Neuroscience at the Heart of Teaching Presentation

By Curtis Kelly, Featured Speaker at the 2019 KOTESOL Intl. Conference

You might not think neuroscience has much to do with teaching presentation, but there is one theoretical area I have found indispensable. We will get to that soon, but first, let's review student speech-making.

Have you ever been a judge in an English speech contest? Doing a national speech contest is not so bad, but the ones your local school puts on can be downright painful: You have a hard time figuring out what a student is trying to say, a hard time discerning the message, and a hard time holding the parts in mind as the speech unfolds. On top of that, you might be worrying about the likely complaints from parents that might come later, as Daren describes in his *All Grades Final* blog (2013).

I suffered through a number of taxing judging experiences, but these all helped me learn how to teach presentation, mainly in terms of what students should *not* do. Eliminating complexity is the key. Now, having taught speech for 25 years, doing occasional professional training, and having done over 400 presentations myself (not being a natural presenter, I had to work to get the skills), I now consider this subject my specialty.

"All of these techniques serve to reduce cognitive load, the cognitive load placed on listeners."

These days, I go well beyond teaching the usual (project your voice, make eye contact, smile, etc.), and almost every year, I discover some new technique that I was generally oblivious to before. In most cases, the technique is not offered in ESL speech textbooks either. For example, five years ago, I suddenly realized that teaching students "phrasing" was important. Phrasing means breaking a sentence into short bits rather than rolling it out in one large load. Rather than a smooth, unbroken *The man took his family out for a walk in the park*, it comes out better if delivered with short breaks, such as *The man / took his family / out // for a walk // in the park. ///*

Another technique I hit on a couple years ago was how to show "punctuation" in a speech through movement. For a line like *First we must help the victims, and then we must rebuild the town*, I tell my students to visually delineate the parts by facing two directions while saying them. I also advise them to use stage movement to mark the new part of the speech, just as one might insert paragraph or section marks when writing.

Then, of course, dramatization is a useful technique. Gestures help the audience visualize the content, and one of my favorites – using direct instead of indirect speech, with a different voice for each character – helps the audience visualize an interaction. Instead of students using their own voice to say *The mother asked the boy if he was okay and he said he felt sick*, the scenario is clearer if they say *The mother asked the boy* (narrator voice), *"Are you okay?"* (mother voice), *"No, I feel sick"* (boy voice).

And finally, the most important technique of all, and the primary cause of pain in speech contests, is the necessity for speakers to change written English into spoken English, something they rarely do. Unfortunately, the standard approach is to have students write their speeches, memorize them, and then deliver them, which ends up having them verbally "read" written English out of memory. Written language is far weightier than spoken language. A written sentence might contain dependent clauses, external references, and complex syntax, all of which a listener must process and hold in memory in order to understand the whole. So, when we speak, we normally do so in short utterances, repeating a lot, putting in questions, and if we are adept, using names instead of referential pronouns (it, that, she). A student might write English like this for a speech: *In 2016, the Best Game of the Year Award was given to Microsoft Japan for Minecraft.* But even that short sentence is hard to process when delivered orally. Instead, converting it to spoken English makes it easier to unravel and retain: *2016. Best Game of the Year Award. Who got it? Microsoft. For what? Minecraft! The amazing game, Minecraft.*

So these are four techniques I have found important to teach: phrasing, stage movement, dialog voices, and using spoken English. Others include using stories, long pauses, and Steve Jobs-like "wows." Since this is a article on the neuroscience of language learning, you might be wondering why I am writing about presentation techniques, but I assure you, there is

a connection, and a strong one. Have you figured it out yet? I'll give you two hints: First, as disparate as these techniques might seem, they all serve the same purpose in relation to the brain… not the presenter's brain, the listener's brain. And second, the area of brain research these techniques are related to is one of the topics we examined in the previous "Brain Connection" article.

The answer? All of these techniques serve to reduce cognitive load, the cognitive load placed on listeners. To review, cognitive load refers to the complexity and amount of information the brain must hold in working memory at once (Cowan, 2010), which has limited storage (and no, it is not seven items as commonly believed). For a presentation, that means how much processing the brain must do to unravel the language, which then reduces how much is left over for the message. Complexity, like that in speech contests, results in cognitive overload. When listeners have to use all their resources to figure out the meaning of what is being said, they usually miss most of the message. And it is exhausting.

▲ ***Reducing cognitive load: Something for both teachers and students to do.***

So let's look at how those techniques reduce cognitive load. Phrasing chunks language into short syntactically connected units ("for a walk // in the park"), so that the audience does not have to do that parsing themselves. Load reduced. Stage movement as punctuation relieves the audience from having to figure out topic changes. Load reduced. Dialog voice and dramatization relieves them from mentally reconstructing the scenes themselves, and spoken language gives them bite-sized pieces to digest. Load reduced even more. These techniques reduce the language processing listeners have to do, allowing them to focus their resources on the message instead.

"…in presentation, it is something *students* do, whereas every other time we talk about reducing cognitive load, it is put forward as something *teachers* have to do."

So, I spend a lot of time teaching my presentation students how to reduce cognitive load. And what I really love about this idea is that, in presentation, it is something *students* do, whereas every other time we talk about reducing cognitive load, it is put forward as something *teachers* have to do.

In fact, I have been noticing other areas where teaching students to reduce cognitive load helps their communication skills, including writing, desktop publishing, slide design, and even conversation. So, I wonder: Has our universal access to media brought us new standards for communication? I suspect we are entering an age where information design itself will be seen as a basic language skill.

References

Cowan, N. (2010). The magical mystery four:How is working memory capacity limited, and why? *Current Directions in Psychological Science, 19*(1), 51–57.

Daren. (2013, October 11). English speech competition [Web log post]. Retrieved from https://allgradesfinal.wordpress.com/2013/10/11/english-speech-competition/#comments

The Author

Curtis Kelly (EdD) founded the JALT Mind, Brain, and Education SIG and is a professor of English at Kansai University in Japan. He has written over 30 books, 100 articles, given over 450 presentations and is the producer of the MindBrainEd Think Tanks. Curtis will also be a featured speaker at KOTESOL 2019, talking about the *Neuroscience of Learning* and *Ten Principles of TBLT.*