

# Percepción de profesores sobre la afectividad en los entornos virtuales en una universidad pública del sureste de México

*Faculty' perception of affectivity in virtual environments at a public university in southeastern Mexico*

*Percepção de professores sobre a afetividade em ambientes virtuais em uma universidade pública no sudeste do México*

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## Resumen

El presente trabajo muestra los resultados de un estudio cuyo objetivo fue indagar la percepción de los profesores universitarios respecto al desarrollo de competencias afectivas en los entornos virtuales. La muestra representativa estuvo conformada por los profesores de tiempo completo del Campus de Ciencias Sociales, Económico Administrativas y Humanidades de la Universidad Autónoma de Yucatán. El estudio fue cuantitativo de tipo exploratorio y transversal. Los resultados indican que 90 % de los profesores participantes no demuestran aspectos afectivos al momento de trabajar en entornos digitales, debido a que se centran más en el desarrollo de competencias cognitivas y destrezas técnicas. Dichos resultados son

importantes para proponer un diseño de formación concreta y adecuada para el desarrollo de competencias afectivas aplicadas a la educación a través de este tipo de entornos.

**Palabras clave:** afectividad, entornos virtuales, formación docente, TIC.

### **Abstract**

In this paper shows the results of a study whose objective is to research the perception of university professors regarding the development of their affective skills in virtual environments. The representative sample are full-time faculty from the Campus of Social, Economic, Administrative and Human Sciences of the Autonomous University of Yucatan. The study are quantitative, exploratory and cross-sectional in nature, since the impact of affectivity on virtual environments has not yet been investigated at this educational institution. The results indicate that 90% of the faculty who participated in the study do not show affective aspects when working in virtual environments, due to the fact that in their subjects they focus more on the development of cognitive and technical skills. These results are important to propose a concrete and adequate training design for the development of affective competencies applied to education through virtual environments.

**Keywords:** affectivity, virtual environments, teacher training, ICT.

### **Resumo**

O presente trabalho mostra os resultados de um estudo cujo objetivo foi investigar a percepção de professores universitários sobre o desenvolvimento de competências afetivas em ambientes virtuais. A amostra representativa foi composta por professores em tempo integral do Campus de Ciências Sociais, Econômicas e Humanas da Universidade Autônoma de Yucatán. O estudo foi quantitativo de tipo exploratório e transversal. Os resultados indicam que 90% dos professores participantes não demonstram aspectos afetivos quando trabalham em ambientes digitais, pois se concentram mais no desenvolvimento de habilidades cognitivas e habilidades técnicas. Esses resultados são importantes para propor um desenho de treinamento concreto e adequado para o desenvolvimento de habilidades afetivas aplicadas à educação por meio desses tipos de ambientes.

**Palavras-chave:** afetividade, ambientes virtuais, formação de professores, TIC.

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## **Introduction**

In recent years, both teachers and students and society in general are increasingly aware of the importance of information and communication technologies (ICT) for education; It is often outside of classrooms where the potential of the students acquires a true meaning and the understanding of the theory, the development of skills and attitudes are contextualized for the solution of problems.

Models such as e-learning (online teaching) or b-learning (mixed or combined teaching) have proven to be beneficial in terms of the possibility of offering educational content and interactive-educational activities (Cobo and Moravec, 2011). However, they have not proved convincing enough to take into account the affective aspects that arise during online interactions between teachers and students. Alcer and Díaz (2010) mention that in the courses taught through the virtual modality students have problems due to the lack of cohesion of a study group and the existence of a human vacuum.

The authors Chiecher and Donolo (2013), meanwhile, mention that nowadays virtual environments give the possibility to participate and exchange information from anywhere and at any time, which allows each student to work at their own pace and take the time necessary to read, reflect, write and review the information with other colleagues. However, while this is attractive, we must also consider that communication in virtual environments is based on the writing of texts, which makes it a special challenge for students, since this type of communication imposes a series of restrictions -the absence of eye contact, gestures, signs of approval and of some voice or noise, among others- that, together with the spatio-temporal mismatch, can produce a certain sense of loneliness and diminish their capacity to establish interpersonal relationships, all of which makes that there be an open dialogue that supports and promotes their academic performance.

The Autonomous University of Yucatan (UADY) is an institution recognized for its educational quality that is located in the southeast of Mexico. It is a university that, nowadays, is concerned about using technology in its academic and administrative processes. This is

formally evidenced in its Educational Model for Integral Training (MEFI), which states that one of its fundamental components is innovation. That is to say:

The deliberate and systematic planning of new proposals for the solution of problematic situations and for the continuous improvement of the educational practice that implies a change in the context and the educational practice itself, through the incorporation of avant-garde educational resources and means (UADY, 2012, p. 39).

In addition, the MEFI states that the student must have a technological competence in his / her graduation profile, namely, "using ICT in their professional interventions and in their personal life in a relevant and responsible manner" (UADY, 2012, p. 46). And in the case of the teacher, this model states that he must "use information and communication technologies as a didactic resource in his teaching practice, in a relevant manner" (UADY, 2012, p.49).

When observing the points treated in this model, it stands out that aspects of the affective type for work in virtual environments are not mentioned. This lack should not be taken lightly, because, as established by Bleger (1985), if a student feels uncomfortable, anguished or assaulted, their learning ability decreases because they are unmotivated: excessive anguish inhibits the learning process .

If a student receives motivation, support and understanding from the tutor in a virtual learning context, their perception of wellbeing will be high, which in turn will be an important factor for success in their academic performance. In this line, Hernández and Ortega (2015) mention that an innovative model in virtual education should consider affectivity as an important element for the development of cyberconvival, as well as establish the generation of learning from a sense of emotional well-being, individual and collective.

For the aforementioned, there is a need to investigate the perception of teachers regarding the development of affective competences in virtual environments. Although the demonstrations of affection, motivation and accompaniment to students in a virtual course can be considered beneficial, according to our bibliographic review, there are no formal studies that indicate the impact that this type of actions have on the teaching and learning processes at higher level in the southeast of Mexico.

## **Technology in education**

Technology leads the new forms of learning and provides better opportunities in the educational field to motivate students in their academic performance (Abascal and López, 2017, Salas, 2016). Studies conducted at the Oxford Internet Institute show that "those who have access to the Internet search the definition of a word until they obtain information about health, education, medicine, science, culture or commercial products" (Cobo and Moravec, 2011). Furthermore, virtual social networks are becoming a means of social construction in the sense that people congregate in these spaces to play, discuss and share information. In fact, at present, their employment in the educational field is growing because the new generations are accustomed to using mobile devices and the various applications available there (Stosic, 2015).

As technology is a platform for learning and for socializing, students who participate in virtual courses assume an active role, that is, the responsibility for learning depends on it. However, this implies certain adjustments in their way of acquiring knowledge and, above all, in the way they relate to their classmates and teachers.

The usual way of communication in virtual learning environments is through written language, that is, through the use of messages that encourage interactions and the development of different affective manifestations, which, by the way, are externalized by students and teachers through different symbols or spellings that translate into expressions of liking or dislike in terms of educational processes (Wallace, 2001). The same author also mentions that interactions in a virtual environment are established differently, since emotions are shown through written communication and some symbols that represent moods.

According to Astleitner (2000), the interactions between teacher and student in an online course are made through discussion forums, chat or videochat; and these interactions can be determinant to establish the affective tone of the relationships in the teaching and learning processes. They have to use different ways of communicating to meet the look, gestures and, mainly, the student's need to obtain approval and motivation from the teacher. Likewise, this same author establishes that it is important to design and implement emotional teaching strategies aimed at increasing sympathy and pleasure in the student, reducing fear, envy and anger; this in order to help the development of their learning and personal well-being.

### **Affectivity model for online education**

Affective manifestations in online education are expressions of liking or dislike of a learning situation; they establish a personal relationship between teacher and student. Affects are the motor of life, therefore, a determining factor in academic performance (Blanchard, 1996). In the educational process, interactions in online courses are not only characterized by academic contents, but also by affective contents (Gálvez, 2005).

In each of the interactions that arise in a face-to-face or online class, negative or positive affects are present. In order to contribute to the fulfillment of the established objectives, the teacher must consider and work on these affects to create an emotional environment conducive to teaching and learning processes (Postic, 2000). In this same sense, Hernández and Ortega (2016) mention that it is important to maintain an adequate educational relationship with the student that guarantees communication and continuous interaction capable of generating knowledge and well-being. Teachers who care and positively engage with students encourage optimism and, in this way, minimize the undesirable situations of anxiety, frustration and reluctance in virtual education processes (Hernández and Ortega, 2016).

In order to achieve an appropriate emotional learning environment, it is necessary to take into account the interaction of elements of various kinds: cognitive, affective and social. The combination of all of them influences the type of relationship that students who live in a course, whatever their modality, engage (Gómez, 2005).

The elements that make up the affective model for online education are shaped as follows (Ortega, 2014):

- Epistemology: constructivism, psychopedagogical cognitivism and some behavioral proposals.
- Approach: interactive-collaborative, constructivist and cognitivist.
- Proposal: shared knowledge and collaborative problem solving online, through strategies, storage and management of information and knowledge in digital repositories.
- Technological tools: intelligent electronic libraries and media libraries, e-portfolios, intercommunity blogs, profiles of specific social networks and virtual three-dimensional worlds, among others.

- It is based on shared leadership: due to the renewal of democratic evaluation processes (self-evaluation, hetero-evaluation and co-evaluation, for the quality of a more humane process).

From the aforementioned, the general objective of the affective model is consolidated, which consists of increasing the well-being of the student who interacts and works in virtual learning environments.

Among the specific objectives of the model are, on the other hand, to improve by means of the incidence in the emotional states the expectations of the student's learning; that achieves an intrinsic motivation with respect to its academic formation; promote in the agents that intervene in the virtual environments of learning favorable attitudes on the cultivation of affective states in the didactic and organizational designs and developments of this educational modality; reinforce the presence of emotions as catalysts of quality in the processes of communication, coexistence, creativity and learning that take place in virtual environments; facilitate that the student becomes aware of the emotions and feelings experienced in learning experiences in virtual environments, and promote skills for the student to manage the emotions and feelings that often hinder the educational processes that take place in virtual spaces (Hernández and Ortega, 2015).

### **The teacher as a motivator in virtual environments (affective, humanizing and inclusive)**

As in most of the educational modalities, the teacher is the one who guides the students; in one way or another, it is he who establishes the activities that will be carried out. This is not different in distance education, since the instructor is the one who establishes the steps that students should follow. In relation to this, Pérez (2012) states that the teacher is in charge of establishing the purposes, the pace to be followed and how the interaction of the online participants will be carried out to favor communication. All this can be done from the organization of the structures as long as they include relationships, contents, objectives and strategies (Pérez, p.20). In all interaction processes that are established in online education, positive or negative aspects that may emanate from the participants must be included.

The teacher of each course is the one who encourages the creation of an emotional space that benefits learning, and creates relationships that help the achievement of learning objectives (Postic, 2000). Its role in a didactic session (face-to-face or virtual) triggers the affective relationship; since it not only includes experience and disposition, but enthusiasm, motivation

and desire to teach or share with all students their knowledge are also involved. On the other hand, the student always wants their expectations about the educational process to be fulfilled (Pérez, 2012). In this way, a balance can be obtained in which work is achieved in both directions with the participation of both students and teachers, each fulfilling their responsibility for the achievement of meaningful learning.

In virtual environments, teachers must be able to create innovative strategies to replace the use of voice, gestures and facial expressions; implement, in exchange for these, the use of textual symbols with affective nuances that allow understanding and communication with their students (Pérez, 2012). The use of gestural language is a support for students that allows expressing emotions and feelings through symbols. In this case, the use of emoticons is presented, which function as a means to express an emotion or feeling in the distance modality (Gálvez, 2005); they are a way to be able to understand the mood or emotions that the classmates or professors want to express.

On the other hand, the research carried out by Estrada (2014) states that an affective teacher must fulfill the following characteristics: be a moderator, leader, charismatic, expert, expressive, mediator, guide, close, adviser, kind, understanding, fair, friend, pleasant, patient, good listener, positive, energetic and serene (p 16). The development of these characteristics can help a teacher to perform adequately in virtual environments.

An online course is the interaction space where students carry out activities and develop content. Likewise, participants must be willing to interact with all the people involved in the teaching and learning processes; in the first instance with the teacher. Through this context, students must exploit their emotions and include affective aspects that benefit their learning. As a result, Pérez (2012) expresses that the affective interactions between the teacher and the students must be mediated by sending messages, through forums, chats and other activities.

Finally, Etchevers (2006) mentions that students and teachers immersed in the virtual community have replaced verbal communication with the use of symbols and textual expressions. And in this same sense, Galvez (2005) states that "participants in virtual environments, take graphic representations to share emotions and build a specific space of educational relationship for each context of learning developed" (p. 25).



### **Affectivity in virtual environments**

Working in virtual environments involves constant challenges, especially if we talk about achieving academic achievement by students. On many occasions, distance and technology cause the human and innovative side of teaching to be lost, letting itself be carried away by the technological approach. It should be reiterated that achieving states of trust and enjoyment in the teaching and learning processes is not only achieved by the acquisition of knowledge, but also the interactions, emotions and experiences shared by the teachers themselves with the students in the way of their formation. integral.

With this in mind, the authors Rebollo, Hornillo and García (2006) conducted an investigation on emotions in the educational sphere in which they identified emotional patterns in school failure and attrition. These researchers implemented a qualitative methodology based on an analysis of autobiographical discourses through interviews and found that feelings are key elements in the educational process for the approval of the subjects and the permanence in educational programs. Among the results of the research, the "establishing strategies for emotional education through new teaching and learning environments, such as teletraining and e-learning" is highlighted (p 41).

Like that of Rebollo, Hornillo and García (2006) there are several investigations that demonstrate the importance of considering the affective aspects in virtual environments. A further example of this is the work done by Alcer y Díaz (2010), an experimental study carried out during an intervention in a virtual course. For this company they had two user groups to which a test and a post-test were applied. As a result, they obtained that the experimental group accompanied by the affective treatment obtained better results than the control group, which did not receive any kind of affective treatment. Another remarkable work is that carried out by Hernández and Ortega (2015), who underline two key aspects for affective formation in virtual environments:

1. It is important to motivate students to be trained in a constant and disciplined way in virtual environments.

2. Take into account the importance of the tutor online, as in addition to academic experts in the subject, should cultivate their role as guidance counselor and counselor from a creative teaching methodology and affective. Likewise, it must have a mandatory impact on the ways in which it deals with both the direct contact with the student and the planning of times

and evaluative decisions; achieve that its tutorial action is structured around a comprehensive and friendly attitude that makes it look more human.

## Method

The research carried out here had a quantitative approach of the exploratory and transversal type. It should be noted that this methodology was chosen because the study of affectivity in virtual environments had not been addressed before in the UADY; It was also considered cross-sectional since the measurement and data collection was carried out in a single moment in time (Hernández, Fernández and Baptista, 2013). The design of the study was of a survey type, because it allows to describe the opinion and attitudes of people through the recording and analysis of the data provided by the subjects participating in the research (Isaac and Michael, 1995). Continuing with this order of ideas, González, Calleja, López, Padrino and Puebla (2009) mention that survey-type studies are useful to describe and predict an educational phenomenon, as well as efficient to obtain a first contact with reality to investigate or for exploratory studies (see figure 1).

**Figura 1.** Diseño del estudio tipo encuesta



Fuente: Arnau, 1995

Following the design of the survey study proposed by Arnau (1995) in its first phase, the objective that would guide the work was proposed, namely: To investigate the perception of university professors regarding the development of their affective competences in virtual environments. It is worth mentioning that a review of the literature was previously carried out, in which the importance of working on affective aspects in virtual environments was highlighted. Likewise, this review served for the design and preparation of the questionnaire called Diagnosis for socio-affective training and the use of ICT in virtual environments. This instrument was a basic means that allowed to assess in an organized way the indicators of the variables involved in the objective of the survey (Casas, Repullo and Donado, 2003).

In a second phase, the population was selected and shown for the study. Participants had to meet the criterion of being full-time university professors; At the same time, the following was considered in the selection by the MEFI in its axis of innovation: "It is important to encourage digital competences in teachers" (UADY, 2012).

In a third phase, the questionnaire was developed digitally, which was programmed with the Google Drive Form tool (see figure 2). This is a collaborative tool with easy distribution and access, which guaranteed users to store data with a high level of security. Thanks to this, in addition, the instrument could be answered from any device and place, which also allowed to collect automatically the data that would be used later in the analysis of the results.

**Figura 2.** Diseño del cuestionario de diagnóstico en Google Drive

The image shows a screenshot of a Google Forms questionnaire. At the top, there is a header with a stack of colorful books and a pair of glasses. Below this, the title of the questionnaire is displayed in bold, uppercase letters: "DIAGNÓSTICO PARA LA FORMACIÓN SOCIO AFECTIVA Y USO DE LAS TECNOLOGÍAS DIGITALES EN ENTORNOS VIRTUALES". Underneath the title, there is a short instruction in Spanish: "Lea atentamente cada uno de los reactivos y marque con una X la opción que corresponda a su respuesta, en algunos de ellos puede seleccionar más de una respuestas. Es importante que responda todo el cuestionario." Below the instruction, there is a section titled "Datos Generales" with a label "Correo electrónico" and an empty text input field. The entire form is displayed within a browser window, with the URL "https://docs.google.com/forms/d/1mriu9dMGIMUX0BhFpvaeeNDhdTxd0X1FTwOQMzCrM/viewform" visible in the address bar.

Fuente: Elaboración propia

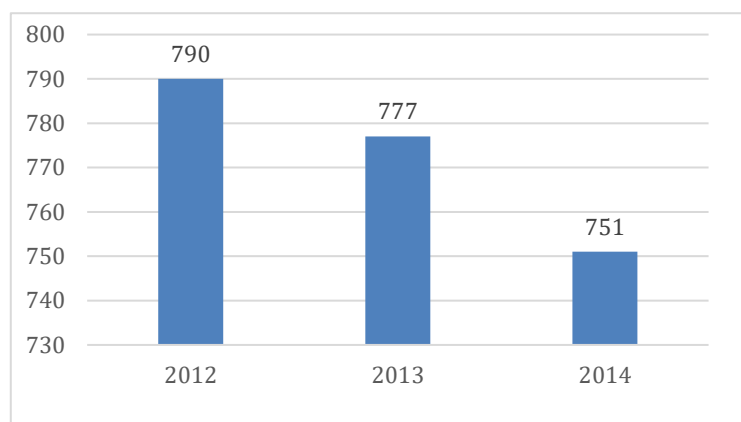
In a fourth phase, the data obtained through the Statistical Package for the Social Sciences (SPSS) program were codified and analyzed. As a result, graphs were obtained by sectors that describe the general data of the respondents. Likewise, the t-Student test was used for independent samples in order to carry out the discrimination process in the various reagents of the instrument, and thus determine its validity. The reliability of the questionnaire was carried out through Cronbach's alpha statistical test. In addition, the chi-square test was performed to determine the relationship between categorical variables. All this, together with the calculation of frequencies and percentages, allowed us to identify the level of need for the formation of affective aspects in virtual work.

### Population and sample

An important part of the study is the selection of the subjects that participate in it. These provide valuable information that is analyzed to check the effectiveness of what was done during the development and closure of the investigation.

At present, the full-time professors (PTC) that make up the UADY is 751, according to the last cut made in November of the year 2014; currently it has remained unchanged (see figure 3).

**Figura 3.** Evolución del número de PTC por año



Fuente: Elaboración propia

Thus, the population that participated in the study was composed of the PTC of the Campus of Social, Economic-Administrative Sciences and Humanities of the UADY (see table 1).

**Tabla 1.** Número de PTC por nivel académico

Facultad	Nivel educativo en el que imparten clases			Total
	Licenciatura	Maestría	Doctorado	
Antropología	2	21	30	53
Contaduría	7	20	14	41
Derecho	4	4	2	10
Economía	3	12	6	21
Educación	4	45	14	63
Psicología	1	27	8	36
Total				224

Fuente: Elaboración propia

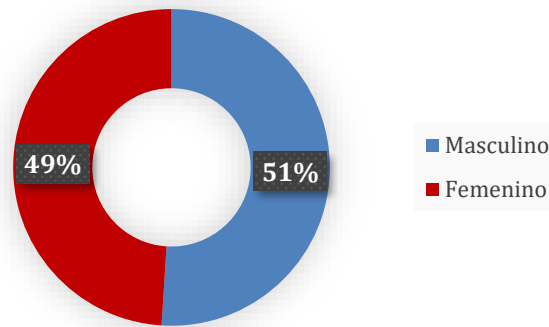
Taking into account the total population of the Social Sciences, Economic-Administrative and Humanities Campus (224 PTC), the professors that would integrate the diagnostic phase were selected based on a non-probabilistic sampling, following the convenience criteria (Casal y Mateu, 2003). In this case, the predominant criterion was the availability of the various professors of the campus to answer the instrument that was sent to them via email. Non-probabilistic samplings present two notorious advantages that make them attractive for research practice (Cea D'Ancona, 2001):

- It does not require the existence of a sampling frame.
- Its materialization is simpler and cheaper than probabilistic sampling.

The instrument has a Likert scale; this was answered by 70 PTC that represented 31% of the total population of the Social Sciences, Economic-Administrative and Humanities Campus.

Among the general data obtained from the sample, as can be seen in Figure 4, 51% represents the male gender and 49% the female gender.

**Figura 4.** Distribución de la muestra según el género

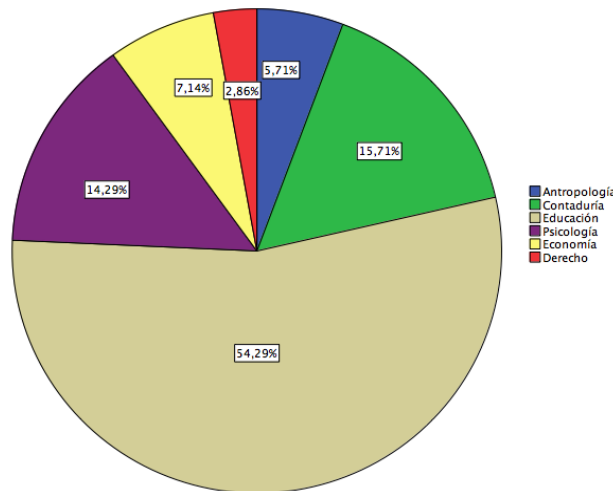


Fuente: Elaboración propia

Another aspect that characterizes the study sample is the work center to which they belong. In Figure 5 it can be seen that most of the teachers who participated in the diagnosis are from the Faculty of Education, 54.3%; in second place, there are those of the Faculty of Accounting, 15.7%, and those of Psychology, 14.3%; with a smaller percentage are the professors belonging to the Faculties of Economy, 7.1%, Anthropology, 5.7%, and Law, 2.8%.

This fact marked one of the important points of reflection regarding this study, since the most involved and interested in affective formation were those that are related to teaching and those that work directly with students, supporting and guiding them.

**Figura 5.** Distribución de la muestra según la Facultad de procedencia



Fuente: Elaboración propia

## **Instrument**

The instrument used for the study consisted of three sections: 1) general data, 2) socio-affective training and 3) the use of ICT. For the realization of this article, a focus was made on describing the second part of the instrument; this section was designed based on the review of the literature, specifically in the proposal made by Ortega (2014) regarding the Affective eLearning model, which guides the present study from an affective, collaborative, inclusive and humanizing perspective. Taking into account the aforementioned, the following socio-affective variables were identified: motivate, promote, encourage and accompany; and the measurement of these allowed to assess the need for affective demonstration in the PTC that participated.

From the aforementioned model emerged the 21 items of the socio-affective and humanizing formation section. In this section, a Likert scale with the following response options was used: Never, Rarely, Sometimes, Almost always and Always. This type of scales is one of the most used formats when you want to ask several questions that share the same answer options (Cea D'Ancona, 2001).

As part of the psychometric analysis performed on the instrument to determine its validity, the discrimination test was performed on each item by comparing its scores. From the analysis of the data observed in table 2, it was determined that the reagents are discriminated, since the value of significance of P in all of these is less than 0.05.

**Tabla 2.** Prueba t-Student para muestras independientes aplicada a los reactivos de la dimensión afectividad

Ítem	t	P
1. Fomenta la colaboración de los estudiantes en la coevaluación que se realiza al comentar tareas desde espacios colaborativos (el portafolio digital o el foro).	-6.666	0.001
2. Proporciona acompañamiento afectivo durante las tutorías en línea a los estudiantes.	-6.503	0.001
3. Evita estados de ansiedad en los estudiantes durante su trabajo en línea.	-7.150	0.001
4. Es capaz de conseguir estados de disfrute en los estudiantes durante su trabajo en línea.	-6.410	0.001
5. Fomenta el aprendizaje lúdico con los estudiantes.	-4.588	0.001
6. Transmite lo positivamente vivido en su ámbito personal y laboral para la formación integral del estudiante.	-4.859	0.001
7. Diseña materiales didácticos en línea con el objetivo de despertar conciencias acerca de la responsabilidad social para la educación.	-12.652	0.001
8. Implementa estrategias para la resolución colectiva de problemas.	-5.409	0.001
9. Motiva al trabajo colaborativo en los entornos virtuales de aprendizaje.	-6.590	0.001
10. Fomenta un clima de cordialidad durante el curso entre alumno-alumno, alumno-docente, alumno-grupo, etc.	-5.803	0.001
11. Promueve entre sus estudiantes el uso ético y legal de las aplicaciones informáticas.	-4.615	0.001
12. Fomenta relaciones ciberpersonales sanas que motivan a los estudiantes a participar en el curso virtual.	-5.147	0.001
13. Motiva a los estudiantes a expresarse mediante diversos formatos no escritos (audios, vídeos, videoforos).	-7.500	0.004
14. Acompaña a los estudiantes mediante los foros y correo electrónico.	-5.803	0.001
15. Fomenta diversos matices de afectividad durante el proceso enseñanza-aprendizaje (motivación, comprensión, apoyo, celebración, etc.).	-3.758	0.004
16. Demuestra flexibilidad respecto a la entrega de trabajos.	-4.468	0.001
17. Considera durante las diversas actividades del curso las eventualidades y dificultades personales.	-3.067	0.001
18. Implementa foros grupales para la interacción y retroalimentación grupal.	-3.151	0.001
19. Evita estados de frustración en los estudiantes durante su trabajo en línea.	-8.200	0.001
20. Demuestra preocupación por los estudiantes que participan poco.	-4.906	0.001
21. Fomenta la coconstrucción del conocimiento para la integración profesional y personal.	-5.310	0.001

Fuente: Elaboración propia



Similarly, the reliability of the instrument in the category of affectivity was analyzed by calculating Cronbach's alpha, whose value was 0.961, so that the instrument was reliable (see table 3).

**Tabla 3.** Alfa de Cronbach de la dimensión afectiva

Alfa de Cronbach	Número de elementos
0.961	21

Fuente: Elaboración propia

## Results

Based on the perception of university professors, in this first part of the results the information of the percentage to be considered is presented to determine the level of affectivity shown when working in virtual environments. For this process, the categorization was determined in the following way: if less than 70% of the sample was located at the high level of the scale (always and almost always), the affective aspect was considered a need that needed to be addressed through a intervention (see table 4).

**Tabla 4.** Nivel de afectividad aplicado en los entornos virtuales

Aspecto evaluado	Alto %
Fomenta la colaboración de los estudiantes en la coevaluación que se realiza al comentar tareas desde espacios colaborativos (el portafolio digital o el foro).	40.0
Proporciona acompañamiento afectivo durante las tutorías en línea a los estudiantes.	42.9
Evita estados de ansiedad en los estudiantes durante su trabajo en línea.	47.1
Es capaz de conseguir estados de disfrute en los estudiantes durante su trabajo en línea.	32.9
Fomenta el aprendizaje lúdico con los estudiantes.	37.1
Transmite lo positivamente vivido en su ámbito personal y laboral para la formación integral del estudiante.	62.9
Diseña materiales didácticos en línea con el objetivo de despertar conciencias acerca de la responsabilidad social para la educación.	40.0
Implementa estrategias para la resolución colectiva de problemas.	45.7
Motiva al trabajo colaborativo en los entornos virtuales de aprendizaje.	54.3
Fomenta un clima de cordialidad durante el curso entre alumno-alumno, alumno-docente, alumno-grupo, etc.	80.0
Promueve entre sus estudiantes el uso ético y legal de las aplicaciones informáticas.	74.3
Fomenta relaciones ciberpersonales sanas que motivan a los estudiantes a participar en el curso virtual.	57.1
Motiva a los estudiantes a expresarse mediante diversos formatos no escritos (audios, vídeos, videoforos).	45.7
Acompaña a los estudiantes mediante los foros y correo electrónico.	21.4
Fomenta diversos matices de afectividad durante el proceso enseñanza-aprendizaje (motivación, comprensión, apoyo, celebración, etc.).	50.0
Demuestra flexibilidad respecto a la entrega de trabajos.	47.1
Considera durante las diversas actividades del curso las eventualidades y dificultades personales.	62.5
Implementa foros grupales para la interacción y retroalimentación grupal.	11.4
Evita estados de frustración en los estudiantes durante su trabajo en línea.	41.4
Demuestra preocupación por los estudiantes que participan poco.	74.3
Fomenta la coconstrucción del conocimiento para la integración profesional y personal.	61.4

Fuente: Elaboración propia

Based on the results of the table, it can be seen that 90% of teachers are below 70%, that is, when working in virtual environments they do not demonstrate the affective aspects previously valued. So it is necessary to design an intervention to support teachers in the development of their affective skills, with the aim of sensitizing them when working in virtual

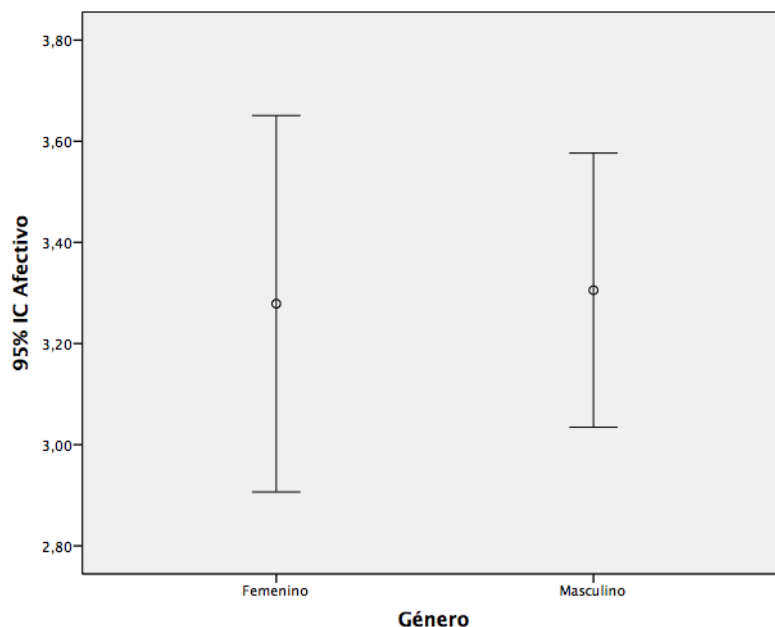
environments. The aspects to take into account are to encourage collaboration and co-construction of knowledge, provide emotional support during work in forums, avoid anxiety and frustration during online work, motivate and encourage healthy cyber personal relationships with different shades of affectivity, consideration and be flexible in the face of personal eventualities.

The items that were above 70% and that, therefore, are not considered for an intervention are those related to cordiality, promotion of ethics in the use of computer applications, good treatment and concern for students during work in line; this shows that teachers mostly always or almost always perform such affective actions.

Next, a second part of the analysis of the results is presented. Here the affective demonstration in virtual environments was compared by gender.

Figure 6 presents the comparison of the affective category based on gender, where it can be observed that there is no significant difference between the male and female genders, since the means in each case are 3.3, in addition to the behavior between both variables were reported normal.

**Figura 6.** Barras de error de la categoría afectiva con base en el género



Fuente: Elaboración propia

Likewise, in order to consolidate the previously presented result, a t-Student statistical test was performed for independent samples. In it, gender and affective demonstration were related in virtual environments (see table 5).

**Tabla 5.** Prueba t-Student para muestras independientes (aspectos afectivos)

<i>t</i>	<i>gl</i>	<i>P</i>
-0.119	68	0.905

Fuente: Elaboración propia

Based on the data in Table 5, it can be concluded that no significant difference was found between the means of the two groups: both the male and female gender scored similarly in the affective aspects, since the value of  $p > 0.05$ . This means that both use the affective aspects in the same way during their interaction and work in virtual environments. In the same way, it was related by means of a chi-square statistical test of the various faculties where teachers work with their affective skills (see table 6).

**Tabla 6.** Prueba de la ji al cuadrado

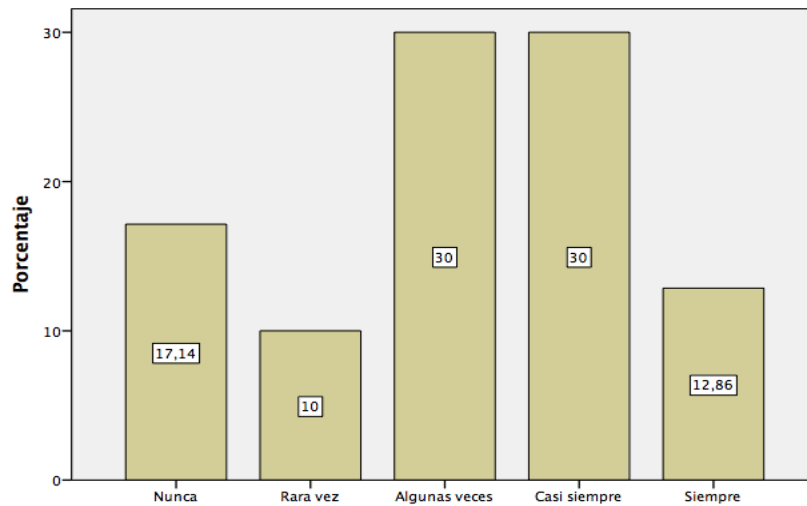
Variable	$X^2$	P
Competencias afectivas	10.2	0.420

Fuente: Elaboración propia

As can be seen in table 6, there is no relationship between the faculty of secondment of teachers with the development of their affective skills, since the value of  $p > 0.05$ . This shows, on the other hand, that teachers, even though they are of different faculties, demonstrate their affectivity in virtual environments in the same way.

Finally, a third part of the statistical analysis is presented, whose purpose is to propose an intervention with strategies that allow the development of affective competencies. Next, the results obtained in some reagents that integrated the dimension of affectivity are described. The first reagent responds to the statement "Provides affective accompaniment during online tutorials to students" (see figure 7).

**Figura 7.** Porcentaje de respuestas al reactivo “Proporciona acompañamiento afectivo durante las tutorías en línea a los estudiantes”

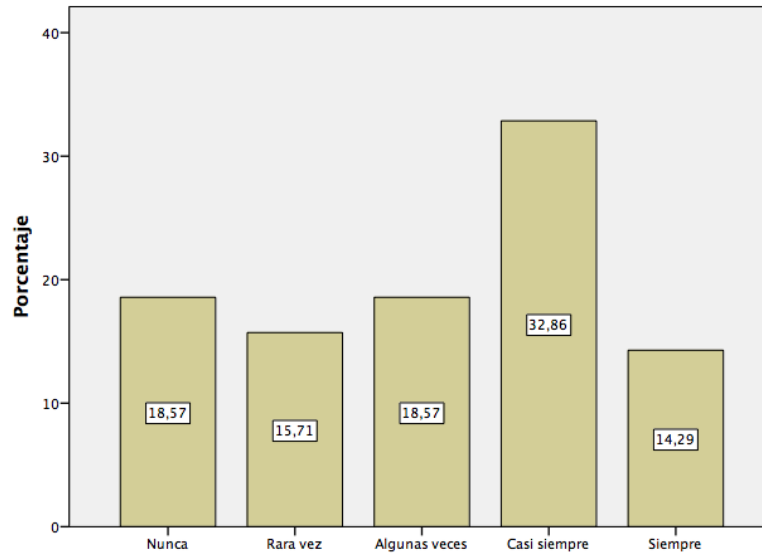


Fuente: Elaboración propia

According to figure 7, the scales Never, Rarely and Some are the ones that concentrate the majority of the percentage of responses. Consequently, it can be affirmed that 57.1% of teachers have a low level of affective demonstration in this aspect.

In the second reagent the teacher was asked to answer based on the statement "Avoid states of anxiety in students during their work online" (see Figure 8).

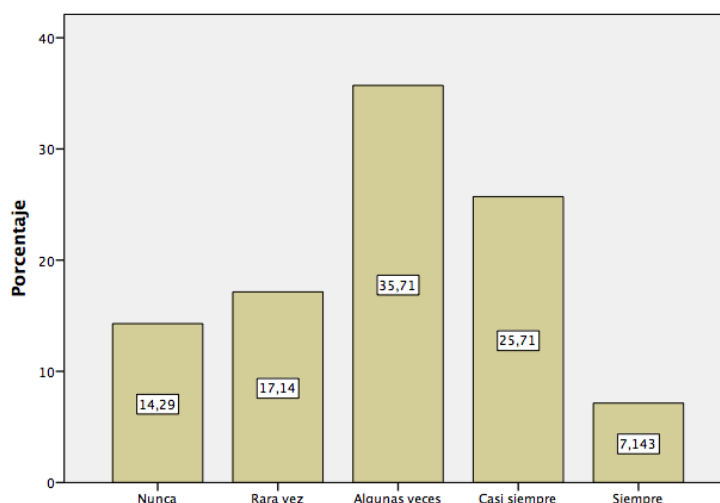
**Figura 8.** Porcentaje de respuestas al reactivo “Evita estados de ansiedad en los estudiantes durante su trabajo en línea”



Fuente: Elaboración propia

According to Fig. 8, the scales Never, Rarely and Sometimes are the ones that concentrate the majority of the percentage of responses. Therefore, it can be affirmed that 52.8% of teachers have a low level of affective demonstration in this area. To close this block of analysis, the teacher was asked to answer based on the following statement: "It is able to achieve states of enjoyment in students during their work online" (see figure 9).

**Figura 9.** Porcentaje de respuestas al reactivo “Es capaz de conseguir estados de disfrute en los estudiantes durante su trabajo en línea”



Fuente: Elaboración propia

In figure 9 it can be observed that in the scales Never, Rarely and Sometimes it is where the majority of the percentage of the answers is concentrated. As a result, it can be affirmed that 67.1% of teachers have a low level of affective demonstration in this aspect.

## Discussion

In this study we identified the level of affectivity shown by the professors of the Campus of Social, Economic-Administrative and Humanities of the UADY, always following their own perception. As a relevant result, it was evident that 90% of teachers do not implement affective aspects in their virtual courses, such as encouraging collaboration and the co-construction of knowledge, providing emotional support during work in virtual forums, avoiding anxiety and frustration during online work , motivate, promote healthy cyber personal relationships with different nuances of affectivity, be considerate and be flexible in the face of personal eventualities. These results contrast with what was found in the review of the literature regarding affective demonstration, since Hernández and Ortega (2015) mention that it is important to motivate and monitor students when they work in virtual environments. Likewise, Alcer and Díaz (2010) comment that "working in a virtual modality causes students to tend to have problems due to the lack of cohesion in a group and the existence of a human vacuum on

the part of the tutors". That is why teachers who are cognitively trained and committed to affective demonstrations are needed.

The MEFI of UADY considers innovation one of its main axes. Consequently, it is promoted that the teacher must use ICT as a support resource in their teaching. For this, it has the learning management system called UADY Virtual (<https://es.uadyvirtual.uady.mx/>), academic databases (EBSCO, Science Direct, etc.) and a repository of educational digital content. (<http://www.agora.uady.mx/>), among others (UADY, 2014).

Thus, the MEFI provides priority to the didactic-technological aspects. However, the most emotional and socio-affective aspects go to the second level or simply are not taken into account. It is also important to highlight that the statistical tests showed that there is no significant difference between the genders and the attribution faculties of the professors with respect to the development of the affective competences, which allows for an equitable planning of interventions such as those recommended by Hernández and Ortega (2015), who propose a training model in virtual environments in which in addition to the development of digital and cognitive skills, take into account the emotional states, expectations of student learning and intrinsic motivation regarding their academic training; The model also encourages communication, coexistence, creativity and the development of affective states in didactic designs for work in such environments.

## Conclusions

Based on the perception of university professors, answers were obtained that demonstrated the need to develop affective skills in them in virtual environments. The diverse results obtained from the analysis of the dimension of affectivity confirm the low level (less than 70%) that university professors have in various aspects of this nature, such as providing emotional support during online tutorials to students, avoiding anxiety states in students during their online work and be able to achieve states of enjoyment in students during their work online.

The various researches consulted agree that the affective demonstration in virtual environments allows the student to feel less distressed, and is motivated when the tutors are aware of him in each of his academic activities. Due to the aforementioned, it is necessary to sensitize higher level institutions to the importance of demonstrations of this kind between students and teachers when they interact in digital learning environments; therefore, it is



necessary to promote in them the commitment to incorporate ICTs together with training for the development of affective competences in teachers. This effort will allow students to be safe, effective, autonomous learners and, above all, to practice self-management in the best way to ensure their success in a virtual learning mode.

Finally, the usefulness of this study for the UADY is highlighted, since this institution plans to offer the Bachelor of Education in virtual mode in 2019, and in the next five years it is expected to offer three more degrees in this modality.

As work in the future, it is necessary to carry out a series of effective interventions to be able to develop other types of studies that allow the measurement from an approach of the variables related to affectivity, for example, through experimental or quasi-experimental treatments. Said the previous thing and considering the obtained results and the model Affective eLearning of Ortega (2014), a proposal has been elaborated for the development of affective competitions applied to the virtual modality (see table 7).

**Tabla 7.** Propuesta de formación socioafectiva para profesores universitarios

Categoría formativa	Acción a realizar
Organización curricular	<p>Se establece en el diseño curricular contar con elementos socioafectivos que permitan al profesor trabajar colaborativamente y en armonía; generar espacios o ambientes de aprendizaje motivadores y lúdicos; implementar estrategias para fomentar actitudes que motiven la conciencia de las emociones y bienestar en el trabajo en los diversos entornos virtuales (Hernández y Ortega, 2015).</p>
Tecnológico-didáctico	<p>Diseño de las tutorías con base en el uso de las tecnologías; de igual forma, con consideración de la flexibilidad, la empatía, la disponibilidad, el acompañamiento y la adecuación a los diferentes ritmos de aprendizaje (Hernández y Ortega, 2015). Es por esto que se recomienda desarrollar e implementar la tutoría virtual mediante videoconferencia; al mismo tiempo que se propone trabajar la afectividad, el pensamiento crítico y reflexivo de los profesores y estudiantes mediante foros o videoforos de discusión.</p>
Materiales didácticos	<p>Los materiales didácticos se diseñarán teniendo en cuenta su efectividad didáctica (guiar los aprendizajes, ejercitar habilidades, motivar y evaluar). Se contemplarán medios y recursos audiovisuales, así como de nueva tecnología. Se realizarán teniendo en cuenta los diversos estilos de aprendizaje de los estudiantes, la naturaleza del contexto en el que se desarrolla la acción formativa y se tendrá en cuenta los recursos con los que cuenta la institución.</p>
Evaluación	<p>La evaluación se integrará a partir de dos aspectos:</p> <ul style="list-style-type: none"> <li>• La diagnóstica: con la idea de generar expectativas en la formación inicial de los estudiantes.</li> <li>• La formativa: mediante el diseño de una variedad de actividades de aprendizaje que le permitan al estudiante desarrollar y evaluar sus diversos conocimientos, habilidades, actitudes y emociones. Entre las herramientas tecnológicas a utilizar están los foros de aprendizaje y discusión, diarios de aprendizaje y portafolio de evidencias.</li> </ul>

Fuente: Elaboración propia

According to table 7, the main actions to be carried out are contained in four training categories: 1) curricular organization, 2) technological-didactic, 3) didactic materials and 4) evaluation.

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<b>Metodología</b>	Desarrollo o diseño de metodología.	Principal: Sergio Quiñonez Apoyo: Pedro Canto
<b>Validación</b>	Verificación, ya sea como parte de la actividad o por separado, de la replicación.	Principal: Sergio Quiñonez Apoyo: Alfredo Zapata
<b>Análisis Formal</b>	Aplicación de técnicas estadísticas, matemáticas, computacionales y otras técnicas formales para analizar y sintetizar los datos del estudio.	Principal: Sergio Quiñonez Igual: Pedro Canto Apoyo: Alfredo Zapata
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