

Handouts for PowerPoint Best Practices Workshop

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Introduction

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**Some slides courtesy of Michael Alley,
 Department of Engineering Communications,
 Penn State University*

Background/History of PowerPoint

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PowerPoint was originally developed for business, but is now widely used in educational settings



PPT was originally developed for business, but is now widely used in educational settings:

- Developed in the 1980s for use in designing slides for overhead projectors.
- Originally intended for business meetings – especially for meeting outlines/agendas.
- Now PPT is ubiquitous in educational settings as well as business settings.

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PowerPoint has been the subject of recent debate about (in)effective communication



PPT has been the subject of recent debate about (in)effective communication:

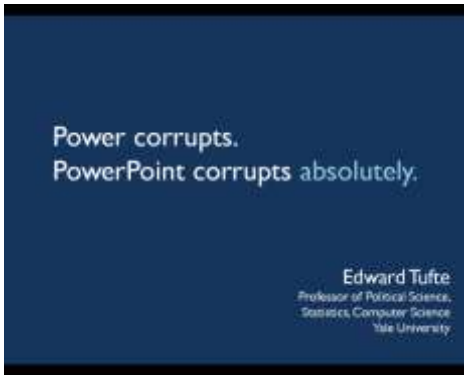
- NY Times article¹
- Wired² article

¹ Bumiller, Elisabeth. 2010. We Have Met the Enemy and He Is PowerPoint. *The New York Times* 26 April 2010. Available online: <http://www.nytimes.com/2010/04/27/world/27powerpoint.html> (Accessed 27 September 2010)

² Tufte, Edward. 2003. PowerPoint is Evil. *Wired*. September 2003. Available online: <http://www.wired.com/wired/archive/11.09/ppt2.html> (Accessed 27 September 2010)

PowerPoint is Evil?

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“Power corrupts. PowerPoint corrupts absolutely.” –Edward Tufte, Professor of Political Science, Statistics, Computer Science, Yale University

- Edward Tufte – specialist in information design. Wrote a book called *The Cognitive Style of PowerPoint*.
- It may seem extreme to say that PPT corrupts absolutely, but as with the War in Afghanistan, Tufte argues that PPT’s pervasiveness has the potential to have major impacts.

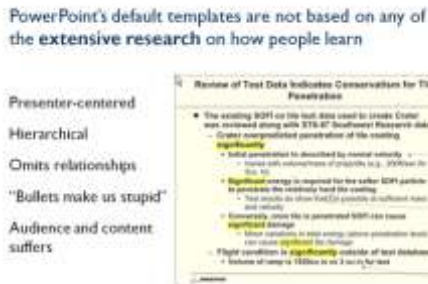
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Columbia space shuttle disaster:

- Edward Tufte was asked to serve on the board investigating the Columbia disaster, where he argued that this slide impeded communication³ regarding the testing of the foam insulation that ultimately caused the disaster. Is it possible, if the above slide had been better-designed, that the disaster could have been avoided?

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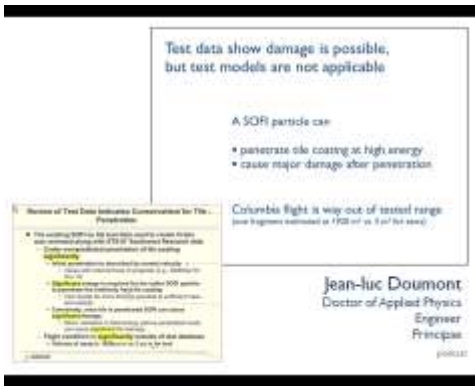
PowerPoint’s default templates are not based on any of the **extensive research** on how people learn

- Fields like cognitive psychology, communications, marketing, design, etc
- In *The Cognitive Style of PowerPoint*⁴, Tufte argues these points, and says that PowerPoint shouldn’t be used in most circumstances
- So what should we do?

³ Tufte, Edward. 2003. “Engineering by Viewgraphs.” *Columbia Accident Investigation Board Report Volume I*. August 2003. Available online: http://spaceflight.nasa.gov/shuttle/archives/sts-107/investigation/CAIB_medres_full.pdf (Accessed 27 September 2010)

⁴ Tufte, Edward. 2003. *The Cognitive Style of PowerPoint*. Chesire, CT: Graphics Press.

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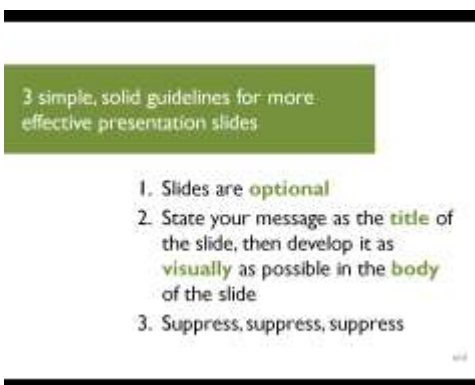


Jean-luc Doumont, Doctor of Applied Physics, Engineer, founding partner of *Principae*:

- Doumont specializes in the visual presentation of technical information, and he argues that with proper slide design, Tufte's concerns can be addressed⁵.

Podcast Interlude

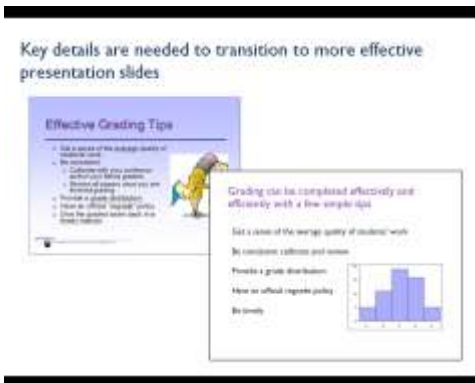
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Three simple, solid guidelines for more effective presentation slides

- In the podcast, Doumont introduces some guidelines for PPT design that can help us avoid some of the problems highlighted by Tufte.
- NOTE: Doumont uses some examples that are geared toward a more commercial setting, but the principles he mentions are adaptable to an academic/educational setting.

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Key details are needed to transition to more effective presentation slides

- How do we get our slides from this to this?
- The rest of the presentation will expand on Doumont's three guidelines

⁵ Doumont, Jean-luc. 2005. The Cognitive Style of PowerPoint: Slides Are not All Evil. *Technical Communication* 52(1): February.

1. Slides are Optional

Your PowerPoint is not your presentation



It is a medium
It is a visual aid

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What does it mean to say “slides are optional”? We all know that these days, slides are expected in our classes⁶, and in many professional settings, slides are the norm. So what does this really mean?

Your PowerPoint is not your presentation

- The slideshow is a medium, it is not your message. It’s important to make this distinction.
- Saying your PPT is your presentation is like saying your pen and paper is your essay.

Different people absorb information by different means, and at different rates



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Different people absorb information by different means, and at different rates

- We all know that people learn in different ways, that’s why we design our classes to communicate information using different means. We have oral presentations, assigned writings, and hands-on opportunities – all designed to complement one another to communicate a message.

People have a very limited ability to absorb aural information



Will this medium help me reach my students? How?

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People have a very limited ability to absorb aural information

- People tend to tune in and out every 15-20 mins or so⁷. This means, in any given moment, only about 25% of your students are fully attentive!
- Your PPT slideshow is just another medium to communicate information – a visual medium. You should ask yourself, how does this complement the other ways that I’m communicating this message? If I have a bunch of text on a slide, how is that different from the students reading the textbook?
- Thus, for our slideshows (and for our individual slides) we need to ask ourselves, how will this help me reach and hold those other 75% of my students? If you can’t answer that question, it might be best to reconsider PPT.

⁶ Mackiewicz, Jo. 2008. Comparing PowerPoint Experts’ and University Students’ Opinions About PowerPoint Presentations. *Journal of Technical Writing and Communication* 38(2): 149-165.

⁷ Enarson, Elaine, N. Johnson, S. Milner, and K. Plank. 1997. *The Penn State Teacher II*. Chapter 2: Matching Methods to Objectives, p34. Available online: http://www.schreyer.institute.psu.edu/pdf/PennStateTeacherII_R1.pdf (Accessed 27 September 2010).

2. State your message as the title of the slide, then develop it as visually as possible in the body of the slide

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Research shows that a succinct assertion in the slide headline improves audience retention

...when followed by visual evidence

Slides courtesy of Michael Alley

Research shows that a succinct assertion in the slide headline improves audience retention...when followed by **visual** evidence

- This idea (that an assertion in the slide headline improves audience retention) has been around since the 1960s⁸ but Michael Alley from Penn State actually tested it in his classroom⁹.

**Next three slides courtesy of Michael Alley, Department of Engineering Communications, Penn State University*

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The best places to harness geothermal energy are at plate boundaries

Slide courtesy of Michael Alley

Iceland is almost entirely run on geothermal energy

Example from Michael Alley:

- The headline orients the audience much more effectively to the slide's purpose than a title headline
- Allows the presenter to emphasize the most important detail of the slide
- Presents the audience with key assertions and assumptions of the presentation
- Audience is more inclined to believe the presentation's argument if they comprehend the assertions and assumptions of that argument

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This template slide begins with a sentence assertion

Call-out, if necessary: keep to one or two lines

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Graphic, table, or equation supporting the sentence-headline assertion

Call-out, if necessary: keep to one or two lines

Slide courtesy of Michael Alley

Template slide from Michael Alley:

- This template slide is for a slide from the middle of a class presentation. First you should craft a sentence headline that states an assertion you want to make about your topic. In the body of the slide, you should support the sentence-headline assertion visually with photographs, drawings, diagrams, equations, or words arranged visually.
- Use supporting text only where necessary. Do not rely on bulleted lists, because bulleted lists do not reveal the connections between details¹⁰.

⁸ Alley, Michael. 2006. "How the Design of Headlines in Presentation Slides Affects Audience Retention." *Technical Communication* 53(2): 225-234. Pilot Testing of a New Design for Presentation Slides to Teach Science and Engineering

⁹ Alley, Michael, M. Schreiber, and J. Muffo. 2005. "Pilot Testing of a New Design for Presentation Slides to Teach Science and Engineering". *ASEE/IEEE Frontiers in Education Conference*. October 19-22, 2005, Indianapolis, IN.

¹⁰ Shaw, Gordon, Robert Brown, and Philip Bromiley, "Strategic Stories: How 3M Is Rewriting Business Planning," *Harvard Business Review* (May-June, 1998), pp. 41-50

3. Suppress, suppress, suppress

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Amplifying the message is less effective than suppressing noise.



Amplifying the message is less effective than suppressing the noise¹¹

- Most of us are intuitively aware that there is noise, but instead of reducing it, we try instead to amplify the message – that’s why we’ll take a slide full of text, and start underlining things, and adding colors and italics. We know which parts of that slide are the most important, and we try to amplify them above the noise.
- Alley’s assertion evidence can help to amplify your message, but the BEST strategy is to amplify the message AND reduce the noise
- Proper design choices will serve to reduce the noise between your message and your audience

Color

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Color can enhance your message...

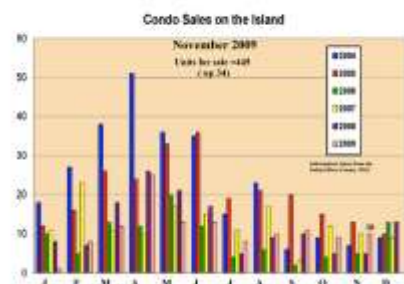
Power corrupts.
PowerPoint corrupts absolutely.
– Edward Tufte

Color can enhance your message...

- Adds emphasis, creates drama, draws attention to key details.

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...or detract from it



...or detract from it

- By the time your students figure out what is going on with this graph – what all the colors mean, and how they relate to your message, you will have completely lost their attention to your verbal presentation

¹¹ Doumont, Jean-luc. 2002. “The Three Laws of Professional Communication.” *IEEE Transactions on Professional Communication* 45(4) December 2002: 291-296

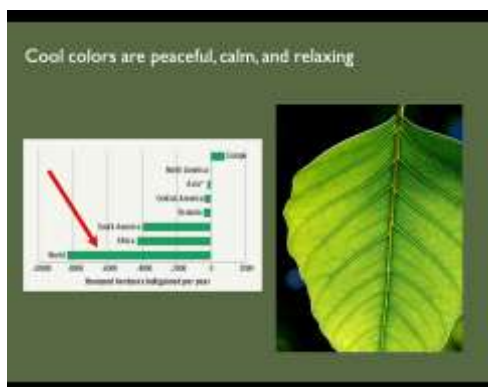
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Warm colors are active, arousing, and produce anxiety¹²

- Different colors generate different psychological and physiological responses. These physiological responses can be harnessed to help you communicate. For example, if you're doing a presentation on volcanoes, especially when most of your images will follow a certain color palette, choose complimentary colors to help your students internalize the information in mind and body.

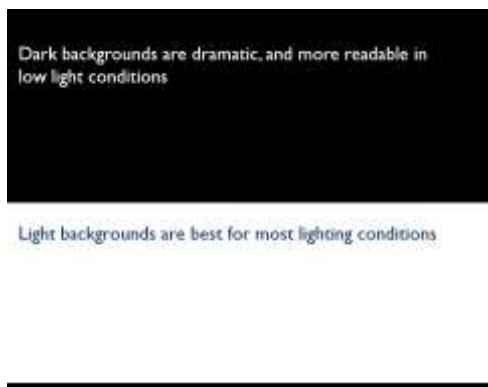
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Cool colors are peaceful, calm, and relaxing

- But you can use an appropriate contrasting color to bring attention to these kinds of details.

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Dark backgrounds are dramatic, and more readable in low light conditions, light backgrounds are best for most lighting conditions

- Light backgrounds are best for most lighting conditions¹³. Unless you know that you'll be working in low light, best to use a light background, and then switch to a dark background if you want to lend extra emphasis to a particular slide.
- Colors have cultural associations as well, research shows that most people (across multiple cultures) prefer cool colors like blues and greens in presentation slides, but...

¹² Bellizzi, J.A., and R. E. Hite. 1992. Environmental color, consumer feelings, and purchase likelihood. *Psychology & Marketing* 9: 347-363

Cahoon, R. L. 1969. Physiological arousal and time estimation. *Perception and Motor Skills* 28: 259-268

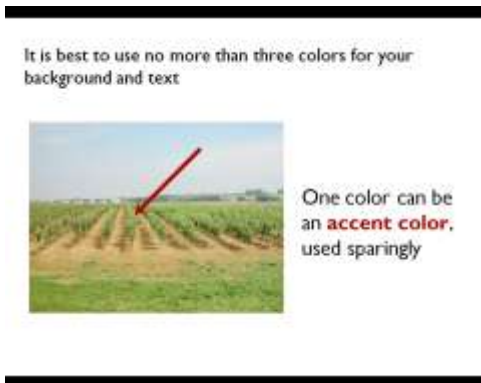
¹³ Mackiewicz, Jo. 2007. Perceptions of Clarity and Attractiveness in PowerPoint Graph Slides. *Technical Communication* 54(2): 145-156

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More important is the contrast between your background and foreground colors¹³

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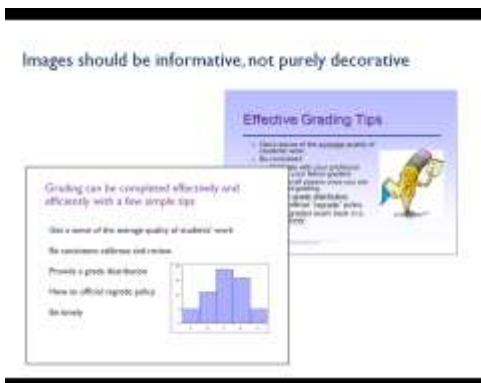


It is best to use no more than three colors for your background and text

- One color can be an accent color, used sparingly

Images

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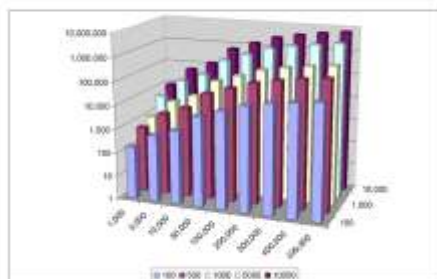
Images should be informative, not purely decorative¹⁴

- The visual image on the first slide is purely decorative. The second slide includes an informative image – showing what a grade distribution is for those who haven't seen one before or who might have forgotten.
- The first image is distracting, the second aids your message.

¹⁴ Carney, R.N., and J. R. Levin, Pictorial Illustrations Still Improve Students' Learning from Text. *Educational Psychology Review* 14(1): 101-120.

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Avoid complex graphs and diagrams

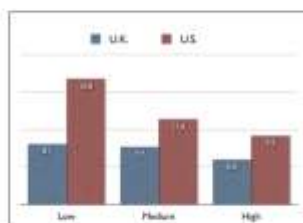


Avoid complex graphs and diagrams

- Avoid 3-dimensional graphs. They're visually confusing, and studies show that it's harder for the reader to correctly perceive the data¹³.
- PowerPoint is set to make 3-D graphs as a default. If you make your graphs in PowerPoint, you'll have to change the default.

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Choose simple, clean graphs that minimize noise



Choose simple, clean graphs that minimize noise

- Do your best to reduce noise by taking off any extra elements. Take away lines, tick marks, etc, to focus on the info you need to communicate.
- Make sure your images are of an appropriate resolution – especially if you get them from the web. Fuzzy images are just as distracting as noisy ones

Fonts

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Sans serif fonts are easier to read on projected surfaces than serif fonts



Sans serif fonts are easier to read on projected surfaces than serif fonts¹⁵

- Serifs are the danglies on the ends of letters. *Sans serif* means “without serif”
- Serifs make words easier to read *on paper* (think Times New Roman).
- Sans serif fonts are much easier to read on a screen.

¹⁵ Mackiewicz, Jo. 2007. Audience Perceptions of Fonts in Projected PowerPoint Text Slides. *Technical Communication* 54(3): 295-307

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No more than two font styles should be used per slide, avoid underlining

"If you **must** include a long quote on your slide, it's a good idea to **break up the text** with one style change or one color change. This can help the eye **capture** the most **important** pieces you want to emphasize - even better, **annotate** the quote."

one standard font
one for accenting
24pt font or larger

No more than two font styles should be used per slide, avoid underlining

- Sometimes we have to use quotes to support our assertions. If we present them correctly, they can be used as visual evidence, just like a photo or a graph.
- Let your audience read the quote when you **FIRST** change the slide over. Don't talk over the quote until they're done reading. Don't read it for them.
- Avoid underlining – it adds too much noise.

Animations

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Text animations and transitions should be used sparingly, and with purpose

- No flying or zooming
- Appear and dissolve only
- Beware of the "striptease"

Text animations and transitions should be used sparingly, and *with purpose*

- No flying or zooming
- Appear and dissolve only
- Beware of the "striptease": creates a sense of suspense that you might not want (powertrip for the presenter). Also, frequently used as a way of cheating and putting way too much text on the slide.

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Animated diagrams and images are great, as long as they are informative, not purely decorative



Animated diagrams and images are great, as long as they are informative, not purely decorative

- Best if they have a fixed beginning and ending
- Introduce the animation, set up its purpose, and let it play
- Be careful that it's not distracting from your words
- Outside media: great to include in your lectures.
 - Put the links in the same place every time so your students can find them and you will remember to click on them
 - Activate the hyperlink or preload videos before you start your lecture

Be careful not to be dogmatic about design rules - instead, think holistically



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Be careful not to be dogmatic about design rules – instead, think holistically

- “The secret of six”: no more than six bullet points, no more than six words per bullet.
 - The idea behind this rule is to avoid cluttering a slide with text, but as you can see, it doesn’t necessarily accomplish this. In fact, it might make things worse by encouraging you to use abbreviations and shorten sentences, making them practically incomprehensible¹³.
 - Better to think broadly about the purpose of your presentation, the purpose of your slides, the purpose of your text, the purpose of your graphics, etc
- Suppression will not work to better communicate your message...if you don’t have a message to begin with

Conclusion

It's important to be practical about what you can change, and on what timeline

3 simple, solid guidelines for more effective presentation slides

1. Slides are **optional**
2. State your message as the **title** of the slide, then develop it as **visually** as possible in the **body** of the slide
3. Suppress, suppress, suppress

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It’s important to be practical about what you can change, and on what timeline

- Depending on what you’re starting with (starting from scratch, recycling slides, etc), you can make small changes now that will better your presentations from now on.
- These design changes do take time. Plan to spend more time on your slideshows, at least until you get more comfortable with the design guidelines.