blockbuster! Use these elements also to deliver a **TED talk** (Technology, Entertainment, Design): 18 minutes, three times longer than a Pecha Kucha, if you wish with a conventional powerpoint. Experiment with the venue. Why not have it in a pub, utilize its relaxed atmosphere and have a beer in between. Thus you may include elements of **science in the pub**, a long-time classic in UK.

Don't try to be the guru and the guy that knows everything, tap the audience's experience and expertise, for example by means of **Robert Jungk's future workshops**. It consists of three distinct phases which describe a sinus curve: dive down into the subject and **criticize**, takeoff and **vision**, touch-down and **realize**. This all allows for plenty of creativity, participation, discovery. Jungk's mantra is the involvement and active participation of persons and parties concerned and affected ("Betroffene zu Beteiligten machen!")

If you should decide for a **science café**, despite of its inflated use, make it more sexy. Not just different tables, at which experts discuss with lay people. Make your audience move around from table to table. So you have a steady flow of new people and provide for a rich human chemistry. Record the discussion on a paper tablecloth and use it for documentation, when results are being presented. Papers and colours, hand-on experience of all sorts, the haptic unfolding makes the event really workshop-like. Action, making people move, dynamics, providing a multi-faceted exchange upgrades the science café to a **world café**.

Debates are always in vogue, i.e. the ones organized by debating societies, which follow parliamentary procedure. At the world conference of science journalists in Seoul, this type of debate was applied to scientific and technological issues. Participants thoroughly enjoyed the experience, but it remained a show-type event. Real and serious are **Science Debates with inverted panels**. The audience sets the agenda, then the scientists respond. Jointly the conclusions are drawn. Goal is to include the public in the early stages of research, start of pipe instead of end of pipe.

Another approach are Citizen Conferences or **Consensus Conferences**. Lay people make up a jury, which assesses science and technology. The European GAMBA project included patients to give feedback as to whether arthritis should be treated with stem cells and especially focussed on the ethics of such a step.

Attention: No everyone is very outgoing, but yet would like to speak his mind. **Fish Bowls** put participants, especially not the most outspoken, into the inner circle of the session to voice their opinion. This center provides a constant mix of speakers, provide a nice flow to your session.

In a **Bar Camp**, everyone gets a chance to make a presentation, modern communication technology is widely applied. Related is also the **hack-a-thon**, composed of hack and marathon, often geared towards the development of new software. These formats are part of „**unconferencing**“, cutting down the official conference overhead, as introduced by **Open Space** and its philosophy: The most exciting and meaningful things happen during coffee breaks.

Now it's high time for the arts, stage and performance. **Science Slams** were derived from Poetry Slams. It's a competitive workout of students and scientists. They present papers, research, theories. In eight minutes, you must be done. As suggested in Istanbul, also all kinds of music can be applied, i.e. opera, gospel, you name it. How about a pioneering first **Science Hip-Hop** (if it hasn't been done yet)?

During PCST 2016, the group „Big Van Theory“ presented a **Stand-up Comedy**. It featured central scientific questions like the Big Bang, neuro enhancement, GM foods, nano medicine and others, with the involvement of the public and the audience. Very witty, lots of laughter. See also the TV series „Big Bang Theory“ with its hero, the nutty physicist Sheldon Cooper; the Bright Club; the science comedian Brain Malow; the BBC radio science comedy „The Infinite Monkey Cage“. Last but not least: Produce your own comedy and upload it to **youtube!**

Like storytelling, **Science Comics** are a very useful tool. As applied in Germany by acatech, simple drawings demonstrate artificial photosynthesis and how algae can be used to produce energy. Also **cartoons** serve the needs. As presented in Istanbul, **pictograms** and posters can be helpful to educate low income people about health and hygiene, i.e. the need to regularly wash hands.

Finally, PCST 2016 presented an entirely new category of engagement: **Science at the margins**. One of the frontrunners of this format is Claudia Aguirre, Exploration Park, Medellín, Colombia. This museum was initial in converting a dangerous garbage dump into a park, by the inhabitants, with the inhabitants, for the inhabitants. In the process, staffers applied a lot of education and science to vulnerable populations and made them smart about taking care of their community. As a follow-up, marginalized neighborhoods in Medellín were taught to use balloons and cameras. With aerial pictures they put themselves on the city map. Similar approaches are used in Mexico, to empower the marginalized with mathematics; or in Spain, where Big Van takes science comedies to prisons.

Results

We applied some of these formats in our PCST session suchs as line-ups, Pecha Kucha, mumble groups. This generated a very interactive session, very well accepted and accordingly rated by the participants. Many of them knew a lot of these methods, but don't apply them in their daily work. We heard commitments and hope for their realization that participants from now on will apply these methods more readily (see also session report on EUSJA site, link below).

Conclusions

Good and meaningful session, the content of which will help to make seminars, workshops, conferences more pleasurable in many ways.

References

Weitze, Marc-Denis, & Heckl, Wolfgang M.: Wissenschaftskommunikation. Schlüsselideen. Akteure. Fallbeispiele. Springer Spektrum 2016

Session Report on EUSJA Website: <http://www.eusja.org/how-to-make-neurons-rock-toolbox-with-20-methods>

German Association of Science Writers TELL: www.teli.de, www.wissenschaftsdebatte.de

Netzwerk Gemeinsinn: Professional Network to develop and review new methods: www.netzwerk-gemeinsinn.net

Announcement of session in PCST 2016 program:
<http://www.pcst.co/papers/view/71>

Links to formats & methods

<https://en.wikipedia.org/wiki/Sociometry>
<https://en.wikipedia.org/wiki/PechaKucha>
https://en.wikipedia.org/wiki/Future_workshop
<https://en.wikipedia.org/wiki/Storytelling>
https://en.wikipedia.org/wiki/TED_%28conference%29
https://en.wikipedia.org/wiki/Caf%C3%A9_Scientifique
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