Technologies of knowledge: the teaching of non-verbal language in the era of Web 2.0

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Abstract

In the context of Technological Issues in Education_ Classroom and Laboratory: Integration, the work that we propose, shows the main points presented to investigate possible interferences that occur in the subjects of education as creative elements in the production of images for different media / medium they use.

Aware that technology and art have always coexisted in practice, we propose an analysis not to the results of experiments conducted by the artistic using a certain technology, but an analysis of the processes of construction and solidification of communication in certain learning contexts. We exclusively dedicate our attention to digital technology, and more specifically to the issues that the technology uses to communicate and it's representation in different contexts such as the analogical and digital [1]. We do not intend to do a chronological collection or present a set of situations and examples that demonstrate how technology has affected the perception and the construction of the world. In this sense, our proposal attempts to clarify some issues that seem relevant when talking about the process of using communications technology and information [2] applied to the teaching and learning to another process that is the drawing. What we study is whether these tools serve to communicate and who is expressed through non-verbal language, such as image, particularly drawn pictures. We do not refer to the use of the computer as a tool or as a means of dissemination. These issues are obviously outdated and the computer is used in drawing classes like any other tool available. The implications and changes that a tool like the computer might have not only to the communication between the participants in this case education but well as the development of procedural construction and solidification of an idea that deserves our attention. It is our obligation as teachers to be alert to the signs outside and to be able to provide students with mechanisms , tools and strategies that can support and develop their skills enabling them to produce, implement and develop expertise in future practice. Therefore, our contribution to the discussion at this meeting relates to the presence of digital technology in today's society and more specifically in the context: "Technology and art education."

Keywords- Nonverbal language, art education, web 2.0, digital technology.

1. BY MAIL TO THE WEB 2.0

Around 1860, one of the most respected English critics and art professors of the XIX century, Jonh Ruskin (1819_1900), had as a student a young lady called Annette Nicholls, living in Manchester that started her drawing lessons in 1965, ending at October 1869. What distinguishes these lessons from all other lessons is the fact that this were conducted and accompanied by letter. These set of 24 letters, 23 written by Ruskin and only one written by Annette, are present in New York, at Pierpont Morgan library and are the beginning of the drawing manual that Ruskin produced. One of the examples is “The elements of drawing”. Ruskin advocated drawing as a basic course in teaching, independently of the studying areas. His contribution in recovering and compiling drawing exercises, makes him one of the most important and well know teachers in this field of study, in such a way that the drawing school at the Oxford University holds his name.[3]

Around four years of mailing Ruskin corrects and evaluates the drawing that Annette sent him. Unfortunately, these drawings are lost and until now only the drawings that Ruskin made in his own letters and that showed the correct way to solve the drawing exercises arrive to our days. These letters show the importance of the students to Ruskin, accompanying them from technical questions like material and supports to questions related with the representation and conceptualization of reality. Taking as a starting point the development of our text these short descriptions of the distance learning experience by Ruskin.

There are two main points that seem important and that are the main motivation for ones paper. On one side, the distance learning experience. On the other side, the necessity to use non verbal language to demonstrate and clarify what the word can’t say. It’s right that this text describes the experience of drawing and, in this sense, Ruskin used the drawing language as a way to more effectively exemplify the correct way to do the exercise. However, and as one will develop in the second part of this text, we know that the drawing has been along the evolution of Man one of the ways to communicate.

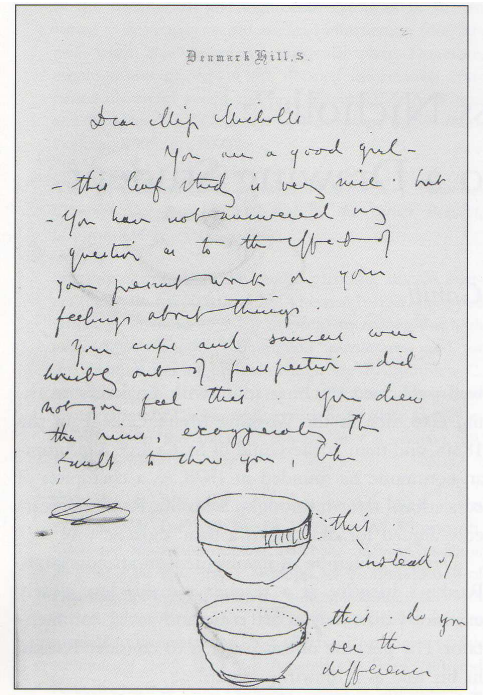

fig1. An example Ruskin's letter

Our time is no longer the time of the letters written on paper, placed in March of mail waiting to be brought to its recipient. We live in a society that evolves from text to hypertext [4]. Our time, hypertext is the time of the interconnectedness of digital devices that enable communication from one to one million worldwide and almost instantaneously. This world we live in is based on electronic communication network, where the elements of communication are different from images, sounds, videos and all of them available at a distance of one click.

> "Nos anos 50, Albert Einstein declarou numa entrevista que tinham explodido três bombas: a bomba demográfica., a bomba atómica e a das telecomunicações. O meu amigo Roy Ascott (um dos pioneiros e um dos principais teóricos da arte em rede) referiu-se ao que Einstein chamava " a bomba das telecomunicações" como o "segundo dilúvio", o das informações. As telecomunicações arrastam este novo dilúvio em virtude da característica exponencial, explosiva e caótica do seu crescimento. A quantidade brutal de dados disponíveis multiplica-se e acelera-se. A densidade das ligações entre as informações aumentam vertiginosamente nos bancos informáticos, os hípertexto e as redes. Os contactos transversais entre indivíduos proliferam anarquicamente." [5]
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> "In 50 years, Albert Einstein said in an interview that had exploded three bombs: a demographic bomb. The atomic bomb and telecommunications. My friend Roy Ascott (one of the pioneers and one of the leading theorists of the art network) referred to what Einstein called "the bomb telecommunications" as "the second flood," the information. Telecommunications drag this new flood due to the characteristic exponential, explosive and chaotic growth. The gross amount of available data multiplies and accelerates. The density of connections between the information increases dramatically in the computer banks, the hypertext and networks. The contacts that cut across individuals proliferate anarchy:" (free translation)

It is mainly from the century. Century that the technological process is directed towards developing means of communication over long distances. The first patent for a telegraph apparatus, which allowed the transmission of manuscripts and drawings from the mid-century. XIX. This machine was presented in 1851 at the World Exhibition in London, initiating the communication (electrical) is encrypted. Also in the century. Century, in 1861, are made the first telephone experiments, but only in 1876 Graham Bell patents the electric telephone. Inventions like the telephone or the telegraph gave way to a considerable territorial overcome distances. They solved the problem of individuals apart and by sending messages without body, in an attempt to overcome the physical distances. The first computers appeared in 1945. Great calculators, isolated in rooms with refrigeration, these computers were used for scientific calculations, government statistics. Reserved for a long time for scientific calculations military, only expanded for civilian use in 60 years, is about 15 years later. The great transformation takes place in 70 years with the production and marketing of microprocessor that possible to automate industrial production, the creation of machines and digital tools, robotics, and personal computer. The invention of the personal computer allows the individualization of the instrument, its portability and a variety of tools and programs, coupled with the ability to communicate on the network. Like computers, the Internet was born in a military environment, linked to the U.S. government during the Cold War, but was quickly adapted for use by ordinary people and exploited by big business, who saw in this new medium a lucrative business. The United States had favourable conditions for giving big step in the use of the information network. The cost of telephone calls were low and telephone systems have capacity to handle the increased number of users. In 80 years, NSF (National Science Foundation) spent on the Internet so that the U.S. universities were to become networked, bringing layers of student Internet use, and therefore the computer, giving rise to a new social movement and cultural. In the late 80's, the network took on a global scale. This caused a current cultural spontaneous and unpredictable that imposed a new route in the technical and economic development. The new digital technologies embody a new means of communication, sociability, trading of goods and information. The fact that the computer can be used non-professionals will allow its use switching to a more experimental, moving - if the computer services business and professional programmers to become an instrument for the creation of texts, images, music, for the organization of data, simulation and fun with interactive games.

At the same time in the late 80s, early 90s, the Multimedia gain size in the field of applications, the number of participants in the production and the amount of

users. This is because the media like the television, radio and newspapers, updated equipment to digital, because this system allows greater quality and speed of implementation and dissemination of information, and new aesthetic possibilities. This change meant a large investment quality of the software industry and hardware for business purposes. This industry, to develop their products to a specialized market, is also offering to create a market with an amateur status. The democratization of software enables a lower cost, access to a larger number of users who, for lack of work experience, use your computer to experimental, to achieving that produce some unexpected experiences. The use of software for scanning of sounds and images, 3D animation programs, programs for image manipulation and sound triggers new forms of interactive posts which consequently enable new forms of communication, new industries and new jobs. The evolution of hardware and software from the need to meet the demands of market growing number of users. Everything we do through the use of computers, from raising money, send an e-mail. Invaded by the computer, increasing its presence is part of our everyday life.[6]

The revolution of information technology, due to its ability to adapt and invisible to all fields of human activity have been over the years been used for different objectives, developing and adapting to the needs of communication. The flexibility and the possibility of reconfiguration of information, the ability to share and access information on the Web, encourages the creation of communities and networks of common interest and specific, where the individual shares and contributes to global network. The Internet enhances and extends the mass media, allowing participants to refine and contribute to updating and sharing of knowledge, increasingly found that users are also responsible for editing and sharing of information. The major development of the tools available in Web 2.0 provide and enhance a flexible network and in flux. The possibility of installing software residing on servers that are not necessarily installed on the user's computer, prints and enhances the character of the global network and collective. Mobile devices like the iPod and the phone allow us to be always connected to the network.

If some of us this technological evolution has been followed in order to adapt ourselves to emerging devices, we can not say the same generation of our students. Most of our students were born after 80 years of this decade but had been major developments in digital devices and communication technologies, these were implemented. Born already connected. For these people the dispositive digital underlie mediator in contact with the world. “Digital Natives” and Palfrey and Gasser labels the book "Born digital" are young adults who have developed differently from the way of how we grow. “they read blogs rather than newspaper. They often meet each other online before they meet in person. They

probably don’t even know what a library card looks like, much lees have one; and if they do, they’ve probably never used it. They get their music online, often for free, illegally-rather than buying it in record stores. They’re more likely to send an instant message (IM) than pick up the telephone to arrange a date later in the afternoon... Major aspects of their lives – social interactions, friendships, civic activities- are mediated by digital technologies. And they’ve never Know other way of life”.[7]

It is against this background of expertise that the school found space to enjoy and take ownership of tools available in Web 2.0, to enhance and encourage students in the exchange and sharing knowledge and making the learning process more collaborative and dynamic [8]. The rhizome system, complex connections, very similar to human thought, are, as stated Lévy, particularly suited to educational uses. First, the possibility of involving individual participation in the acquisition of knowledge, on the other, non-linear interactive features offered by interactive media, encourage an exploratory attitude and face the committee investigating the study, fundamental for developing critical and creative student. While teaching in higher education, it is up to me to be careful and question certain practices of teaching. Throughout my teaching career I tried to highlight the tools and technologies available deploying them in teaching. Checked however that the technological changes occur very rapidly in the society in which we live. I realized that digital media available require a "literacy technology for teachers so that they can be on an equal basis with students, and can remove the devices and technologies existing resources to improve educational resources. My experience as a drawing teacher, taught me that art education is not at all a linear education, and that each year the demands and experiences developed by students are different, require new tools and technology in the exercises. It is important to be aware of the reality that our students grow, our duty as responsible for education, and understand that the concept of education that I advocate is based on a process of shared learning, continuous, adapted, performed in a space of relational knowing in which are present all participants in education, be they teachers, students as well as other persons involved in education. Under this principle of sharing, and contribution to the expansion of knowledge, I think the role of Professor will be to monitor and manage the learning, as a mediator that provokes and stimulates the search for knowledge.

As the day the development of interaction technologies, editing and sharing web was the medium for the construction of change in the drawing and organization of social networking and learning. The sense of social sharing that characterizes the Web is one of the reasons for the noticeable change in the development of learning networks. More than an information resource, learning networks

supported by the Web, are, therefore, a form of immersion and collaborative construction of meaning.[9]

Arts education by virtue of skill, requires a close relationship between students and teachers. We know that the model of arts education has traditionally been a model in person, very focused on the figure of the master / teacher.

On the one hand we have the weight of tradition; on the other hand, we find strength in computer use by teachers. The technological illiteracy, lack of knowledge of the technological potential and a certain conformity with the educational practices installed, lead to a distant position in relation to digital technologies and in particular to information technology and knowledge (ICT). However as mentioned earlier, the world is changing, our students have other ways to communicate, to relate, to investigate and seek information. Therefore, it is urgent we deploy and reorganize the teaching practices, ICT, present us with a new paradigm on the relationship between student / knowledge / teacher social constructivist perspective which advocates teaching strategies and learning by making pupils more actively in the construction of own knowledge.[10].

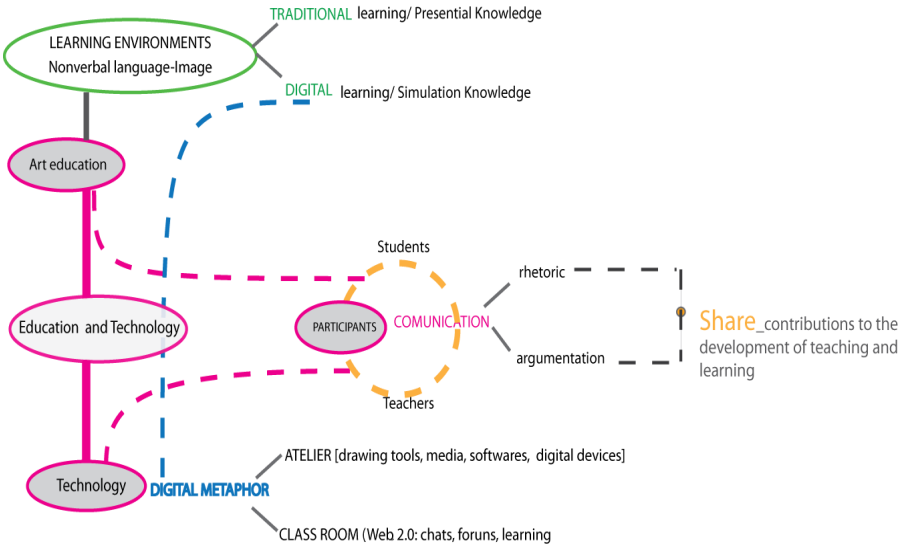

FIG 2. The figure illustrates how the relationship building, development and sharing may be affected in different learning contexts.

2. THE NON-VERBAL LANGUAGE THAT IS THE CASE THE DRAWING

In the first part of the text we have looked at the contribution of ICT to arts education and how it seems that the implementation of networked education can contribute to a dynamic and collaborative learning.

In this second part will try to identify some of the changes caused by the use of technology in the construction of drawn pictures. We begin by defining in broad strokes, what we mean by drawing. Drawing is the action of producing lines, or marks on a two dimensional surface. However, if we devote more attention to the definition of the word drawing, we found that the scale refers to semantics in different fields, involving the concepts that are far beyond support questions and techniques. There are unique features of the drawing, which distinguishes it from other forms of art. The quality of the drawing is to translate the world of ideas to the world of representation / presentation, allowed a performance over the centuries within in the visual representation. This feature allows the visualization of scientific and theoretical speculation, driven and open field to the conflict between perception, knowledge and action. While language has had the privilege of being called to other fields of knowledge, occupying a hybrid for several centuries.

We can't talk about drawing, without mention its function. There are various uses made of the drawing as a language and form of representation. We can't dissociate, or understand a drawing without first understanding its function, that is, we must realize that the purpose that the drawing's objectives. In simple terms we could say that there are two ways of drawing. Drawing from the reality, which aims to understand and mimic reality, what Federico Zuccaro (1543/1609) defined as external drawing (disegno esterno),[11] and the drawing of the idea or the intellect, that Zuccaro defined as internal drawing. This brief definition is intended to introduce readers to the dimension and function of the drawing concept in our work. To our study, is the drawing like language and presentation of the idea that is important for us. Drawing processes, drawings that make possible new discoveries and that find new possibilities that give course to ideas.

Drawing like a language that make possible "Thinking in action and action as thinking" [12]

We think according our time. Thinking is a product of the time, the social, education and culture. Like we see in the first part of the text, our students are "digital natives", they think with digital technology. Assuming that, we thought that visualisation and creation image knew media transformed and amplified our

imagination field. The introduction of digital tools raise questions in image concept and in imaginary.

With digital technology the drawing support left no longer a physical medium. The possibility that the digital introduces the immateriality / virtuality of support enables a new area of construction and realization of the images. The possibility of image manipulation, the infinite multiplication of the image without loss of quality, ease of use of existing tools in software vector drawing or raster one, the similarity between the digital tools and traditional tools, the draw of figures 3D, as well as the possibility of manipulation languages such as the processing, allows us to expand our creative field with new proposals.

We know that the easy accessibility to software creation and image manipulation are present in the visual culture of our students. Most answers and demand the involvement of digital technology in the discipline of drawing from personal experience. However, these individual experiences in the context of teaching and learning of the arts is essential and extend the practical knowledge and creative. These two types of knowledge are essential for a student to communicate with the image. Successful communication depends on our ability to execute. Thinking and doing are two actions that are directly involved in the creative act. Our ability to achieve allow ourselves to be thinking ahead, further, challenging us turn our ability to do. The ability to design and set up is something you learn to do. [13]

For many of these experiences do not end summarized the relationship pupil / teacher seems to us that the possibility of creating a supportive environment for the teaching of drawing is on the one hand, a form that everyone can contribute their experiences to the community, another, a way of involving digital media in the creation and development of the work of our students.

If drawing is equivalent to think, like tells us the artist Bruce Nauman never before had so much technological support as in our days. Is urgent to be involved in teaching practices with regard to education b-learning as the contents of the discipline of drawing if we think further.

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