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## INVESTIGACIÓN/RESEARCH

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# AS INFOGRAFIAS COMO FERRAMENTAS AUXILIARES PARA O ENSINO/APRENDIZAGEM

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**RESUMO:** Pelas suas potencialidades didáticas, a infografia progressivamente vai-se tornando um recurso incontornável para o trabalho pedagógico. Este artigo centra a discussão na utilização das infografias enquanto ferramenta auxiliar no processo de ensino/aprendizagem de conteúdos, particularmente os mais complexos, facilitando a sua compreensão. O ensino nas áreas de ciências sociais, da terra e da vida, poderá ser diretamente beneficiado com o recurso a esta ferramenta didática, que utiliza uma narrativa mais atrativa, sintética e eficiente.

**Palavras-chave:** infografia - infografia multimédia - aprendizagem - tecnologias de informação e comunicação - recurso didático - ferramentas educacionais.

## INFOGRAPHICS AS AN AUXILIARY TOOL FOR TEACHING/LEARNING

With technological advancement associated with media we are constantly being bombarded with information. In spite of the benefits of ease of access, increasingly, the paucity of time hinders their understanding (Cairo, 2008). Given the centrality that infographics has been gaining in journalistic activity, print and multimedia, we

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need a more objective recognition of the semantics associated with computer graphics as an element of information and knowledge transmission (Brigas, 2012). Also in the educational context, static or dynamic infographics are a powerful weapon to hold students attention and facilitate the understanding of the subject matter by reducing its complexity. Thus, it's intended to promote the use of this tool demonstrating its potential to improve teaching and promote learning.

**PALABRAS CLAVE:** infographics - multimedia infographics - learning - technologies of information and communication - teaching resource - educational tools -

## 1. Introduction

Infographics has an essential role for its graphic qualities and exploratory narratives within the educational process and its eventual outcome on learning, not limited to transmit information in a concise and attractive form (Cagijas, 1995). Infographics are used as an auxiliary tool in the teaching / learning in several situations, not only in the school environment, but in the media, businesses, institutions, etc.. Sancho (2001) defines infographics as a "plus informative performed with iconic elements and typography" (p.21), which allows or facilitates the understanding of events, actions or current facts, or even some of the more significant aspects and accompanying or replaces an informative text. Similarly, Peltzer (1992) defines the infographics as "graphic expressions, more or less complex, information whose contents are facts or events, the explanation of how something works, or information is something like" (p.130).

In regards of the use of journalistic infographics, Brigas (2012) refers there are "many authors in consensus understanding that infographics can be considered a information gender itself (Coello, 1999; Sancho, 2001; Casasús, 1991; Sojo 2002)" (p.21). He also alerts for the fact that it doesn't means that any combination of image and text are an infographic, as well as the danger of very complex infographics complicate understanding rather than simplify.

To be considered infographics, this technique has to present certain specific characteristics. Sancho (2001: p.21) suggests eight: giving meaning to information, providing sufficient current information, allowing an understanding of the event; containing written information with typographical forms; containing accurate iconic elements; has the capacity to possess owns identity or has the function of synthesis or complement to written information and provides aesthetic feel and without misprints or absence of agreement.

The same author also considers that infographics follows two basic rules: utility and visuality. Utility on the level of functionality of information, that can be obtained through computer graphics. Visuality since as the reader notice the information that it intended to pass, through the clarity of the draw, instead of the command in the text. It should also keep in mind that the reader always selects iconicelements more familiar.

Peltzer (1992) refers that actually exist more predisposition for graphic information, that readers are more accustomed to the visual codes and many messages can be transmitted, more efficiently, in a visual way. Peltzer gives one of the possible answers, "draw is seen and understood in a very short time, which allows us to speak of an immediate reading; owes its effectiveness to speed" (p.86), that is understood, or rather, that the information you want to convey can reach the level of knowledge of the reader, who puts together the pieces of infographics in a more rapid and effective way, at the same time, then the text.

In a broad sense, infographics is visual representation that facilitates the transmission of information, through the integrated use of different graphic languages. The infographics resort to iconic and textual elements to build a broader sense than purchased by these isolated elements, being the third symbol system formed by their combination (Poloni, 2011).

More simply, we can consider that the infographic is the representation of the binomial image + text although the support where this union informative are presents (Coello, 1999).

## **2. Infographics as teaching tools**

Although the multiple possibilities of using computer graphics, we intend to focus our attention on its pedagogical potential, because as Cairo (2006: p.15) refers "infographics are fundamental tools in education, and even more in present days, we have them in digital format and take advantage that multimedia resources offer". Currently, with the help of technology in the classroom, teachers present more easily multimedia courseware, transmitting information in order to motivate or incite the student to research and, thus, a self-learning. In this context, the infographics used in classrooms presents as a valuable teaching resource, summarizing and integrating iconic symbols and graphs, improving learning.

Dondis (1997), Contreras (2000), Cairo (2006), and others authors, support the use of infographics in education because students learn better when they associate text and images to the process of teaching and learning.

In this regard, Ramos (2012: p.16) refers that "as the infographic as a teaching resource, Mariana Andrea Minervini expresses very well this idea when she notes that: new technologies have transformed our society, the ways of living and thinking. These changes influenced the ways to present the information in different media, which is then transferred to the classroom, trying to optimize the teaching process. Represents a challenge for the education system to develop tools that facilitate the processes of comprehension in classrooms, relation to almost explosive growth of the amount and density of information circulating in all areas of society and in all areas of knowledge".

According to Reinhardt (2007: p.12) "education, linked to pedagogy and teaching, have always been victims of censorship for its gap of modernization, although teachers being essentially communicators and teach is to communicate, reflect on arrangements that allow, in one hand, students to understand what is said, and on the other hand, teachers take into account the reactions of his students". There searcher adds that currently "exist more investment in resources to equip technologically the school than to train teachers, encourage the relationship between them and students or test and evaluate experiences" (p.13).

Didactics is specifically related to the method of teaching (pedagogy), in which it tries to stimulate the mind of the student to create their own learning process (Marques, 2007). A teaching resource has an instructive nature, methodological and aims a maximum efficiency, in terms of transmission and processing of information provided, through the student interaction. In our days, teaching is considered all that requires interaction with the environment, with the goal of teaching.

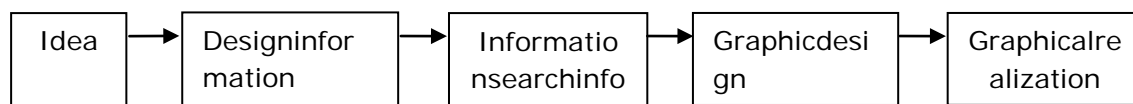
Infographics are a teaching resources Reinhardt (2007) that can be used simultaneously in books and audiovisual or multimedia formats, adapting traditional supports and virtual media, containing images and texts, allowing freedom in the way of reading and decoding content, which may be linear or not, going from the particular to the general and vice versa.

This article argues that the modes of interpretation and reading provided by infographics collaborate with the development of more complex forms of thinking and more adapted to the current time. It means that infographics is able to not only teach, but also allows learning through interpretations and ideas. This capability is invaluable to the teaching method, in which it encourages student participation that captures and transforms the information into knowledge.

### **3. Infographics process of elaboration**

The preparation of infographics which, simultaneously, capture the student's attention, facilitate the interpretation and are scientifically correct, it is a demanding job that goes beyond a simple transformation of data into images or graphics. For the infographic fulfil their functions, it is necessary that the teacher know how to transform data into a story well told, with proper framing and angle of approach, visual quality, and structure. One of the issues most important is the selection of graphical form, which must be done in accordance with the objective of infographics, the nature of the information to represent, the level of education to which is designed and what information is expected that students extract from.

We can consider the model of Chappé (2005) as the basis of the process of developing an infographic (Figure 1).



**Figure 1:** Infographics process of elaboration.

**Source:** adapted from Jean-Marie Chappé, by Brigas (2008, p.92).

In an intuitive way, we can see the importance of organization (layout) of the information, both graphical and textual, to improve the information transfer. A graphic conception effective helps the readability of information, helping students to understand the content more easily. The use of attractive graphics and visual hierarchies help to apprehend the information, allowing students to remember and retain knowledge in long term. At the same time the use of illustrations and pictograms help to familiarize students with the information by creating visual interest.

We should recognize the duality of the infographics user in order to understand where is created the interaction, and therefore the didactic. Teaching resources, as mentioned above, are those who not only call the student's attention, but create a dual channel, at in a certain stage of visualization, this means, the user starts the reading, transforming themselves into a reader, but also in the receiver of information, at the same time, and is in this duality created by these techniques (either in attracting of care, for its aesthetic nature or by its layout) that emerge didactic step in the process of teaching / learning.

#### 4. Conclusion

For its didactics skills, whereas as an auxiliary tool in the process of teaching / learning of content, infographics has progressively becoming a resource indispensable for the pedagogical work. The teaching in the areas of social sciences, earth and life, can be directly benefited from the use of this learning tool, which uses a narrative more attractive, concise and efficient.

This paper intend to encourage reflection concerning for the use of infographics as an important tool in the learning process, by promoting from teachers the utilization of these teaching resources, maximizing the existing technology in the classroom. It can, naturally, appear the question whether it would be counterproductive to use in school teaching resources designed for specific school level, where information is processed and presented in an easy and synthetic form as infographics, students avoiding the effort to reach the understanding of a particular topic. Would we legitimize an attitude of easiness and indulgence in a society that no longer wants to think? Or rather, we managed with the use of this kind of auxiliary tools for now innovative, that knowledge be better absorbed by the public school? So, we reiterate that it is important to reflect on the theme and, we believe, infographics for their didactics potential, facilitate the analysis, synthesis and apprehension of the contents by the students.

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