WHEN to USE Visuals

Use when student learning will be enhanced by . . .

<table>
<thead>
<tr>
<th>Guidelines</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>simplifying complex concepts</td>
<td>A high school teacher uses a genetics chart to show dominant and recessive traits. Students take digital photos of each classmate and classify them into genetic groups (e.g., attached ear lobes, curly hair, eye color).</td>
</tr>
<tr>
<td></td>
<td>Middle school students select and assemble photos into a PowerPoint presentation that represents their concept of freedom.</td>
</tr>
<tr>
<td>seeing relationships</td>
<td>Early childhood students study historical photos from the 1800s that show children in their homes to identify similarities and differences with their current home lives.</td>
</tr>
<tr>
<td></td>
<td>A high school history teacher projects a spreadsheet chart showing population growth in the local community over the past 100 years. She has students predict changes over the next 100 years and then shows the predicted changes on the chart by changing the numerical values of various cells.</td>
</tr>
<tr>
<td>depicting processes</td>
<td>Elementary students in social studies build a model Alaskan igloo while using a disposable camera to create a photo journal of the building process.</td>
</tr>
<tr>
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<td>An ESL elementary teacher projects an interactive bilingual (English/Spanish) chart showing the life of a seed.</td>
</tr>
<tr>
<td>stimulating interest</td>
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<td>Students work in pairs to create their own political cartoons of a historical event.</td>
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<td>Middle school student pairs write original math word problems on a transparency so the problem can be solved as a whole-group activity led by the teacher.</td>
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VISUAL DESIGN

GUIDELINES

Designing a visual begins with gathering or producing the individual pictorial and text elements that you expect to use. This assumes, of course, that you have already determined students' needs and interests regarding the topic and decided what objective(s) you hope to achieve through the visual you are planning. The following guidelines are applicable to computer screens, multimedia programs, printed materials, whiteboards, exhibits, overhead transparencies, PowerPoint slides, and bulletin boards.

ARRANGEMENT

First you must decide which elements to include in your visual. Then you are ready to consider its overall "look" or arrangement. The idea is to establish an underlying pattern—to determine how the viewer's eye will flow across your display.

If you are planning a series of visuals, such as a set of PowerPoint slides, a multipage handout, or a series of computer screens, you should be consistent in your arrangement of the elements. As viewers go through the series of visuals they begin unconsciously to form a set of rules about where information will appear in your display.

BALANCE

A psychological sense of equilibrium, or balance, is achieved when the "weight" of the elements in a visual is equally distributed on each side of an axis, either horizontally or vertically or both. When the design is repeated on both sides, the balance is symmetrical, or formal.

In most cases, though, for visuals that will catch the eye and serve an informational purpose you should aim to achieve an asymmetrical, or informal, balance. With asymmetrical balance there is rough equivalence of weight, but with different elements on each side (e.g., one large open
WHEN to USE Visuals

Use when student learning will be enhanced by...

Guidelines

- Simplifying complex concepts
  - Examples: A high school teacher uses a genetics chart to show dominant and recessive traits. Students take digital photos of each classmate and classify them into genetic groups (e.g., attached ear loaves, curly hair, eye color).
- Casing relationships
  - Examples: Early childhood students study historical photos from the 1800s that show children in their homes to identify similarities and differences with their current home lives.
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  - Examples: Middle school students select and assembly photos into a PowerPoint presentation that represents their concept of freedom.
- Stimulating interest
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- Encouraging creativity
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COLOR

When choosing a color scheme for a visual, consider the harmony among the colors. The color wheel is useful in helping us understand the relationships among the colors of the visible spectrum (Figure 8.17).

Any two colors that lie directly opposite each other on the color wheel are called complementary colors—for example, red and green or yellow and violet. Complementary colors often harmonize well in terms of an overall color scheme. However, try not to directly juxtapose two complementary colors (e.g., placing green letters on a red background). There are two reasons for this. First, if the colors are of equal value, or darkness, the letters will not have good contrast. Second, when saturated (intense) complementary colors are placed directly next to each other the eye cannot focus on both at the same time, so you get an unpleasant vibrating effect.

Colors that lie next to each other on the color wheel are called analogous colors—for example, blue-green, blue, and blue-violet. Analogous colors may also form pleasing combinations when used together in a visual.

When thinking about a color scheme for PowerPoint slides or a computer screen, it may be helpful to think in terms of a background color, a color for the images or text appearing against that background, and a color for highlights. Colors that work well together are shown in Table 8.1.

Table 8.1 Effective Combinations for Background and Images for PowerPoint Slides and Computer Screens

<table>
<thead>
<tr>
<th>Background</th>
<th>Foreground Images and Text</th>
<th>Highlights</th>
</tr>
</thead>
<tbody>
<tr>
<td>white</td>
<td>dark blue</td>
<td>red, orange</td>
</tr>
<tr>
<td>light blue</td>
<td>light yellow, white</td>
<td>red-orange</td>
</tr>
<tr>
<td>blue</td>
<td>light blue, dark green</td>
<td>red</td>
</tr>
<tr>
<td>light yellow</td>
<td>violet, brown</td>
<td>red</td>
</tr>
</tbody>
</table>

Colored words or images in a monochrome display will draw the eye. Notice how the “hot” arrows in Figure 8.19 stand out from the cool background. Further, a color repeated in different parts of a display tends to show a relationship between or among those parts. For example, if only two symbols in a display are shown in cherry red, they will appear to be related to each other, and the viewer’s gaze will go back and forth between them. Please view these suggestions about color schemes as general guidelines, not as absolute rules, because in any situation many factors will have an impact on whether particular colors will work well together.

Colors on a computer screen may not be the same from one computer to another. Projected colors may also be different. Colors that look good on your computer may look different when projected. It is a good idea to practice your presentation to determine whether the projected colors efficiently transmit your message.

**LEGIBILITY**

A visual cannot do its job unless all viewers can see the words and images. It’s surprising how often this simple rule is broken. Think of how many times you have heard a presenter say, “You may not be able to see what’s on this, so let me describe (or read) it for you.” To keep this from happening, make sure your visuals are large enough to be seen by all your audience members, even the most distant viewer. This applies to printed materials, projected visuals, and displays.

Legibility can be improved by increasing image size, type of font, and contrast among objects in a visual. Just as we discussed contrast in reference to color, contrast also applies to the total visual. Make sure the objects in your visual don’t blur together. The goal of good visual design is to remove as many obstacles as possible that might impede interpretation of your message. Remember: If your students can’t see it, they can’t learn from it!

**APPEAL**

Your visual has no chance of having an effect unless it captures and holds the viewer’s attention. There are several techniques to provide appeal: style, surprise, texture, and interaction.

Different audiences and different settings call for different design styles. Think about the simple, uncluttered,
Figure 8.18
Color and Legibility
Black lettering on a yellow background (a) is the most legible; the other combinations are shown in descending order of legibility.

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When designing visuals, teachers need to use the principles of universal design to ensure that they are making the visuals usable to as many students as possible regardless of their age, ability, or subject area. Universal design accommodates students with a variety of learning levels, including disabilities and special talents. These principles promote simple, intuitive, equitable, and flexible use of visuals. All of these ideas in this section on visual design guidelines promote universal design.

CREATING VISUALS

Planning is an important component of creating visuals. Software tools provided in Inspiration and Kidspiration are excellent for using planning techniques such as storyboarding, concept mapping, or concept mapping. It is also helpful to understand methods such as lettering techniques or how to create simple drawings, sketches, or cartoons. Techniques for creating presentation graphics and overhead transparencies are also important tools in producing visuals.

PLANNING TOOLS

If you or your students are designing a series of visuals—such as a series of computer screens, a set of PowerPoint slides, a video sequence, or several related overhead transparencies—storyboarding is a handy strategy for planning. This technique, borrowed from film and video production, allows you to creatively arrange and rearrange a whole sequence of thumbnail sketches or some other simple representations of the visuals and text you plan to use. Any narration would also be included on the storyboard, along with production notes that link the visuals to the narration. After developing a series of such cards, place them in rough sequence on a flat surface or storyboard holder (Figure 8.21).

Index cards are common materials for storyboarding because they are durable, inexpensive, and available in a variety of colors and sizes. You may also use small pieces of paper. Self-sticking removable notes have become popular because they will stick to anything—cardsboard, desks, walls, whiteboards, bulletin boards, and so on.

Divide the individual storyboard cards into different sections to accommodate the text or narration and the production notes (Figure 8.22). The exact format of the storyboard card should fit your needs and purposes. Design a card that facilitates your work if the existing or recommended format