

DESIGNING EFFECTIVE VISUALS

by Ray Shackelford, Ryan Brown, and Jennifer Smith

If we are to design effective visual materials and presentations, it is important to understand the advances that have taken place in instructional technology.

In a short period of time teachers have progressed from using Leroy pens and IBM Selectric typewriters to produce black and white overheads, to the use of laptop computers with powerful presentation software to produce colorful visuals with motion and sound. While much of the literature examines the technology used to create visuals, it is of equal importance to understand the elements of effective visual design.

We have all sat through presentations where the presenter's understanding of the subject was not matched by their ability to design and produce an effective message. Boring, confusing, and sometimes ugly visuals distract from the teaching/learning process. The perception is that the ability of many teachers to use this technology to design meaningful messages has not necessarily kept pace with the technology. "Graphic design is a skill to be learned, with rules to be followed, principles adhered to, and intelligent self-criticism integrated" (Proximity Learning, p. 2). This visual design process includes the use of established guidelines for everything from planning to the selection of various fonts, colors, clip art, font sizes, and layout of basic design elements.

DESIGNING EFFECTIVE VISUALS: A MODEL

Supported by a model to facilitate the DESIGN and use of effective visuals the authors have conducted various workshops and presentations to assist teachers and others develop instructional materials that meet identified needs, see Figure 1. The use of the DESIGN Model facilitates the creation of well-planned, successful presentations. As Shenenberger (1975) states:

The success or failure of your presentation will rest primarily on the thoroughness and care you give to planning and design of your message. A clear, well-planned ...presentation has a better chance of effectively communicating your ideas. (p. 18)

DETERMINE THE PURPOSE

EVALUATE LEARNER/AUDIENCE

CHARACTERISTICS AND NEEDS

SELECT AND CRAFT THE MESSAGE

ILLUSTRATE AND PRODUCE THE MEDIA

GIVE THE PRESENTATION

NAME AND IMPLEMENT ASSESSMENT

PROCEDURES

Figure 1: Design Model for Producing Effective Visuals

Each of the above elements will be described to help clarify the Model and its ability to support the design of effective media. However, to maintain the focus of this article, only the process of "illustrating and producing the media" will be discussed in detail. The other elements of the Model will be discussed only briefly to establish a foundation for sharing the primary design principles.

DETERMINING THE PURPOSE

Shackelford and Henak (1992) recognized that the most important phase of using instructional technology was to determine clearly and concisely the purpose of the message. To accomplish this task, one often seeks answers to the following questions, “What do I want to say and why . . . to whom . . . where . . . and with what effect and support materials?” Based upon the answers to these and similar questions, the purpose of the presentation and need for support visuals can be clarified. Quite simply, as Brody (2006) describes, during the process of determining the message’s purpose we are seeking the answer to the audience’s unspoken question: “What’s In It For Me?”

EVALUATING LEARNER/AUDIENCE NEEDS

Brody (2006) emphasizes that presenting information is not a one way street and presenters must connect with the audience and its needs if they are to effectively get their message across. Accomplished presenters find out as much as they can about their audience. In a classroom setting, attempt to determine what the typical member of the class knows about the presentation’s content. Seek information on their educational backgrounds, experiences, and attitudes toward the subject. For other presentations, Miller (2006) recommends that presenters seek answers to the following: Who are my listeners?, What is their purpose or main objective in listening to me?, What are the three to five key points they should take away from my presentation?, What material or visuals should be used to support those points?, and What are their potential questions, concerns, or doubts?

SELECTING AND CRAFTING THE MESSAGE

During the process of “selecting and crafting the message”, the message’s purpose and audience’s needs should be transformed into objectives or a list of desirable changes in audience behavior. Once the presentation’s objective(s) are clearly defined, the related content can be outlined. As the outline is developed major ideas, concepts and facts should be described. The outline should also include related stories, examples, and outcomes to be addressed or used to reinforce the message. Most successful presenters/teachers craft their presentations to flow from their experiences, observations or passion associated with the topic.

ILLUSTRATING AND PRODUCING MEDIA

One of the first steps in “illustrating and producing instructional media” is to select the type of media that best matches the target audience and content. During this process, it is often a good idea to discuss potential problems or solutions with others. Throughout these discussions, the

use of pedagogy, humor, dramatizations, and audience participation should be discussed.

When using technology to produce effective visuals four main considerations should be integrated into the design of an effective message/visual. These include (a) arrangement, (b) color, (c) mechanics, and (d) treatment.

ARRANGEMENT

The graphic and verbal elements of a visual should be arranged to focus the audience’s attention and clearly communicate the message. When arranging visual elements, Shackelford and Henak (1992) recommend designers consider the working area, legibility and proportion of the visual elements, and unity of the message.

Working area can be described as the space or size on which visual’s elements are placed. When determining the working area necessary margins, visual size, reproduction techniques, and storage should be taken into consideration. For projected media produced with PowerPoint, or other similar presentation software, the working area should be 6” vertically and 8” horizontally. The dominate part of all text and graphic elements should be kept in the upper two thirds of the visual, see Figure 2. This ensures the key portions of the visual use the optimum sections of the projection system and can be projected at a height for the audience to see. This also reduces the number of out of focus images that often occur around the edges of a projected visual.

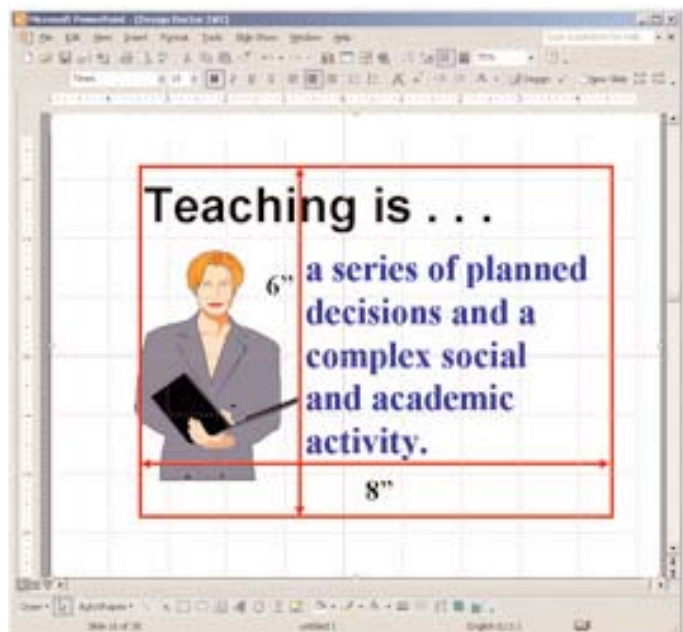


Figure 2: Placement of the visual’s graphic and verbal elements in the 6 X 8 working area.

In developing a visual’s design, the legibility of the graphic and verbal elements is often overlooked because presenters assume that what they see on their computer screen is what the audience will see. When using

presentation software, consider the following guidelines for improved legibility:

1. Use background and foreground colors and elements (e.g., templates, pictures, text, etc.) that support message transfer instead of distracting from it.
2. Text should be supported by appropriate, professional quality visuals (Endicott, 2003).
3. The use of text in all capital letters should be avoided.
4. Avoid using more than three fonts and when different fonts are used they should each have a specific purpose (e.g., headings, subtitles and text).
5. Italics should be used primarily for foreign or technical words (Meade, 1991).

When developing instructional media, visual elements should be proportional in size to the working area and other elements (unless proportion is changed for purposes of emphasis). However, when the visual is completed, all elements within it must combine to form one functional unit or visual, see Figure 3.

COLOR

When selecting colors for a particular visual, the human response to the color should be considered. Colors such as blue, green and violet are perceived as being cool or passive in nature. The colors red and orange are often viewed as being hot. Presenters can capitalize on this information by using red or orange colors to get the audience's attention or emphasize a particular point. However, many colors do not project well. While reds and blues are easily seen on a clear background, many tones of greens, violets and oranges are not easily reproduced or projected, see Figure 4. Also, presenters must take into consideration how certain colors are perceived by those individuals who are color blind.

Color can also be used to separate items, emphasize points, or enhance unity. However, different colors must be used wisely and sparingly because too many colors can actually distract from a message. Heinich, Molenda, Russell, and Smaldino (1996), Shackelford and Smith (2002), and others indicate that the use of color in a visual can be used to increase realism, create harmony, emphasize similarities or differences, and create a particular feeling or mood.

MECHANICS

When developing effective visuals most professional designers remind us to use the "KISS" principle – "Keep It Simple Silly". However, many presenters fail to follow the KISS principle. Thus, many visuals contain more than one idea and are far too complex. When the concept of simplicity is combined with the numerous technical elements of visual design, the concept of visual mechanics immerses, see Figure 5. When using presentation software consider the following principles:

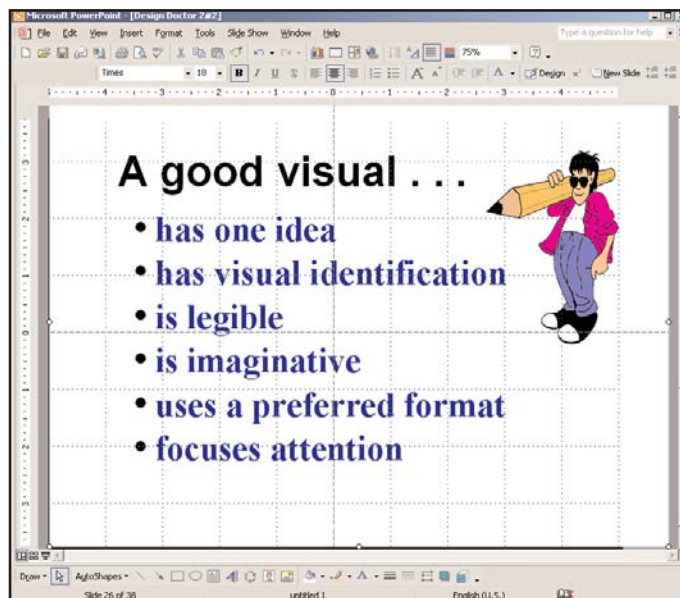


Figure 3: Arrangement of graphic and verbal elements in a visual.

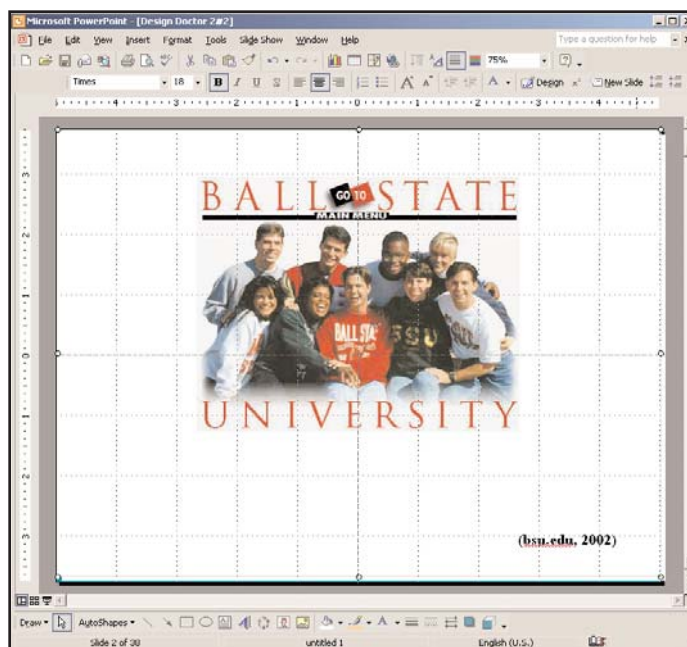


Figure 4: Color of graphic and verbal elements.

1. Use the horizontal or landscape format. Vertical slides do not work well in most settings.
2. Text elements should be in a readable. Use a San Serif font for headings and a Serif for the body of the text. Also, use a type size that is bold, 36 point or larger (Meade, 1991).
3. Try not to use more than eighteen words per slide. (Shackelford, 2006). An effective highway billboard uses only eight.
4. Visual and text elements should be appropriately cited.
5. Use animations, transitions, templates, sounds, videos, etc. appropriately. Too many "bells and whistles" can be detractive.

6. Subdivide and present complex data in stages by using a number of visuals or revealing one section at a time.
7. When using bullets there should be no more than six words per bullet and no more than six bullets per a slide (Miller, 2006b).
8. Maintain slide continuity (colors, graphics, fonts, etc.) from the beginning to the end.

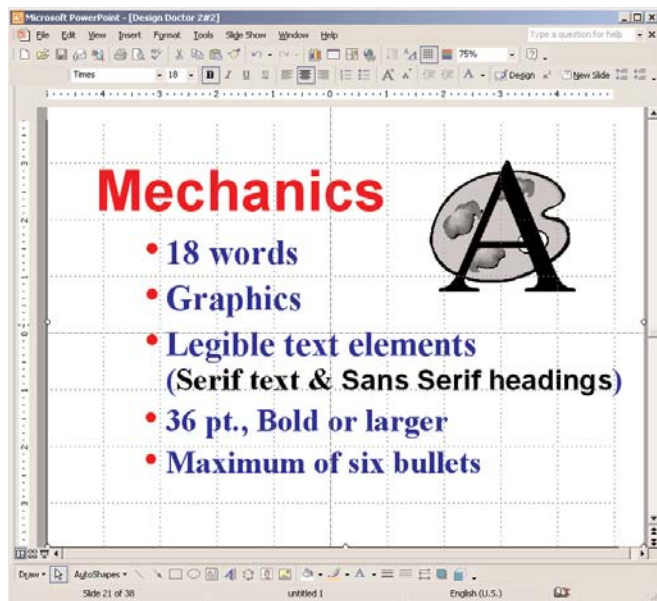


Figure 5: Basic principles of designing and producing effective visuals.

9. Avoid animations that fly across other text, graphics, or images.
10. Keep backgrounds down-to-earth. Use a basic template or no template at all for transparencies. It saves ink and many colors or images project better on a clear background.

TREATMENT

The purpose of using a visual is to support the message and provided visual stimulus to support learning. Everything else is secondary. Heinich et al. (1996) and Shackelford and Henak (1992) suggest that treatment also includes visual elements such as dynamic effect, emphasis, and graphic harmony. These elements help assure that the different parts of a visual work together to achieve desired outcomes. Dynamic visuals are designed to grab and hold the audience's attention, generate enthusiasm, and present a stimulating and captivating message. Most dynamic visuals emphasize one point or concept at a time. To support the message visual designers use color, arrangement, size, graphic shapes, etc. to help describe and identify dominate and subordinate parts of a visual. Emphasizing one element at a time helps focus the learner's attention on each point to be addressed.

Graphic harmony is created when all elements of a visual work together to convey a clear message. It also tends to

produce a sense of unity or feeling on the audience's part that they are viewing one visual as apposed to a visual with three or more parts. Harmony is enhanced by:

1. Keeping visuals simple [e.g., Limiting visuals to one idea. "There is nothing that 'turns off' an audience faster than visuals that are complex and confusing." (Slide Shows Made Easy)].
2. Using charts and graphs rather than tables to display facts and figures. Visual comparisons are more easily made with graphs.
3. Keeping graphic or visual elements uncluttered (e.g., A close-up is often be more effective in communicating detail than an overall view.).
4. Checking the legibility of each slide. Check the size and sharpness of all visual elements. Just because the designer can clearly read and see all the visual's elements on their computer monitor does not mean that -- given the screen size, lighting, and viewer's distance and angle to the screen -- the person in the last row can see them.

Designing effective visuals can be challenging and the use of these and other recommended guidelines will not make an individual an expert on the first try, but they will help them make improvements. Just remember that arrangement, color, mechanics, and treatment are the key elements for illustrating and producing effective visuals. For additional recommendations for projected media go to <http://rshackelford.iweb.bsu.edu/itedu/projectedmediarecommendations.htm>

GIVING THE PRESENTATION

Over the years there have been literally hundreds of suggestions or strategies for giving an effective presentation. Most of them can be boiled down to the basic rule of "Tell 'em what you are going to tell 'em, tell 'em, and then tell 'em what you told them." In support of this basic rule, experience clearly demonstrates that the level of retention during a presentation often depends on how it or the content is introduced. Thus, effective presenters often begin their presentations with an opening statement that amounts to the equivalent of a one-sentence summary.

The use of instructional technology and well designed visual has the potential to: bring the world and beyond to an audience, be compatible with a wide variety of learning styles, dramatize information, and connect the lives of the audience in ways never before possible. To be successful, presenters must make sure the intended message is communicated simply and coherently. Most people retain more of what they see than what they hear. To improve learning retention presenters should allow for "soak time" for each slide or major topic, and encourage active participation or discussion of major point based upon audience experiences.

NAMING AND IMPLEMENTING ASSESSMENT PROCEDURES

During the teaching/learning process, teachers should identify and implement the appropriate procedures to ensure that their message and instructional technology are effectively supporting learning. At times this assessment can be as simple as analyzing student behavior, responses, quizzes, discussion, body language, facial expressions, silence, or use of a variety of classroom assessment techniques (Angelo & Cross, 1993).

The message and supporting materials should also be evaluated during and after instruction, and appropriate changes made or ideas for enhancement clearly recorded. Teachers should be encouraged to use a comprehensive evaluation plan that includes an assessment of the content, instructional strategies and media used, and teacher's effectiveness for each major unit of instruction. Potential changes should be made or noted as close to the time they were used as possible. Over time, we all tend to forget things that we thought required attention and/or change (Shackelford & Smith, 2002).

SUMMARY

Presenters now have the tools to create and utilize sophisticated graphics and text with vivid color, interesting animations, detailed charts, and personalized templates. For many the use of instructional media and programs like PowerPoint have become an integral part of the instructional process and when effectively interfaced with and supported by other instructional strategies and materials have become a powerful tool to support learning. In this instance "the media is not the message," the design and use of effective visuals should (a) support learning objectives and respond to learner characteristics and needs, (b) be integrated into the learning process and support learning retention and student achievement, and (c) support the delivery of information at a level and pace suitable for the audience and the instructional strategies used. The DESIGN Model and its related elements were developed to assist presenters in reaching these goals. ●

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