Valuation of the Professors Technological Competencies of UNAN-MANAGUA, Case: FAREM-CARAZO

MSc. Concepción de María Mendieta Baltodano
Education and Social Intervention Phd. under graduate
UNAN-MANAGUA, FAREM-CARAZO
connymendieta@yahoo.com

Abstract

In the current society, the technologies of information and communication, TIC, revolve around all the processes of information and communication, distinguishing the telematics and communicative processes. This is so, until the society of this century turns out to be called "the information society", "Web generation", "generation I", (of internet and/or information), and including the WhatsApp generation. Also in words of professor Manuel Castell (2001): *society in net,* or, *the information era;* as Echaverrìa (2000) points out, the new technologies light a new social space; the third environment, which clearly differs from the natural and urban ones.

This study takes as one of its principles, the proposals already indicated by UNESCO related to the project "standards of TIC competencies for teachers", ECD-TIC (as in Spanish), when noting that *"teachers need to be prepared to empower students with the advantages given by TIC. Schools and classroom, face-to-face or virtual ones should count with teachers who have the competencies and resources of TIC and being able teach efficiently the correspondent subjects, including at the same time in their teaching, concepts and abilities of them"* (UNESCO, 2008:p.6).

In this sense, we focus our context of doing on detecting the formative TIC needs that teachers have in FAREM-Carazo. So based on that, design and implement a virtual space for the didactic use of applications of the Web 2.0.

Introduction

"…a virtual environment does not handle exclusively the transmission of information, contents or messages; it produces, articulates and manages interaction, group dynamics and sociability" **Gálvez y Tirado (2006).**

TIC's have been inserted as a product of the increasing scientific development in the computer studies, that added to the advances in the telematics nets, and have allowed a bigger access, use, production and transmission of information. In this association, therefore, the computer and

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internet is outlined.

The situation above, bring us to think carefully about the real role of the teachers in the teaching-learning process, because they have to know when, how and where to integrate TIC's as part of their pedagogics practices. Undoubtly, this is a process of integration that represents one of the major challenges for the upper education, currently.

In this slow process of appropriation and empowering of TIC's by the teachers; it becomes an imperative need for all teaching institutions, that it is supposed these institutions have to know the training needs of their teachers related to TIC's and the right integration of these abilities in their practice, so based on that, propose permanent programs of formation and updating, and also pertinent according to the context, socioeconomic reality and cultural of people and regions where these institutions exist and are developed in their various levels and modalities.

On the other hand, it is really important to remember that we live moments in which the technological development has made possible the access, consumption and use of the information on a massive scale by children, teenagers and youngs. In this sense, the educational process should present to new horizons, that allows the optimization of such spaces through the application of diverse educational tools of Web 2.0, so taking advantage of a numerous learning scenarios, this offers by the way of different formative activities in a communication environment, synchronous or asynchronous, and flexible at the same time, students flourish their technical, scientific, and humanist knowledge in the frame of a constructivist approach of learning. In this manner, TIC's represent support for teachers, with high educative potential, in order to achieve the learning process in the cognitive, procedural, and attitudinal level.

Due to what was exposed before, it is laudable to emphasize in the classical work of Ausubel (1976), in which he supports regarding to types of learning that can happen in the classroom, distinguishing two possible dimensions, a) the one which refers to the mode that knowledge is acquired and b) the one related to the form in which knowledge is incorporated into the structure of knowledge or cognitive of learning.

However, it should be emphasized that in order to attain a very significant learning in which students, who were born in the era of knowledge and technology, it is necessary a complementation between reception and discovery because both approaches have points in common, being the major one, for example, that it is possible to link the acquired knowledge through reception with situations in which the goal is solving academic problems and that of real life by way of discovery, and because sometimes students learn from this mode; it drives them to the rediscovering known concepts (Barriga y Hernández, 2010), and it is just this way of learning in a socialization environment and with more autonomy, that motivates and influences students to investigate and get or improve knowledge, gotten in the scenarios of traditional formation, although, the teacher should have already gotten the needed TIC's competencies.

Just in the same way, the presence of TIC's in the superior education can be considered very relevant because every professional with a bachelor degree, no matter the field this professional inscribes, should have an appropriate formation in the use of these tools in their professional development and the implementation of any formative activity in the socio-technological environment we live in (López Meneses and Vásquez Cano, 2013).

In this new learning context, the teacher is now a facilitator who promotes the autonomous and cooperative learning. From this clear vision of *Education for the Century XXI,* in light of TIC`s this study

is conceived, whose goal is designing and implementing a virtual space for the didactic applications of Web 2.0, the teachers of the Regional Multidisciplinary Faculty of Carazo, FAREM-Carazo, UNAN-Managua are the actors in this context.

Materials and Methods

Based on the approach of Kuhn (1962), the concept of paradigm as a basic interpretation scheme, complies theorical assumptions, laws and tecniques that adopts a concrete society of scientifics and the appearance of a determined paradigm affects the structure of a group who practices a concrete scientific field. This same author stands that a specific sort of paradigm prevails when it is more sucessful and has more acceptance than its competitor; examples, the conductual paradigm and the cognitive paradigm.

Taking into account Kuhn's theory, the current study so called *Valuation of the Tecnological Competencies of Teachers of UNAN-Managua, Case FAREM-Carazo: Design and Implementation of a Virtual Space for the Didactic Use of Web 2.0 Applications* correspondents to a mixed educational paradigm, because it shows characteriscs of the sociocritical or critical ones, considering that the objectives oriented for the investigation are attitudinal, because they focus mainly in the transmission of effects, feelings and attitudes, for that reason has to study and understand the subjects under study, in other words, teachers of FAREM-Carazo and their attitudes towards the use of TIC's, their level of knowledge, their assessment of the implicancies of these tools of learning in the development of meaningful knowledge in the students, based on that, to know the teachers opinions about TIC's from an educational perspective.

Therefore, from this point of view, the proposed investigation also presents characteristics of the interpretative paradigm. However, the complementation of both approaches will allow a more flexible use of the methodologies and techniques needed to propose, justify, develop and evaluate a proposal of a formation program on TIC's for didactical use of Web 2.0, which is aimed for the teachers of this faculty, according to the biggets formative and didactical necessities.

It is pretended, for that reason, to provoke a social transformation but also educative in the context of FAREM-Carazo, related to application and assement of the curricular of TIC's by teachers.

Considering the proposals before exposed, and due to the education in question, it has an educative character, it gets inserted in the Social Sciences point of view, because it tries to understand, in an integral way, the sociocultural phenomema, which leads to establish the design of investigation presented in the chart 1.

Chart 1: General stages of the investigation. (Adaptation of Briones, 1990)

PROPOSAL OF THE OBJECT OF STUDY
• Value the technological competencies that the teachers of FAREM-Carazo.
DESIGN OF THE INVESTIGATION
• The investigation is placed in a multimethod, mixed, systemic, eclecthic and also integrating approach, since what is aimed is assessing the technological competencies of the teachers of FAREM-Carazo, UNAN-Managua, so, based on the most felt and expressed TIC's formative needs by the teachers in their educative enviroment, and depending on them, propose and develop a formating program of TIC's (as part of the social intervention on educational research), based on the Web 2.0, that once its execution is finished, it will be subdued under an evaluation by the participating teachers in the formating process.

DEVELOPMENT OF TOOLS AND COLLECTION OF DATA
• First of all, a tool of questionnarie in both way is applied, this is made up of 14 items, already validated, that was used to carry out a diagnostic of the FAREM-Carazo, in 2013 relating to the TIC's use, dimension 9 "Diagnostic analysis from the teachers perspective". It is worth mentioning that this tool was validated by a group of 25 teachers in a group practice and under the direction of Phd. Diago Castro Ceacero, professor of Universidad Autònoma de Barcelona (UAB) during his stay in the FAREM-Carazo, due to the Master on Specific Didactics. Especifically in the Curriculum Administration, this same one was implemented during the biennium 2011-2013. Such tool will be applied again to 15 workers among teachers and administrative personnel to update the diagnosis about the use of TIC's, ellaborated in 2013 and whose results are shown in this report. The collected information firstly, through the application of this tool, will give basic information which contribute to determine the magnitude and a second tool for the obtaining of the data.
• In a second moment it will be used a questionnarie, which will be applied to a sample of 25 teachers. This second instrument will be used to determine the level of knowledge and the formative necessities in TIC's of the teachers of FAREM-Carazo adapted to Nicaragua and that will be validated with the collaboration of five expert teachers on TIC's. this tool can found on http://www.um.es/competenciastic/informe.html Though this collected information, it will be designed a formating program on TIC's for the teachers, helping so with their updating process on TIC's, that promotes the obtaining of technological competences to a low level and to deepen into knowledge, as a goal of this research paper social and educational type.
• It also turns to the observation, by the researcher, as a technique to collect qualitative data, through which it is intended to collect information regarding, the attitudes shown by the teachers under this investigation, regarding to TIC's, their value as didactic resource in the formation process of their students and perceive their commitment level with them.
ANALYSIS AND INTERPRETATION OF DATA
• Through the collected data and by means of the application of the previously mentioned instruments, results will come out that will make possible the concretion of the investigation through of conclusions through a methodic triangulation aiming to get a holistic comprehension, but also integral at same time of the object of investigation of this paper.
REFLEXIVE AND INTROSPECTIVE CONSTRUCTION OF CONCLUSIONS
• Through the reflexive construction, conclusions will be analyzed to set up specific contributions to be considered relevant by the researcher.

Partial results and discussions

In this reflection it is considered the level of this investigation is done until this moment, which has allowed to reach every proposed goal in this study, which is considered straightaway.

Conclusions regarding the investigation objectives

Main Objective: *Value the technological competencies FAREM-Carazo teachers have.*

According to an introspective revision, this theoretical reflection, the experiences of the researcher through the systematized observation and the application of quantitative instruments, permit to consider that this objective has been partially achieved, since it was possible to update the institutional diagnostic related to TIC's by the teachers and administrative personnel of FAREM-Carazo, done in

2013, as general result and according to theoretical foundation, TIC's should be promoted from a didactic and curricular point of view among teachers, not only from the instrumental perspective. This first concretion reassures the need to spread the application of TIC's in the formative spaces of FAREM-Carazo, consequently, it is suggested to initially train teachers to a basic level, but also to a deep level and production of knowledge regarding TIC's.

At the same time, this study has also focused on the next specific objectives straightaway:

1. *To do a scientific literature revision about the value of TIC's and their link with the autonomous learning in the university context.*

The revision and theoretical reflection, shown in the first, second and third part of this investigation, just like the methodological options which were designed and implemented, allows to conjecture that this objective has been successfully achieved, permitting to determine a general profile and the ideal features of the instruments to use to collect data of the technological competencies of the teachers of FAREM-Carazo, then based on that, propose a TIC's training program according to the most felt formative necessities of the subjects under study.

2. *Identify the formational level on TIC's, the teachers of FAREM-Carazo have.*

Regarding this goal, it is possible to infer that the most teachers of FAREM-Carazo have a basic level on TIC's, therefore, the teachers need a training program on TIC's that aims the achievement of TIC's competencies to a profound level and the production of knowledge, accordingly with the revision and theoretical reflection done, using for such objective, educative applications of Web 2.0.

Research study restrictions

Once here, it is worth noticing that there are various restrictions in this investigation that should be considered in similar researches.

Primarily, the first and biggest limit is related to the general objective. This one has only been partially achieved, because even though a general analysis of TIC's competencies of the teachers of FAREM-Carazo was done, it has not been still determined thoroughly the formative necessities on TIC's from the instrumental, curricular and didactical point of view, because the obtained data has not been analyzed yet through the application of the second instrument for such purpose, consequently it is not possible to determine exhaustedly the applications of the Web2.0 to be used for the design for a training program on TIC's as an intervention proposal and final product of this investigation. However, this limit is expected to be worked out in the second stage of this process during the second semester of 2015 and first trimester of 2016.

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