

Using Graphics

Introduction

Graphics add an emotional element to the presentation of material and appeal to learners with a right-brain orientation. However, graphics must be used properly or they can actually interfere with communication. This session deals with some general considerations in the use of graphics and then deals with how to use some of the popular graphics programs to create images for use in your presentations or Web pages.

General Considerations

- Only use graphics when they reinforce the message being presented; avoid the trap of using graphics on every screen just because you think to need to.
- Use an appropriate level of representation (from abstract line drawings to photo-realistic images) for the topic and audience.
- Because of the potential of large file sizes, graphics can balloon the size of your presentation or Web page, causing delivery of the screen or page to slow down.
- Get good value contrast (difference in lightness or darkness) between text and the background. Value contrast is actually more important than is the difference in hue (color).
- If you are working with a projector with a low light output, then use light backgrounds and dark text, since the light background will add light to the darkened room.
- If you are working with a projector with a high light output (so the room doesn't have to be as dark), then you may be able to use a dark background with light text. Be sure to check some sample pages in the classroom to see how legible they are from the back of the room.
- Avoid placing text over images with a lot of value contrast (light and dark areas). This makes it difficult to find a color for the text that will be visible across the entire graphic.
- Avoid placing text over busy images, since the image will interfere with the legibility of the text.
- If you are creating Web pages, avoid the use of light text on dark backgrounds. The background color or image will not print, so your students will get "white on white" text when they try to print your pages.
- Be careful in your selection of colors. The following table provides some guidelines.

Color Usage Principles	Implications for Hypermedia Design
Work with an understanding of the limits imposed by the physiology of color perception <ul style="list-style-type: none">• Pure complements tend to buzz when placed next to each other.• Some men have red-green color blindness• Our eyes have fewer receptors for blue and they are away from the focal center of the retina	<ul style="list-style-type: none">• Avoid using pure complements (colors opposite each other on the color wheel) together• Avoid using red/green, brown/green and blue/purple in combination to differentiate elements (e.g., in charts and graphs)• Generally use blue as a background color, since it is harder to focus on blue
Work with an understanding of the psychological effects of colors	<ul style="list-style-type: none">• Use the warm-cool division to communicate meaning on your screens.• Work with, not against, common cultural associations with colors.• Be careful in your selection of a background color

Use color sparingly and for meaning.	<ul style="list-style-type: none"> • "Too many colors on a single display obscure the content. For the most effective presentation, use no more than three or four big regions of color on a single screen" (Vetter, Ward & Shapiro, 1995, p. 49).
Use color consistently; Color can be a powerful tool for coding information when used properly	<p>Establish a reference palette that identifies how each color will be used and apply it consistently to each screen/page.</p> <ul style="list-style-type: none"> • Specify the colors for background, type, bullets, graph symbols, highlights, hotwords, etc. • List the RGB colors for each and, if you are working on Web pages, the hexadecimal equivalent.
Use color to focus attention	<ul style="list-style-type: none"> • "Focus attention on one particular element in your frame by assigning it a color that is brighter or lighter than the rest of your palette" (Rabb, 1993, p. 113). • But "[d]on't try to emphasize more than one or two elements, and don't set up competing bright colors that will cancel each other out" (Rabb, 1993, p. 113).
Use color as a cueing strategy to alert students to changes	<ul style="list-style-type: none"> • Changes in color can be used to indicate a multimedia event is about to happen • Changes in color can be used to indicate changes in content
Color can be used to unify and differentiate	<ul style="list-style-type: none"> • Link elements from one screen to another with consistent application of color. • Distinguish between different elements by using colors or, more subtly, different tones of the same color.
Color can be used to establish hierarchies	<ul style="list-style-type: none"> • "Indicate levels of importance or a progression of data by increasing the color value and saturation level" (Rabb, 1993, p. 112). • "We perceive dark colors as being 'heavier' than light ones, so graphic elements that are arranged from darkest to lightest are the easiest for the eyes to scan" (Hanke, 1998, p. 47).

References

Hanke, J. (1998, May). The psychology of presentation visuals. *Presentations*, 12, 42-43, 45, 47, 49, 51.

Rabb, M. Y. (1993). *The presentation design book* (2nd ed.). Chapel Hill, NC: Ventana Press.

Vetter, R., Ward, C. & Shapiro, S. (1995). Using color and text in multimedia projections. *IEEE Multimedia*, 2, 46-54.