Communicating With Your Audience: Tips to Presenting Live, Interactive Programming
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BIOGRAPHY
Dayna Thompson has been Assistant Planetarium Director at Ball State University since 2012. With a M.S. in Physics she has over 10 years’ experience in STEM outreach. She manages school group visits and public programming at the Brown Planetarium which sees over 22,000 guests annually.

ABSTRACT
“I want you to do something for me,” is a powerful sentence when presenting to your audience. It requires them to listen and respond – to be engaged. During this session, I will present on the various ways I encourage audience participation and turn planetarium shows into a conversation instead of a lecture.

INTRODUCTION
I think we have all something in common. Each and every one of us has sat through a presentation where we have lost interest, couldn’t understand what the presenter was talking about, or felt like the presentation was dragging on. For me, I had many of those feelings and thoughts while in graduate school attending the weekly physics colloquium series. The series was your basic physics colloquium. It brought in scientists from a wide range of fields who would talk about their research for about an hour. Like many other audience members, I typically was lost by slide five of their PowerPoint presentation. However there were those few times where I stayed with the presenter throughout their entire presentation. These were always the ones where I felt like they were really talking to their audience, and not just at us.

It is these presentations that inspire me to become a better public speaker. Not being a natural public speaker, I spend time practicing and studying various presentation techniques. I used to feel uncomfortable in front of an audience because I felt like there was some great standard to adhere to. The fear of making a mistake was overwhelming. I needed to just focus on presenting the way I enjoyed to get past this fear. Once I did that, most of the pressure went away and I started to have fun presenting. Being authentic and real nurtures a connection with your audience. Basically, in the words of Zefram Cochrane, “Don't try to be a great man. Just be a man and let history make its own judgements.”

How can we make an impact?
Sometimes presenters can get it in their heads that they are doing the audience a favor by being there presenting. But it’s the other way around. We presenters are there because of the audience. We have to make sure to consider their needs first during our presentations. When planning a presentation, you should ask: “Who is the audience and what matters to them?” Generally the audience wants to feel included above all else. In what ways can we better connect with our audience and keep them engaged?

There are many ways to do this but I will focus on what can be said, rather than shown. This comes down to creating a dialogue: a two-way conversation. I personally find it hard to be engaged in one-way conversations and lectures. When people seem to be talking to themselves, I lose interest. Therefore, I aim to have a two-way conversation with my audience. Many other planetarians do this as well. A big part of creating a dialogue is being comfortable asking your audience questions. Avoid getting caught up in the facts, figures, or data and check-in with your audience throughout the presentation. Saying the following phrases can help to maintain the dialogue when presenting: “I want you to do something for me…” or “I know that many of you may be thinking that…” or “How would it make you feel if…?” By asking the audience to simply think about something, a conversation is started without any verbal input from the audience. Also, these phrases can be used with an audience of any size.

Here are some examples of what these phrases could be:

- “I want you to do something for me. When you leave the dome tonight, take a look at the bright full moon in the sky and see if you can locate the spot where I said man first walked on the
moon.” (The location can be easily explained by looking for the upside-down bunny on the moon and noticing where its eye would be.)

- “I want you to do something for me. I’d like you to look for a backwards question mark in the stars. Take your time finding it and raise your hand when you do.”
- “I know you may be thinking ‘How do we know that for sure,’ and I can show you how by explaining the techniques and data scientists use.”
- “Given the information you learned today, what are some actions you could do or some changes you could make in your life?” or simply ask the audience in a show of hands if what they saw/heard/experienced changed the way they think about something. Or if they would change their behavior based on what they now know.
- “How would it make you feel if tomorrow we confirmed the existence of life in our universe?”
- “Imagine what Edwin Hubble felt when he discovered in 1923 that Andromeda was in fact a galaxy, forever changing our view of the universe.”

When presenting to school groups, we (the audience and the presenter) are all on the same mission: To learn together as a group. We are one team. And to help keep things inclusive, I call the audience “friends.” I of course have the answers and am the leader of the experience, but I am also constantly getting input from our visitors. For instance, instead of saying a fact, I sometimes ask the learners what they think the answer is. I try to use positive responses with every answer, and continue taking responses even if the correct answer has been provided. We can then usually learn the answer together by using the planetarium technology to show the answer (speeding up time to show what direction the sun rises in rather than telling them).

You can also check in with an audience by putting up a question for them on the dome. The question can be multiple choice with the answer options labeled as 1, 2, 3, or 4 instead of A, B, C, or D. This way the audience can simply hold up a number of fingers to provide their answer. This is an easy way to see what the audience knows/thinks. They can then “think-pair-share”: they can talk to their neighbor about their answer, say why they think that’s the correct answer, and then answer the question again with the rest of the audience. This keeps the audience engaged by feeling like they are actively contributing to the presentation. When done correctly, it makes them feel like the presentation is truly geared to them.

There is also the option to “give” the audience something to take home… more about that below.

**General advice for public speaking.**

The following are tips I give to our show presenters and ones that I follow myself. I gathered these tips from many different sources over the years but they are mostly inspired by TED.

1. **Know your audience** – Who is your audience and what matters to them? Consider the grade level of the audience. Recall what is learned at each grade level by going over at GLPA’s Astronomy Literacy: Essential Concepts for a K-12 Curriculum, pages 5-13.
2. **Practice** – Practice speaking out loud about the subject.
3. **Listen** – Pay attention to how others discuss the subject matter. Watch examples (documentaries, etc.) and take notes.
4. **Record and watch/listen** – Notice any crutch words (e.g.: um, and, like, so…).  
5. **Be honest with yourself** – There is always room for growth in your knowledge and for your presentation techniques. Admit when you do not know something and use it as a teaching moment.
6. **Carry notes** – No one is going to hold this against you. We are all human.
7. **Establish a pre-routine** – Give yourself time before each presentation to prepare. Walk around the room, check the microphone and sound levels. Run through your presentation. Try vocal exercises.
8. **Speak in an authoritative tone** – Crutch words hurt your credibility. Do not make excuses: “I didn’t get much time to prepare” or, “I’m not very good at this.”
9. **Be energetic but keep the pace slow** – Show the audience that it is okay to be enthusiastic about science. If you are not interested in what you are discussing, they will not be either. Remember to keep the pace slow so the audience has time to digest.
10. **Encourage questions** – Embrace questions from the audience. Always repeat the question before you answer.

11. **Try new introductions** – e.g.: Ask questions to grab attention. Tell a fact that stuns the audience. Tell a story relating to the topic.

12. **Give the audience something to take home** – Provide something specific the audience can do almost immediately.

13. **Respond to your audience** – If the audience is not responding the way you expect, change your presentation accordingly.

14. **Be comfortable with silence** – It is OK to pause and gather your thoughts once in a while.

15. **Always run a little short** – Respect your audience’s time and end early. Leave time for questions and time for travel to their next event. (If you have an hour, take 50 minutes.)

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**More about Tip 12: Give the audience something to take home.**

“Provide something specific the audience can do almost immediately after the presentation.” This tip is simple but important. This does not need to be a material item. This can be an idea or a task. The task can be simple: Find the planet Venus in your night sky. It can be something more challenging: Be conscious of your water consumption and make changes to lessen your household water consumption.

You can also show them a demo that they can recreate at home. I try to create our demos with things you can find in a typical home because I think it makes science more attainable and approachable. For instance, most cell phone cameras can detect the IR light that comes from a remote control. We show this when talking about the electromagnetic spectrum and the biological limits of our eyes. This is something that amazes guests and is also something they can do when they get home on their own.

And of course this can also be something tangible like a [star chart](https://example.com/star-charts).