

Adding Complexity for Different Audiences

1. The more complex your material, the more important it is to be clear about three things: Who is the audience? Why are you talking to this audience? What is your main point?

Ask yourself:

- What is my goal? What am I trying to achieve? What do I want these people to learn, to remember, to feel, or to do? How do I want them to feel about me?
- What does my audience know? What are they interested in? How can I find common ground with them?
- What one or two things do I most want them to remember?

Everything you say should be aimed like an arrow at these targets.

If you ask yourself these questions – and actually write down the answers – it can help you focus what you want to say.

2. For a short talk that contains complex material, try to have one main point.

Do not be afraid to make the same point several times, in several interesting ways: Use anecdotes, analogies, contrasts, vivid and concrete images, as well as statements. These are all ways to relate unfamiliar things to things the person already knows.

3. Move from simple to complex, from familiar to unfamiliar. Start with basics, and then introduce complexity.

For instance, first use an easy example. Then explain the principle or issue involved. Then give a more complex, more realistic example or illustration.

It's fine to tell people that things are more complicated than what you're saying: "Let me give you a basic example, although it's really more complicated than that. If you want me to, I could go into more detail later."

4. Don't just dump a load of facts on people. Your goal is to deliver the most essential piece of information in a way that engages their interest and makes them want to know more.

Ask yourself:

Is this fact necessary?

Can I leave it out and still deliver the essential information?

Remember: What you leave out is as important as what you say.

“If you argue ten points, even if each is a good point, when they get back to the jury room they won't remember any.’ To strip an idea down to its core, we must be masters of exclusion. We must relentlessly prioritize.”

-- A defense lawyer quoted in the book *Made to Stick* by Chip Heath and Dan Heath

5. Sometimes a fact will be essential not because it is so important but because it is so memorable or entertaining that it will delight your listeners and help them remember what you say. Look for these facts and use them!

Things that are extreme, unexpected, counterintuitive, or mysterious catch people's attention.

Example: Emily studies invasive riverbank species. These include algae called rock snot (*Didymosphenia geminata*) that form big, gross, oozing brown clumps that completely block streams. Do we *need* to know the name “rock snot?” No, but the name and a vivid description will make people remember what she says.

6. Answer the “so what” question. Say what it matters. This often is the best way to begin. If people believe something is important to them, they are more likely to listen to what follows.

The more esoteric your material, the more it helps to tell why it matters.

7. Archimedes said: “Give me a place to stand, and I will move the world.” Even with a lever, you need a place to stand.

What common ground do you share? Where do you “meet” the people with whom you are communicating?

Your common ground need not be scientific. It could be that you are neighbors, musicians, runners, parents, children, taxpayers, voters, book-lovers, gardeners, cancer survivors, etc. It could be some event in the news, a popular movie or TV show, a piece of celebrity gossip or YouTube video.

8. Pay attention to your audience. Listen to them. Learn from them.

Listen to what they say. Notice their nonverbal responses. Do they look puzzled, bored? Be prepared with anecdotes, examples, metaphors you can use if they don't seem engaged or interested.

Remember: Good communication is always a conversation, even if only one person is talking.

And when others speak, pay full attention and respond. Be prepared to hear new perspective that may actually teach you something, provide new insights into something you think you know well. Don't just stick to a script. “Real listening is a willingness to let the other person change you.” – Alan Alda

9. Place things in context.

Sometimes a little history can help provide context. This is one way to broaden the common ground you share with the people you're speaking with.

Example: "Until the 1990s, most people believed that once you were an adult, your brain stopped growing. But now researchers know that people continue to make new brain cells even in late adulthood. This happens in only two regions of the brain. One is the center of memory. The other is the area that involves our sense of smell. Why doesn't the rest of our brain grow? I'm trying to find out. I'm looking for a specific signal in these two brain regions that lets cells grow. I hope this knowledge could be used to prevent or cure brain diseases such as Alzheimer's."

Context can be particularly helpful with numbers:

A million seconds ago was about 11 and a half days ago.

A billion seconds ago Ronald Reagan was president (1981, 31.7 years ago).

A trillion seconds ago, Neanderthals were alive (about 31,700 years).

10. Provide a road map, with clear bridges (transitions) from one part to another.

"This process has three steps. First.... Then comes the second step ... After we've done A and B, we do C . . . "

This may seem like a waste of words, but it gives people time and space to absorb what you are saying. As content gets more complicated, your words and the structure of your sentences should get simpler. Your pace should get slower.

11. Provide signals that important or difficult points are coming.

This is a little hard to explain, so tell me if I'm not being clear ...

Some people find this part confusing . . .

The really important thing to remember is ...

12. Things that are concrete and specific – that can be visualized – are easier to grasp and remember than things that are abstract and conceptual. This is especially true when they are expressed in direct, everyday language.

"He died," not "he experienced an adverse outcome."

"A bird in the hand is worth two in the bush." Not: "A sure thing is worth twice as much as the speculative possibility of attaining the same thing."

Roses, not flowers.

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