



## **Creativity, Cooperation and ICTs in Teacher Education in this New Era**

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### **Abstract**

*This theme emerges from exploratory research on new praxis in the classroom in search of motivation and greater learning by the students. It is based on a methodology already used in many classrooms Brazil, Latin America and Europe over 30 years. Currently research is under way aims to contribute to a model of pedagogical work, which is based on the development of creativity, cooperation, the field of information and communication technologies (ICTs). It includes creativity and expression in school as motivation and accelerated learning factors, and integrated action of information and communication technologies with emphasis on the use of telematics (TV and audio -visual) and computers, integrating them, the everyday the classroom. This study / research is a method of determining how innovative pedagogical work by integrating three areas often dissociated from the processes of teaching / learning. The survey, now in its second year, this monitoring schools and their teachers and teachers in the learning relationships, building new practices in the classroom, with children in the 4th year of primary education in the fields of Natural Sciences, Geography and History. The integration between these soft skills and formal content has created a stimulating more meaningful learning and construction of new behavior patterns and relationships between children, school and environment knowledge. This work uses the methods of exploratory research with action research, is occurring at this moment with private and public collection in Portuguese schools, and in the second half of 2014 shall also collect the private and public with the aim of building bridges among Brazilian schools didactic actions proposed to teachers and students of these two countries. Throughout this first phase of collection, and taking into account the experience of over 30 years in classrooms using this method of training teachers, observations an important change in learning arising from these broader interactions, an enhancement of motivation, and a integration and cooperation too big for the styles of the activities and the glare of the training of teachers seeking a classroom where they always have every minute cooperation, creativity and new technologies (ICTs).*

### **1. The Educational scenario and its challenges**

The behavior of children and young people has been transformed from that new technologies and context of multiple stimuli. The company also charges of educational facilities and teachers' new ways of thinking, planning and structuring the transmission, learning and experience of knowledge. Therefore, the educator is being forced to change, breaking certain conservative stances as to use only the "chalk dust "and books on calligraphy class.

Our question is clearly changing the traditional educational paradigm, still present in many educational institutions, and has been shown in over the years weaknesses and deficiencies, which require rethinking concepts and practices in the name of searching for a more meaningful education and more tune with the world in which we live.

We see that public policies do not always realize the complex social demands, but every day increase the interest and willingness to work to promote the improvement of living conditions, work and interaction in schools, changing the conception we have of educational environments.

Another latent reality are multiple languages and existing social media in this century, are stimuli that children and young people are subjected since early childhood . From early demonstrate the desire to master the interpretation (the icons of letters), the "navigate" in multiple languages and symbols, to



master various concepts and words, to conduct their own narratives, to work in a cooperative network. This child in this new world expands your vision of community and territory, forcing us, the adults, reviewing concepts and attitudes toward this new being. The emergence of new practices and social behavior triggers a historical process of "separation between locality and sociality in community formation: new standards, selective, social relations substitute forms of human interaction territorially limited " (Catells, 2003, p.97).

This all has led us to discuss when, how and where to get this process will form "interacting" (Haetinger and Haetinger , 2011, p.49 ), children not only read and add up, but know how to interpret the various codes, meanings signifiers, media and forms of communication, expression, creation and languages.

This fact leads us to think in new ways to meet this twenty-first century, they are not just retellings of old ways of teaching, but they can represent the new guy moving media, fragmented and plural, accessible and connected, fit and content. A cognitive being, but in the same affective measure, taking as a basis the past, but not as a foundation.

## **2. The relationship of ICT in school**

Technology and education have always been intertwined, sometimes more dependent, others less. The black box, through the chalk, pencil, pen, paper galore, the notebooks, the overhead, the mimeograph, radio, cinema, learning materials, modern TV, the VCR, DVD, computer, internet, digital whiteboards, three-dimensional projectors. Education has always relied, and used the technology in their relationship pupil / teacher / knowledge.

Nowadays this ratio of technologies in school, has expanded geometrically and taking more relevance and importance in the practice of aula. Levy (2000) defines this room space promoted by digital computers in the "cyberspace internet that as support collective intelligence is one of the main conditions for its development" (Levy 2000 p. 29), collective intelligence that really approaches the ideal conditions for learning.

Information technology and communication could exist without the computer, but never have the importance they have today and neither influence on the formation of hundreds of thousands of children and young people worldwide. Sancho (2006) states the change of behavior by the use of these new technologies, "From this point of view , study, experimentation and exploration of information on any area of the school curriculum , immediately improves motivation, performance and cognitive abilities of students" (Sancho, 2006, p.21).

## **3. Creativity and its relationship with school learning**

Nowadays creativity is derived from the discussions about the possibility of creative development as competence and especially the relationship of the creative act and the educational processes, be they formal, schools, or informal in many places, situations and productive means.

This is the vision that we want to highlight the important relationship of the development and enhancement of creativity in the teaching / learning formal processes that happen in school. Guilford (1967) to confirm the relationship of creativity with divergent thinking and human skills as well as his work on the intellect , helps us to understand the need of creativity be the object of educational action , since the school is a suitable for enhancing skills environment.

The concept developed by Torrance (1990) brings us the fact of creativity help to fill gaps of knowledge, observing hypotheses and seek solutions. Torrance (1990) makes clear in all his work, the intrinsic relationship of creativity and school environment, their creative testing, which most often been applied and validated in schools , leave no doubt of the potential development of creativity in school activities.

Lubart (2007) goes beyond the concepts of Torrance and associates create the cognitive, conative and environmental factors. The author states that the school works closely with cognition but the question that is established is working well from cognition to creativity and not only by the formalism



and memorization. The school environment for its multitude of stimuli and the diversity of experiences that can potentially offer is undoubtedly a rich environment for creative opportunities. We know that human creativity as the ability to produce new, transformation, change, is more than an ability is a major cultural good of humanity, and one of the key places for cultural transmission is the school, beyond the arts and being present in all disciplines and areas of knowledge " creativity is not enclosed in a metal box along with the arts" (Best, 1996, p.18).

Another important factor in the development of creativity in school settings is the appreciation of the different and divergent ideas, emphasize that there is not just one correct answer for each question (Best, 1996; Csikszentmihalyi, 1996). This way of acting encourages creativity and initiative.

That said it is time to turn to the third theoretical nuclear issue of this paper, the organization and management of pedagogical work, depending on which model it highlights the need to ponder the conditions of work that provides a classroom for their male and female students can benefit from a more creative and demanding relationship with ICTs and, in general, with the personal, cultural and social life with a classroom confronts the challenges.

#### **4. The cooperative management organization of school work**

In general, classrooms continue to be organized according to the mode of simultaneous teaching (Barroso, 1995), which corresponds better to the choices and the designs of the paradigm of instruction (Trinidad & Cosme, 2010). A paradigm, according Trinidad and R. A. Cosme, rests on a fundamental belief, that the role of teachers involves students redeem their ignorance, prescribing what they should learn and how they should behave to learn the they have to learn. In this sense, the concern is not limited only in the transmission of content, but also in shaping the ways of thinking and acting which, after all, are those that teachers require their students.

We believe it is possible, provided it does not assign the role to creativity we consider to be necessary for such use may have an empowering impact on learning and students' education. Thus, it can be considered that in our proposed work, creativity is a key to that ICTs can play any decisive role as an instrument to enhance the role of students, develop their curiosity, awakening interests, and promote condition intellectual autonomy and the devolution of communication networks and cooperation with others. A condition whose importance has to do with how affects the organization and management of pedagogical work. We would say that this is an effect of systemic character.

This is an organization and management of educational work aimed at promoting creativity as a condition of affirmation of intelligence, originality, and the role of the subject as a cultural producer needs to break with the simultaneous teaching mode and competition mode as privileged relationship in the classroom, even if this disruption may be spurred by the desire to take creativity as a primary educational goal and a use of ICTs contributing towards such a goal be realized.

Is this pedagogical environment that the definition of creativity we proposed acquires its fullest sense? This is also the educational environment that can most benefit from the communicative potential of ICTs, while giving them an educational meaning, otherwise they would not have.

Is completed, therefore, the conceptual triangle systemic nature that underlies this work.

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