

Preparing an Impactful Presentation and Effective Use of Slides*

Scientific presentations are an important part of the discovery and dissemination of knowledge gained through research. They are a core component of academic and professional society meetings. Live presentations allow research to be shared with others before it is published, and it provides an opportunity for valuable feedback and discussion. Thus it is important to spend time learning how to give an effective presentation.

The evolution and broad availability of PowerPoint over the past 20 years has certainly driven a shift in how presentations are delivered across a wide variety of disciplines. It is easy to equate your slides with your presentation, but it's important to consider the difference between the two. Your presentation starts when you step up to the podium. It includes your body language, how you project your voice, visual aids, and of course what you say. The challenge is to focus on the information you want to convey and how you intend to communicate that message, using your slides as an adjunct and not as a replacement for an effective presentation.

We will come back to tips for creating useful slides, but for now let's focus on the other things you can do to prepare a powerful presentation.

Determine the message you want to convey

Review the material you are presenting and determine the points you want to make. If this is a presentation of your research, you likely have an abstract to work from and some expectations regarding the format you will follow. However, you may want to start by defining a set of learning objectives if you're teaching a class or other educational session. Limit your message to what's important. If you try to cover too much material, you jeopardize the effectiveness of your entire presentation. Sometimes it is better to focus on less material and to ensure that your audience develops a good understanding of crucial information. Another idea is to start with your conclusion first, then determine the best way to lead your audience to it by the end of your presentation.

Consider your audience, available time, and venue

Several constraints exist when giving a presentation and it is important to recognize them. The knowledge base of your audience may be different than yours and they may come with preconceived notions. Be sure not to bore your audience with mundane information they consider common knowledge, but at the same time be careful not to lose them with complicated jargon and unfamiliar concepts. Monitor your audience during the presentation (and practice sessions) for feedback. If they are focused on your slides and not you, it might be because your slides contain too much data or are confusing. Stay on time by limiting the amount of information you intend to cover, practicing your presentation, and editing as necessary. Respecting the limitations placed upon you shows that you respect your audience.

*The information contained in this article was compiled by Dustin J. Petersen, MD, MPH after review of several online commentaries and with personal experience in mind, as both teacher and learner. It was produced at the request of the Education Subcommittee (SPC, AAAM) in order to share with researchers and students as they prepare their presentations for the AAAM Annual Conference. Our hope is that they might find it useful and that the resulting presentations remain of the highest quality.

Practice delivering your presentation and solicit feedback

One of the best ways to appear prepared is to prepare ahead of time. As a suggestion, rehearse one hour for every minute of your presentation. Focus on interactive speaking and engaging your audience. Slow down as you speak and use pauses strategically. It will make you (appear) more comfortable and will provide emphasis. Pay attention to your voice in terms of tone, modulation, and inflection. Ask questions during your presentation, even if they are rhetorical. They can serve to arouse interest, pique curiosity, and captivate your audience. Practice your presentation out loud, even if no one else is listening. You will hear things that lead you to make changes and improvements. Consider audio taping or video recording yourself as you practice. Do not read from your slides and do not apologize for anything in your presentation. If you believe something is hard to read, view, or understand, then don't use it. Practice your presentation in front of someone who has never experienced it. Get their feedback on your delivery, content, and slide design, including colors, contrast, graphics, figures, and tables.

Select appropriate attire and assess your use of body language

Professional appearance is an important contribution to your credibility and your audience's level of engagement, particularly for a scientific presentation. Practicing your presentation in front of a mirror, while being videotaped, or while soliciting feedback from others will provide you with insight into your body language, whether it is helpful or distracting, and can give you an opportunity to change. Do not speak to your slides. Consider identifying three locations in the room to look at throughout your presentation and focus on the middle of the room when making important points. Try to remain relaxed, confident, and composed. Most people tend to talk faster when they are under stress. Consider taking deep breaths to relieve stress.

Be prepared for questions

Most presentations are followed by a period of questions and answers. Practicing your presentation in front of others will allow you to anticipate some of these questions. If you have submitted your work for peer review, you have another good source of potential questions. Think about how you would answer these questions before you give your presentation. Being prepared will boost your confidence and make you appear more knowledgeable and professional.

Now that you've thought about some of the most important parts of your presentation, let's consider some tips for creating worthwhile slides and discuss a number of pitfalls to avoid.

Remember that your slides are not the presentation

Your slides should be designed and viewed as an adjunct to your presentation. They should serve as a visual aid for your audience and not as a script for you. If your audience remembers your slides and not your message, then you have not been effective and it may be because your slides were distracting. Some of the most useful slides don't make sense when viewed unaccompanied by your presentation. Remember that this is OK. Your slides are not supposed to stand alone, they are supplemental. They are not the presentation.

Begin with an outline

Start with a basic outline of the points you want to make. For a scientific presentation, this often follows the format of your abstract. Determine a logical progression through the content and consider making your last slide first. Starting with your conclusion can sometimes provide focus for where you want your audience to be at the end of your presentation and what you need to do to get them there.

Use a new slide for each concept

Your audience should not have to struggle to figure out what point you're trying to make. By limiting each slide to no more than one concept, you know that your audience is getting a unified message, both by what they see on your slide and hear from you.

Limit the number of slides

As a general rule you should limit your slides to no more than one per minute of your presentation. Be sure to account for time set aside for questions. Projecting slides for less than one minute is often frustrating to those who are trying to view them and digest the information. *Less is more (effective).*¹

Limit the amount of text on each slide

You want to engage your audience in what you are saying, not allow them to become distracted by reading your slides. Don't place more than 5-6 lines of text on each slide and keep each to no more than 6-8 words per line. Avoid wrapping text onto multiple lines. Use key phrases while avoiding sentences or paragraphs. Consider refraining from the use of articles such as "a" or "the" to limit text.

Refrain from reporting large quantities of data

Big tables and complex graphic representations of vast amounts of data are often difficult to view and understand in a short amount of time. It is better to focus on the most important pieces of your data, and to briefly, verbally summarize any other information, as needed. Your manuscript is a better place for a comprehensive set of data, figures, graphs, and tables.

Minimize the use of punctuation, capital letters, and italics

These things all make slides harder for your audience to read quickly and easily. It's OK to capitalize words where appropriate, but refrain from the use of ALL CAPS.

Organize the information on your slides

It's fine to use bullets when they help to organize material. They can also serve as a visual cue for you while speaking and serve to reinforce important points. However, consider slides where bullets may not be necessary and remove them if they do not add value. Check the alignment of text and graphics on each slide. Use the features contained within your slide software to do this (justify left, center, etc). Select an effective layout and use it consistently throughout your slides as much as possible.

¹ 37 Effective PowerPoint presentation tips, Brad Smith, Envato Tuts+
<https://business.tutsplus.com/articles/37-effective-powerpoint-presentation-tips--cms-25421>

Ensure sufficient “white space” on your slides

Providing empty space on your slides enhances readability. Consider this when placing graphics or aligning text. If a slide is too cluttered, perhaps you can divide the contents into two slides.

Select a font that’s easy for your audience to read

Using a font that is easy to read will help to prevent frustration and inattention. Sans serif fonts are typically best for slides. Consider fonts such as Arial, Helvetica, Calibri, or Gill Sans (not Times New Roman or Palatino). Typically font sizes of at least 24 point are best for the body of your slide, with fonts of 35-45 point for headlines. If you’re unsure, stand back at least 6 feet from your monitor and try to read the text. Viewing your slides on a projector from the back row of a room is an even better way to ensure your text will be easy to read.

Employ effective use of colors and contrast

Limit the number of colors used in your slides and keep them consistent throughout. Selecting no more than 4 colors will help add a professional appearance. The background of your slides should be also be consistent and subtle. Consider a dark background and light text or vice-versa. Also consider colors that provide adequate contrast while complementing each other, and recognize that they may project differently on a large screen when compared to how they appear on your monitor. The effective use of color and contrast will improve the visibility of the information in your slides and can evoke different emotions from your audience.

Use graphics to illustrate your points

Symbols and visual representations are important in how we interpret the world around us. You can increase the effectiveness of your presentation by carefully inserting graphics into your slides. High quality photographs or screenshots can reinforce your message, while poor resolution or distorted images and clip art can detract from it. Crop images if necessary rather than stretching them. Avoid transitions, animations, and sound effects which rarely enhance your slides and can also adversely impact your presentation. These things may be viewed as unprofessional and impact your credibility in the eyes of your audience. Be sure to provide labels for graphs and charts so that they are understandable and not difficult to decipher. Consider video clips when appropriate, but be sure to test them on a different computer to ensure they will sequence and play correctly. Infographics and other visual representations of numbers can also be visually compelling.

Check spelling and grammar

This should go without explanation, but these types of errors still occur. Please take the time to proofread your slides. If you are not presenting in your native language, ask someone who writes and speaks fluently in that language to review your slides and listen to you rehearse your presentation.

Review your presentation in its entirety

Use the slide sorter view to look over all of your slides. Consider how the information flows, look for redundancy, and make edits as needed. Add a final slide with a photo or other image appropriate to your audience and venue, or perhaps duplicate your final slide. This way if you click to advance past your last slide while delivering your presentation, the same slide will “re-appear” rather than a blank screen.

Practice delivering your presentation with your slides

Use your slides when rehearsing your presentation. Take time to learn the few commands or menus needed to display your slides in a professional manner. Do not advance through your slides without first changing to presentation mode. Consider presenter view, which will provide you with space to insert brief notes to keep you on track and will only be seen by you, from the podium. Hide the cursor or pointer of the mouse if it does not disappear automatically. You may be able to drag it to the bottom right-hand corner of the screen or press CTRL+H to make it disappear. Refrain from unnecessary or subconscious use of the pointer (mouse or laser) as it can be extremely distracting. If your slides are simple and clean you will find that things do not need to be pointed out. They should generally be obvious to your audience based upon your verbal explanation.

Prepare for potential problems

Technical difficulties are not uncommon. Fortunately there are things you can do to prepare for them. Save your presentation in multiple locations so that if one place becomes inaccessible or is lost, you have alternatives. This might include sending the slides via e-mail (to yourself or an event organizer), saving them to a USB drive, or storing them in the cloud. Another consideration is that different versions of software or hardware could corrupt or distort your slides. Consider embedding the fonts into your slideshow file (ie Save as > Embed TrueType fonts - this may be different on a Mac). You can also save your slides as a PDF or save each slide as an image (ie JPEG) and then drag/drop them onto blank slides in a separate file as a backup. The images have a much better chance of being displayed as you intended them to be if there is a problem with rendering text and graphics from a native slideshow file. The size and resolution of the projector that will be used is another important consideration. For instance, if you prepare your slides in widescreen format (16:9), they may appear distorted or cropped if projected in a standard format (4:3).

Here are a few additional suggestions from AAAM members based on past presentations:

- Don't refer the audience to your manuscript without providing an additional reference as the papers will not have been published in *TIP* prior to the meeting.
- Do make an effort to solicit feedback during the meeting with regard to your presentation. This may help you with your manuscript, future research, and your presentation skills.
- Consider using black and white photos, especially if some might consider them gory.
- Devote time to contextualize your findings, particularly if your research involves large amounts of numerical data.

If you still have questions about how you can improve your presentation, it is often best to ask others for their opinion and feedback. There are a number of resources available online that may provide you with useful advice as well. One additional suggestion is to review the following slideshow, which contains a visual representation of both poor and effective strategies.²

<http://www.businessinsider.com/8-tips-for-great-powerpoint-presentations-2015-1?op=1/#1>

² 8 Insights that will change the way you give PowerPoint presentations, Richard Feloni, Business Insider