

7 Reasons Your Scientific Communications Are Bad and What You Can Do About It

Sonya Snedecor

Communication is something we all believe we understand intuitively. Our daily communications are relatively simple where all parties have common knowledge. With scientific data or technical content, common familiarity can be absent. In addition, **scientists frequently and unknowingly contribute to others' difficulty in understanding their work.**

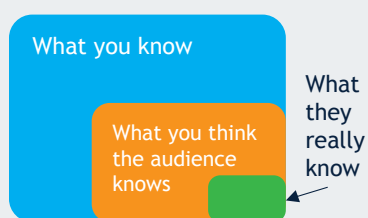
1 Not Including the Right Information

Scientists love facts and think they are sufficient to make a persuasive argument. But facts are only helpful if you know how to properly interpret them, so be sure to tell the audience your conclusions and how the facts lead to them.

Yes, the audience must understand the facts. What are these data, what do they mean? Make the implications of the data explicit.



2 Not Including Enough Information



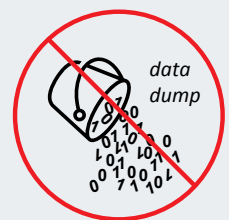
Failure to provide an explicitly stated conclusion can result from the cognitive bias that makes it difficult to remember what it was like not to know something. This leads to the implicit (but incorrect) assumption that the audience knows more than it does.

Experts often leap past the building blocks of knowledge to the hypercomplex or technical. If you start there, the audience will become lost and frustrated because they don't have foundational information.

3 Including More Information Than Is Necessary

The point of scientific communications to diverse audiences is to inform, so the technical nature of how the results were generated is often less important than the data and their implications. Presentations should include no more than the minimum amount of information needed to understand the key message and conclusions.

The speaker should ask, "What do I want the audience to know?" It is easy to feel that certain technical aspects of our work are crucial and that simplifying the content would be inaccurate. Resist that feeling. Including too much information overwhelms and confuses listeners, losing their attention.



4 Poor Structure



Adapted from: Nancy Baron, *Escape From the Ivory Tower - A Guide to Making Your Science Matter*.

Effective communication requires thoughtful organization. Maintaining listeners' attention is the most important task, so begin by asking: "Why should they care?" Knowing the bottom line helps your audience take in the information you share.

The classic structure of scientific communications – Background, Methods, Results, Conclusion, and Discussion – is great for documentation, but less so for engaging an audience coming fresh to the topic.

5 Overly Complex Language

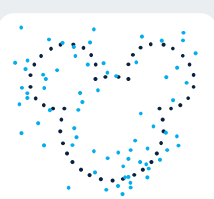
Use technical language sparingly, as studies show that it is harder to understand and paradoxically tends to lower the audience's perception of the speaker's intelligence. The point of communication is to be understood, not to show off.



"If you can't explain it simply, you don't understand it well enough."

While it might be tempting to use technical terms to signal one's expertise in the field, this is an ineffective communication strategy. If you can make a point simply, make it that way. Your audience will understand it better – and think more highly of you.

6 Visual Embellishments That Detract From Important Information



Presented with a visual, our brains try to make sense of it. Embellishments, such as obtrusive borders or excess shading, waste the audience's cognitive resources.

Visual embellishments may seem a minor matter, but even small distractions cognitively burden the audience, impairing efficient understanding. Make sure supporting visuals enhance understanding, not detract from it.

7 Not Using Enough Visuals

Present difficult or complex ideas as graphics or charts whenever possible. Visuals transmit information easier, faster, and with more durability than text and help the audience identify and understand trends, patterns, or outliers more quickly.

One line connected to two other lines to form one shape

VS



Our brain's visual cortex has proven decision-making power without needing to involve the brain's analytic portions. This means that visual information is an equally important persuasion tool as written information.