Artículos científicos

Implementación de la docencia en modalidad a distancia del Centro Universitario UAEM Ecatepec

Implementation of distance teaching at the UAEM Ecatepec University Center

Implementação de ensino a distância no Centro Universitário UAEM Ecatepec

Patricia Delgadillo Gómez
Universidad Autónoma del Estado de México, México
pdelgadillog@uaemex.mx
https://orcid.org/0000-0001-7871-4925

Adriana Mercedes Ruiz Reynoso
Universidad Autónoma del Estado de México, México
amruizr@uaemex.mx
https://orcid.org/0000-0003-4294-2912

Sara Lilia García Pérez
Universidad Autónoma del Estado de México, México
slgarciap@uaemex.mx
https://orcid.org/0000-0002-5395-9990

Leisdy del Carmen Gutiérrez Olmos
Universidad Autónoma del Estado de México, México
ldgutierrezo@uaemex.mx
https://orcid.org/0000-0001-5774-9635

Matilde Gómez Méndez
Universidad Autónoma del Estado de México, México
mgomezm@uaemex.mx
https://orcid.org/0000-0002-1861-5092

Resumen

La presente investigación es de tipo descriptiva, ya que se buscó tener una medición precisa y específica acerca de la muestra seleccionada de alumnos que cursan la Licenciatura en Contaduría y Administración del Centro Universitario UAEM Ecatepec. Tiene un corte cuantitativo porque está caracterizado por recopilar, procesar y examinar información; se recabaron datos por medio de un instrumento contextualizado a la Institución en la cual se aplicó, posteriormente los resultados fueron organizados.

El objetivo principal fue analizar la viabilidad de la aplicación de la UA de Administración de las PyMES para su impartición de forma semipresencial, utilizando las TIC´s como una herramienta para mejorar el proceso de enseñanza aprendizaje, e identificar si el alumno contaba con los recursos tecnológicos apropiados.

Palabras clave: enseñanza, estrategias, método, unidad de aprendizaje, virtual.

Abstract

The main objective is to analyze the feasibility of the application of the AU for SME Management for its delivery in a semi-face-to-face manner, using ICT as a tool to improve the learning teaching process; and to identify whether the student has the appropriate technological resources, as well as to analyze the skills that the teacher must have to teach the subject.

The main objective was to analyze the viability of the application of the UA of Administration of SMEs for its delivery in a blended way, using ICTs as a tool to improve the teaching-learning process, and identify if the student had the resources appropriate technology.

Keywords: Teaching, strategies, method, learning unit, virtual.

Resumo

Esta pesquisa é descritiva, visto que buscou-se uma mensuração precisa e específica sobre a amostra selecionada de alunos que cursam o Curso de Bacharelado em Ciências Contábeis e Administração do Centro Universitário UAEM Ecatepec. Possui corte quantitativo porque se caracteriza por coletar, processar e examinar informações; Os dados foram coletados por meio de um instrumento contextualizado à Instituição em que foi aplicado, posteriormente os resultados foram organizados.

O objetivo principal foi analisar a viabilidade da aplicação da UA de Administração de PMEs para a sua entrega de forma mista, utilizando as TIC como ferramenta para melhorar o processo de ensino-aprendizagem, e identificar se o aluno dispunha de recursos tecnológicos adequados.

Introduction

This research is descriptive, since it seeks to have a precise and specific measurement about the selected sample of students who are studying the accounting and administration degree of the UAEM Ecatepec University Center. It has a quantitative cut because it is characterized by collecting, processing and examining information since data will be collected through an instrument contextualized to the university in which it was applied, later the results will be organized.

For this study, a pilot test will be developed, applied in the Accounting Degree of the UAEM Ecatepec University Center.

Taking into consideration that education is a dynamic process that adapts to the needs of each country and is constantly changing, even more so in a globalized world, where technology occupies an important place in the development of each nation, resources, societies and interaction through global networks.

Education is the first to answer the technological call where training has to be permanent in a process of change and innovation in virtual teaching-learning environments, as well as the use of technologies in the Learning Unit (UA) of Administration of SMEs, in the Bachelor's Degree in Accounting and Administration of the UAEM Ecatepec University Center.

The purpose of this study is to find the feasibility of implementing the UA Administration of SMEs in a blended way, analyzing and evaluating whether the students have the internet and the computer necessary for its development and implementation.

Once the instrument was applied to the students who were taking the course as part of this research, the next purpose is to evaluate the viability of the blended application, in order to make the request to the relevant authorities, for its application in subsequent semesters . Collaborative learning can be achieved through the use of collaborative strategies in virtual environments. It is necessary to have technological support for the development of these tools, so that they intervene as an intermediary for new significant

experiences in the educational field, producing the learning of concepts, abilities and skills of the students. They are essential to produce meaningful learning, interaction, collaboration and dialogue related to those that are currently demanded such as: creativity, capacity for analysis, reflection, thought, reasoning, abstraction, resolution, proposal of alternatives, among others.

Virtual environments

Learning and education play a very important role in social development and are one of the engines of its development process. That is why the teaching process must always adapt to the personal characteristics that make it up.

On the other hand, in recent years we are experiencing a true technological revolution, which has changed our life habits and affected our environment, sometimes saturated or overwhelmed by all these technologies. (Garcia, 2001)

Distance education, also known in Mexico as online, virtual or e-learning, has had a great impact on higher education, in different ways, complexities that impact pedagogy, technology, organization and the economy, with resources from evolutionary learning, progressive evaluation systems, being a process that is in application and improvement, analyzing normative frameworks so that this educational model has an important impact on their daily work, on research and connection with society.

This model is a university reality in Mexico, linking pedagogy, technology, institutions, teachers, tutors, specialists and students, taking it as a complex modality, with new paradigms and different intellectual visions, potentiating the realities or opposing, in an environment academic or work, seeking as an objective to understand new realities with designs and developments of evolutionary educational models, adding institutions, programs, offer models in different areas, seeking components of quality and equity.

The world undergoes progressive transformation, currently stands out for the use of new information and communication technologies, the individual has to be able to prosper and renew themselves in this world of continuous changes, educational systems also have to be renewed.

Currently the UAEM educational system offers the individual the opportunity to prepare, to adapt to the constant changes that are experienced day by day, for this the University is at the forefront taking into consideration the processes of change, culture and historical evolution, modifying the contents, hierarchies, methods, seeking that man not only knows, but passes to know how to be.

The following table shows the characteristics of each of the modalities offered by the institution, which are open modality, distance modality and mixed modality, face-to-face modality.

Tabla 1. Modalidades de enseñanza de la UAEM

Modelo	Descripción
Estudio independiente guiado (modalidad abierta)	El estudiante se encontrará solo y aislado al momento de leer los materiales, aportando ideas personales, preguntas y juicios; involucrándolo para lograr un interés en la materia o problema en cuestión.
2. Aula remota (modalidad a distancia)	Se basa en el uso de las TIC para reproducir en distancia lo que normalmente ocurre en un salón de clases presencial, llamado por Miller "aula distribuida" (2004), generalmente se manejan tecnologías que consienten la transmisión sincrónica (en tiempo real, en vivo y espontáneas) de audio y/o video. Se alcanzan sólo sitios establecidos por la institución y no por los estudiantes.
3. Modelo interactivo basado en las TIC (modalidad a distancia)	Utiliza tecnologías de Internet para el acceso a los materiales y para el contacto entre asesores académicos y estudiantes, en interacción sincrónica y/o asincrónica. También conocido como educación a distancia basada en redes o "en línea", la interacción entre el profesor y el estudiante se incrementan, mas no asegura, el conocimiento por parte de los estudiantes.
4. Modelo híbrido (modalidad mixta)	Se mezclan educación presencial y a distancia de tal manera que ambas experiencias de aprendizaje son imprescindibles para el éxito de los objetivos de la misma. Se requiere que trabajen juntas de manera lógica como las partes de una máquina. El modelo basado en las TIC se utiliza para la entrega de contenidos, simulaciones, el desarrollo de actividades colaborativas, el proceso de retroalimentación y el de interacción. El modelo presencial se utiliza para sensibilizar al estudiante en los contenidos, practicar, discutir los retos de estos conocimientos y habilidades en el ámbito laboral y asegurar el compromiso social.
5. Modelo presencial apoyado con tecnología (modalidad presencial)	Modelos más que mixtos son presenciales apoyados con el uso de las TIC. Continuo entre la educación presencial tradicional y la educación a distancia. No obstante, en los extremos de este espectro encontraremos educación presencial con muy poco apoyo a distancia y educación a distancia con muy poca presencia.

Fuente: Elaboración propia extraído de Universidad Autónoma del Estado de México.

(2009). *Plan General de Desarrollo 2009-2021*. Toluca, México.

http://web.uaemex.mx/abogado/doc/0057%20LinEdCont.pdf.

The Autonomous University of the State of Mexico offers different teaching options to those who wish to train professionally in any of the professional careers it offers, as well as each of the attached University Centers, the student can choose the most appropriate option for their professional training based on in their interests, disposition, economic and technological resources.

To study in a virtual way (not in school), students must be enterprising, creative and innovative, have a taste for technology and have the necessary technological resources that allow them to study and even alternate with a job, from a self-taught perspective.

Methodology

A quantitative investigation was developed by applying a questionnaire to collect data, analyze them and verify the hypothesis, of a documentary type through the consultation of books, magazines, memories, records, among others. It is exploratory because it explains the purpose of collecting information in a single moment. Transectional or transversal since the data were collected in a single moment, the data being descriptive in order to recognize, locate and define particular situations; substantiate the hypothesis, to collect ideas or suggestions that allow to refine the methodology, strategies, etc., formulating with greater accuracy the definitive research scheme.

Identify the viability of the implementation of the SME Administration course at a distance for the Accounting and Administration Degrees, if the students have the necessary infrastructure to take the aforementioned learning UA.

The total population is 28 Accounting and Administration students, enrolled in the spring 2019 period, the questionnaire was applied to carry out the corresponding pilot test, looking for its reliability and validity, applying it to all students to obtain results reliable and representative.

At the UAEM Ecatepec University Center there is an enrollment of 1,440 students, which correspond to the degrees of Accounting, Administration, Administrative Informatics, Computer Engineering, Psychology and Law; For this research, students enrolled in the fourth semester of the Bachelor of Accounting and Administration, who are taking the subject of Administration of SMEs, will be used.
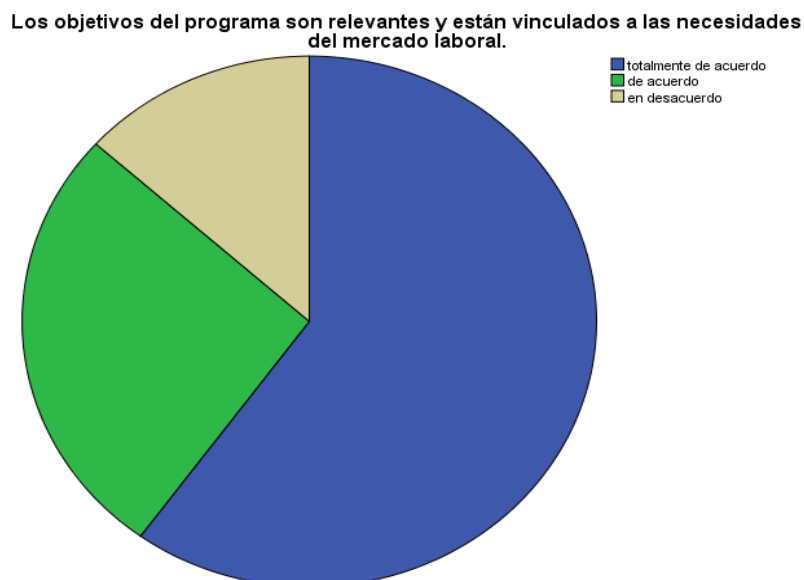
Results

Figura 1. Programa Educativo
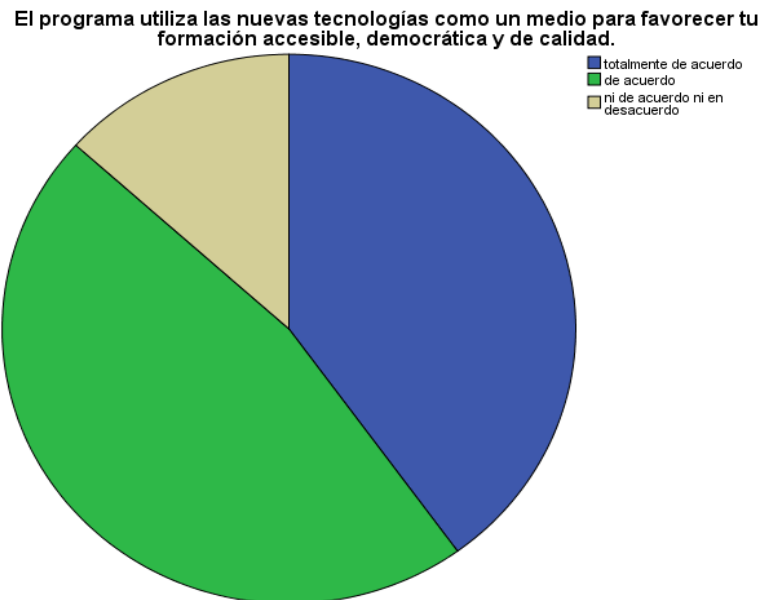
Fuente: Elaboración propia

The sum of those in total agreement and those in agreement is 86.7% of the students who consider that new technologies are an accessible medium that favor their training in a democratic and quality way, and only 13.3% do not agree or in disagreement.

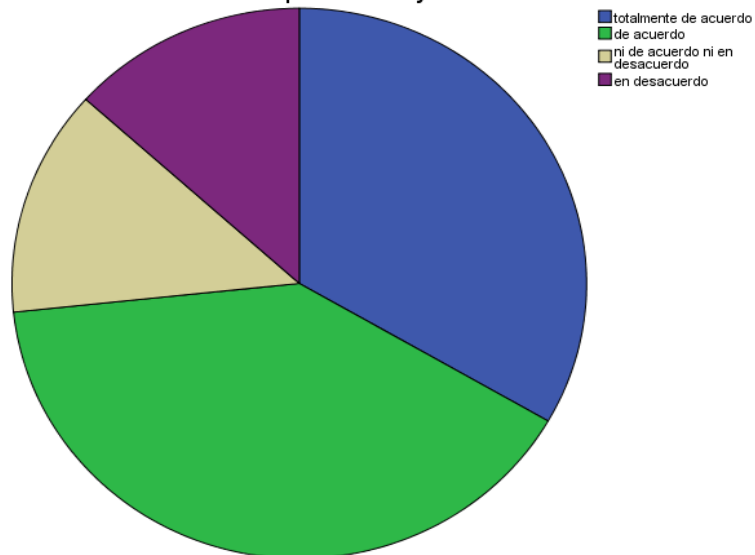**Figura 2.** Funcionalidad del programa educativo

Fuente: Elaboración propia

Only 13.3% of those surveyed consider that the objectives of the educational program are not relevant or are linked to the needs of the labor market, against 86.7% who consider it relevant.

**Figura 3.** Estrategias del programa educativo

Fuente: Elaboración propia

The students consider that the program contemplates the strategies in person and online, being in complete agreement and in agreement with 73.3%, the remaining consider neither agree nor disagree and neither disagree with 26.6%, of the sample none answered totally disagree.

**Figura 4**. Alcances del programa educativo
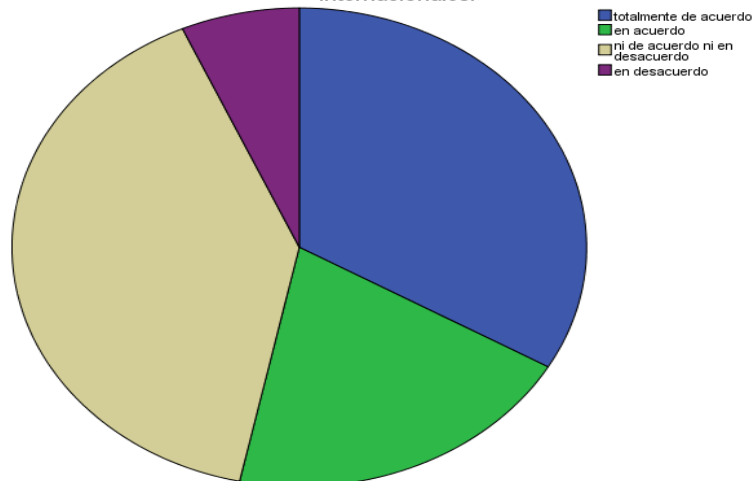
Fuente: Elaboración propia

More than half of the surveyed students consider that the educational program has an international attention with 53.3%, the minority being 6.7% who disagree.

Figura 5. Nivel de competencia del programa

El programa prevé los diferentes niveles de competencia que se requieren en el uso de las tics.

- totalmente de acuerdo
- de acuerdo
- ni de acuerdo ni en desacuerdo
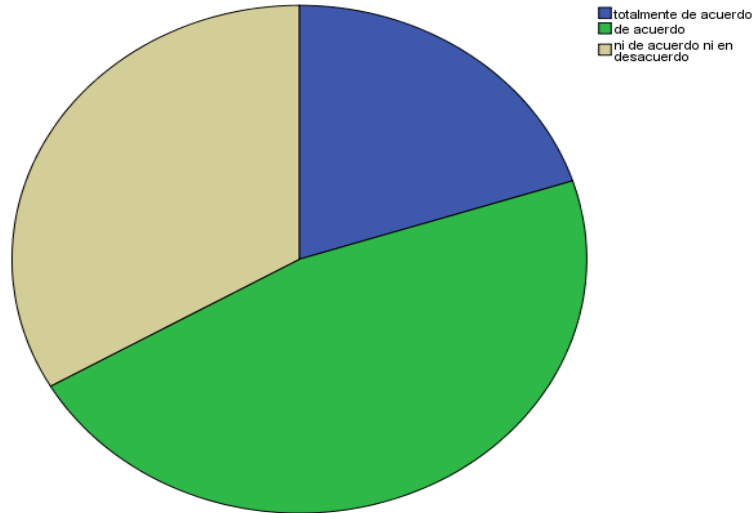
Fuente: Elaboración propia

66.7% of the students consider that the program has the skills required to use ICTs.

Figura 6. Estrategias de aprendizaje en el programa de estudios

El programa promueve la utilización de estrategias de aprendizaje basadas en la búsqueda, manejo y gestión de la información.

- totalmente de acuerdo
- de acuerdo
- en desacuerdo
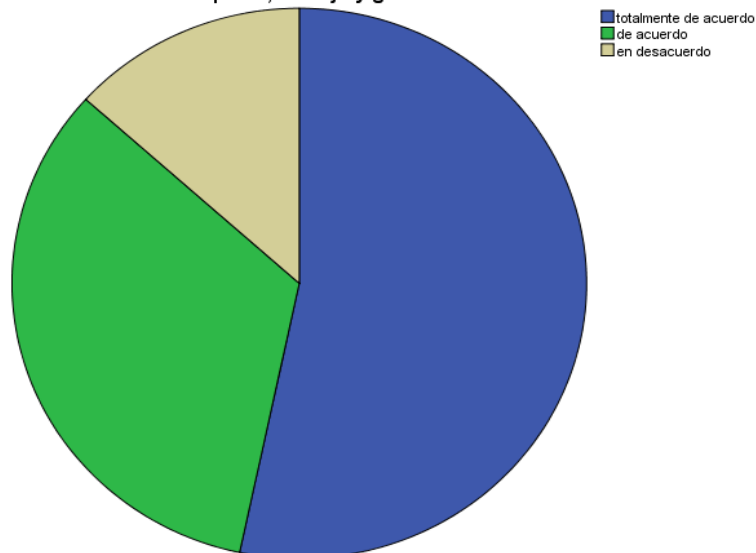
Fuente: Elaboración propia

Respondents consider to be in complete agreement and in agreement with 86.7% that the program promotes the use of information-based learning strategies, in their management, search and management to transform it into knowledge and only 13.3% disagree.

Figura 7. Estrategias innovadoras en el programa de estudios
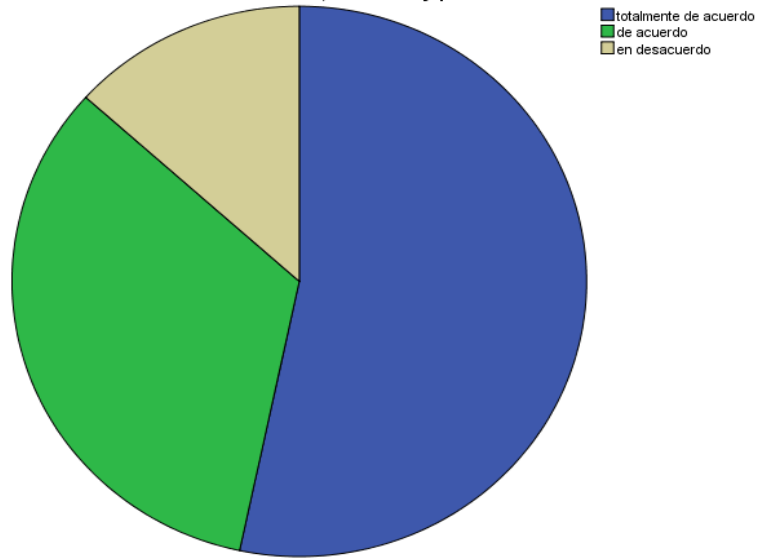
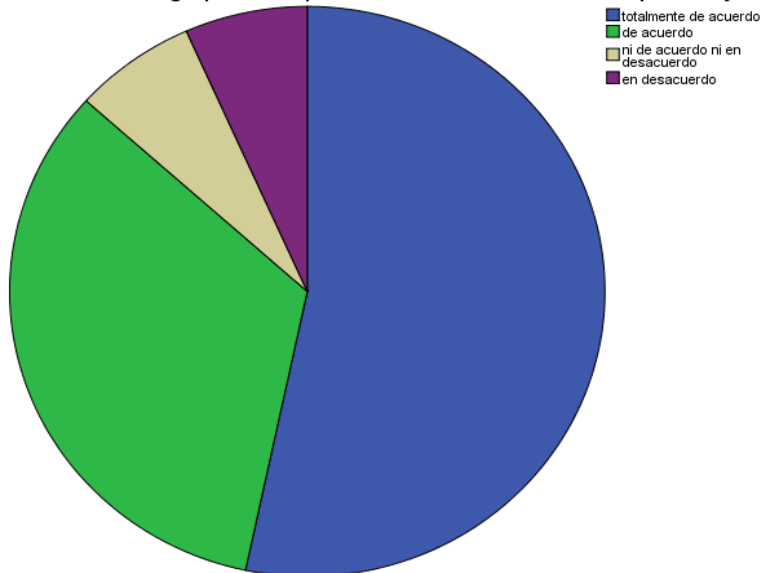Fuente: Elaboración propia

The respondents consider that the program promotes the use, creation and production of innovative learning resources with 86.7%, while 13.3% disagree.

**Figura 8**. Personalización del ambiente de aprendizaje

Fuente: Elaboración propia

86.7% of students consider that technology allows individual and didactic learning in learning environments, and only 6.7% disagree.

Figura 9. El contenido generador de discriminación

El contenido textual, gráfico y multimedia no provoca discriminación en relación a edad, sexo, cultura, religión o etnia

- totalmente de acuerdo
- de acuerdo
- en desacuerdo
- totalemnte en desacuerdo
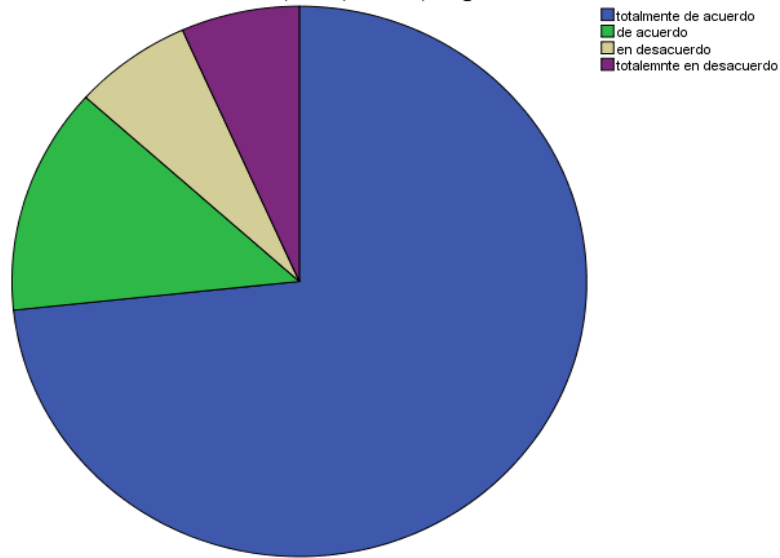
Fuente: Elaboración propia

A percentage result of 73.3 was obtained in relation to textual, graphic and multimedia content that does not cause discrimination of age, sex, culture, religion or ethnicity, compared to 6.7% who totally disagree.

Figura 10. Contextualización del contenido

Las imágenes, audios y videos del programa están bien contextualizados con los temas a desarrollar

- totalmente de acuerdo
- de acuerdo
- ni de acuerdo ni en desacuerdo
- en desacuerdo
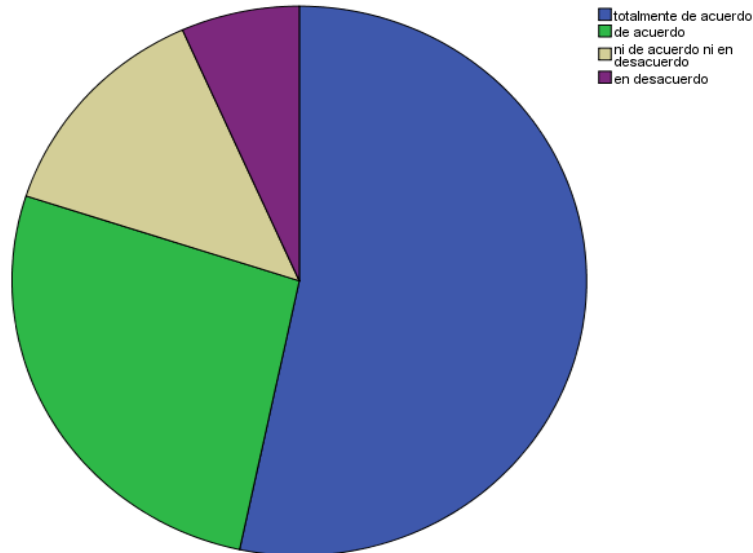
Fuente: Elaboración propia

80% of the surveyed population agrees and totally agrees that digital media are consistent with the topics to be developed in the program.

Figura 11. Herramientas tecnológicas

Con que tipo de herramientas tecnológicas cuentas?

computadora
ninguna

Fuente: Elaboración propia

93.3% of the respondents have a computer and only 6.7% do not have any technological tool for personal use and focused on the school.

Figura 12. Acceso de los estudiantes a internet

¿Tienes acceso a internet desde tu hogar?

si
no
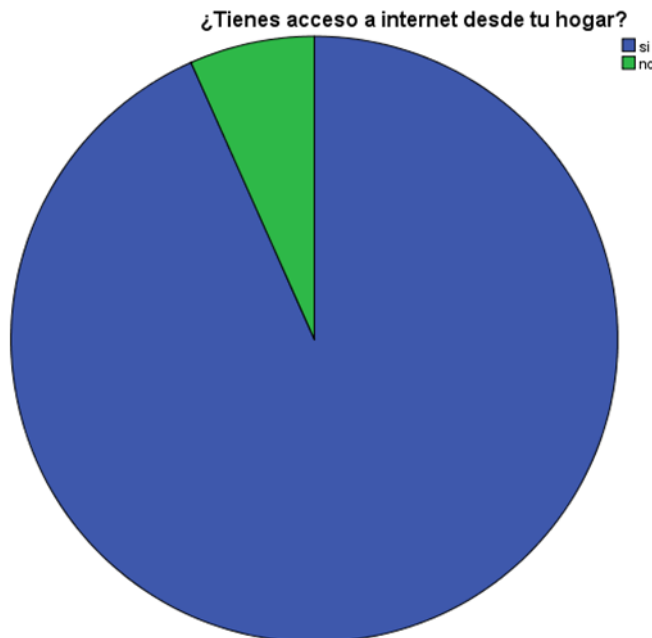
Fuente: Elaboración propia

93.3% of those surveyed do have internet access and 6.7% do not have internet accessibility to be able to use it in their tasks and jobs.

Figura 13. Asignatura a distancia

¿Cuántas veces haz cursado una asignatura a distancia?

- 1-3
- ninguno

Fuente: Elaboración propia

13.3% have taken distance subjects 1 to 3 times and 86.7% have not taken any distance subjects, therefore it will be a more complex process to introduce them to this model.

Figura 14. Facilidad de un curso a distancia

¿Se te facilita tomar cursos a distancia?

- si
- no
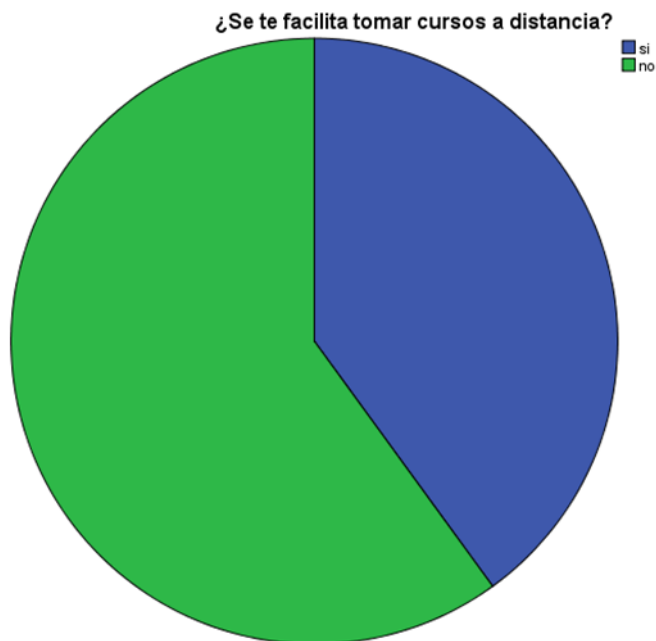
Fuente: Elaboración propia

60% of students do not find it easy to take distance courses since they do not have experience, 40% if the courses are facilitated, since they have been able to experience distance classes.

Figura 15. Viabilidad de asignatura a distancia

Fuente: Elaboración propia

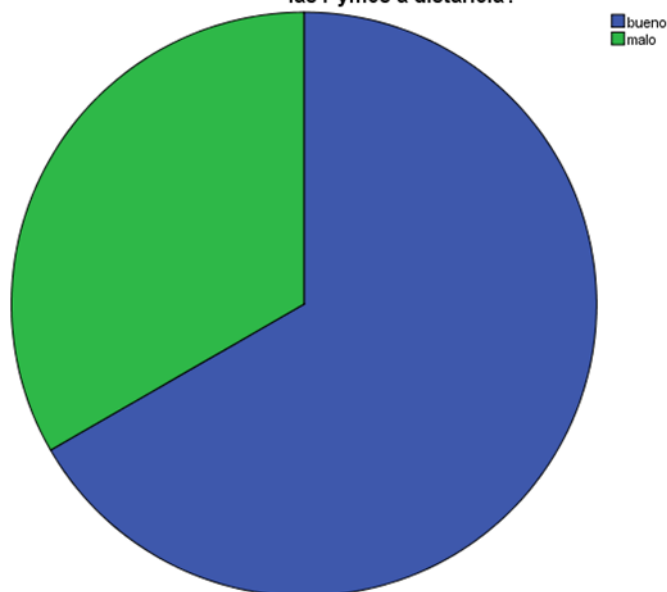66.7% consider that the distance teaching of the subject is good, and 33.3% consider the implementation of the distance subject bad, since they are not used to educational and technological changes.

The results obtained, considering that technology allows individual and didactic learning in learning environments, is high since students consider that ICTs can be used as a tool to improve the teaching-learning process, having as an axis Guided and learning-oriented communication is the main one in the interaction between teacher-student.

In order to be able to specify distance education mechanisms, public universities face challenges such as the curricular structure, planning, structuring of courses, as well as educational programs, it is there where the different agents participate, who make up the projects institutions to offer quality distance education. In this distance educational model, it is necessary to have different actors such as the coordinators of the curricular plans who will virtually determine the actions and activities to be carried out by the students, in the same way these university project coordinators plan, They train and structure the staff of teachers who will intervene in this educational process, as well as the evaluation of educational processes and their monitoring.

Discussion

The sample consisted of 28 students from the Accounting and Administration Bachelor's degrees who attended the SME Administration Learning Unit, with an age range between 19 and 43 years old, answering the questionnaire corresponding to the research on the importance of implementation of the application of distance education of the UA, in addition to investigating if they have a computer and internet to study it and the capacities of teachers to teach the subject at a distance.

It is considered that at present the development of competences, abilities, aptitudes, attitudes, talents and skills, generate the success of professionals integrated into the labor field, since societies have been evolving in the transformation of information and knowledge, with the help of technological tools. Since the implementation of technology helps life in society, facilitating the processes and development of social solutions.

The challenge in universities is increasing, with the transformation of the new information and knowledge societies, in which education and the university are immersed in it (Casas, 2002), promoting changes in processes and theories of innovation, development and renewal, to offer social and professional quality among professionals.

There are problems with the implementation of technology in public educational institutions, due to the lack of infrastructure, the poor quality of connectivity, eradicating false problems, so that the student can achieve success not only in the educational field but also globally in his life, since the student is not an entity isolated from society.

Encouraging the implementation of the use of technological tools in class programs, where quality didactic supports are developed, training teachers in the management of educational platforms, instruments, databases, among many others that exist. Actively interacting teacher-student in this process, where the former is only a facilitator and guide. Counting on an active and adequate, respectful, direct and impartial communication.

ICTs can contribute to universal access to education. UNESCO applies integration strategies in the promotion of ICTs in education and enhanced learning in three sectors: communication and information, education and science. Educational technology is the sum total of the activities that make the person modify their external (material) or internal (behavioral) environments. Machines or devices should not be confused with the application of technologies, which have more to do with the organization of means and resources than with the means themselves. In the use of technology and educational programs need to be appreciated in terms of effectiveness and flexibility of application in

terms of time, personnel and resources available so that technology can be used in their doing.

It must be understood that as a teacher, tools should be sought to optimize student learning using strategies that help solve real contextual problems, aided by technological tools that can reinforce knowledge, with the help of videos, forums of discussion, debates, readings, simulators, audios, among others.

Conclusions

The conclusions are presented on the findings found in the study in relation to the objectives, the descriptive information about the participants and to give answers to the research questions about the possibility that the students consider it pertinent to take the UA Administration of SMEs in a way blended, 66.7% of those surveyed consider that it is convenient to teach the SME subject at a distance.

Distance education requires that students are equipped with a technological structure, since 86.7% consider that information and communication technologies are an accessible means that favor their training. Likewise, 66.7% consider that it is convenient to teach the SMEs course at a distance, however, there is a percentage that does not agree with it, which may be due to the fact that they do not have the technological equipment to take it. The current situation in the educational environment has shown that not all families have enough equipment to meet the needs of the members who attend some educational level. For the implementation of a blended education it is required that the students and teachers who teach the Learning Unit participate, other subjects such as an advisor who will be the one who will specifically guide the path of university students through this Institution, orient them about the technical alternatives and learning processes in order to meet the proposed goal; It is also required to provide the student with teaching tools.

The guide or advisor must have characteristics such as empathy, respect, solidarity, as well as values that promote a pleasant and trusting environment with respect to the students.

Teachers will identify the characteristics of the student beyond geographical borders, and assuming different contexts, in this sense it is necessary for the tutor to be trained and constantly apply the practice of new strategies and techniques in distance systems. Which will evaluate the attitude of students towards the new paradigms of ICTs, knowing their students well. Offer guidance and information. Avoid feeling isolated. Integrate the course contents to the proposed objectives. Help the student in the management of

technology. Support him in setting goals. Motivate communication and participation, determining the following functions to be fulfilled by the tutor: providing support, motivation and guidance to the participants, creating a pleasant and stimulating environment.

To support them in the management of technology, the guide or teacher must have the necessary knowledge and skills in the management of technology, since as has been observed in the current situation that is being experienced in an extraordinary way, due to the situation health, without generalizing, teachers do not have the necessary training to face the situation of teaching at a distance.

For education to bear real fruits, they must contemplate the figure of the tutors, whose main function is to carry out an effective accompaniment of the students, so that there is a relationship of cordiality and empathy, which will generate an atmosphere conducive to That the students carry out the assigned tasks, in this sense the tutors have a great responsibility, so training and constant updating is necessary, it is to be noted that the tutors must warn, in addition to diagnosing problems of an academic nature, orienting completely to students and effective in choosing their academic situation.

Teachers, advisers, tutors and technical support in distance education should be responsible for organizing, structuring, and directing tutoring programs in higher education institutions, with the purpose of meeting the academic needs of university students, incorporating the new technologies to tutorial programs. Being a capable and professional person, who attends, guides and raises academic scenarios in which he orients students in the conformation of their cognitive processes in an integral way, establishing a series of channels, with the purpose that they have a didactic and effective way of study habits, capable of integrating a series of learning strategies, so that the student can take advantage of their stay in educational institutions. It also raises alternatives to expose significant content according to the themes developed in the university learning units, establishes the planning of courses, activities, as well as training in virtual environments, and multimedia design.

The optimal development of distance education is complemented with the use of electronic tools that meet the needs of students, which means that there must be current elements such as computer equipment, interactive software, accessible portals, new technologies, that provide support for the completion of student tasks; Universities must take into consideration that technological tools must have an innovative support, with the possibility of actively participating as well as the alternative of interacting directly not only with advisors, tutors, but with the educational community in which perform.

With the triple helix where the student is the main actor in addition to the help of facilitators and tutors, this learning integration is complemented, where the main actor manages his time and the tools he has in addition to implementing the administrative process (planning, organization, direction and control) to the maximum, you must have a taste for reading and writing, also have a critical sense for self-education.

Future lines of research

The results of the research, as well as the documentary analysis on it, suggest a series of future research lines on what is related to training at the UAEM Ecatepec University Center, innovating in the study plans or programs, updates in the staff of teaching in the use of technological tools for use in teaching, implement or update study programs according to the demand of the world of work, investigate the professional competences, values and attitudes of students, as well as the resources they have Or it could tell and their economic situation, difficulties that students presented when taking the subjects online, at the end of the course verify if the objective of the course was met in terms of the learning obtained by the students.

References

Cordera Campos, R. (2008). La autonomía en la sociedad del conocimiento. Recuperado el 2018, de Universidades: https://www.redalyc.org/pdf/373/37303803.pdf

Díaz, H. (2014). Las Ciencias Sociales en la Sociedad del Conocimiento. Recuperado el 2018, de Diálogo Andino- Revista de Historia, Geografia y Cultura Andina. Universidad de Tarapacá: http://www.redalyc.org/articulo.oa?id=371333938001

García, F. P. (2001). Nativos digitales y modelos de aprendizaje. Recuperado el 26 de 09 de 2020, de http://ceur-ws.org/Vol-318/Garcia.pdf

Gutiérrez, A. (1997). Integración Curricular de las TIC´s y Educación para los Medios en la Sociedad del Conocimeinto. España: Edicones de la Torre.

Henríquez, P. (2001). La Aplicación didactica de las Tecnologías de la Informatica y la Comunicación en la formación del siglo XXI. Recuperado el 2018, de Tesis Doctoral, Universidad Rovira I Virgili. Tarragona.

Holmberg, B. &. (s.f.). Guided didactic conversation in distance education. En Distance Education: International Perspectives (págs. 114-122). New York.

México, U. A. (2009). Plan General de Desarrollo 2009-2021. Recuperado el 2020, de Universidad Autónoma del Estado de México: http://web.uaemex.mx/abogado/doc/0057%20LinEdCont.pdf

Ortega, F. (2007). ¿Una sociedad del conocimeinto sin intelectuales? Recuperado el 2017, de Universidad de los Hemisterios: http://www.redalyc.org/articulo.oa?id=199520735006

Salinas, J. (2004). Hacia un modelo de educación flexible: Elementos y reflexiones. Madrid, España: Pearson-Prentice Hall.

Sangrá, A. (2003). La integración de las TIC´s a la Universidad: una aproximación estrategica. Proyecto de investigación. Univerdiad Oberta de Catalunya, Barcelona.

Torres, S. A. (2012). ¿Hacia una sociedad del conocimiento? consideraciones a partir del desarrollo de la ciencia, la educación superior y las TIC´s. Recuperado el 2019, de https://www.facebook.com/sharer/sharer.php?u=https%3A%2F%2Fredie.uabc.mx%2Findex.php%2Fredie%2Farticle%2Fview%2F307%2F662

UNESCO. (1998). Declaración mundial sobre la educación superior en el siglo XXI: Visión, acción y marco de acción prioritaria para el cambio y el desarrollo de la educación superior. Recuperado el 2019, de http://www.unesco.org/education/educprog/wche/declaration_spa.htm

Rol de Contribución	Autor (es)
Conceptualización	Patricia Delgadillo Gómez
Metodología	Leisdy Del Carmen Gutiérrez Olmos
Software	Patricia Delgadillo Gómez
Validación	Adriana Mercedes Ruiz Reynoso
Análisis Formal	Sara Lilia García Pérez
Investigación	Leisdy Del Carmen Gutiérrez Olmos
Recursos	Matilde Gómez Méndez
Curación de datos	Adriana Mercedes Ruiz Reynoso
Escritura - Preparación del borrador original	Matilde Gómez Méndez
Escritura - Revisión y edición	Matilde Gómez Méndez
Visualización	Sara Lilia García Pérez
Supervisión	Leisdy Del Carmen Gutiérrez Olmos
Administración de Proyectos	Patricia Delgadillo Gómez
Adquisición de fondos	Adriana Mercedes Ruiz Reynoso