Abstract: A web designer must use color in an efficient way that will present, on the internet, information, services, organizations and products. Colors have great impact on the human psyche. By using color along with various techniques web clients can be influenced to buy (products or information) and can even be inspired.

Key words: color, contrast, web, design.

1. INTRODUCTION

1.1. What is Web-Design

Web design is the realization of websites, from the moment of conceiving the structure and graphic interface to the point of finalizing the programming and the actual introduction of the data – images, text, files and other elements – that makes up the site content.

1.2. How to create a website

Every site goes through the following stages:

- Establishing the main ideas
- Sketching the visual elements and making the site structure
- Programming the web pages (HTML, CSS, JavaScript)
- Website testing
- Changing the parts that don’t meet the target
- Publishing the site on the web
- Posterior modifying and republishing on the Internet, according to client needs.

After settling the site structure, the part when the graphic interface conceiving begins, which besides the esthetic goals, must allow the visitors access to all the public sections of the site, be easy to understand, and fast to load. When talking about the site design, web sites are mainly made up of invisible line tables where images (logos, symbols, and buttons) and text is inserted, in such a way that the layout is unitary and there is no trace of tabular organization. The graphic designer uses initially graphic software (Adobe Photoshop, CorelDraw etc.) to make up an idea of how the website will look. He creates the button shapes, dimensions and positions the site logo, sets the place of the menus, how and where the text fits, and the website color scheme, along with other specific aspects. Because this primary image is then split into many little images, which are to be inserted into tables or defined using CSS, graphically, websites comply with the same composition rules as print graphics. After the initial image has been split into tiny images, these are inserted into tables or are positioned using CSS, or by writing the HTML code in a simple text editor like Notepad, or with the usage of more complex HTML editor like Dreamweaver. This way a site sketch is being generated, called a “mock-up” site, which simulates the website and its functions, without having an actual content, only fake text and temporary images. [1]

1.3. History of web-design

Tim-Barners-Lee published in august 1991 what is considered to be the first website. Barners-Lee was the first to combine Internet communication (e-mail, Usenet) and hypertext (limited in those times to only browsing the information on a single computer). The websites are coded in simple HTML and the first HTML versions were rudimentary, offering just a basic structure (headings and paragraphs) and the possibility to use hypertext. As the Internet and web-design evolved, website programming became more complex and flexible, offering the possibility to add tables and images to the web pages. As time passes, websites change their interior code and exterior design with the ever changing and evolving web design programs and utilities.[2]

2. THE INFLUENCE OF COLORS IN WEB-DESIGN

2.1. Introduction

The internet is a visual and psychological medium. The words have by far the greatest psychological impact on the website visitors, becoming thus the most important communication tool. But another important psychological aspect that is overlooked many times is the site colors. The color of the background, the headline, text and heading color all have a psychological impact on the site visitors.[3]

2.2. General meaning of color

A lot of reactions towards colors are instinctual, universal and pass cultural frontiers. Also, colors offer a message that surpasses ethnic, racial or sexual barriers.

According to a 1997 study made by Cooper Marketing Group, power is generally associated with scarlet red by 25% of the interviewed, black by 17% and violet by 13%. More than 55% chose one of these colors from a total of 100. Fragility was best represented by pale pink (27%), white (9%) and pale lavender (9%).

Also, there are some color associations specific to cultures and regions. Mixing adequate quantities of colors can neutralize negative cultural connotations. A successful web design is sensible to iconic, instinctual and cultural meanings in relation to the promoted product on the website and tacked into account the cultural and sexual background. Experts have conceded that blue is, globally, the most positive perceived color.
Blue is the color that inspires safety in almost all cultures. You can use blue in almost any site, indifferent of visitor type, the purpose of the site or its location. Other colors are more difficult to classify. Pink is such an example. For visitors from India or Eastern Europe, pale pink signifies the feminine, but in other countries such colors are favored by both sexes. In catholic Europe violet is associated with death and crucifixion. It is said that in some Arabic cultures violet is associated with prostitution, like red is associated in eastern and north-American cultures with this same activity. Violet is also the symbol of mysticism and spiritual beliefs that don’t align with classic doctrines like Judaism or Christianity.

It must be taken into account that mixing of colors can completely alter the individual significance of colors. For example, white, associated in many eastern and west-European cultures with purity and cleanliness, denotes bad luck in China and Japan where it is a mourning color. In India, a bride in white resembles future unhappiness.

But if we mix this color with another, like red, its significance totally changes and the negative connotations are changed or even expelled. In many cultures red is associated with good luck and vitality. When combined with white, red becomes even stronger and white is neutralized.

Another consideration that must be taken into account, regarding color, is the difference in perception for men and women. Some generalization: blue comes forward more for men than for women; men prefer blue to red and for women it’s the other way around; men prefer orange to yellow and to women also, it’s the other way around. Women’s preferences concerning colors are way more diverse than those of men. In a study in England women could actually count more colors than men. When choosing a color scheme, you must take into account the cultural resemblances of the respective colors. For example, red will have a different impact on teenagers than on people over 40, who may find it tiring.

Green inspires trust. Blue shoes seriousness. When research is done for a color scheme, another point of view is to find the colors associated naturally with the product. For example, a website that presents natural products should use colors associated with them.[4]

### 2.3. Online stability of colors

The simplest explanation for color instability comes from the gamma differences and user allocated space and the operating system for the color scheme. Gamma is responsible for the lighting of an image. Different operating systems have different gamma standards, many of them not having enough gamma correction for the accurate presenting of colors, thus the images will have to suffer modifications. Every computer functions in its own color range. The first step toward color stability on any work stations is the introduction in the graphic image of color depth and gamma. A first solution would be the ColorSync computer designed by Apple. By definition, a stable color management system exists within the operating system. Besides these, there is also a ColorSync filter in Photoshop to call up the most important color profiles for the conversion of the images in a GIF or JPEG. Another promising solution is the new graphic format, PNG.

### 2.4. Basic rules of web-design

The first rule when choosing a site associated color is naturally associating it with the presented product. For the realization of a more suggestive site one can choose an image from nature, identify its basic colors and then use those as basic color range.

Contrast is of high importance in pages with lots of text. In these cases, it is recommended that you use background as simple as possible, in neuter colors so as not to produce visual discomfort. The difference in hue between text and background must be big enough for the text to be easy to read. In addition, the background must be solid, devoid of pictures, patterns or animations (Fig. 3).

The design of web pages implies that we use colors that create a pleasant visual aspect indifferent of what browser or computer they are accessed from. This is how web-safe colors were created.

![Color range identification.](image1)

**Fig. 1 Color range identification.**

**Fig. 2 Strong hued colors usage.**

**Fig. 3. Importance of background color**

And although the color range is not as limited as in the past, web-safe color usage is recommended especially to beginners and to those who desire a simple and neat website image. After we choose a color scheme, we must apply a desaturation to the colors (Fig 4). When
designing a web page there are several color combination from which to choose.

![Fig. 4 Desaturation example.](image)

2.4.1. Monochromatic color scheme
A single color is used, but with different luminosity and hue values (see Fig. 5).

![Fig. 5 Monochromatic color scheme.](image)

These color schemes are harmonious and create a unitary and elegant image. The ensemble is easy to look at, especially the ones that use blue and. It is used to establish a general atmosphere within the site. Besides the basic color, white, black or grey can be used for a difference in hue. In spite of this, important objects are still difficult to track. This color scheme is recommended for sites which accentuate the content.

2.4.2. Analog color scheme
The analog color scheme uses three adjacent colors. One color is dominant and the others are used to accentuate certain details (see Fig. 6). This scheme also creates a harmonious atmosphere. The dominant color establishes the general scheme of the website, while the other color complete it, as in a natural ensemble.

![Fig. 6 The analog color scheme.](image)

2.4.3. The triad color scheme
This color scheme is composed of three equally placed colors on the color wheel (see Fig. 7). The scheme is used by artists as it offers the possibility of utilizing a large hue range, while remaining balanced and harmonious.

![Fig. 7 The triad color scheme.](image)

2.4.4. The analog – complementary color scheme
This scheme uses a color along with the analogs of its complementary. It offers a powerful contrast without being tiring (see Fig. 8).

![Fig. 8 The analog-complementary color scheme.](image)

2.4.5. The complementary color scheme
The complementary color scheme is made up of two complementary colors (see Fig. 9). The scheme produces powerful contrasts that are why it is advisable to use one as main color and the complementary for accents. This scheme imprints a dynamic atmosphere, the reason why it is used on children’s websites.[5]

![Fig. 9 The complementary color scheme.](image)

2.5. Contrast
Contrast is the difference between two colors. In a website, the necessary contrast quantity depends on the different parts of the page. A contrast between text and background is preferable. Still, too much contrast can make the image disorganized and tiring. The most powerful contrast is between white and black. Johannes Itten, Bauhaus teacher, identified seven types of contrasts.

2.5.1. Hue contrast
The hue contrast is closest to the actual color combinations taken from the color wheel up above. The more distant are the colors one from another, the more contrast they’ll create (see Fig. 10).

![Fig. 10 Hue contrast.](image)

2.5.2. Luminosity contrast
Dark colors seem to come forward while lighted colors go back. Luminosity contrast can be applied to white and black but also to colors. It can be seen on the top row the highest contrast, in the pairs with 100% and 10%. As the percentage drops, so does the contrast. Luminosity contrast can be used to make a dynamic, powerful impression (Fig. 11).

![Fig. 11 Luminosity contrast example.](image)
**Influence of colour in Web-Design**

### 2.5.3. Cool and warm contrast

A special kind of hue contrast is the cool and warm contrast. Cool colors generally seem more distant, while warm ones seem closer. This type of contrast is very useful as you can use a warm color for the menu and a cool color for the background (see Fig. 12).

![Cool and warm contrast](image)

**Fig. 12** Cool and warm contrast.

### 2.5.4. Complementary color contrast

You can easily make up a high contrast between two complementary colors. As with the hue contrast, the smaller the hue percentage, the weaker the contrast (Fig. 13).

![Complementary colors contrast](image)

**Fig. 13** Complementary colors contrast.

### 2.5.5 Simultaneous contrast

This type of contrast is realized when the limits between two colors seem to vibrate. It is very useful at creating interesting illusions (see Fig. 14).

![Simultaneous contrast example](image)

**Fig. 14** Simultaneous contrast example.

### 2.5.6. Saturation contrast

This type of contrast is best for the design aspects which need not be accentuated. The saturation of a color refers to its purity. 100% yellow is a pure hue. Mix 10% black or violet (yellow’s complementary) with 100% yellow and the last will become dull. You can also dilute a color (add white) to shorten the color percentage. Saturated colors give a subtle and sophisticated contrast (see Fig. 15 and Fig. 16).

![Saturation contrast example](image)

**Fig. 15** Saturation contrast example.

![Saturation contrast example 2](image)

**Fig. 16** Saturation contrast example 2.

### 2.5.7. Proportion contrast

Proportion contrast refers to the relative size, area and color proportion and its relation to the other colors on the page. The red squares in the image underneath are smaller than the green rectangle and still, they point out of the image because of the difference in size (Fig. 17).[6]

![Proportion contrast example](image)

**Fig. 17** Proportion contrast example.

### 3. REFERENCES


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