



## VIRTUAL LEARNING ENVIRONMENT: EXPLORING THE ROLE OF TEACHER AS A CENTRAL FACTOR

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### ABSTRACT

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Online training permits or encourages a change in the teacher's role. It is in this sense that the objective of this paper was to analyze the implications of the application of an unconventional model to the teaching process, supported by Information and Communications Technology (ICT) and incorporating new methodological paradigms into the teaching-learning process for course presentation and management, encouraging students to change the role they have played to date, given their preliminary training process, which has been based, nearly always, on a traditional model. Using online courses to support the student-centered teaching-learning process involves knowing what features the online teacher must have and how teachers can help their students in their new role. On the other hand, it is important to employ the lessons learned by traditionalist teachers, because the latter can take advantage of their experience to teach in a better way by implementing the use of information and communications technologies.

**Contribution/Originality:** This study contributes in the existing literature a learner-orient environment for the teachers and students.in which it is attempted to recognize the importance that the teacher has in this current knowledge society, where undoubtedly the tutor has two decisive roles: offer feedback and manage and strengthen relationships between students-teachers. This study documents aspects such as communicating effectively and the Role of teacher as a central factor in the virtual learning environments

### 1. INTRODUCTION

The Ciénega University Center (CUCi) has proposed the incorporation of Information and Communications Technologies (ICT) and has affirmed its conviction with respect to the basic function of the continuous development of the individual and societies. Therefore, it has been necessary to engage in reflection in relation to the planning of the university teaching staff following a novel educative model for a society that regenerates itself across time, in this manner acquiring educative success. In order to achieve educative success, the needs of the students should be satisfied in the context within which they are found, and today, students are immersed in the information society; thus, education should be incorporated in this context in order to attain its objectives and to discern, with the knowledge of what one is doing, the sense of implicating this focus for the improvement of classroom practices.

Thus, it is necessary to adapt and confront the challenge of ICT in a context within which an excess of information and impermanent emotions incessantly lead to concentration on immediate problems. Situations demand responses and rapid solutions, while many of the problems found require a patient, concerted, and negotiated reform strategy.

In this reflection on a non-conventional educative model, questions arise, such as, Which implications lead to the implementation of a formation model supported by ICT in higher education?, and Is this an ideal model in the teaching-learning process? Do teachers already employ ICT-supported tools? If the objective is to achieve the formation of a better individual for society, what is the contribution of a virtual educative model that supports the face-to-face formative process?

Confronted with this context, the society is submitted to changes that continually propose new problematics, demanding from persons multiple competencies to create the exact knowledge that will allow them to confront these problematics successfully.

Therefore, today the role of teachers is not so much "to teach" (teaching in the traditional model) some knowledges that will have limited validity and will always be accessible, such as helping students "learn to learn" autonomously in this culture of change and to promote their cognitive and personal development by means of critical and applicative activities that, taking advantage of the immense amount of available information and the potent tools of ICT, teachers will take into account their students' characteristics (centered formation in the student) and demand from them active and interdisciplinary processing of the information so that they can construct their own knowledge and are not limited to performing simple, passive-memory information reception (Marquès, 2005).

A personal opinion is that one of the most relevant aspects of the incorporation of the new paradigm in an educative institution of higher learning is to know how convinced the teachers are of working with ICT, in view of the fact that their own learning processes have been based on a traditional model.

Understanding a "new professor" as an expert in the "royal we", who will seek out life's problematics and will propose to their students situations that embrace all of the human dimensions: intelligence; sensitivity, and those of the body; this will permit teachers to lead students to what they can come to be. The "new" students will describe notions that they had inside themselves, without their knowing it.

The insertion of ICT into the CUC educative system offers many possibilities, but this does not mean that this is what is most important in education, We must be realists and consider that at the fore of every educative system are persons... and as such, we must bear in mind the fact that there is the possibility that teachers may find it difficult to readapt the old knowledge in order to assimilate the new, therefore the resistance to changing their way of sharing knowledges.

It is necessary to be aware that it continues to be difficult for some professors to assimilate this challenge, because the traditional model is deeply rooted in their professional occupational life and they teach as they were taught, repeating time and time again the same schemes from generation to generation. However, this article is directed toward all those who rise to adopt the change, to no longer be the bearers of content, but to be, instead, facilitators, guides and, why not, supports for students when they have problems in their learning. And to be aware of what is means to cede their leading role to the students, who assumes the fundamental role in their own formation process.

### 1.1. Influence of ICT at the CUCi

Beginning in the year 2000, a decade during which the Internet expanded in society, the potentiality became evident of technologies for supporting teaching-learning processes, thus the importance of the incorporation of these new technologies into institutions of higher education and, in general, into all educative institutions. The importance of ICT was not only transparent as an instrument for supporting learning processes, but also it became

increasingly clear that these could comprise a vehicle for introducing innovations into institutions, modifying the role of the professor and of the student, achieving effective learning environments for the attainment of professor-student interaction. In addition to this and deriving from another field, the technologies would serve as support in other administrative labors, for making complex activities and operations more efficient, carrying these out in a lesser amount of time.

In this context, the University of Guadalajara (UdeG) in Mexico initiated a process of investment in ICT in order to achieve the pedagogical objectives proposed and to be on a par with the requirements of today's society, which every day demands more interactive processes of academic formation. A "modernization" process commenced with the purpose of profiling the university toward a new culture of quality and of academic competitiveness.

Within this framework, the CUC has driven the development and launching of online courses with the Modular Object-Oriented Dynamic Learning Environment (MOODLE) platform, which permits professors to comply with their roles as consultants, understanding the roles of the latter as orienting and leading students to their own learning. However, a process has not yet been conducted of reflection and critical investigation on how teachers experience participating in an online course, as well as on what their perception is with respect to the utilization of online courses as a complement to the face-to-face teaching-learning process.

In addition to this, it is noteworthy that evaluations to date have been conducted on external online courses; they derive from a coordination of the University of Guadalajara itself, but are outside of the CUC proper. These evaluations have focused on didactic design and not on how the online course is employed and set into motion by its own users. Additionally, the evaluation is directed toward completely virtual courses or toward distance-learning courses, while at the CUC, online courses function in a mixed modality or as a support for face-to-face courses. These differences are not casuistic, but rather are fundamental for the evaluation process.

## 1.2. Professors as Central Factor

In view of the transcendence of everything that has been addressed, the teaching staff must accompany the student in the process of organizing reality and the information surrounding it, so that students can make productive use of these and construct their own knowledge. Are professors able to deal with these challenges?

Those who have engaged in the educational revolution are often persons born and educated in a more conventional era. Therefore, they are accompanied by their own burden of this experience, with all of the difficulties, resistance, prejudice, and myths that this carries with it.

As noted by Bates (2001) "Teachers will only change if they can clearly see the benefits of change and the disadvantages of not changing. Any strategy to put the use of technology into practice for teaching and learning should bear in mind the predominant culture of the University and, above all, that of the members of the cloister".

The use of ICT requires that professors exchange experiences and information and that they produce educative materials that would be useful for students. In this respect, it is necessary to pass from a culture of individual work into one of collaborative and cooperative work. And that sometimes results in great complexity in educative institutions, above all at university levels, where professors tend to have some problems in integrating themselves into teams.

The role of the teacher has been transformed, now required to take into account additional functions that require skills and personalized methodologies that allow for coadjuvancy in terms of objectives, prior knowledges, learning rhythms and learning styles, availability, dedication, and the remaining variables that characterize the distinct students. Teachers' activities have diversified and the new conception of the role that they have acquired can be summed up in a single word, a learning "manager".

The tutoring that teachers perform to deal with these concerns that can arise in students during the development of their learning has become more flexible and indispensable.

**1.3. Professorial Formation**

This leads us to the aspect of the formation of professors. Teaching with the ICT-supported educative model is very different from teaching in the traditional fashion. It is necessary for teachers to work with distinct models in order to encourage substantive interactions among participants. Employment of the Internet as a support for face-to-face teaching requires being connected to the Web, correcting assignments, and reviewing individual or group work, in addition to guiding and modeling discussions when students are connected, and encouraging students to respond to each other in their work. All of this requires that professors monitor discussions, provide students with feedback, establish clear schedules for responding to questions, and request discipline from students for respecting these times. Teachers should be facilitators and take care that students do not become dependent on each other; that is, teachers must propose didactic situations that motivate students and promote their learning, because under other circumstances students can become easily distracted.

It is necessary to provide teachers with opportunities as well as expertise in the employment of ICT in the classroom, with the purpose of facilitating real changes in practice.

In this respect, strategies should be established so that the students themselves can check the materials of their peers, for feedback among them, and so that professors monitor that activity: contrariwise, the task becomes very cumbersome. This reinforces the idea of students learning to learn and not the professor, who must be at all times mindful of the students' activity.

In addition, the teachers should work with the affective dimensions of learning (see Figure 1), which are often forgotten on overestimating the value of technologies in education.

Dimension 1	Dimension 2	Dimension 3	Dimension 4	Dimension 5
Attitudes and perceptions	Knowledge acquisition and integration	Knowledge extension and consolidation	Significant utilization of knowledge	Attitudes And mental habits
Classroom environment Classroom tasks	Declarative and procedural knowledge	Comparing Classifying Abstracting Inductive reasoning Deductive reasoning Constructing supports Analyzing errors Analyzing perspectives	Decision-making Problem-solving Invention Experimental inquiry Investigation Systems analysis	Critical thought Creative thought Self-regulation

Figure-1. Dimensions of Learning (Marzano, 1997).

In the teaching-learning process, not only do cognitive variables play an important role, but also affective-type variables act as factors that exert an influence on this process. In terms of clarity, it is noteworthy that we are not speaking of sentimentalism here, but rather the importance of whether students have a positive attitude toward learning, toward themselves and toward the study material and additionally, whether students perceive acceptance in the classroom (on the part of peers and teachers), the usefulness of the tasks, and the personal capacity to carry these out, with which they will learn more and with greater ease.

Thus, the key to efficient instruction is to consider that these dimensions, which are based on the affective ambience, are always present in the learning process and possess an essential relationship with the final results. Paying attention to the affective ambit of the students will improve the learning of assignments.

The Ciénega University Center (CUCi) educative teaching-learning model requires its teachers to have a formation with respect to ICT, and this implies that the professorate must possess competencies and capacities. As Cebrián de la Serna (2003) shows, the professors of the future should possess a series of competencies of face-to-face ICT utilization, and from their analysis, we can also find the dimension for their formation.

Cabero and Marín (2012) states that the formation of teachers regarding the different ways of working in ICT is important for developing their teaching in diverse spaces and with diverse resources, for example, the

organizational aspect and that of planning of the classroom planning, the dominion for inserting the techniques and the means for formation in any space and time that combines face-to-face formation with formation at a distance (distance-learning) and the selection of pertinent materials.

There is clear consensus on that teaching updating is one of the keys for the implementation of a way of teaching that strengthens learning. ICT can, in turn, provide support for the continuing formation of professors through virtual spaces, creating instances at which intersection, collaboration, and learning with peers, supported by a tutor, transform these into excellent scenarios for the updating of teaching.

Professors using these spaces to learn permits them to know, in the most direct fashion, the roles that are expected from a “virtual teaching staff” and those that they could exercise on incorporating this modality into their practice.

Not to be overlooked is the fact that only if professors incorporate ICT into their customary activity, at home and at the university, will they acquire the experience and the security to conduct themselves successfully with their students in class. Therefore, teachers should have fluid access to computers, as well as to accessibility to a permanent learning and training regime.

Consultant-facilitator technological competency, as well as their beliefs and pedagogical practices, are important factors in student learning, but the students’ profile and the objectives of the assignments to be approached acquire even more relevance and, based on that, the setting forth of strategies that adapt to these characteristics in order to take advantage of the technologies and, in this manner, comply with the final purpose of teaching: to achieve significant learning in students. The latter is achieved through tasks, exercises, and activities that are interesting, didactic, and adequate.

Teachers need broader views of how ICT can improve and enrich their students’ learning opportunities in ways that were never before available at such a grand scale, and they need time to explore these new focuses.

It is important for professors to appreciate the relationship between ICT and the following different aspects of their professional work: learning theories; academic standards guidelines; evaluation methods, etc.

For learning tools such as online courses to be successful with students, the teaching staff needs to encourage the latter at all times by means of interaction, in order to advise, model student thinking, and promote an atmosphere in which the latter are motivated to work. This requires yet more time, energy, and commitment on the part of the facilitator. Thus it is that the greatest successes with this non-conventional model are produced in adults, while for younger persons, the results are very ambiguous.

In teacher formation, pre-essential education supported by the use of ICT is a very promising modality, because it places teachers in contact with novel ideas on which to model their criteria and work styles. In addition, it avoids the costs of transportation, printed materials, and travel expenses, and does not possess the limitation of having to synchronize everyone’s time agendas, facilitating asynchronous exchange and also allowing being in contact with teachers with greater expertise in each subject area.

#### **1.4. Teacher and Student Motivation and Affective Factors**

To a great degree, lack of motivation is due to methodologies implemented, monotony, and lack of innovation. Professors increasingly feel more insecure in this technological revolution due to different constructions, ranging from their lack of expertise in ICT, including the speed and rapidity with which it is incorporated into the society, to having to become acquainted with the latest software version that they require. In addition, and what may be of greatest importance for professors, is their desire not to appear incompetent before their students.

One of the great problems that are indicated more and more frequently among professors is the students’ lack of motivation, as well as the difficulty students exhibit for maintaining attention, this mainly due to that the students are accustomed to receiving and interacting with information through very different symbolic systems from those usually employed in the classroom. Their culture is that of cyberspace: audiovisual; hypertextual, and

multimedia, and the attempt is made for these students to work modifying the culture to that of printing and orality. Obviously, this does not mean that the latter will necessarily disappear. Cabero and Marín (2012) affirms the following: “The theory of multiple intelligences (linguistic, expression, and artistic production, body kinetics...), is manifesting to us clearly that we are not equally cognitively competent for interacting with those symbolic systems, or so too, that each has a preference, due to the characteristics of his/her intelligence, for interacting previously with some symbolic systems and forms of presenting information, above others”.

ICT do not come to be employed with conviction until one appropriates them for oneself, and their appropriation is acquired through the daily use of these and one’s nearness them.

It is inarguable that technology at present is the generator of great social and cultural changes to which the individual has adapted in general terms, in work as well as in familial relations. Ellul (2003) indicates that what is happening is that humans have changed their hierarchization from natural to artificial. Now, humans have replaced their natural medium with a technological environment; the natural one does not appear to be as attractive as the technological.

Discovering the reality is not sufficient. We must be able to transform it. Knowledge, in order to be incorporated, must go through a reflexive process. This concerns a conscious and responsible incorporation of the facts, concepts, situations, and experiences, novel structures and mental attitudes by means of which the student can analyze and solve the problems proposed to them.

The computer comprises a means through which the student integrates knowledges, develops skills, interacts, invents, etc. To this we add the power of motivation and the possibility afforded for communication and teamwork, which facilitates the acquisition of shared meanings.

In addition, all learning allows the development of determined values and aptitudes that are indispensable for participating in a productive and social life. It is also necessary to rethink whether the students are receiving these values and what these values are. The lack of mental opening leaves out of reach issues such as the collaboration and solidarity that form the student as a person.

Access to ICT in the classroom is related with the availability of the physical resources that exist in the classroom (e.g., the number of students per computer), but above all, with quality of access, time limits for computer use (e.g., free or restricted access), quality of the technology (e.g., Internet connection vs. broad band), and privacy level (e.g., the need to share one computer or not with one or more students) (Selwyn, 2004). In this respect, it is evident that better work conditions permit more significant and effective use of ICT on the part of the students.

The evaluation of student opinions is important and essential to assess, update, refine, and prepare learning activities, thus minimizing the problem and maximizing the potentialities of this pedagogical modality, which is learning- to a greater extent than teaching-centered.

## 2. CONCLUSIONS

The incorporation of technologies into institution of higher learning should be submitted to reflexive criteria and critique for decision-making. The investment made by universities in technological matters and the start-up of a non-conventional educative model should receive biofeedback by a growing process of evaluation and critical assessment that allows the knowing and yielding of results on the manner in which implementation and change processes are being carried out and the effects that these exert on the students’ learning.

The work presented here arises from the integration of experiences as teacher and investigator, which have represented great academic and technological challenges, due to the complexity of the contents of the disciplines and fields of knowledge, the diversity of the participating experts and institutions, the heterogeneity of the receiver communities, and the convergence of information and communications technologies.

Many institutions that have already initiated their online education offerings have undergone, in the first instance, a stage of resistance to change, followed by a gradual opening to this teaching modality. Having taken

their first steps, they have been able to experience first-hand how complex it can be to introduce themselves into this paradigm.

While it is true that utilizing online courses as didactic support favors the student learning process, it is also true that offering quality in these courses should be in place with, from the beginning, a series of strengths and critical competitive advantages.

The pedagogical potentials are varied of the use of the communicative aspects of ICT and also of the factors that influence their success. It is necessary to take these elements into account when incorporating this tool into the didactic design of a virtual environment, because solely incorporating these does not guarantee the interaction, the collaboration, or the construction of knowledge. In this regard, at least three aspects should be taken into consideration: design of the spaces in the platform; moderation of the teaching staff, and the relevance of themes for debate. As a first step, it is important to recognize that this does not concern just another technology, but a paradigm change that could transform the view, values, strategies, processes, educative offerings, teaching skills, and administration of institutions of higher education.

The decision to incorporate learning tools supported by ICT in education implies recognizing the sense of differentiation that should be afforded to the use of these, in which they should contribute to the teaching and learning process deriving from a methodology.

What implications are entailed in the implementation of a model of formation supported by ICT in higher education?

A change of methodology is student- and learning process-centered. However, it must be recognized that there is the risk that students will not discern the coherence and usefulness included within the perspectives, thus the importance of designing an awareness and training strategy for teachers and students, given that they are the managers of the distinct actions of change, in that the communicative process is centered on the student and, depending on the degree of implication that students and teachers assume, the proposal will achieve greater or lesser success.

Is this an ideal model in the teaching-learning process?

This requires a systematic focus in which isolated actions are not admitted but, contrariwise, coherent behaviors are required that aim for improving the quality of the teaching, without losing sight of this being a project under ongoing, permanent construction, which implies rigorous planning, follow-up, and continuous evaluation, so that strengths and weaknesses can be identified that allow the construction of a solid proposal that contributes to teachers and students assuming the role that society requires in information and communication.

Do the students already employ methodologies supported by ICT tools? If the objective is to achieve the formation of a better individual for society, what is the contribution of a virtual educative model that supports the face-to-face formative process? Within this context, the CUC has begun to co-construct this experience with the conceptual elements that the institution assumes for this methodology and the articulation of the organizational, technological, communicative, and pedagogical dimensions. All of this implies novel strategies, new roles for the teaching staff as well as for the student and the course or academic space producing, from the teaching-learning process, an alternative of quality education.

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