



The importance of visual design and aesthetics in e-learning

Jorge Reyna

Every time I undertake a new e-learning project, I explain to my client that a good online learning experience needs to take into account at least six basic aspects: visual design; information architecture; web standards and accessibility; principles of multimedia learning; pedagogical considerations; and of course quality of content. Each of these components is important to enhancing the learning experience.

Visual design is usually an aspect that is neglected or implemented at a less than professional level in online learning. Why is good visual design and aesthetics important in online learning? Design and aesthetics have a profound impact on how users perceive information and learn, judge credibility and usability, and ultimately assign value to an online experience. This article will summarise the principles of visual design applied in online learning. The aim is for readers to review and apply this knowledge to enhance usability, influence perception, increase appeal, and make better design decisions when designing online courseware.

Design elements and principles

To apply visual design effectively, it is important to understand the elements and principles of design which underpin good visual design. The purpose of this article is not to cover these concepts in-depth but to remind e-learning professionals of the importance and impact of these in the development of visually appealing courses. Briefly, the elements of design are: line, colour, shape, texture, space, and form. Principles of design are tools that are applied to these elements bring them together into one design. How these principles are applied determines how successful a design is. Successful application of design elements and principles is not an easy task, and it

takes time to achieve consistent results. It is important to remember that the best designers sometimes disregard the principles of design. When they do so, however, there is usually some compensating merit attained at the cost of the breach. Unless you are certain of doing so as well, it is best to abide by the principles.

When developing a visual interface for e-learning, the golden rule is to play it safe and use a symmetrical and clean design.

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Symmetry is an age-old device of the visual artist. The word refers to two halves that perfectly mirror each other. In design, symmetry is closely tied to balance. A perfectly symmetrical design achieves balance and a sense of stability, which is highly desirable for e-learning. One powerful aspect of symmetry is its ability to direct the user's focus (*Figure 1*). In contrast, an asymmetrical design will have an opposite effect and may distract learners' attention to other elements on the page (*Figure 2*).

When developing prototypes/mock-ups of online learning, effort should be focused on

achieving visual balance and this will be easily accomplished using symmetrical design.

Colour scheme

Colour creates moods and the way they are combined is very important. While perceptions of colour are somewhat subjective, there are some colour effects that have universal meaning. Colours in the red area of the colour spectrum (red, orange, and yellow) which are known as warm colours

evoke emotions ranging from feelings of warmth and comfort to feelings of anger and hostility. Studies have also shown that certain colours can have an impact on performance. Exposing learners to the colour red prior to an exam has been shown to have a negative impact on test performance (Elliot *et al.*, 2007). More recently, researchers

discovered that the colour red causes people to react with greater speed and force, something that might prove useful during athletic activities. (Elliot & Aarts, 2011). In contrast, colours on the blue side of the spectrum (blue, purple, and green) are known as cool colours and are often described as calm, but can also call to mind feelings of sadness or indifference.

The use of bright background colours and combinations that "clash" should be avoided, as it makes it hard to read. They can even cause dizziness, sore eyes, headache, and loss of concentration/

motivation (Reyna, 2009) (Figure 3).

An appropriate colour scheme conveys professionalism and will help learners to engage with the material (Figure 4).

Using graphics or patterns as background can decrease legibility, and it is recommended to avoid them (Figure 5). Remember the colour scheme can impact on readability and become an issue for colourblind people. A good solution is to download the free plug-in for Adobe Photoshop called Vischeck which simulates colour blindness and tests projects before deployment.

What is a good colour scheme for e-learning? Have you noticed how art galleries have white walls? They want the visitors to focus on the artwork exhibited rather than the walls. The more simple and plain the colour scheme you use on your e-learning site, the better it will showcase your content for your learners. I highly recommend a neutral colour scheme and the use of white or soft background colours (Figure 6). Soft background colour with dark fonts creates good contrast, stimulates reading and engages students, enhancing the learning experience.

Typography

Web-safe fonts used to be ideal when creating websites. Web-safe fonts are fonts which are common to all versions of Windows, Mac, Linux, etc. They guarantee a proper display across platforms. Custom fonts are among the most appealing aspects of CSS3 for designers. With the font-face rule in CSS3, you can render any font you have online within your web page text, regardless of whether the user has it installed or not. Services like Typekit by Adobe are changing the way fonts are used in web design. Typography has been described extensively for graphic design but less so for web design. On the other hand, some fonts are more legible than others and more accessible. That is the reason why web safe fonts are still recommended for e-learning projects.

The following are some general rules on typography for websites:

- Avoid using different fonts, different sizes and different colours on the same page.
- For consistency, the same font type,

size and colour should be used in your entire e-learning project.

- Avoid underlining words unless you want to create a link from them.
- Avoid using capitalisation.
- Use bold fonts discreetly, otherwise you may lose the attention you want to attract.
- Italics should only be used for foreign or Latin words like *in situ*, *ad libitum* and so on (Reyna, 2009).
- Try not to use red when writing important announcements online. It carries a negative connotation in some cultures, and can be hard to read.

By applying the typography rules listed above you are more likely to create an inviting and professional website (Figure 7).

Layout consistency

Have you tried to buy an item online, found the best deal, but were put off by the layout of the website? Layout consistency is crucial in web design and of course in e-learning: it is about credibility and conveying a professional message. Layout is not only defined on how elements such images, buttons, links are distributed on the page, but also relates to colour scheme and information architecture. A consistent site will have all the pages looking similar with the same design layout and a design pattern that is consistent across the entire website. This makes the site credible and students will be able to engage with your content more easily.

Recent studies reported that the aesthetics of a course, particularly the layout, the use of graphics, and the ease of use, were important in motivating learners to engage and persist in web-based learning (Scribner, 2007; Glore 2010). This emphasises that it is increasingly important for educators to consider aesthetic qualities when developing course materials.

When designing an e-learning website, it is advisable to use 'flexible grids' which allow the page elements to automatically rearrange according to the screen size of the user. This is called 'responsive design' and is covered in an article on the move from Flash to HTML5, that originally appeared in *Training & Development* magazine (October 2012 Vol 39 No 5)



Fig 1: Symmetrical prototype. Notice the two halves perfectly mirror each other. This design achieves balance and stability and directs user focus.



Fig 2: Asymmetrical prototype. The user may get distracted and click other parts of the interface.



Fig 3: Colour clash examples. This colour scheme has an energetic, raw, and brash quality. It is used primarily in advertisement and graphic design and should be avoided in e-learning.



Fig 4: Neutral colour scheme. This colour scheme is the natural result of neutralizing colours by mixing them with their respective complementaries.

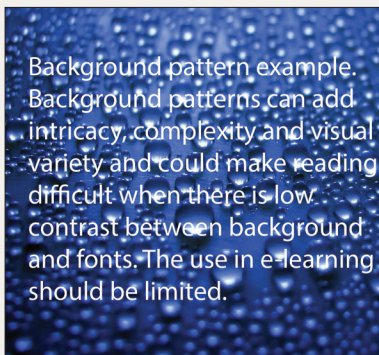


Fig 5: Background pattern example. Background patterns can add intricacy, complexity and visual variety, and could make reading difficult when there is low contrast between background and fonts. Their use in e-learning should be limited.

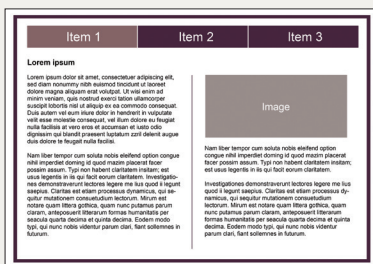


Fig 6: A design that uses a neutral colour scheme and white background with black fonts. It looks clean, professional and legible.

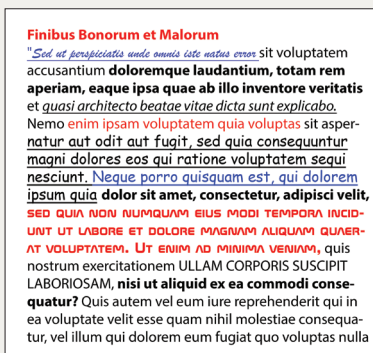


Fig 7: Poor use of typography. Note that this example is hard to read and the page appears confusing.

The more simple and plain the colour scheme you use on your e-learning site, the better it will showcase your content for your learners.

Layout consistency creates a sense of professionalism on a website, making it more credible and appealing to users.

Presenting information effectively

A basic principle of information architecture for websites is the ‘principle of disclosure’ which refers to showing only enough information to help people understand what they will find as they read further (Brown, 2010). In this regard, students can be tricked by using accordions (JavaScript) with labels (headings) and by avoiding scrolling pages as much as possible. When the information is visually compacted, it creates an impression that there is not much to read and prevents users from feeling overwhelmed. Another principle that helps to present information effectively is called ‘focused navigation’ (Lidwell *et al.*, 2010). If you have a page with online lectures, use only links rather than a combination of links and embedded player, and be consistent to avoid learners’ confusion. When presenting an activity for learners to watch a video and comment on a blog, embed the video inside the blog. Don’t give your learners the opportunity to walk away by clicking a link and opening a new window.

Finally, ‘the principle of objects’ points us to treat content as a living, breathing thing, with a lifecycle, behaviours, and attributes. For example, if you are going to post an online lecture (Slidecast) using multimodal delivery, you will need to make sure you label the objects appropriately, such as Interactive PDF (Size MB), PDF to Print (Size MB), Audio File MP3 (Size MB). This will let learners efficiently choose the way they want to engage with your content, and you will be catering to various learning styles.

Aesthetics and credibility

Recent research has proposed that aesthetics play an important role in shaping user responses to products and websites. Users also draw on aesthetic impressions to judge usability and credibility. In online learning, it is therefore important for training providers and educational institutions to consider the educational function of visual content and the aesthetic judgements that are being made by learners. Including visual content and applying aesthetic standards during online course development can ultimately improve not only the visual appearance of course content, but can also improve how students react to and interact with those courses.

The digital aspects of aesthetics and design are not limited to photos or graphics displayed on a screen, but include methods of deliberately arranging elements to appeal to the senses or emotions of the user, or the act of creating something that does not exist (Batiha, Al-Slaimeh & Besoul, 2006). Over 45 percent of consumers made judgments about the credibility of websites based on the site design, including layout, typography, font size, and colour scheme (Fogg *et al.*, 2003). Several studies have demonstrated that aesthetic judgments also affect a system’s perceived usability (Mbipom & Harper, 2009; Tractinsky, Katz & Ikar, 2000). These findings should lead e-learning professionals to consider aesthetics as a way to enhance learners’ experience.

Visual design and aesthetics have a great impact on how users perceive information, learn, judge credibility and usability, and ultimately assign value to an online product. It has a role in enhancing and supporting teaching, but it has often been neglected or implemented less than professionally in online learning. The aims

of a visual design are to ensure legibility; simplify the message; increase learner engagement; focus learner attention on important points; and provide an alternative channel of communication.

Visual design principles and aesthetics are key considerations of every e-learning project. The aim is to deploy content that is visually appealing and conveys a professional and credible message to learners. This will have a positive outcome in engagement and retention. ■

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Jorge Reyna works as an educational technology consultant. His background includes a degree in Animal Husbandry, Masters of Science in Veterinary Science, Certificate IV in Digital Media and Certificate IV in Small Business. He has been presenting workshops for academics and students in the area of eLearning, digital media authoring tools and Web 2.0 tools. Contact via jorg.reyna@gmail.com or visit www.jorge-reyna.com

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