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How to develop a University educational guide? Some suggestions for its graphic design

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1. Introduction

It is being a more common practice that universities edit and distribute a document called educational guide or study guide at the beginning of each academic course. This publication is principally for students and contains information and details referred to the institution. For example, study plan and subjects, management team and staff directory, history, services (library, secretary, laboratories), building plans, etc.

This study guide constitute a fundamental support for new students who need more information because they do not know the centre. Also is a useful tool for old students because it serves as reminder of the information they already know or as a referral of new data.

In addition, this educational guide can serve as an introduction letter for the institution for those who are interested in knowing some more about its academic aspects. The educational guide could be given to future students, parents, high school students, visitors, congress assistants, etc. In these cases it constitutes a superb instrument for showing and promoting the institution.

These two segments determine two basic functions of the educational guide. On one hand this publication has an informative purpose since it has been created to inform about main issues as subjects, schedules, telephones, etc. On the other hand it has a promotional function because it can become a kind of business card in order to introduce the center to the different audiences.

Besides, this second function reveals that both the contents and the form play a fundamental roll which is not only to inform but also to promote and to persuade by transmitting a suitable and attractive image of the university.

The following pages present some guidelines about how to design one of these Teacher Guides including suggestions about the use of typography, images, grid and components of the Visual Corporate Identity. One of the Guides made for the Engineering Design Upper Technical School of the Universidad Politécnica de Valencia (Spain) is presented as example at the end. The comment regarding to decisions made about the design to be used in this Teachers Guide may serve as an example for the suggestions that have been presented.



Fig. 1. Studies Guide 06-07

2. Color

Color is an important element in any graphical design since it not only heightens the presence of the poster, packaging, logo or brochure and distinguishes it from the competition but also because it can communicate certain values, concepts or meanings.

Color language is probably nowadays the most universal of all because it has a very significant presence in analogies and connotations within popular language. Although color was also created to distinguish itself from the others it was also thought as the purest and most millenary vehicle of communication. Color selection and use in design must follow certain guidelines (Ferrer, 1999).

2.1 Color in the design

Designers refer to three variables when using colors: tone, brightness and saturation.

Tone defines color thorough the wave long that dominate it's expectrum (Ferrer, 1999) and it's what we normally call color: green, blue, red, yellow...

Brightness refers to lightness or darkness contained in a tone (Ferrer, 1999; Carter, 1997) and can be also describe as the amount of white or black mixed with the tone (Chijiwa, 1999).

Value distinguish between light colors and dark colors: a color is lighter or brighter if white has been added and darker or less bright. (Carter, 1997).

Saturation is related to color intensity o pureness and goes from matte to bright or from an intense tone to a opac one depending on how much gray is in it (Ferrer, 1999).

It's also possible to distinguish between cool and warm colors. In general, red, orange and yellow transmit warmness and blue, green or purple transmit coolness (Carter, 1997).

2.2 Choosing and combining colors

Chijiwa (1999) indicates some parameters about how to choose and use color for the design of a Teachers Guide. First of all, he considers necessary to know colors which includes to familiarize with their three characteristics (tone, brightness and saturation), the uses and

emotions associated with each color and the six great chromatic categories (warm, cold, light, dark, intense and dull).

This distinction seems to be more useful when combining two or more colors. According to Chijiwa (1999), it's important to ensure that it exists a reasonable gap between those colors that will be mixed. So if colors have a similar tone, it should have different brightness and saturation; or if colors have similar brightness, saturation and tone may be different.

Main goal of the design may be determined next. For achieving it, it becomes useful to answer the following questions:

- What type of effect you want to obtain?
- What colors will transmit better that effect?
- Are those colors topic or have been used too much? What other possibilities are available?
- Do those colors adjust to your potential public? Are they legible? Are they showy?
- Can you improve the effect by changing some colors?

Once the main goal has been determined, it's convenient to decide colour (light or dark) brightness. Although people usually classify colors by their tone, luminosity is much more important when determining the general aspect of the design. In fact, all colors with the same brightness (for example, all light colors or all dark colors) are similar enough without considering shade. Nevertheless, colors with the same shade but with different values (for example, blue sky, turquoise and navy blue) can be surprisingly different and hard to combine.

So choosing brightness first the general design effect is chosen as well: Do you wish an intense and showy design? Or light and smooth? Or better dark and discreet? Or dull and grey?

Furthermore, it is important to consider that it is more important to vary brightness and clarifying or darkening colors than to vary tones when combining colors. If light and dark colors are contrasted, the scheme will be showy and three-dimensional. If only tonalities appear contrasted, the final scheme seems to be flat and poor.

Regarding to the number of colors to be used for the design, Chijiwa (1999) considers it necessary to limit the number of colours in order to increase chromatic armony. Two or three colors should be enough, five would be excessive. Besides, it is necessary to make sure that only one color exists and establishes the guideline for the rest of the chromatic scheme.



Fig. 2. Chromatic selection for the 04/05 CD Studies Guide version

Besides, intense colors must be used with moderation to avoid an annoying perception rather than spectacular effect. They have to be used in general for details (for example headline) and light or dull colors for background.

Lastly, Chijiwa (1999) suggested to use an achromatic color (black, grey or white) to get a harmonious result. White or black have a simplicity and an elegance that is able enough to attract our attention as much as the most showy and intense colors. Apart of that, all colors combine with black or white.

2.3 Color Language

According it (1995), people experiment colors in three levels: psychological, cultural and asociative. The psichological answer is universal and involunteer and regarding to it, red color accelerates pulse while green decreases it.

Color is also related to traditions established in each culture. For example, black is the color of death in Occident while in some oriental countries it it white. Associative experience also reflects those expectations produced by colors as a result of marketing efforts along time that makes for example that the combination of white and red remembers people to Coca-Cola.

According to March (1989), associative characteristics of colors can be acquired (for example red that is related to danger) or symbolic (for example blue is associated to cleanliness and green to health and wellness).

Nevertheless, there is no unique code for the use of color because the meaning of each color depends on different factors: experiences, taste, fashion... ad the meaning it has today can become totally different tomorrow (Ferrer, 1999).

Several authors include in their works the most comon meanings related to every color from the symbolic, cultural or marketing associations that have been acquiring along time. The following table includes the most important meanings and uses colors have in Graphic Design sector.

Color	Associations	Use in Graphic Design
Black	Darkness, sadness, mourning, death, ugliness, night, deepness, hate, heavyness, fear, magic	Great background color because other colors bring out over it. Perfect to transmit concepts as elegance, wealthy, high quality, selection.
White	Pureness, peace, innocence, virtue, truth, goodness, lightness, elegance, cleanliness, sterility, coolness, simplicity.	Creates distance and space. As background color takes away brightness and tone from the other colors. Used as secondary color in order to obtain visibility and impact.
Green	Nature, freshness, humidity, life, health, ecology, hope.	Surgery and first aid equipments.
Red	Blood, fire, revolutionary passion, communism, emotions, movement, force, aggressivity, intensity, rage.	Dominates the collection, bring out the profiles and attracts attention strongly.
Orange	Warmness, friendship, excitement, spontaneity.	Cheap goods.
Blue	Constant, fidelity, trust, meditation, mysticism, serenity.	Masculine products, cleaning products, transportation and financial sector.
Yellow	Joy, loud, sun, wealthy, intelligence, intuition.	Great impact.

Table 1. Color Meanings (Ferrer, 1999; Wills, 1999; Chijiwa, 1999; Heller, 2004).

3. Typography

It is necessary to consider the election of the font as well as its location within the page when we talk about typography. Both purposes may consider two basic functions of typography: linguistic and aesthetic (Martín Montesinos & Mas Hurtuna, 2001). On one side, text readability will be reached, on the other, transmitting a correct graphic image, attractive and consequent to those values that want to be transmitted.

Recommendations about the correct use of Typography are listed below.

3.1 Choosing Font

The more anonymous a letter is, the more legible it becomes. Therefore a familiar typesetter font will be chosen for the Teacher's Guide in order to transmit the information to the receiver as efficiently as possible considering the importance of this process.

Another aspect to be regarded is that well-proportioned and open characters that show the regularity of the classic typographical families (Helvetica, Times New Roman, Garamond, etc.) are easier to read than those types with edgings, decorations and irregularities (Carter, 1997). So typeface selected for the Teacher's Guide may be that kind.

Regarding to the number of typefaces to be used in the design, it turns out too annoying to read more than two different typographical families in the same page. For that reason, it is recommended to use only one typeface family and to vary its size and thickness (using typefaces) in case some part of the text has to be reinforced.

Scripts also bring out part of the text. Nevertheless, it may be used carefully because too many characters are inclined in a text it is more difficult to be read (Carter, 1997).

About Capital letters and lower-case letters, a text written in capital letters makes the reading slower (reading speed decreases 12%) and occupies more space (Carter, 1997). The difference in regard to legibility is because small letters add visual signals to the text (various shape letters, ascendants, descendants and word forms) that makes the reading easier whereas capital letters lack of this visual variety. It is better to use lower-case letters and leave Capital Letters for special cases (for example, titles, key words within the text, etc.).

Last, it is important to determine font size correctly because too big or too small letters tire readers easily when examining plain texts. When defining what size is more appropriate, we have to consider that the height of the "x" influences more in the legibility of the text than the size of the letter (10 or 12 points) (Bix et al., 2003).

3.2 Text Location in the page

Once typography has been chosen it's necessary to decide how to locate text all over the page. This decisions are related to aspect such line size, number of columns, space between lines, text direction, etc. There are some guidelines for this as well that make reading much easier.

Regarding to line size, if text lines are too long, it becomes tedious. On the other side, if text lines are too short its reading produce a discontinue movement of the eyes, that reader get tired as well. So it is essential to look for a coherent line length as well as to maintain the body of the text.

At the same time, a correct space between lines makes reading much easier. Reduced space between could make readers confuse a line with the following one. Oppositely, if space is too large finding the following line becomes more difficult.

Refearing to text direction, the disposition of our eyes makes horizontal vision more natural than vertical vision. Therefore, a text horizontally written is easier and quicker to be read than another vertically written.

Regarding to text alingment, It seems that left alignment is the most legible since space between words is homogenous and in case lines finish in different points readers can easily locate the beginning of the following line. That's why it's more convenient for long texts. Right alignment makes it difficult to locate the following line that is why it should be only used for short texts. Centred alignment gives text a very formal appearance and should not be considered long texts. Last, justified text is uniform and unsuitable hollows do not interrupt the fluency of the text its reading becomes easier and appropriate for long texts.

According to text color, it should be selected thinking about obtaining the best legibility. Legible color combinations present tone contrast (warm and cold), brightness contrast (light and dark) and/or saturation contrast (intense and dull) but brightness contrast is the most important of all. It is also important to know that texts are clearer when dark letters are over a light back (Carter, 1997).

3.3 Typography Language

Typography exist to be read and to be seen as well (Willberg & Forssman, 2003) so values beyond simple meanings can be transmited through written words.

Typefaces have character as people do and it can be expressed through it's global effect – through it's force and smoothness- and through it's individual elements as well (March, 1989).

Written text is usually related to peronal, organic, unique and espontaneous while printed text is impersonal, neutral, objective, precise and universal (Ruder, 1992).

In the same way, each type family transmit different values. According to Blanchard (1988), gothic typographies remember ancient times, the past, middle age, religion or gastronomy; Garamond typography suggest elegance and tradition; typographies like Bodoni or similar las tipografías como Bodoni are associated to dignity, asuterity and coolness; Optima give the sensation of a modern clasisism; sans serif letters as Helvetica or Univers refer to modernism, industry and funcionalism; typographies like Antique Olive transmit an elegant modernism; and scripts suggest personal witting.

As written text creates kind of figure and its draw doesn't help at all if there are no connotations related to the sense that wants to be transmited, selection of typography may be directed by the idea (Moliné, 1999). This way, form and content may transmit the same meaning and communication may be much more effective.

4. Image

Images play an important role in all designs. Not only they transmit those information that can not be shown by text but also they add attractive to the graphic aspect of the page. Images are a more intensive stimulus than words. Therefore they are more perceptible and easier to remember. (Underwood & Klein, 2002).

Photos, illustrations, graphics, schemes or tables are kind of images that could be used for a Teacher's Guide depending of the information that would like to be transmitted.



Fig. 3. Images example

4.1 Use of Images

In some cases images used in a Teacher's Guide belong to other graphical products made previously but merely they are specifically created for their insertion in the guide. No matter their origin, they may have a homogeneous aspect in order to get a coordinated design and to transmit the same values.

It is much easier to get this homogeneity when images are specifically created for the Guide while they could be very different between each other when taken from previous works according to graphical aspect. Designers have different options to create homogeneity in this cases:

- Use the same color range for all.
- Unify font type, style and size used in graphic or tables.
- Insert image into the page in the same way: with or without margin, with or without border, etc.

4.2 Images

According to several criteria, we can classify two different types of images.

Regarding to fidelity towards represented object, images can be realistic or non realistic. Realistic images represent object with great fidelity and it can be easily identified. Non realistic images are abstract and their presentation is not clear enough (Underwood & Klein, 2002).

Images could be also classified according to the represented object (places, things, animals, people...), proximity to the object or vision angle.

According to the technique used for producing them we can distinguish between Illustration, which is an interpreting drawing of reality; and photography that is an image obtained from reality.

Illustration shows the individual and peculiar point of view of its creator in a more evident way and it is used most of the times as a contrast for photography or as support for a better communication and for understanding contests. On the other side, photography offers a depersonalized and objective image (Newark, 2002).

5. Grid

Every design need to be built over a grid that is the invisible structure that organizes graphical material in a surface guiding the position of the elements that compose the design. For designers it constitutes the minimum structure from which their work begins. The gride has a double function: to support designer by deciding how to place elements in each page and to unify the design on the other.

So when designing a Teacher's Guide it's necessary to create a grid that guides the localization of every single element in each page.

The interpretation of the graticule system must be as freely as necessary so that it works correctly. This freedom will be responsible of providing richness to the design that otherwise could be lifeless.

The distribution of elements in the design transmits different impressions. The symmetrical disposition of elements within the composition tends to communicate values related to strength, integrity, elegance and order but it can appear rigid, impersonal, predictable or tedious. On the other extreme, asymmetry insinuates movement and freedom.

6. Corporate Identity

The study guide constitutes one of the different communication elements of the university or school so it can be included in the corporate identity according to Melewar & Jenkins (2002) specially in the chapter "communication and visual identity".

In the actual university environment, corporate identity and specific theme "communication and visual identity" are considered as a powerful source of competitive advantage and a way of presenting the main characteristics of the organization in an effective and consistent way to all of the relevant stakeholders (Melewar & Akeel, 2005).

Including Teacher's Guide in corporate identity means that the design of the guide may be in concordance the style and philosophy of the organization, it means with characteristics and values that represents it and ensure this way that no opposite or different image could be transmitted if other elements are used.

According to visual and graphic design aspects, this means that the Travel Guide may follow the established graphic parameters of the University or School. Each University should have a special regulation regarding to colors, typography, formats, grids, images, etc. that should be checked before starting the design of the Guide and guidelines should be followed as well.

7. Design of a Teacher's Guide

We will apply the guidelines above to view a description of the teaching guide published in 2007 by the Engineering Design Upper Thechnical School of the Universidad Politécnica de Valencia (Spain). The commentary of the design used in this guide will explain in a graphic way all the recommendations made.

First, regarding to corporate identity, the design of the guide follows the guidelines set in terms of corporate visual identity by University and School. In the first case, the instructions for submitting the mark of the Universidad Politécnica de Valencia have been followed. In the second case, the School corporate color (blue) has been chosen. Also, design tries to transmit the characteristic values of the School: innovation, technology and dynamism.

White color is chosen for the background because it will allow a better legibility of the texts. The color for the text is gray characteristic of an industrial and technological world. Furthermore, not using the traditional combination white-black for text, a more modern image will be provides and it will be present more attractive to young public. The corporate color of the School is used to highlight titles and other important information.

Typography only used throughout the guide is Unifers family. This type family has the advantage of being in agreement with the values that will be transmitted (industry, technology, functionality). To reach a good degree of legibility typography must be familiar to the public target.



Fig. 4. Type family (Univers)

The text on the page is presented in two columns to avoid an excessive line length. Text direction is horizontal and justified alignment.



Fig. 5. Double column texts

Images are chosen instead of illustration because they are in relation with the ideas of technology and relevance set out. Finally, to avoid excess of color on the page, black-withe images are used.

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