Teaching with PowerPoint

PowerPoint can be an effective tool to present material in the classroom and encourage student learning.

PowerPoint, when effectively planned and used, can enhance instruction. People are divided on the effectiveness of this ubiquitous software—some say that PowerPoint is wonderful while others bemoan its pervasiveness. No matter which side you take, there are effective ways to use PowerPoint which can be used to enhance instruction. This section is organized in three major sections: Part one will help faculty identify and use basic but important design elements; Part two will cover ways to enhance teaching and learning with PowerPoint; Part three will list ways to engage students with PowerPoint.

PowerPoint can be an effective tool to present material in the classroom and encourage student learning. PowerPoint can be used to project visuals which would otherwise be difficult to bring to class. For example, in an anthropology class, a single PowerPoint presentation could project images of an anthropological dig from a remote area, questions which ask students about the topic, a chart of related statistics, and a mini quiz about what was just discussed that provides students with information that is visual, challenging and engaging.

This article will highlight ways to design effective PowerPoint presentations as well as show best practice when using this powerful software.

PART I — Designing the PowerPoint Presentation

Preparing for the presentation

PowerPoint is especially useful when providing course material online.

– Consider time and effort in preparing a PP presentation—give yourself plenty of lead time for design and development.
– PowerPoint is especially useful when providing course material online.
– Student technology compatibility with PowerPoint material put on the Web—ensure images and graphics have been compressed for access by computers using dial-up connection.
– Student accessibility—visually impaired may not be able to fully access a PowerPoint presentation, especially those with graphics and images.
– Copyrighted material—be sure to properly cite source material. This is especially important when using visuals obtained from the Internet or other sources.
– Message interpretation—will students be able understand material in a PowerPoint presentation outside of the classroom? Will you need to provide notes and other material to help students understand complex information, data, or graphics?

Use PowerPoint to cue and guide the presentation rather than project long and complete sentences.

– If you will be using your own laptop, be sure the classroom is equipped with the proper cables, drivers, and other means to display your presentation the way you have intended.

Slide content
– Avoid text-dense slides—it's better to have more slides than trying to place too much text on one slide.
– Use brief points instead of long sentences or paragraphs.

- Use PowerPoint to cue and guide the presentation rather than project long and complete sentences.
- Use the Notes Pages feature to add content to your presentation which the audience will not see.
- Relate PowerPoint material to course objectives to reinforce their purpose.

Number of slides
- As a rule of thumb, plan to show one slide per minute to account for discussion and time and for students to absorb the material.
- Reduce redundant or text heavy sentences or bullets to ensure a more professional appearance.

Emphasizing content
- Use italics, bold and color for emphasizing content.
- Use of a light background (white, beige, yellow) with dark typeface or a dark background (blue, purple, brown) with a light typeface is easy to read in a large room.
- Consider using different color slide backgrounds to change the pace of the presentation (or when you shift to new major content).
- Avoid using underlines for emphasis which typically signifies hypertext in digital media.

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Typeface
- Use a sans serif typeface such as Arial, Helvetica, or Tahoma. The text you are now reading is Arial.
- Limit the number of typeface styles to no more than two per slide.

Point size
- Ensure the typeface is large enough to read from anywhere in the room: titles and headings should be no less than 36-40 points.
- The subtext should be no less than 32 points.

Clip art and graphics
- Use clip art and graphics sparingly. Research shows that it's best to use graphics *only* when they support the content.
- Photographs can be effectively used to add realism.
- Size and place graphics appropriately on the slide – consider wrapping text around a graphic.
- Use two-dimensional pie and bar graphs rather than 3-D styles which can interfere with the intended message.

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Animation and sound
- Add motion, sound, or music *only* when necessary. When in doubt, do without!
- Excessive movement within or between slides can interfere with the message and can be annoying. Avoid or use only simple screen transitions.

PowerPoint's Slide Sorter View is especially helpful to check slides for proper sequencing and information gaps and redundancy.

Final check
– Check for spelling, correct word usage, flow of material and overall appearance of the presentation.
– Colleagues can be especially helpful to check your presentation for accuracy and appeal. Note: Typos are more obvious when they are projected.
– Schedule at least one practice session to check for timing and flow.
– PowerPoint's *Slide Sorter View* is especially helpful to check slides for proper sequencing and information gaps and redundancy.
– Prepare for plan "B" in case you have trouble with the technology in the classroom – how will you provide material which is located on your flash drive or computer?

PowerPoint Handouts
PowerPoint provides a number of print-based handouts that can be distributed at various points in the class—**before class:** students like having materials available to help them prepare and formulate questions before the class period; **during class:** use this time for a planned break and to discuss the material on the handout; **after class:** some instructors wait to make the presentation available after the class period so students concentrate on the presentation rather than reading the handout.

[Notes Pages provide detailed notes [that] can be printed and used during the presentation…

– **Handouts.** PowerPoint slides can be printed in the form of handouts—with one, two, three, four, six, or nine slides on a page— that can be given to the students for reference during and after the presentation. The three-slides-per-page handout includes lined space to assist in note-taking.
– **Notes Pages.** Detailed notes can be printed and used during the presentation or, if they are notes intended for students, they can be distributed before the presentation.
– **Outline View.** PowerPoint presentations can be printed as an outline which provides all of the text from each slide. Outlines provide a welcome alternative to slide handouts and can be modified from the original presentation to provide more or less information than the projected presentation.

The Presentation
Alley, Schreiber, Ramsdell and Muffo suggest that PowerPoint slide headlines design "affects audience retention," and conclude that "succinct sentence headlines are more effective" in information recall than headlines of short phrases or single words (2006, p. 233). In other words, create slide titles with as much information used for newspapers and journals to help students better understand the content of the slide.

Avoid "laser shows" by discretely using laser pointers.

– PowerPoint should provide key words, concepts, and images to enhance your presentation (but PowerPoint should not replace you as the presenter).
– Avoid reading from the slide—reading the material can be perceived as though you don't know the material. If you must read the material, provide it in a handout instead of a projected PowerPoint slide.

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Stand to one side of the screen and face the audience while presenting.

- Avoid rapidly moving the laser pointer across the slide. Also, use a laser pointer with a dot large enough to be seen from all areas of the room.
- Allow no more than one to two slides per minute of content.
- Incorporate blank slides to allow students to reflect on what has just been discussed or to gain their attention (Press B for a black screen or W for a white screen—press these keys again to return to the live presentation). This pause can also be used for a break period and when transitioning to new content.
- Stand to one side of the screen and face the audience while presenting.
- Leave classroom lights on and turn off lights directly over the projection screen if possible.
- Learn to use PowerPoint efficiently and have a back-up plan in case of technical failure.
- Give yourself enough time to finish the presentation. Trying to rush through slides can give the impression of an unorganized presentation and may be difficult for student to follow.

PART II — Enhancing Teaching and Learning with PowerPoint

Class Preparation
PowerPoint can be used to prepare lectures and presentations by helping instructors refine their material to salient points and content. Class lectures can be typed in outline format which can then be refined as slides. Lecture notes can be printed as notes pages and can also be given as handouts to accompany the presentation.

Using PowerPoint can address students' learning preferences…

Student's Learning Preferences
Using PowerPoint can address students' learning preferences through the projection of: color, images, video and shapes for visual learners; sound and music for auditory learners; and interactive slides which ask students to do something for kinesthetic learners which involve group or class activities where students can practice or review concepts (see Engaging Students with PowerPoint below).

Type-on Live Slides
PowerPoint allows users to type directly during the slide show which provides another form of interaction. These write-on slides can be used to project students' comments and ideas for the entire class to see. When the presentation is over, the new material can be saved to the original file and posted electronically.

You can make your PowerPoint slides and notes pages available online 24/7…

Just-In-Time Course Material
You can make your PowerPoint slides and notes pages available online 24/7 through Blackboard and other Web sites. Students can review the material before class, bring printouts to class and be better prepared for listening rather than taking a lot of notes during the class period.

PART III — Engaging Students with PowerPoint

The following techniques can be incorporated into PowerPoint presentations to increase interactivity and engagement between students and students and students and the instructor. Each technique can be projected as a separate PowerPoint slide. For example, "Take a moment to reflect on the concept we just reviewed" can be typed on its own slide.

Running Slide Show as Students Arrive in the Classroom
This technique provides visual interest and can also have a series of questions students can answer as they sit waiting for the class to begin. These questions could be future texts or quizzes.

- **Opening Question**—project an opening question—Take a moment to reflect on _____.
- **Think-Pair-Share**—can be projected at different intervals of a presentation to allow students to concentrate on, and discuss with a partner, what has been presented.
    o Think of what you know about _____.
    o Turn to a partner and share your knowledge about _____.
    o Share with the class what you have discussed with your partner.
- **Focused Listing**—list as many characteristics of _____ or write down as many words related to _____(this technique helps with recall of pertinent information).
- **Brainstorm**—what do you know about _____? Start with your clearest thoughts and then move on to those what are kind of "out there" (this technique stretches the mind, promotes deep thinking and recall of prior knowledge).
- **Questions**—ask students if they have any questions so far—do this about every 15 minutes or so. (This technique provides time for students to reflect and is also a good time for a scheduled break and for the instructor to interact with students).
- **Note Check**—take a few minutes to compare notes with a partner—to summarize the most important information—identify and clarify any sticking points.
- **Questions and Answer Pairs**—take a minute to come with one question then see if you can stump your partner!
- **Two-Minute Paper**—summarize the most important points of today's lecture—submit the paper at the end of class. (This technique allows the instructor to check the class progress).
- **If You Could Ask One Last Question—What Would it be?** (This technique allows for students to think more deeply about the topic and to apply what they have learned in a question format).
- **Classroom Opinion Poll**—do you believe in _____ or what are your thoughts on _____ (This technique provides a sense of where students are on certain topics).
- **Muddiest Point**—what is the muddiest point of today's material? (This technique allows anonymous feedback to inform the instructor if changes and or additions need to be made to the class).

PowerPoint supports multimedia such as video, audio, images and animation.

– **Most Useful Point**—what is the most useful point in today's material and how can you illustrate its use in a practical setting? (This technique can tell the instructor if the course is on track).

Positive Features of PowerPoint
– PowerPoint saves time and energy once the presentation has been created, is easy to update and can be modified for other courses.
– PowerPoint is portable and can be easily shared with students and colleagues.
– PowerPoint supports multimedia such as video, audio, images and animation.

Drawbacks of PowerPoint

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– PowerPoint can lead to information overload, especially with long sentences and paragraphs.
– PowerPoint can "drive" the instruction and minimize the opportunity for spontaneity and creative teaching.

Summary
As with any technology, the way PowerPoint is used will determine its pedagogical effectiveness. By strategically using the points described above, PowerPoint can be used to enhance instruction and engage students.

References
Alley, M., Schreiber, M., Ramsdell, K., & Muffo, J. (2006). How the design of headlines in presentation slides affects audience retention. *Technical Communication,53*(2), 233.

Selected Resources
Tufte, E. R. (2006). *The cognitive style of PowerPoint: Pitching out corrupts within.* Cheshire, CT: Graphics Press LLC.

University of Minnesota, Center for Teaching and Learning (2006). *Active Learning with PowerPoint.* http://www1.umn.edu/ohr/teachlearn/tutorials/powerpoint/index.html