USE OF THE TIC´S IN THE COURSE OF INDUCTION OF THE FCQEI OF THE UAEMOR MATH

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ABSTRACT

The experience of incorporating the TIC´s in the course of induction and zero semester in the school of chemical sciences and engineering of the Autonomous University of the State of Morelos, on the subject of mathematics favoring skills in this discipline. We used this resource as software designed for the teaching of the algebra, trigonometry and trigonometric functions, as well as specialized analysis software graphs that allowed the Professor analyzing the academic development of the students. The objective of this research was to observe the way in which the incorporation of materials related to the TIC´s, modified the learning processes of mathematical concepts in the upper level students. The subjects of this research were 500 students of the course of induction of the subject matter of mathematics coming from different institutions of the upper level of different municipalities of the State of Morelos, Guerrero, Puebla and Mexico City. The use of new technologies in the context of a strategy of innovation, influenced by the TIC´s focuses on the improvement of techniques of student skills and in the development of critical thinking, promoting creativity and scientific sense that interpreted and solve problems. The methodology was qualitative Court and evaluations of quantitative type due to the requirements of the institution. Among the results obtained is the development of technology in the majority of students and strengthening the incorporation of parcel in mathematics ability.

Keywords: Technologies, TIC´s, Mathematics.

INTRODUCTION

Technologies of information and communication (TIC´s) arrived in the classroom to stay, connecting students with the world, and it has become the main factor of induction to change and adapt to the new ways of doing and thinking [Lopez de la Madrid, 2007]. In that sense, the TIC´s according to Road and Styptic [Roa M, y Stipcich, S. 2009], redefine the communicative modes and the use of knowledge among teachers and students. However, the use of ICT in education must generate processes that review previous schemes and promote new attitudes toward learning. Therefore the use of technological devices (personal computers, intelligent whiteboards, iPods, tablets, electronic projectors, multimedia systems with online browsing), not blurred the student, on the other hand, ICT must be an efficient vehicle of intermediation that incorporates an added value to students, which is magnified through the technologies in the classroom.

Riascos, Quintero and Avila Fajardo [Riascos, S.C., Quintero, D.M, Avila, G.P. 2009] studied the use of ICT in the classroom on the part of academics, determining that such technologies in the work of the scholar is not homogeneous in the use of ICT, but teaching

practices are successful and innovative to use technology in the classroom, in contrast to the traditional method.

In this regard include the issues raised by Road and Styptic where sets a task to be done in the field of ICT related teacher training, since it points out that it is essential to train new teachers, new skills and tendencies towards autonomy in the function, the personalization of learning and management of new technologies that require capacity and professionalism in teaching and should not be limited to the application of technologies and knowledge created by others. The teachers of the future must create and recreate knowledge to apply them to a reality in continuous change [Roa M, y Stipcich S. 2009]. By integrating ICT to the classroom, prevails the integration of technological means [Navarro, M. 2010].

It's necessary to discuss and clarify the different edges that make up the meeting between the TIC´s and the education, referring in a variety of subjects which include: the work of academics and students in the order of learning strategies with TIC´s and virtual learning environments, which leads to an instructional design and hence a curricular approach [Edel R. 2010].

Relating to the foregoing, the perception of the academic with respect to technologies [Riascos, S.C., Quintero, D.M, Ávila, G.P. 2009], leads to consideration on the academic formation in the TIC´s [Careaga, M., Avendaño, A. 2007].

The use of the TIC´s in the field of education is the studies between academic achievement and thinking skills, specific to the field of cognition and learning which are developed with the TIC´s. The foregoing cannot study in segmented manner, so that the investigation concerning the TIC´s, should be given to the task of articulating a field integrator of all these guidelines and describe processes considering their methods and theorist-explanatory approaches.

OBJECTIVE

The objective of this work consists of observe and characterize the use of materials related to the TIC´s within the learning processes of mathematical concepts in the students of the course of induction and half zero of the FCQeI of the UAEM.

SPECIFIC OBJECTIVES

Generate virtual learning environments that develop skills in students of the course of induction and the half zero, based on the use of technological resources, enabling the exchange of ideas and encouraging collaborative work.
Promote the development of skills that will allow students, improve their academic performance.

METHODOLOGY

The methodology is qualitative, considering a longitudinal study that allows tracking the student in training until the end of the course. The technique used was the direct field observation since we make observations and records of individual behavior or group, procedures, relationships, etc., arising from the use of the TIC´s, through interviews and videos, interviews were on the educational practice of the students and the video about their

work in the context of the course. Subsequently, the information obtained from a source was crossed with other information from a different source to increase the interpretative certainty of the data as well. In both courses are taught using the Geogebra, Excel software and the Software created by the M.E.M. Maria de el Carmen Magadan Salazar (contributor to this article).

RESULTS

The results of this research are as follows:
Students have learned the meaning of collaborative work, in a forceful way and have strengthened the self-study and collaboration; they also stop to ask themselves if the software helps in the task to perform, overcoming the initial act on impulse to solve a problem, who does not even know to define with certainty. They have developed the ability to link topics during his teaching, with the use of the appropriate packages. Its ability to show its evolution has been strengthened to be able to develop your own video shows evidence of its evolution in a lively way. Students are able to integrate digital resources in multimedia presentations, as well as leaking information in an efficient way in their training, i.e., have been able to develop their skill in digital skills to your professional environment. Elementary level they have developed strategies to identify the basic concepts for the design of accompaniment and evaluation of learning tools, developing an electronic portfolio of their evolution, making evident its ability to integrate digital resources into their presentations.

CONCLUSIONS

Discuss the changes today, linked to the effects of globalization, it is a constant, where technological development has brought with it new ways of seeing and doing things, even new cultures detecting novel processes with meanings and different looks. The above, based on the postulates of the "social construction of knowledge" [Wertsch, J. 1993], who refers to a learning process is based on the synergy of an organized group, active participation, collaboration, dialogue of knowledge, negotiation and compromise, in a common reflexive action, set in everyday reality.

In response, arises the possibility of generating a collaborative community as articulator and synthesizer proposed axis, resulting an approach for other interesting, with the creation of a space for discussion of the problems that we see in the individual and collective, creating the possibility of an exchange of experiences and ideas of transformation with the intention of developing a joint vision. In this sense, the students have ventured in the world of research, self-education and autonomy from the same reflection of his acting, which coadyuvo to its formation.

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