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Journal Educational Theory

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As first article we present, *Comparison of digital learning barriers in university students*, by MONCADA-RODRÍGUEZ, Gloria Rebeca, ESPERICUETA-MEDINA, Marta Nieves, VILLARREAL-SOTO, Blanca Margarita and RAMOS-JAUBERT, Rocío Isabel, with adscription *Universidad Autónoma de Coahuila*, with second article we present, *Teaching competencies in virtual learning environments*, by MEX-ALVAREZ, Diana Concepción, MALDONADO-RIVAS, Pablo Javier, HERNÁNDEZ-CRUZ, Luz María and LLANES-CHIUINI, Charlotte Monserrat, with secondment at the Universidad Autónoma de Campeche, as third article we present, *Critical analysis and arguments management: context and teaching and learning processes*, by TORRES-LOPEZ, Guadalupe Yamilet, COLMENARES-VAZQUEZ, Ligia and SANTOYO-VELASCO, Carlos, with adscription in the Universidad Nacional Autónoma de México, as last article we present, *Exploring challenges of online education in universities 2021-2022: Mexico-Kuwait comparative analysis*, by ALKHURAJINEJ, Amani & MONSALVO-VELÁZQUEZ, Gabriela, with adscription Universidad Azteca.

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Comparison of digital learning barriers in university students

Comparativo de barreras de aprendizaje digital en estudiantes universitarios

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Abstract

The general objective of the research was to identify the variables that integrate the learning barriers in students at the higher level of the Autonomous University of Coahuila, the methodology used was quantitative, transversal, exploratory, descriptive and explanatory with a comparative and integrational methodical derivation. The collection of responses was carried out from a virtual instrument composed of 23 signalitic variables and 105 variables on a decimal scale of ratio. The sample consisted of 320 subjects, for which a non-probabilistic sample was used through the convenience strategy. The statistical levels that were processed were: frequencies and percentages in addition to comparison. The main results indicated that students are in family contexts within which there is helplessness, disinterest, violence and detachment, which generates limitations and complications that are reflected in the teaching-learning process. The outstanding conclusions are that most of the havoc and complexities for the educational process of the university student come from digital skills, abilities and abilities, which can be said given that tools, platforms and virtual sites have symbolized limitations and arduous obstacles in the generation of student knowledge, as well as.

Resumen

El objetivo general de la investigación fue identificar las variables que integran las barreras de aprendizaje en los estudiantes en nivel superior de la Universidad Autónoma de Coahuila, La metodología que se utilizó fue cuantitativa, transversal, exploratoria, descriptiva y explicativa con una derivación metódica comparativa e integracional. La recopilación de respuestas se realizó a partir de un instrumento virtual integrado por 23 variables signalíticas y 105 variables en una escala decimal de razón. La muestra se conformó por 320 sujetos, para lo cual se utilizó un muestro no probabilístico mediante la estrategia por conveniencia. Los niveles estadísticos que se procesaron fueron: frecuencias y porcentajes, además de comparación. Los principales resultados señalaron que los estudiantes se encuentran en contextos familiares dentro de los cuales existe un desamparo, desinterés, violencia y desapego, lo cual genera limitantes y complicaciones que se plasman en el proceso de enseñanza- aprendizaje. Las conclusiones destacadas radican que la mayor parte de estragos y complejidades para el proceso educativo del estudiante universitario provienen de las habilidades, destrezas y capacidades digitales, lo cual se puede afirmar dado que las herramientas, plataformas y sitios virtuales han simbolizado limitantes y obstáculos arduos en la generación del conocimiento del alumno, asimismo, se observó que la muestra estudiantil ha experimentado emociones apáticas, de desánimo y de indiferencia durante el proceso de integración a la modalidad establecida por la institución en la que pertenecen.

Learning barriers, Digital skills, Educational Environment

Barreras de aprendizaje, Habilidades digitales, Entorno educativo

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Introduction

The pandemic caused by the COVID-19 virus has caused in the student community different problems and deficiencies in spheres related to the emotional, family, school and digital, within which situations such as: under the domain of technological tools are reflected; emotional imbalances; negative attitudes; family experiences that threaten emotional health and poor school performance, which can lead to school dropouts. It is throughout the quantitative research of transversal design with an exploratory, descriptive and comparative scope that it seeks to inspect and address in a pertinent way the themes of learning barriers, in order to identify the significant differences, and with it, reach an understanding on what are those limitations and deficiencies that hinder the teaching-learning processes.

For these reasons, it is absolutely necessary to touch in a profound way these issues to offer solutions and proposals in favor of the integral formation of the learner. To this end, throughout this article the sections of practical background, theoretical framework, methodological procedures, analysis and discussion of results, conclusions, bibliographic references will be presented.

General question

What variables make up the learning styles of higher education students from various states of Mexico?

General objective

Identify the variables that make up the learning styles of Higher Education students from various States of Mexico.

Specific objectives

- Show the percentage of students who study in the City of Saltillo Coahuila
- Frequency the percentage of students who study at the Autonomous University of Coahuila.
- Contrast the differences of opinion that exist between the age of 18 years and 23 years regarding the method of study.

- Compare the differences of opinion that exist between the Engineer in Business Management and the Lic. in Business Administration, with respect to conventional attitudes.
- Define the factor that integrates the study method, with respect to agentic processing and conventional attitudes of university students.

Research questions

- What is the percentage of students who study in the City of Saltillo?
- What is the percentage of students who study at the Autonomous University of Coahuila?
- What differences of opinion exist between the age of 18 and 23, regarding the method of study?
- What difference of opinion exists between the Eng. en Business Management and the Lic. in Business Administration, with respect to conventional attitudes?

Hypothesis

- The largest student population is concentrated in the City of Saltillo Coahuila
- The largest student population belongs to the Autonomous University of Coahuila
- There are differences of opinion between the age of 18 years and 23 years, regarding the study method.
- There is a difference of opinion between the Engineer in Business Management and the Lic. in Business Administration, with respect to conventional attitudes.

Theoretical framework

On the other hand, emphasis is placed on the AXIS of COVID-19, where, the World Health Organization (2021) is contemplated indicating that COVID-19 is a disease caused by SARS-CoV-2 mostly known as coronavirus which had its first report of contagion on December 31, 2019 in Wuhan China being reported as a case of pneumonia reason why it was handled as a known disease, until months later the cases of this disease increased exponentially. The name was given to the virus on February 11, 2020 by the World Health Organization while major efforts were underway to contain the outbreak in Wuhan.

In the same way, Flores (2022), expresses that even after the 12 weeks of incubation of the virus the sequelae can still be present and even some people have died from them. The sequelae range from chronic fatigue, headache, loss of the sense of smell and taste, but medical studies have shown that there is a great diversity of disorders in different organs. Finally, with regard to learning barriers, the Ministry of Public Education is visualized as sharing the following:

"The term learning barriers is adopted rather than special educational needs, to refer to all the difficulties experienced by any student. Such barriers are considered to arise from the interaction between students and the contexts, people, policies, institutions, cultures, and social and economic circumstances that affect their lives."

Corrales, et. al (2017) comment that "learning barriers can be conceptualized as the presence of contextual factors that hinder or limit full access to education and learning opportunities"

Likewise, it is worth mentioning that virtual education has brought with it barriers and lags in terms of the development of digital skills in university students. Consequently, it is of vital importance to address through the perspective of scientific research these phenomena that are present in higher education.

According to ECLAC-UNESCO (2020) they establish that the essential conclusions they reach within the framework of their research are: "The COVID-19 pandemic exacerbated social inequalities, inequality and exclusion, while paradoxically transforming itself into an opportunity for the strengthening of social relations, guided by feelings of solidarity and collaboration around the search for the common good, and also by responsibility for the care of the other, as an essential dimension of one's care and survival.

In this scenario, and given the next stages of the pandemic and the phenomena or processes of future global crisis or with which we already coexist – such as climate change – it is increasingly common for the discourses of key actors to point out the need to rethink education, giving priority among the new contents to the preparation of students to understand reality, living together and acting in times of crisis and uncertainty, making decisions at the individual and family level and promoting collective solutions to urgent challenges that contribute to the structural transformation of the world.

In the document "Strategy of equity and inclusion in basic education" of the Ministry of Public Education (2018) it refers to three types of barriers in the pedagogical environment which correspond to:

1. "Attitudinal. Those related to the attitude of rejection, segregation, exclusion or overprotective attitudes of the actors who interact with the student (teachers of regular or special education, group mates, among others). These barriers include actions such as denial of enrollment or lack of inclusion in activities because they are not planned considering the characteristics and needs of the students. Likewise, when peers assume behaviors of overprotection, aggression or rejection, the participation of students in the classroom or in the school is limited.

2. Pedagogical. They have in common that the conception that educators have about their teaching actions and learning practices do not correspond to the rhythm or style of learning of the students. For example, when the teaching is homogeneous or when the teacher does not offer the required supports for the students thinking that, if he does, the rest of the group will be delayed and will not cover the program. An example, referring to students with disabilities, is when the teacher plans for them activities of lower grades arguing that "they do not have the capacity" or that the activities are very complicated for the student. It should be noted that students with outstanding aptitudes may also face limitations when school activities do not respond to their pace or interests.
3. Of organization. Barriers of this type refer to the order and stability in work routines, the application of standards and the distribution of space and furniture. For example, changes in rooms, spaces or activities without prior planning; when the materials are not accessible to the students, as well as environments of disorder within the classroom are factors that negatively affect the learning of any student; in the case of students with disabilities they become more serious because many of them need structure, stability and routines to achieve learning." (p.26)

It is worth mentioning Gómez (2017) who alludes to five technological barriers that concern teaching-learning processes which are:

1. Cost.
2. Lack of training.
3. Resistance to adopting new technologies.
4. "Little technological development".
5. Insufficient infrastructure.

Methodology to develop

The research approach is quantitative as:

Part of an idea that is limited and, once established, objectives and research questions are derived, sources of information are reviewed, from which a framework or a theoretical perspective is built. From the questions, hypotheses are displayed and variables are determined; a plan is drawn up to examine them (design), the variables are measured in a certain context; the measurements obtained using statistical methods are analyzed, and a series of conclusions are drawn regarding the hypothesis or hypotheses. (Hernández, Fernández and Baptista, 2014, p. 4-5)

As for its design, it is transversal since it is an investigation that collects data in a single moment (Hernández, Fernández and Baptista, 2014, p. 154). Therefore, a single measuring instrument was applied, in order to explain the relative frequency of the axes of the research, so that an instrument was sent virtually through Google Forms, which covers a total of 128 reagents, of which 23 correspond to the general data and 105 are on a decimal scale of reason. It should be noted that the final instrument obtained an alpha of Cronbach = 0.93, so the test satisfies the criteria of reliability and validity.

Due to its scope, the research taking into consideration the above:

1. Exploratory. Exploratory studies are conducted when the goal is to examine a poorly studied, unknown, or novel research topic or problem.

In this sense, when analyzing the state of the art of the COVID-19 axis, it is characterized by being a topic in vogue and current, on the other hand, there is the axis of learning barriers, which there are very few reliable sources and indexed journals that comprehensively address this topic, therefore, the requirements to be an exploratory research are covered.

2. Descriptive. It consists of detailing and specifying the properties, characteristics and profiles of people, groups, communities, processes, objects or any other phenomenon that is subject to an analysis. That is, they only intend to measure or collect information independently or jointly about the concepts or variables to which they refer, that is, their objective is not to indicate how they are related. The above can be seen in that the present research aims to characterize the student sample with the signalitic variables according to the analysis of frequencies and percentages.
3. Explanatory. It is aimed at answering for the causes of physical or social events and phenomena. It focuses on explaining why a phenomenon occurs and under what conditions it manifests itself, or why two or more variables are related.

By its implication and methodical derivation is:

Comparative. It contrasts differences between opinion groups and variables on a numerical scale, according to the error probability criteria $p \leq 0.05$ and Levene test $p \geq 0.05$.

Results

Frequencies and percentages

1. There is a greater generalization in the female sex because they are those who are represented in a higher degree.
2. Students belonging to the age of 19 are the most represented.

Comparative analysis

In order to examine significant differences between the groups of the participating sample, the general data are analyzed in contrast to the complex variable referring to the *digital competences* of the *learning barriers* axis, from this, an analysis of means is carried out using the Student's T test for independent samples with a probability value of error less than 0.05 ($p < 0.05$) also, the Levene test is performed, which is considered for the study of variances a value of $p < 0.05$.

Comparative Age Analysis

It was found that a variable linked to learning barriers in the field of digital competences that presents a significant difference depending on their means in contrast to the signalitic variable age, in which there is a gap of opinion that is reflected in that 17-year-old learners, unlike 20-year-old students, manifest to a greater degree that *general information search sources such as Google, Yahoo, Bing, Ask, etc.*, have represented a difficulty in their teaching-learning processes.

Consequently, it can be inferred that 17-year-old students demonstrate that one of their obstacles in their learning in times of pandemic has been the management of search engines for general knowledge and information on platforms such as Google, Yahoo, Bing and Ask, consequently, individuals in their 20s, according to their lowest average, are noted for further development in their virtual skills and capabilities in virtual education.

Therefore, H_1 is accepted for this analysis: there is a relevant difference between subjects aged 17 and 20 years in terms of the simple variable information search engines.

Comparative Analysis of Educational Modality

Relevant disparities are observed between the groups of students who adopt the face-to-face and online model that is verified according to the average of each sample. As for the subjects who study in a totally online dynamic from an educational platform, they present in greater proportion impediments to their school training such as: the *development with learning managers such as EMINUS, MOODLE, Blackboard, Joomla, Word Press* at the same time as the *delivery of academic tasks via digital*. As a result of the previous paragraph, it is inferred that learners who have a professional preparation in a 100% virtual panorama, in contrast to students who attend in person, have at a higher-level barrier in their learning which can be shown in the sending of online works and the use of learning managers, which are tools that provide support to facilitate pedagogical processes.

For the above reasons, the H_1 is accredited for this study: there are substantial differences between the groups incorporated in the virtual and face-to-face modality according to digital competences.

Comparative Analysis of Affective State in Confinement

It is also observed that there are dissimilarities of opinion between the subjects who outsource that they are finding the coexistence unpleasant and the students who express that they have been alone and have still done well, with respect to the latter are those who lead to a greater degree the arithmetic average, therefore, they have had to experience predominantly a barrier to their learning that alludes to *the management of file storage in the cloud* on different platforms that offer this function.

As a consequence, it follows that the students who, although they have been in a period of solitude in quarantine, responded that they have known how to handle it well, are those who reflect weaknesses in terms of virtual cloud storage, therefore, it has problems for the use of Dropbox, Google Drive, iCloud, among others. Once the statistical basis of comparison has been exposed, the working hypothesis is assumed that states that there are relevant differences in terms of virtual skills between students who have known how to cope well with confinement even when they are alone and students who go through negative environments of coexistence.

Conclusions

In this segment, the conclusions are presented as proposals and solutions to generate innovation and educational change in higher education. In order to achieve a transformation in the educational field, it is absolutely necessary to have a scientific basis, which provides reliability and validity to the proposals and contributions that are presented. The statistical analyses that were carried out throughout the research serve as a kind of diagnosis of needs, to build solutions in favor of quality and efficiency in education. Below are the intervention proposals that have as their main objective to benefit the student community, in order that they have a training that provides them with essential tools and knowledge to function effectively in the current context:

1. Renewal of the curriculum of university careers. If the curriculum of the different degrees and engineering of the Autonomous University of Coahuila is analyzed, there are subjects focused on the development of specific competencies in a certain disciplinary area, also, additional subjects are counted such as the 5 levels of curricular English and in certain degrees physical education plans, however, it is highlighted that a large part of the careers of the maximum house of studies especially those related to the Humanistic area, arts and social lack in their training subjects aimed at the promotion and strengthening of digital skills, abilities and capacities. Therefore, the proposal is extended to the staff in charge of the design of plans and study programs to integrate into the curriculum subjects focused on raising and potentiating digital skills for mastery and specialization in:

- General information search engines.
- Cloud file storage.
- Virtual platforms.
- Office 365 Pack.
- Creating and editing multimedia content.
- Identification of main indexed journals.

In the same way, the results of the research showed that students manifest themselves with apathetic attitudes, discouragement and indifference in their educational environments for which, it is also recommended to insert subjects focused on stimulating and intensifying to the maximum degree a stable emotional health, in balance and harmony, which in turn to be a trigger in the quality of learning.

2. Another proposal for educational change is to involve mothers and fathers more in different cultural, artistic, academic and sports activities in which their children participate, since, in the results, tutors in the family context denote disinterest, violence and detachment with their children. Also, it is important to open up talks and workshops in which father and son participate to strengthen their affective and communication ties. All of the above may be a watershed in favor of university education.
3. Enabling spaces and a modern infrastructure for the management and exploration of digital tools, in which training programs that are practical, interactive and dynamic can be opened to maintain active learning in the student.
4. Generation of leisure activities of interest to students in each faculty to continue reinforcing emotional health.
5. Give greater promotion to the tutoring program of the Autonomous University of Coahuila.
6. Creation of an academic and psychological guidance department in each faculty to improve academic performance, as well as for the student to feel accompanied and emotionally supported.

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Teaching competencies in virtual learning environments

Competencias docentes en ambientes virtuales de aprendizaje

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Abstract

The COVID-19 pandemic accelerated the digital transformation of different areas and education was one of them. Face-to-face education was abruptly replaced by a virtual environment, however, teaching skills must be adapted and even perfected in this modality. In order to ensure a correct teaching-learning process in a virtual environment, the Autonomous University of Campeche (UAC) offered a training course for all teachers of its various schools and faculties. In this paper we will analyze the pedagogical and technological competencies possessed by 137 UAC teachers who participated in the 2020, 2021 and 2022 editions of the course called Virtual Learning Environments. The instrument used was a questionnaire consisting of 23 action questions with closed answers. The answers were multiple choice, which were estimated according to the Likert scale. The questionnaire was divided into 2 categories: Pedagogical and Technological, with 8 and 15 questions respectively. This analysis allows us to know the strengths and weaknesses of teachers in their pedagogical and technological competencies and thus generate the necessary strategies to ensure the success of the teaching-learning process in a virtual environment.

Technological, Pedagogical, Competencies, Strategies, Faculties

Resumen

La pandemia por la COVID-19 aceleró la transformación digital de diferentes áreas y la educación fue una de ellas. La educación presencial fue sustituida de manera abrupta por un entorno virtual, sin embargo, las habilidades docentes deben adecuarse e incluso perfeccionarse en esta modalidad. Con la finalidad de asegurar un correcto proceso de enseñanza-aprendizaje en un entorno virtual, la Universidad Autónoma de Campeche (UAC), ofertó un curso de capacitación para todos los docentes de sus diversas escuelas y facultades. En el presente trabajo analizaremos las competencias pedagógicas y tecnológicas que poseen 137 docentes de la UAC que participaron en las ediciones 2020, 2021 y 2022 del curso denominado Ambientes Virtuales de Aprendizaje. El instrumento utilizado fue un cuestionario conformado de 23 preguntas de acción con respuestas cerradas. Las respuestas, fueron de opción múltiple, las cuales, se estimaron conforme a la escala de Likert. El cuestionario se dividió en 2 categorías: Pedagógicas y Tecnológicas, con 8 y 15 preguntas respectivamente. Este análisis permite conocer las fortalezas y debilidades de los docentes en sus competencias pedagógicas y tecnológicas y con ello generar las estrategias necesarias para asegurar el éxito del proceso de enseñanza-aprendizaje en un entorno virtual.

Tecnológica, Pedagógica, Competencias, Estrategias, Facultades

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Introduction

The COVID-19 pandemic demanded the use of various technological and pedagogical tools that required the accelerated development of teaching competencies and experiences to provide continuity to the training process of students through online teaching. [8]

Virtual education is one of the encounters between education and technology, being this a teaching-learning scheme that together with technological resources is based on the conviction that properly motivated and oriented people can build knowledge and develop competences and skills in a context of guided self-management [5].

E-learning offers advantages that can justify its rapid expansion: the possibility of using multimedia materials, easy updating of contents, interactivity, access to the course from anywhere and at any time, the existence of immediate feedback, so that the teacher knows if the student responds to the method and achieves the objectives initially set [3].

On the other hand, each of the skills that a teacher possesses and manifests in a face-to-face environment does not guarantee success using virtual environments, i.e., what is learned in the face-to-face environment is a good basis, but when moving from face-to-face to virtual, sometimes the competences must be adapted or perfected or even learnt. This is the reason why the UAC considered it necessary to know the strengths and weaknesses of its teachers, in order to provide them with the necessary tools for teaching in this modality.

In less than ten years, in which the vertiginous pace of change and technological developments are proposing new crossroads and challenges, we are faced with educational scenarios full of innovation and a certain degree of complexity. As of March 2020, the educational context took place under uncertainty in the face of the progress of COVID-19. As Morin (2015) points out, "(...) uncertainties and doubt are linked (...) they allow us to break through scientific determinisms and reductionism (...) we must learn to navigate in an ocean of uncertainty through archipelagos of certainty" [2].

The changes that are taking place in society have an impact on the demand for a redefinition of the work of teachers and the teaching profession, their training and professional development. The roles that teachers have traditionally assumed in teaching a curriculum characterised by academic content are nowadays inadequate. Students receive information through multiple channels (television, radio, Internet, etc.) and teachers cannot ignore this reality.

A teacher in tune with our times.

The fact that, in virtual learning environments (VLE), the processes associated with teaching and learning are mediated by technology; that they do not take place in the same space and time; that they involve the use of asynchronous and synchronous communications, among other distinctive characteristics, makes it necessary for tutors to acquire new competences; to generate new ways of organising their teaching action; in short, to rethink their role.

The virtual world requires us to be creative; to dialogue and build in collaboration with those who, from the networks and from different environments, can contribute multiple perspectives, guidelines, ideas, activities and resources. The challenge is one of complexity. Not to reduce the face-to-face to the virtual; the didactic proposal to a repository of resources and tasks; multidimensionality to simple answers; and, especially, to deal with uncertainty.

As [9] argues, "it is necessary to teach principles of strategy that allow us to face risks, the unexpected and the uncertain, and to modify their development virtually based on information acquired along the way. Uncertainty is not eliminated: it is negotiated with it". [2].

Professional training requires a great process of acquisition, structuring and restoration of competences, knowledge, professional skills ranging from the perspective of pedagogical science, educational technology to social relations and values for a good performance. However, the training of educators in many occasions has not had a solid methodological preparation for the use of technologies, in the best of the cases they were trained for the use of ICT as tools of access and transmission of information, restricting the use of educational technologies to a traditional context of education [7].

They must have the ability to combine these tools and the so-called traditional ones; to be critical, to always think about adapting technologies to teaching and not teaching to technologies; as well as to foster collaborative and cooperative learning spaces [4] that really provoke paradigmatic changes, that overcome the traditional style of teacher-centred pedagogy and encourage students to develop cognitive independence through the promotion of analytical, critical and reflective thinking. [11]. For these reasons, a training process is necessary to equip the tutor with the necessary skills to fulfil his or her role adequately.

Together with the ability to learn, an element that is also considered to be of great importance is the ability to respond to the current challenges of schools: the leadership capacity of teachers. A teacher is being asked to be understood as a "knowledge worker", a designer of learning environments, with the ability to make the most of the different spaces where knowledge is produced. And a teaching profession characterised by what [14] calls a community of practice through which individual experience can become collective. A profession that needs to change its professional culture, marked by isolation and difficulties in learning from and with others; where it is frowned upon to ask for help or acknowledge difficulties.

A virtual learning environment is understood as a technologically mediated space where students and teachers come together to interact in relation to certain content, using previously established methods and techniques with the intention of acquiring knowledge, developing skills, attitudes and, in general, increasing some kind of capacity or competence. [6].

Instructional designer

Achieving this literacy represents the creation of competences in teachers that allow them to recognise their information needs and to know how to satisfy them, in order to respond to the new roles imposed by the implementation of ICT in educational systems in the 21st century.

To be a knowledge worker, a designer of learning environments, rather than a mere transmitter of information [12].

An instructional designer (ID) is the specialist in methodologies, processes, strategies, and application of the different methods that must be considered during the design phase of an online course or programme. He or she acts as a consultant, designer, architect and often as an advisor when adopting and implementing the techniques necessary for the integration of technology into student learning [10].

Therefore, an instructional designer is a person who has a wide range of knowledge to analyse and visualise all the elements that make up an educational programme, providing solutions and strategies to each educational teaching process. Due to the above mentioned, it is important that professionals are prepared in the fields of virtual teaching environments and distance learning, etc...

Belloch proposes some competences that an instructional developer should have:

- Basic and VLE-specific computer skills that enable him/her to adapt content for distance and e-learning.
- Precise knowledge of the characteristics of materials in technology-mediated learning, their constituent elements, formats and typologies. With the ability to assess the advantages and disadvantages in the use of one or the other in each case.
- Knowledge of the implications in terms of time and work involved in the development of some materials compared to others, so that they can select the best solutions for each specific case.
- Ability to use and handle specific software for the design of materials in different formats (textual, hypertextual, multimedia, etc.).
- The necessary knowledge to implement different methodologies aimed at the construction of knowledge.
- Skills and knowledge on the evaluation of training processes [1].

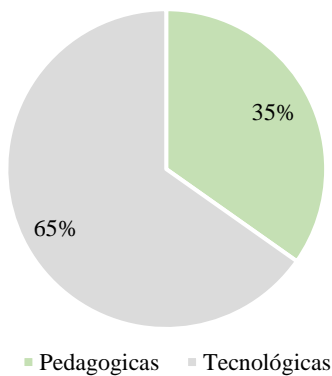
Methodology to be developed

1.- Construction of the instrument:

The instrument used was a questionnaire made up of 23 action questions with closed answers, Egg (1980, cited by [13].

The answers were multiple choice, which were estimated according to the Likert scale, their value is as follows: Strongly Agree (5); Agree (4); Indifferent (3); Disagree (2); and Strongly Disagree (1).

The questionnaire is divided into 2 categories: Pedagogical and Technological, with 8 and 15 questions respectively.



Graphic 1 Percentage of question type
Source: Own elaboration

Each question is associated with an indicator that allows us to measure the various competences.

The table below shows the indicators, the identifying codes for each question and the questions formulated in the first person according to their classification:

Educational category		
Indicator	Code	Question
Knowledge of educational theories	PP1	I master educational theories
Design of activities according to the types of learning.	PP2	For my distance sessions, I design different activities considering the different types of learning (auditory, visual, kinaesthetic).
Generation of strategies for meaningful learning	PP3	I am able to generate strategies for meaningful learning.

Use of different methods of evaluation of distance learning.	PP4	I use different methods of evaluation of distance learning.
Development of contents integrating psycho-pedagogical and communicational elements.	PP5	Development of contents integrating psycho-pedagogical and communicational elements.
Elaboration of learning objects	PP6	I have developed learning objects in my area of knowledge.
Design and development of academic forums to promote group communication among students.	PP7	I design and develop academic forums to foster group communication among students.
Mastery of dialogic narrative, in virtual environments that generate critical thinking in students.	PP8	I consider that I have a good dialogic narrative, achieving with it reflection and critical thinking in my students.

TECHNOLOGY CATEGORY		
INDICATOR	CODE	QUESTION
Analysis and design of learning activities with the use of ICTs.	PT1	In order to generate my distance sessions, I analyse and design learning activities with the use of ICTs.
Planning of videoconference sessions.	PT2	I analyse and design the number of videoconference sessions, as well as the materials to be used and their duration.
Analysis and selection of technological resources according to the contents, according to the educational context.	PT3	I am able to analyse and select technological resources according to the contents and characteristics of the actors involved in the process.
Use of technological resources in different methods of the teaching-learning process.	PT4	I use different methods of the teaching-learning process with the use of technological resources.
Design and development of didactic materials with the use of ICT.	PT5	I design and develop teaching materials using ICT.
Use of technologies for distance counselling and/or feedback - group-.	PT6	I use different technologies for distance counselling and/or feedback (group).

Use of technologies for distance - personalised-counselling and/or feedback.	PT7	Use of various technologies for counselling and/or feedback -personalised-at a distance.
use and promotion of the use of online libraries	PT8	I employ and promote the use of online libraries.
creation of hypertexts for the design of materials	PT9	I generate hypertexts for the design of materials.
Use of digital technologies for collaborative activities.	PT10	I encourage collaborative activities with the use of various digital technologies.
Use of technologies in didactics.	PT11	Use of various technologies in teaching strategies.
Use of audiovisual material.	PT12	Use of documentary capsules, videos or films as part of the learning process.
Use of podcasts.	PT13	Use of podcasts as didactic material in the teaching-learning process.
Use of technological simulators for the development of skills.	PT14	I use technological simulators to generate skills in the subject I teach.
Creación de material videográfico.	PT15	I have produced video material for my course.

Table 1 Indicators and questions of the instrument.
Source: own elaboration.

A. Population to be observed

The population to be studied are 137 teachers of Secondary, Higher and Postgraduate Education in the different Schools and Faculties of the Autonomous University of Campeche, who are mostly professionals (engineers, graduates, accountants, etc...) who, in order to reinforce their teaching practice, are continuously trained in the field of Education and ICTs.

B. Variables

The variables to be observed are the 26 questions about the level of instructional designer in which the teachers of the UAC are.

C. Sampling procedure

To take the sample we go to the Google form and in the tab Answers, we select Open in spreadsheets. The data from the form are displayed in the spreadsheet where they can be exported or analysed.

Figure 1. Form applied
Source: Own elaboration

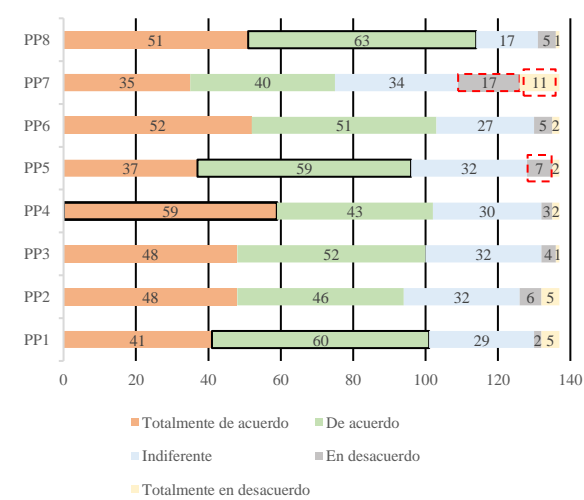
Results

Out of a total of 137 teachers who took the course "Virtual Learning Environments" given at the UAC, 35 were from Higher Secondary Education and 102 from Higher and Postgraduate Education. Table 2 shows the distribution of teachers by educational level and by campus.

Educational Level	Plantel	Total number of teachers
Secondary Education	Lic. Ermilo Sandoval Campos	14
	Dr. Nazario Víctor Montejo Godoy	20
Higher and Postgraduate Education	Faculty of Engineering	19
	Faculty of Chemical and Biological Sciences	13
	Faculty of Social Sciences	7
	Faculty of Law	10
	Faculty of Humanities	13
	Faculty of Accounting and Administration	7
	Faculty of Nursing	25
	Faculty of Medicine	1
	Faculty of Dentistry	8
Higher Education	School of Agricultural Sciences	0
TOTALES		137

Table 2 Total number of teachers by level of education and campus.
Source: Own elaboration

The answers to the pedagogical questions can be seen in graphic 2, where for each stacked bar the frequency of response for each Likert scale is shown.

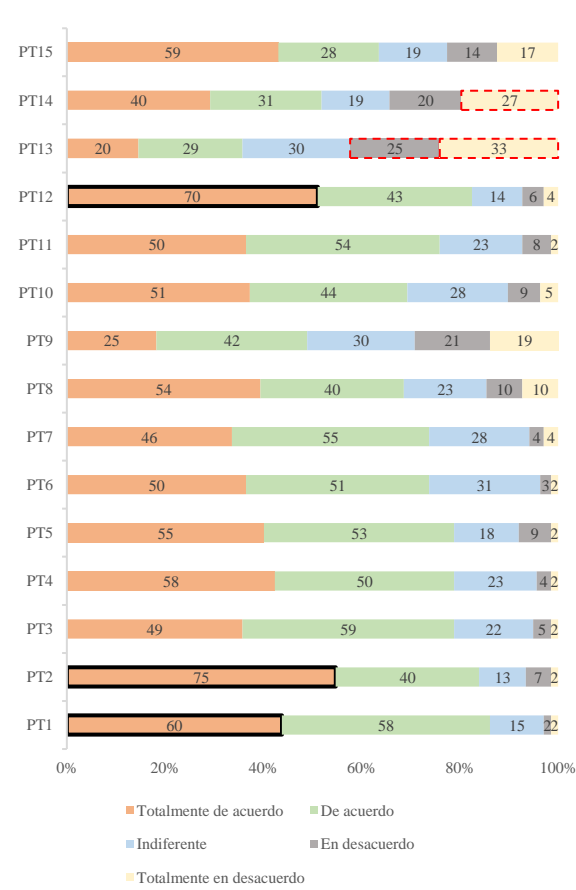


Graphic 2 Total responses to pedagogical questions
Source: Own elaboration

In graphic 2, four indicators stand out positively: PP8 in the "agree" category, where 63 teachers are identified with this level of competence, being the highest of all; in descending order, PP1 in the "agree" category is the next, with 60 teachers identified; then PP5 and PP4, in the "agree" and "strongly agree" categories respectively with 59 teachers.

On the other hand, the indicators that stand out in a negative way are those obtained in PP7, where 17 teachers identify themselves with the level "disagree" and 11 with the level "totally disagree", making a total of 27 teachers who consider that they do not have this pedagogical competence. This is followed by PP5, where 7 teachers chose the level "disagree".

The answers to the technological questions can be seen in graph 3, where for each stacked bar the frequency of response for each Likert scale is shown.

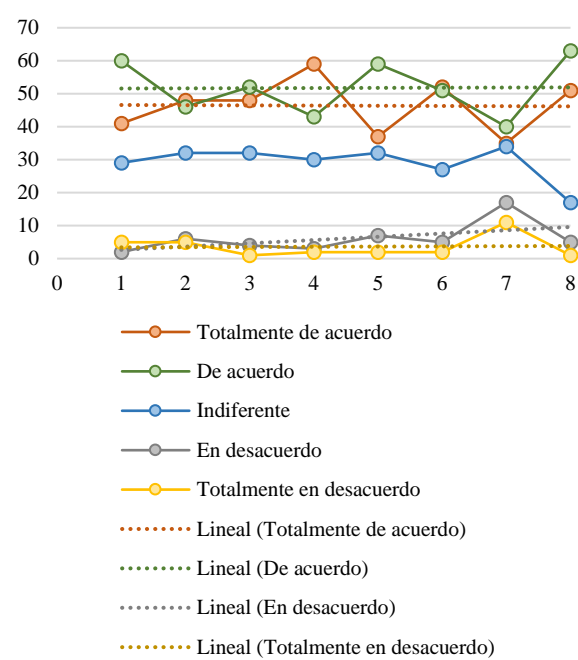


Graphic 3 Total responses to technology questions.
Source: Own elaboration.

Three indicators stand out positively in Figure 3. WP2 in the "strongly agree" category, where 75 teachers are identified with this level of competence, being the highest of all; in descending order, WP12 in the "strongly agree" category is the next, with 70 teachers identified; then the "strongly agree" question respectively with 60 teachers.

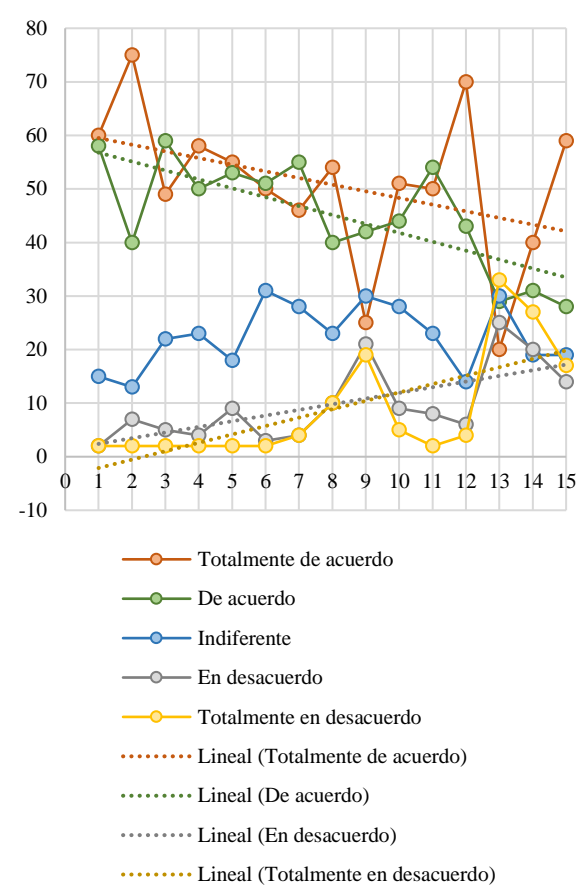
On the contrary, the indicators that stand out in a negative way are those obtained in WP13, where 33 teachers identify themselves with the level "totally disagree" and 25 with the level "disagree", making a total of 58 teachers who consider that they do not have this technological competence. This is followed by WP14, where 27 teachers chose the level "totally disagree".

In graph 4, it can be seen that all the levels of the pedagogical competence indicators have a constant linear behaviour, as a reference to this, the trend lines of the "strongly agree" and "agree" levels are presented. The series that stands out in the graph is the "agree" level.



Graphic 4 Total responses to technology questions
Source: Own elaboration

In graphic 5, it can be seen that the levels of the technological competence indicators have an oscillatory behaviour, where the predominant level is "totally agree", followed by "agree". In this same graph, the tendency of the levels "disagree" and "strongly disagree" is noticeable, going upwards and reaching the highest point in WP13 and consequently the lowest level in the novel "strongly agree" of the same question.”.



Graphic 5 Total responses to technology questions
Source: Own elaboration

The above results can be corroborated in Table 3, where the values of the standard deviation of both categories by level are presented.

Category	NIVEL				
	I fully agree	Agreed.	Indifferent	Disagree	Strongly disagree
Pedagogical	10.95	7.66	6.48	5.05	4.62
Technological	12.79	9.84	6.64	6.47	8.98

Table 2 Total number of teachers by level of education and campus
Source: Own elaboration

It can be seen that in all levels of the technological category the standard deviation is higher than the standard deviation of the pedagogical category levels.

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Conclusions

From the data and trend graphs we can interpret that UAC teachers maintain a constant rate in the teaching competences, resulting in a strength in the teaching-learning process. The competence "Mastery of dialogic narrative in virtual environments that generate critical thinking in students" is the most predominant, which leads us to conclude that teachers develop critical thinking in students through their written arguments. The weakest competence in the academic community is "Design and development of academic forums to foster group communication among students", so it is proposed to train teachers in it as it is important to develop written group communication and the exchange of ideas in this type of environment in students.

From the data, trends and standard deviation, with regard to technological competences, we can interpret that the levels among UAC teachers are very diverse. It would be advisable to carry out research to identify the characteristics of the teachers who are less developed in these competences according to schools or faculties, in order to implement strategies to level out their development.

The competence "Use of audiovisual material" is the most predominant in the technology category, which leads us to conclude that teachers have developed materials for their respective subjects due to virtual classes. The weakest technological competence in the academic community is "Management of podcasts as didactic material in the teaching-learning process", so it is proposed to generate training in this auditory way of generating content, which can be available to students on various virtual platforms and thus strengthen their learning.

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Critical analysis and arguments management: context and teaching and learning processes

Análisis crítico y manejo de argumentos: contexto y procesos de enseñanza y aprendizaje

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Abstract

Managing student arguments is a skill that should be taught in schools at every available opportunity. However, there is a lack of critical analysis skills and construction of valid and coherent arguments in higher education. The Strategic Analysis for Scientific Texts Model (SAStxt) has served as a teaching tool for constant practice in the teaching and learning process of methodological and conceptual skills (HMC, for its acronym in spanish). In this work, three teaching strategies were compared based on the level of execution achieved in the exercises of the model to show the evolution and adjustment of the activities to the pedagogical demands of students. Three natural groups participated, which during a semester made 6, 7 and 4 text analysis exercises. The level of support changed in each: Group A had personalized feedback about the definition of categories. Group B and C had a specific error feedback and recommendations. Group C had additional support: initial correction and review of material. The level of teaching support is key to success in the teaching and learning processes of the HMC, especially to ensure understanding of the task.

Conceptual and methodological skills, Text critical analysis, Pedagogical processes, Scientific skills

Resumen

El manejo de argumentos en estudiantes es una habilidad que se debe enseñar en las escuelas en cada oportunidad disponible. Sin embargo, hay una carencia en las habilidades de análisis crítico y construcción de argumentos válidos y coherentes en educación superior. El MAEtxt ha fungido como una herramienta docente para la práctica constante en el proceso de enseñanza y aprendizaje de habilidades metodológicas y conceptuales (HMC). En este trabajo se comparan tres estrategias docentes en función de el nivel de ejecución logrado en los ejercicios del modelo para mostrar la evolución y el ajuste de las actividades a las demandas pedagógicas del estudiantado. Participaron tres grupos naturales que durante un semestre realizaron de 6, 7 y 4 ejercicios de análisis de texto. El nivel de apoyo cambio en cada uno: Grupo A contó con retroalimentación personalizada respecto a la definición de categorías. El grupo B y C tuvieron una retroalimentación específica del error y recomendación. El grupo C tuvo un apoyo adicional: corrección inicial y revisión de material. El nivel de acompañamiento es clave para el éxito en los procesos de enseñanza y aprendizaje de las HMC, sobre todo para asegurar el entendimiento de la tarea.

Habilidades conceptuales y metodológicas, análisis crítico de textos, procesos pedagógicos, habilidades científicas

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Introduction

The Model of Strategic Text Analysis (MAEtxt) has become an essential tool for teaching and learning the coherent management of arguments in students at different educational levels (mainly undergraduate and graduate). It is an important step for the consolidation of critical thinking from the initial semesters of undergraduate studies through the formation and exercise of analysis, intervention and evaluation skills (Santoyo, 2021).

This directly responds to a localized lack in the development of processes and materials that allow modeling and evaluating skills to filter information, at first, and later issue valid judgments from a certain discipline. Thus, this instructional tool seeks to guide, evaluate and promote the improvement of skills beyond reading comprehension, i.e., deep and purposeful reading (Colmenares & Santoyo, in press).

The Model of Strategic Text Analysis (MAEtxt)

The MAEtxt was born precisely from the knowledge of the evaluation, intervention and process analysis model that contemplates two elements: the level of execution and the level of didactic support (Santoyo & Martínez, 1999). The initial efforts were mainly directed towards improving the students' level of execution, which means trying to increase the scores of adequate responses through experiences in the use of the model. The tasks demanded by MAEtxt include, of course, identification, followed by information analysis and synthesis skills, as well as the construction and reconstruction of arguments beyond simple repetition of the presented content.

A representation of the levels of performance can be found in the work of Colmenares and Santoyo (in press). Here, students' responses to text analysis were categorized into three levels of argumentation: basic, intermediate and expected. The results show that there is still a long way to go in developing the level of support through various didactic means in order to achieve significant changes.

It should be noted that about 50% of the students' answers remain at a basic level (identification, repetition and paraphrasing), while only about 15% of the answers correspond to an expected level of argumentation (synthesis, integration, adequate and supported relations, substantiated evaluation), even after several exercises with MAEtxt.

Therefore, the interest is born in the design, construction and evaluation of didactic material that allows consolidating the skills of critical analysis of texts through the adequate handling of arguments in periods of time according to the teaching periods. A support level that allows to identify, define and build an own argumentative style. The importance of developing these teaching and learning strategies responds directly to the demands set forth in the professional profile in Psychology, which indicates that the graduate must be able to understand, diagnose and intervene in the satisfaction of needs and the solution of psychological problems in different scenarios (School of Psychology, 2008). Students should develop advanced specific technical, professional and disciplinary competencies and knowledge, as well as transversal competencies that qualify them (OECD, 2019) in their area of training.

The way in which the MAEtxt responds to such formative need is due to the fact that it involves both disciplinary knowledge, to the exercise of professional competencies of process intervention that stems from a higher order and evidence-based decision making (Santoyo & Martínez, 1999). The task is not simple because it is not only a matter of finding the elements in the text by reading (identifying). The construction of arguments is requested, a complex skill that requires a particular teaching accompaniment to reach a level of coherence between the content derived from the text and one's own knowledge. This implies a written argumentative response that includes relational explanations, decisions and a conceptual and methodological position (Santoyo, 2019).

The MAEtxt (Santoyo, 2005) derives from 14 general categories involving explicit and implicit content management. The former emphasizes the relationship with conventional structures such as the American Psychological Association (APA) format (APA, 2017), while the latter content management demands the construction of valid in-text and out-of-text arguments.

The explicit structure mostly includes an initial process of identification to follow with one of deduction (minimum desirable performance) in the categories:

1. Justification at three levels: theoretical, methodological and social (JT, JM, JS).
2. Basic assumptions (SB).
3. Objective (O).
4. Unit of analysis (UA).
5. Methodological strategy (AE).
6. Main results (PR).
7. Author's conclusions (CA).

In addition, the model seeks to obtain and exercise evaluation and content construction skills, which demands processes of inference and issuance of value judgments based on the categories:

1. Argumentative strategy (AE)
2. Internal coherence at two levels: argumentative and experimental validity (in the case of empirical or research articles) (IQ-A, IQ-V).
3. External coherence at two levels: generability (replicability) and relationship with the literature (CE-G, CE-L).
4. Own conclusions (CP)
5. Alternative courses of action (AAC)

In this content management, the categories of Own conclusions and Alternative courses of action become the main axes of the reader's interaction with the text. In this way it is possible to identify a level of involvement of the reader with the text: according to certain elements of the response, it is possible to perceive an intention and a motivation with respect to a reading that could range from superficial and generic to a strategic and directed reading.

Considering the levels of both coherences, the MAEtxt categories add up to a total of 16 essential aspects for the construction of arguments through the active and strategic management of the content of empirical articles. It should always be kept in mind that this is a model of interrelated categories in which the initial expected level of execution in all of them is identification, followed by deduction or inference, and which seeks to achieve skills of evaluation or self-construction on the text presented. This scaling of skills is incorporated in its evaluation rubric that goes from 0 to 3 points per category.

Zero implies the absence of a response, 1 is related to an inadequate or incorrect response to what is expected, a score of 2 suggests a response of partially adequate identification or deduction, this includes a high percentage of a partial identification and/or copying of the elements of the text. Finally, a score of 3 expresses a creative construction of one's own, resulting in integrated writing that goes "beyond the text".

Previous experiences have pointed out that there are difficulties to be overcome in order to achieve an appropriate handling of arguments in university students. The information calls for the analysis of four factors: a) the recognition of the errors that students tend to make in their execution with the model, b) in the type of feedback students receive, c) in the number of exercises necessary and sufficient to improve execution, and d) in the level of support provided through didactic material and clarification of doubts.

The systematization of the experiences of teaching and learning of Methodological and Conceptual Skills (MCS) through MAEtxt presented by Ortega, Torres, and Santoyo (2016) revealed that about 80% of the answers given by students in their initial exercise do not correspond to what was expected. This situation may be associated at first to the poor understanding of the categories and, in a complementary way, to the level of support required. A deeper analysis showed that the errors that stand out in the students' answers have to do with relevance, circularity, confusion and general response. Namely, relevance accounts for the null relation of the answer to the category. Circularity implies giving an answer using a single argument as cause and effect of something. Confusion means giving an answer that is (partially) correct but corresponds to another category in the model. General response indicates use of vague arguments that do not account for the text that has been reviewed.

In this regard, even students rated as overall "high performers" in the use of the model exhibit these errors in 56% of their answers in their first exercise, a percentage that drops to 16% in the third exercise. However, what about the rest of the students? The answers they give in their first exercise are known to exhibit the errors of relevance, confusion, and general response in 79.2%. This percentage drops to 60% in their third exercise, but prevails until the end of the course. These data reveal the need to continue improving teaching and learning strategies to overcome such obstacles strongly linked to the level of didactic support.

In the first teaching experiences using MAEtxt, the feedback to the students' performances was of a group type within the classroom. Subsequently, efforts were directed towards working with personalized feedback, as it responds somewhat better to the individual needs of the students. Personalized feedback (instead of group feedback) has an important initial effect in the first three exercises with the MAEtxt and, in addition, can guarantee obtaining scores close to the expected in the long term (Santoyo Ortega, Torres & Colmenares, 2017). Despite that, the data suggest that personalized feedback is not enough to reach the expected score before the third exercise, at least not for all students.

Therefore, it is necessary to complement the level of support from the initial exercise to consolidate and extrapolate the skills to the following texts.

Hence, this paper argues that methodological and conceptual skills can be taught and learned through constant practice. Although in the regular academic cycle there is a tight agenda that competes with the disciplinary fulfillment of the subject in question and the teaching of CMH. Thus, in the face of the temporal restrictions implied by the fulfillment of a subject program, there is a teaching challenge worth taking because of the importance of making explicit and constant the teaching and practice of CMH at every available opportunity, even in large groups.

In relation to the aforementioned restrictions. The use of technological means has been an ally to increase the number of practice opportunities (up to seven exercises) within the regular course. Under the premise that more practice increases the possibilities of improving execution. But it does not necessarily happen that way unless there is a clear understanding on the part of the students about what they should do in each category of the model. In certain trajectories, a "stagnation" in the level of identification has been perceived, and in some other cases there is a certain regression that shows a differential educational need (Torres, Ortega & Santoyo, in press). A closer look at the responses indicates a maintenance of the types of errors indicated above, which continues to point to a lack of understanding of the category that is not solved by increasing the number of exercises.

In this sense, we agree with the intention of improving the teaching-learning process of professional skills through strategies that address higher levels of performance based on a deep and constant behavioral practice (Torres, Colmenares & Santoyo, 2021), that is, the construction of an "optimal context" for such processes to occur (González & Rivas, 2021; Ramos Negrin, Calzadilla Pérez, & Fragozo Ávila, 2022). These strategies should be worked on at the individual level so that students can become aware of the way in which they construct their arguments and then try to modify it strategically.

Recent studies by other research groups have reported interesting differential advances in the various teaching practices using this model. The contribution lies in the generation of evaluative processes with adequate methodological rigor and promising results, but also with critical options for the improvement of such practices in such a way that they contribute to a better formation of students and the teachers who work with them (Cepeda & López, 2010; Ormaza & Macuy, 2022; Colmenares & Santoyo, in press).

The goal of this study is to compare the strategies used in three groups of initial semesters of psychology degree programs according to the level of performance achieved during the academic semester, that is, a comparison is made between the overall scores and by category in each natural group, with the intention of showing how the teaching strategies can be adjusted to the pedagogical demands of the students.

Method

A total of 139 second-semester undergraduate students from a public university in Mexico City participated. They formed three natural groups of 39, 49 and 51 enrolled students. In this text each group was named in sequence of application with the letters A, B and C respectively.

Instruments

Moodle platform in which text analysis activities were programmed throughout the semester, "exam-like" so that students could write their answers.

Material for analysis

Seven scientific articles published and translated into Spanish, with an equivalent extension in number of pages (average of 7 quarto pages). The references of the reading materials are described in Table 1. The topics are related to the subject being studied. The three groups kept the same article as diagnostic evaluation, but the following texts change according to the strategy applied. The distribution is shown in Table 2.

Reading material

1. Fuller, Paul R. (1949) "El condicionamiento operante de un organismo humano vegetativo". En Ulrich, Stachnick y Mabry (eds). *Control de la conducta humana*, Vol. I. México: Trillas, 1972, (pp. 131-135).

2. Watson J.B. y Rayner, R. (1920) "Condicionamiento de reacciones emocionales". En Ulrich, Stachnick y Mabry (eds). *Control de la conducta humana*, Vol. I. México: Trillas, 1972, (pp. 125-131).

3. Seligman, M. E., & Maier, S. F. (1979) "Impotencia ante los traumas". En F. J. McGuigan y P.J. Woods (eds). *Estudios contemporáneos en psicología*. México: Trillas, 1974, (pp. 117-129).

4. Webster, R.L. (1968) "Tartamudeo: Método para eliminarlo y forma de explicarlo". En F. J. McGuigan y P.J. Woods (eds) *Estudios contemporáneos en psicología*. México: Trillas, 1974, (pp. 286-293).

5. Budzynski, T., Stoyva, J., & Adler, C. (1970) "Control de jaquecas debidas a tensiones por medio de retroalimentación" En F. J. McGuigan y P.J. Woods (eds). *Estudios contemporáneos en psicología*. México: Trillas, 1974, (pp. 237-252).

6. Goodwin, D. W., Powell, B., Bremer, D., Hoine, H., & Stern, J. (1969). El alcohol y el recuerdo: Efectos del estado drogado en los humanos. En F. J. McGuigan y P.J. Woods (eds). *Estudios contemporáneos en psicología*. México: Trillas, 1974, (pp. 141-147).

7. Freedman, J. L., Klevansky, S., & Ehrlich, P. R. (1979) "Efectos de la aglomeración sobre el desempeño de los seres humanos y la conducta social" En F. J. McGuigan y P.J. Woods (eds). *Estudios contemporáneos en psicología*. México: Trillas, 1974, (pp. 354-363).

Table 1 Name and order of Items used according to the specified planning
Source: Own elaboration

ARTICLES	Group A	Group B	Group C
1	X	X	X
2	X	X	X
3		X	
4	X	X	X
5	X	X	
6	X	X	X
7	X	X	

Table 2 Items used according to the specified planning.
"X" marks the text that was handled in each group
Source: Own elaboration

Didactic material

Explanatory and feedback visual presentation of the MAEtxt for the group session after the first analysis (1. Fuller). Explanatory audios regarding the categories of the strategic text analysis model. The content was reviewed and rated by two experts in the model. The average duration is four minutes per category or group of categories.

Design

The three courses are in the same subject area, but in different academic cycles. The initial text served as a diagnostic evaluation for the three groups. Subsequently, there was a group explanation session on MAEtxt, in addition to receiving individual feedback on all exercises presented through a Moodle educational platform. Table 3 shows the differences in the planning of the course in each group.

Group	N	Texts	Strategies
A	39	1 diagnostic 5 subsequent	Typical design
B	49	1 diagnostic 6 subsequent	Feedback: error and recommendation
C	51	1 diagnostic 3 subsequent	Feedback: error and recommendation Initial correction Review of additional material

Table 3 Specifications of text analysis applications for each group
Source: Own elaboration

Group A corresponds to the usual course design regarding the teaching and learning of MAEtxt includes a diagnostic exercise, followed by five more exercises. All exercises were scheduled on a biweekly basis on the platform. The feedback provided was generic, which gave an account of the definition of the category and what was expected in terms of structure and content of the response.

Group B focused on increasing the number of exercises (one more experience than the previous cycle). The feedback was intended to respond with a personalized review of each student's execution, which included pointing out the error in the student's answer and giving a recommendation to overcome the difficulty, both in terms of content and structure.

In group C, one month was taken up for an initial comprehensive review of the model using a more direct and closer level of support with respect to what was expected in each category. This included a decrease in the number of exercises (only 4 texts), a correction exercise, the review of additional explanatory material and four group doubt sessions. The type of feedback remained the same as that of group B.

Procedure

The three groups started with the same text as a diagnostic evaluation. After this application, the students were introduced to the MAEtxt categories in a group session.

The readings after the diagnostic application were programmed to be solved in two-week periods on a Moodle educational platform. In each application, students received individual feedback (depending on the group, it could be generic on the category definition or personalized and specific to the error).

In the case of group C, a period of one month was taken for a more exhaustive and extended explanation of the model. This explanation consisted of a weekly review of auditory material and the collection of doubts that were resolved in the following session. After each review, the students had to correct the categories explained in their first exercise (Fuller).

Evaluation criteria

A scale of 0 to 3 was used for all groups, where 0 is equivalent to no response, 1 to an inadequate response, 2 to a partially adequate response and 3 to an integrated and constructed response.

In the case of group C, the students had to answer a questionnaire after reviewing the corresponding explanatory audio for its evaluation in content and level of support for its execution.

Results

The data were transformed to the average accuracy index proposed by Espinosa, Santoyo and Colmenares (2010). This indicator is obtained from the score obtained in the exercise out of 32 points, whose value corresponds to a minimum expected level in the execution and shows that the students identify and/or in certain occasions deduce the 16 elements of the MAEtxt (scores close to 2). The student can achieve up to 48 points in each exercise. Scores above 35 mean that the student synthesizes, integrates, evaluates, and/or constructs content from the reading in most categories.

The shaded part (scores above 1) in the graphs indicates scores of answers considered creative with a coherent and correct handling of arguments, but above all it shows the construction of answers "beyond the text". Scores close to the value of one (1) show that students can identify and deduce information, which is an adequate but basic level: the student usually links coherent ideas from the paraphrasing of the text. Finally, scores close to .60 on the index indicate that the student copies and/or relates arguments or statements in a random and/or incoherent manner in most categories.

Figure 1 presents the overall trajectory of the three groups throughout their applications (see Table 1 of the method). There is a convergence in the initial score of the three groups, which is consistent when a student faces a new and different task with an average index of .60. An ANOVA analysis pointed out that there are significant differences between the three groups in the diagnostic exercise ($F[2,121]=11.553$; $p<.001$), a Post hoc analysis revealed that group A obtains a lower index than groups B and C (.53, .60 and .66 respectively), although the three groups remain at a low level of execution (identification and paraphrasing).

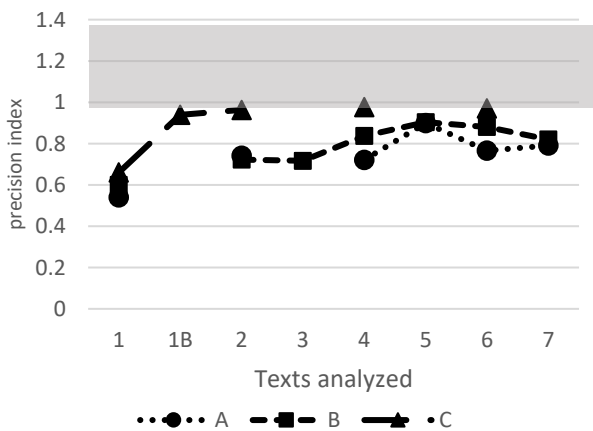


Figure 1 Planning and trajectory design of the text analysis applications for groups A, B and C. Scores were coordinated with the corresponding text (see method box)
Source: Own elaboration

In group A, a stability in this score (.60) is recognized for the following two exercises; subsequently, a small increase in the score (average of .90) is noted in the index. In this case, 5 exercises seem to be necessary to bring the students' performance to scores close to the expected one, but there is still work to be done when the score related to the minimum value (32 points, equivalent to index 1) is expected to be obtained as a group.

In group B, one more exercise was added to increase practice with the model. Despite this, we found the same trajectory effect of group A, during the next two texts there is a stability in low scores, until we reach exercise three there is a slight increase in the index (close to .84). Only in exercise 5 of this group an index of .90 was reached. This situation changes in the following exercises, since there is a slight decrease in performance.

Group C, completely changes the pattern when the correction exercise (1B) is added. Students have a session in which they review their doubts and have the opportunity to correct their own mistakes (once recognized) from the same text. There is an increase in score from the initial part to the correction part (.66 to .94) that continued to advance until the next two exercises. In the last exercise there was a slight decrease, but within high scores.

Figure 2 emphasizes the comparison between the initial and final state of performance in each group. A Student's t-test was performed to evaluate the differences between these states.

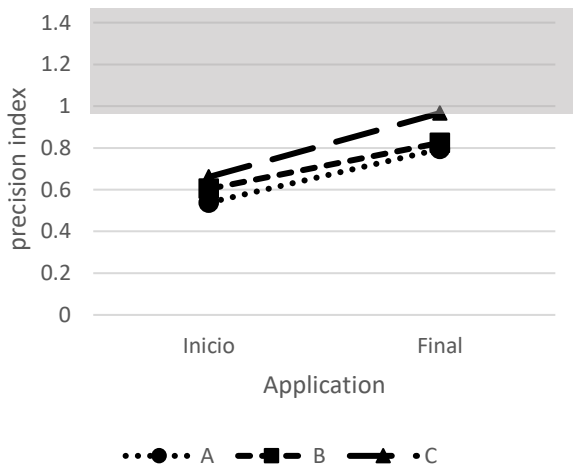


Figure 2 Comparison between the diagnostic exercise (Start) and the final exercise of each group
Source: Own elaboration

Significant differences were found between the diagnostic performance and the final performance of the three groups: A ($F[60]=3.393, t=-6.679, p<.001$), B ($F[75]=4.272, t=-7.527, p<.001$) and C ($F(90)=14.778, t=-9.812, p<.001$).

The descriptive statistical results between groups indicate that group A started with lower scores (.54), followed by group B (.60) and group C (.66), as previously mentioned, significant differences are found in these scores. The final scores maintain statistically significant differences ($F[2,104]=11.186, p<.001$). A post hoc test revealed that differences were found between the final scores of groups A and B (.79 and .83) with respect to C (.97).

This reveals that there is a positive consequence in formative processes, regardless of feedback, number of exercises or strategies presented, students always try to learn and assimilate content and strive to solve problems to the best of their ability.

Although the students' effort should not be left to chance or to time. So rethinking teaching practices should correspond and accompany such processes in professional training. What is shown in the C with a higher score than the other two groups in the final state.

On the other hand, the difficulties are overcome if it is possible to recognize specifically what those obstacles are, in order to find where the errors are, the following figures (3, 4 and 5) are presented, which show the initial and final performance of each group by category of analysis of the model.

The category of Theoretical justification is one of the most complicated elements within the model (together with Basic assumptions and Coherence), in this sense group B (.50) obtained a lower index compared to groups A and C (.59 and .63 respectively). Figure 3 shows an improvement from the first to the last time with the model, although in the three groups it is well below the minimum expected ($F[2,121]= 5.046, p=.008$).

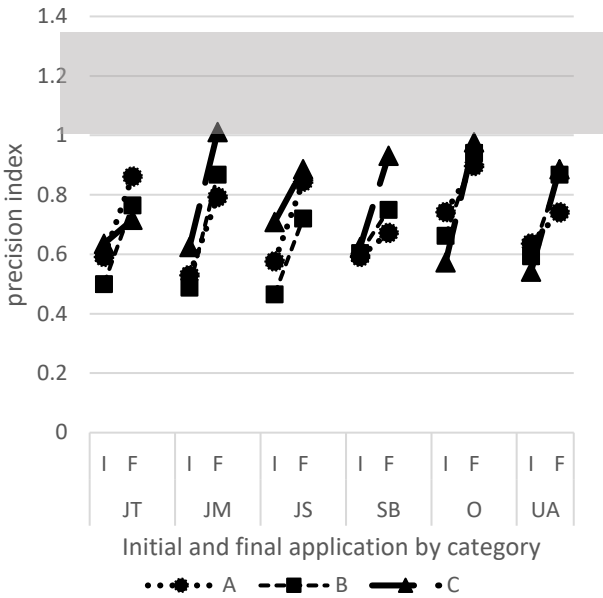


Figure 3 Comparison by category of the initial application (I) and the final exercise (F) of each of the three groups. Theoretical justification (JT), methodological (JM), social (JS), Basic assumptions (SB), Objective (O) and Unit of analysis (UA)
Source: Own elaboration

In the categories of Methodological Justification (JM), Basic Assumptions (SB) and Unit of Analysis (UA) the initial states are similar in the three groups (.55, .60 and .58 respectively). On the contrary the categories of Social Justification (JS) and Objective (O), which are usually among the simplest (together with Main Outcomes), differences were found among the three groups ($F[2,121]=7.647, p<.001$; $F[2, 121]=5.871, p=.004$), specifically that Group B (.46) scores lower than Group C (.70) in the first category, and that Group C (.57) scored lower than Group A (.74) in the Objective category. When it comes to the final performance, group C excels in most of the categories of the graph, mainly in the category of Methodological Justification (JM) where the index reached is 1. There are two exceptions in the categories of Theoretical Justification (JT) and Unit of Analysis (UA), in the first one it is surpassed by group A and in the second one it is equivalent to the other two groups. While group C reaches a score of 1 in the category of Methodological Justification (JM).

In the final application there are statistically significant differences between the groups in the categories of Methodological Justification JM ($F[2,104]=5.156, p=007$) and Basic Assumptions SB ($F[2,104]=8.021, p<.001$).

In both cases group C outperforms the other two groups in the index, with scores close to or equal to 1. A difficulty that had been consistent in previous applications especially in categories in that category because it is usually confused with the Methodological Strategy (MS) category. On the other hand, the SB category had maintained some stability in low scores so far.

In the following categories in Figure 4, the three groups maintain similar initial performance levels, as well as close to and below an index of .6 in categories such as Argumentative Strategy (AS) and Argumentative Internal Coherence (IC-A) and Variables (IC-V). It is worth mentioning that, in the categories of CI-A ($F[2,121]=12.892$, $p<.001$) and CI-V ($F[2,121]=3.886$, $p=.023$), group C starts with a significantly higher score (.79 and .59) than the other groups (.50). Although it could be considered a prior difference for group C, it should be remembered that the indices still represent scores below those expected. The categories of Methodological Strategy (MS) and Main Results (PR) start with similar values in performance (around .71) for the three groups.

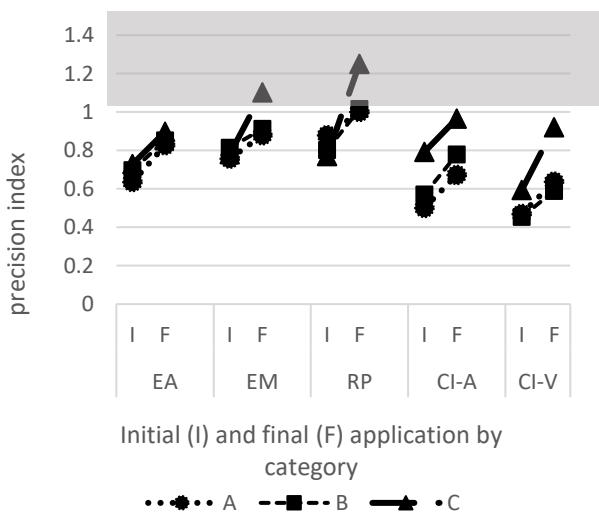


Figure 4 Comparison by category of the initial application (I) and the final exercise (F) of each of the three groups. Argumentative strategy (AE), Methodological strategy (MS), Main results (PR), Internal coherence of arguments (IC-A), Internal coherence of variables (IC-V)
Source: Own elaboration

The change towards the last analysis shows a small improvement in the three groups in the categories of Argumentative strategy (.86). In the internal coherence categories, groups A and B maintain this difficulty in scores below .78, while group C approaches scores above .90 ($F[2,104]=7.364$, $p<.001$; $F[2,104]=10.771$, $p<.001$). The Methodological Strategy (MS) and Main Results (PR) categories are usually single categories. All three groups reach the expected value in the MS category, although there is significant difference with group C, which managed to exceed the score of 1 ($F[2,104]=10.783$, $p<.001$). As for the PR category, group C shows an index closer to the expected (.96), followed by group B (.77) and A (.67), in this category there is a statistically significant difference between the three groups ($F[2,104]=9.898$, $p<.001$).

The following categories shown in Figure 5 expose the difficulty always found in the categories of evaluation (Coherences) and construction. The initial status in all categories of the three groups is close to or below .60, although it is notable in the categories of External Coherences (CE-G and CE-L) a significant supremacy of group C ($F[2,121]=12.273$, $p<.001$; $F[2,121]=5.842$, $p=.004$) over the other groups within scores below the expected (.54 and .49 respectively). There is a similar significant effect in the Author's Conclusions (AC) and Self Conclusions (SP) categories, where group A exhibited lower performance (.50) than the other two groups (.72).

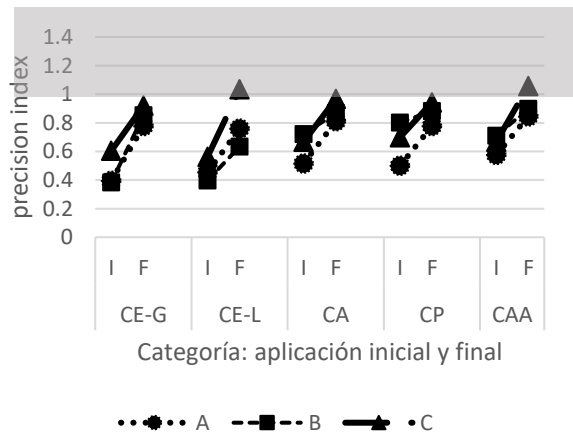


Figure 5 Comparison by category of the initial application (I) and the final exercise (F) of each of the three groups. External coherence generality (EC-G), External coherence with the Literature (EC-L), Author's conclusions (AC), Own conclusions (PC) and Alternative courses of action (AAC)
Source: Own elaboration

While in the final state, the three groups again show statistically significant differences ($F[2,104]=11.345$, $p<.001$; $F[2,104]=3.397$, $p=.037$.) in the categories of External coherence with the Literature (EC-L) and Alternative courses of action (AAC). Group C stands out (1) from the other two groups, in the case of CE-L it is followed by group A (.75) and then group B (.63). While in the CAA category, the order is reversed, first group B (.89) and then group A (.84). In the rest of the categories, an improvement was found in the index of the three groups, although it was always slightly close to the expected value for group C.

Acknowledgments

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Conclusions

The management of specific and coherent arguments is represented in the scores of the Model of Strategic Text Analysis (MAEtxt). This interest in improving the teaching and learning of Methodological and Conceptual Skills (MCS) through the reading and in-depth review of documents derived from empirical research on university students stems from the intention of knowing and overcoming the limitations found in each of the planned experiences. In this sense, it would not have been possible to contextualize the teaching and learning activities of the model without the previous experiences developed and applied in groups A and B of this work.

Thus, the systematization of the information gathered from these experiences resulted in a pedagogical need that was addressed in group C, by correcting their own exercise and making available explanatory material on the categories, always accompanied by a level of teaching support to guide the argumentative patterns presented by the students.

There is consistency with other studies that reveal that there is a difficulty in linking ideas in the writings of students at different levels, particularly high school, undergraduate and graduate and educational systems, schooled and open, as well as in different professional scenarios (Cárdenas, 2005; Cepeda, 2008; Cepeda & López, 2010; Colmenares & Santoyo, in press; González & Rivas, 2021; Jiménez, 2016; Jiménez & Santoyo, 2015; Ponce & Zúñiga, in press). Thus, it is a need and a convergent problem among teachers interested in the development of critical thinking at different educational levels. A situation that requires systematization and constant research inside and outside the classroom.

The evolution of the strategies presented here has given way to the progress and contextualization of educational planning towards the successful teaching and learning of CMH in undergraduate students in their first semesters. The students' final comments reveal the difficulty they encounter in the use of MAEtxt, but they manage to understand its function and usefulness for their training, especially for students in advanced semesters in the bachelor's degree.

The higher education level, within its formative process, necessarily involves the constant exercise of reading and writing, an activity characterized by a particular and specialized knowledge, sometimes even technical. This as a result of the countless amount of long texts, with an expository and argumentative textual sequence that students must not only read quickly, but must read strategically, directed and critically (Olave-Arias, Rojas-García, Cisneros-Estupiñán, 2013; Estevez, González, Llanes & Marrero, 2022).

The differences found in application 1 of the three groups of this work, in the categories of coherences, accounts for the difficulty that students continue to present in their training (prevalence of low scores). The performance of group C needs to be studied in depth, since scoring "high" in some categories could be due to the absence of response that occurs in the model evaluation categories that groups A and B maintained at the time. Students prefer not to respond when they are not clear on how they should respond or what is expected of them.

Group C reports how the level of teacher support impacts on their performance in text analysis and construction of coherent arguments derived from the results of application 2. Direct confrontation of students with their errors seems to be the strategy that should continue in these processes, noting that the level of didactic support should be adjusted to the pedagogical demand of the student. In a functional measurement study that asked the student to answer a level of efficacy from 0 to 100 in the completion of a task that, with some difficulty, level of support and a degree of motivation from them to conclude, it was found that regardless of whether the task is complicated or simple the student body demands to have high levels of support. High levels of efficacy are associated with simple tasks, with high levels of support and motivation. On the contrary, low levels of efficacy are related to high levels of difficulty and low levels of support and motivation (Torres, Ortega, Colmenares & Santoyo, 2019).

The activity of performing text analysis is a task that demands time, concentration and patience on the part of students; it is a complex action that tests their cognitive capacity at various levels. It is not only a matter of understanding the text but also of demonstrating in writing a convenient and critical handling of disciplinary issues. A process that goes beyond repeating the information presented, since it requires the construction of judgments with a coherent and valid argumentative support: critical thinking. In particular, there are studies that show that this problem of information management and construction of arguments is neither new nor unique for a population such as the Mexican university population. In addition, there are other factors that affect the expected performance in HMCs. It is located that the most common practice (85%) in university students, for the completion of academic tasks related to reading texts, is based precisely on paraphrasing or partial (sometimes total) copying of elements of the text to the requested product (essay, summary, analysis, etc.) (Cisneros-Estupiñán, Olave-Arias & Rojas-García, 2012). It has been identified that students very rarely read in depth, because they prefer to read the text in parts or superficially, and when they read it, they only do it once (López Gil, 2016), practices that hinder the total comprehension of the text and therefore prevent the generation of coherent and correctly sustained judgments.

Therefore, it is necessary to continue analyzing these teaching experiences in order to change these patterns through the contextualization of knowledge. The evidence presented throughout this paper is proof of the concern on the part of teachers about the educational problems related to comprehension and information management in students, but it also shows that all these critical thinking skills can be taught and learned successfully in schools of different educational levels as long as they are adjusted to the students' demands.

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Exploring challenges of online education in universities 2021-2022: Mexico-Kuwait comparative analysis

Explorando los retos de la educación en línea en las universidades 2021-2022: análisis comparativo México-Kuwait

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Abstract

Online university education during and after the COVID-19 pandemic underwent changes that this study sought to identify the main difficulty for students and teachers that prevent detonating education with quality and university efficiency. An electronic snowball survey was applied to collect information sectioned into information on isolation, access to technology and the value of emotions in education, with a mixed methodology and a hermeneutic analysis. The relevance of a comparative analysis between Kuwait and Mexico was analyzed, with a stratified random sampling in two population groups: students and university teachers. The data collection was applied in both countries between December 2021 and January 2022. The results from 2,247 participants show that in both countries, women are more receptive and assertive to educational challenges than men. Mexico entered the virtual university process quickly without guaranteeing electronic equipment or training, while Kuwait began by training teachers, guaranteeing electronic equipment with training, and staggering schedules for different levels of education throughout the day to ensure that female teachers were at home and time was used effectively.

Online university education, Values, Efficiency, Quality

Resumen

La educación universitaria en línea durante y después de la pandemia del COVID-19 sufrió cambios que este estudio buscó identificar la principal dificultad para estudiantes y profesores que impiden detonar una educación con calidad y eficiencia universitaria. Se aplicó una encuesta electrónica tipo bola de nieve para recolectar información seccionada en información sobre aislamiento, acceso a la tecnología y el valor de las emociones en la educación, con una metodología mixta y un análisis hermenéutico. Se analizó la pertinencia de un análisis comparativo entre Kuwait y México, con un muestreo aleatorio estratificado en dos grupos de población: estudiantes y profesores universitarios. La recolección de datos se aplicó en ambos países entre diciembre de 2021 y enero de 2022. Los resultados de 2,247 participantes muestran que en ambos países, las mujeres son más receptivas y asertivas a los retos educativos que los hombres. México entró rápidamente al proceso de la universidad virtual sin garantizar equipo electrónico ni capacitación, mientras que Kuwait comenzó capacitando a las maestras, garantizando equipo electrónico con capacitación y escalonando los horarios de los diferentes niveles educativos a lo largo del día para asegurar que las maestras estuvieran en casa y se aprovechara el tiempo de manera efectiva.

Enseñanza universitaria en línea, Valores, Eficacia, Calidad

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Introduction

Two years after the COVID-19 epidemic and its variants, nations implemented measures to protect their populations, among them, the first measure was the suspension of face-to-face classes, forcing the migration of face-to-face education to distance or online education. This highlighted the first difficulties in not having the skills and competencies of the teaching teams and the students often lacking not only the skills, but also the optimal tools, knowledge and skills for their use and remote application, as well as the stable connectivity to stay online continuously without failures.

As a consequence of the above, UNICEF in its report 2021 on the subject of education points out that "the progress of education worldwide has been set back a decade due to the closure of schools". In the specific case of universities, the dropout rate reaches 49%, which represents a loss of social capital in preparation for their entry into working life, since students also drop out in advanced semesters.

Currently, not knowing clearly the root difficulties of online education leads to face a generation of students to various dilemmas such as: to continue or not with the professional preparation, to seek alternative income in the short term and perhaps with better results than professional life, to remain isolated and lonely in front of the comfort of connectivity but thereby losing the ability of real social contact. These dilemmas demand from higher education institutions an emerging transformation that two years later they still do not end up realizing, and not only that, now they return to traditional processes condemning their processes to failure before generations "Z" and "Alpha" who are not willing to return to conventional methods, on the contrary they demand greater digitization and exponential progress in educational processes overcoming borders, not only in the connection, but in the exchange, contact and why not: in their physical migration to any part around the world.

Given this cognitive need, this research was conducted in a first exploratory stage in the master's degree in international graduate studies at the Universidad Azteca with a bilateral context Mexico-Kuwait. It is worth mentioning that this research arises from deep academic reflections to identify and transform subjects and their contents, while the virtual classes are offered from Mexico with nine hours of difference with Kuwait during the holidays and face-to-face in Mexico. Despite the differences between the two countries: cultural, institutional, religious and social organization, they share very similar needs and cultural essences, especially in the role of women students and teachers, as analyzed in the results of this study.

State of the Art

Several studies emerge to analyze in a multidisciplinary and multifactorial way the difficulties of online education in post-COVID periods and its variants. From issues of apparent simplicity such as scheduling of class schedules (face-to-face, virtual and blended), university entrance exams, chronological evaluations, advising, tutoring, scheduling and planning of courses, laboratories and trainings, meetings, seminars, stays, exchanges, breaks and vacations of teachers and students, to the lack of metaheuristic techniques, moments of tension and conflict, dropout and desertion. The most accurate state of the art on the subject is presented by Ceschia et. al (2022) where the review of ninety-seven specialized documents shows how the reality of university education currently exceeds all previous metrics in the face of the challenges of optimization and restrictions, in the face of high efficiency and results by applying more with less. Karimi-Mamaghan et.al. (2022) present another state of the art where they point out the challenges to advance in the use of automatic learning techniques in metaheuristics whose objective is to improve performance with convergence solutions and maximum optimization of material and human resources.

Papers such as that of García-Morales et. al. (2021) stand out, which delve into the radical transformations that universities around the world are undergoing due to the need to digitize educational training processes in record time, in the face of teaching teams lacking technological capabilities and tools for online teaching. They contribute to the debate to synthesize technological resources and digitalized methodologies to overcome the educational crisis in the face of the disruption caused by COVID-19 and subsequent diseases. An interesting contribution on the perspective of teachers and their experiences is analyzed by Kruszewska et. al (2022) where difficulties are transformed into opportunities and where cooperation is a fundamental element. Finally Stewart & Lowenthal (2021) report on a case study with fifteen international students in Korea during the pandemic, highlighting above technological difficulties the importance of social contact versus isolation and loneliness. The latter coincides with the analyses, dilemmas and results of the present study, which have an impact on recognizing that in addition to scientific difficulties, disruptive technological advances and the need to optimize resources with complex methodologies, social contact and the need for emotional management when making decisions are fundamental.

An exploratory search was carried out in the repository of the intelligo platform with the SciELO.org search engine with the words: online university education, COVID and Mexico. What was found was the scientific production of 15 sources of information: 4 related to health, 7 on agronomic topics and biodiversity, 1 on geographic research, 1 on region and society, 1 on social studies and only 1 on educational profiles. Below is the map with the clusters and nodes associated with the scientific production of topics and subtopics.

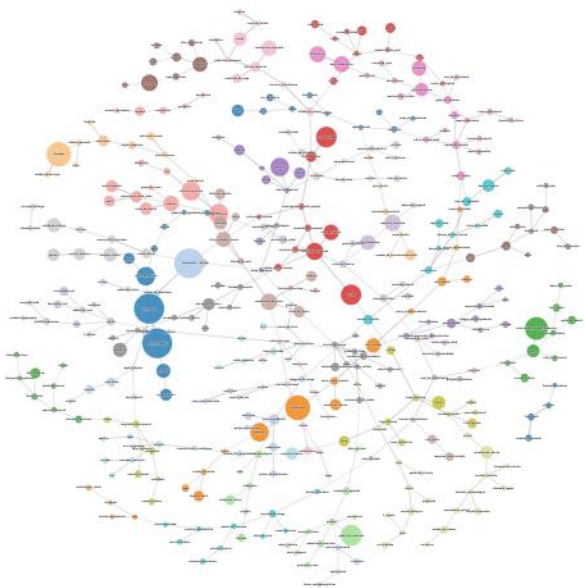
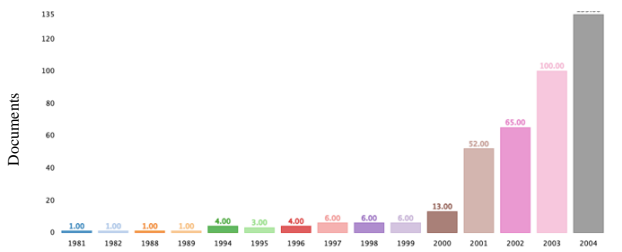
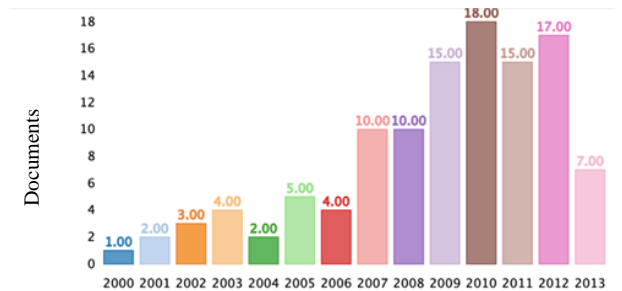


Figure 1 Network Map 1. First scientific information search in Intelligo Mexico-Kuwait: online university education, COVID, Mexico Kuwait
Source: own elaboration with Intelligo platform

With respect to scientific production, the following graph shows the production that focuses on journals and documents on a multidisciplinary range of topics more associated with health and does not fall under the weight of education until 2004 in the case of Mexico since 1992 until 2004 total production of, and until 2013 in the case of Kuwait. The following graphs show on the left Mexico and on the right the results for Kuwait.



Graphic 1 México scientific production on Online university education
Source: Own elaboration with Itelligo platform. Electronic consult, last consult 12 May 20:11 hrs.



Graphic 2 Kuwait scientific production on Online university education
Source: Own elaboration with Itelligo platform. Electronic consult, last consult 12 May 20:11 hrs.

Value added

The importance of this study has two direct impacts:

1. Public and private university institutions to accurately direct their reengineering strategies, transformation and conversion of planning, schedules, careers, incentives, evaluations, inclusion and extracurricular linkage, thus maximizing their tangible and intangible resources and optimizing two critical variables: time and money.
2. Students, teachers, counselors, evaluators, directors, tutors, grandmothers, grandmothers, fathers and mothers linked to the hope of quality education to form full persons, capable of facing global challenges in an intelligently assertive way from recognizing their vulnerability and their transforming potential in three essential elements: values, family, life commitment.

The main objective was to explore and detect the difficulties of distance education with university teachers and students in Mexico and Kuwait in order to identify the factors that impede educational quality and efficiency.

Methodology, method and instrument of work

The mixed methodology applied in this research star with next hypotheses:

The main difficulty of distance education with teachers and students to detonate educational quality and efficiency in universities is the emotional spirit over technological, economic and institutional problems.

Mixed methodology consisted of designing, validating and applying a mixed questionnaire: ten closed questions and three open questions. Taking into account the conditions of confinement, the whole process was developed online: institutional contacts with cooperating universities in Kuwait and Mexico, as well as the links between peers allowed the socialization of the questionnaire link through the "snowball" technique whose only conditions were: to be a student or university professor and to respond.

The application of the questionnaire began in December 2020 and closed in January 2021. The collection of information closed with two thousand two hundred and forty seven questionnaires answered between both nations by students and teachers of the main public and private universities.

The analysis began with the delimitation of the topic, followed by a sweep of information between both nations and at a global level, concluding with determining the relevance and practical usefulness of the topic. The principal question for this research was:

What is the main difficulty of distance education with teachers and students to detonate educational quality and efficiency in universities?

In the process, the following research questions emerged, which reflect the concerns inside and outside this research, because of the dialogue with peers on the subject:

Is it the lack of emotional support and time face to face for university students that gives disinterest in studies, career, friends and family?

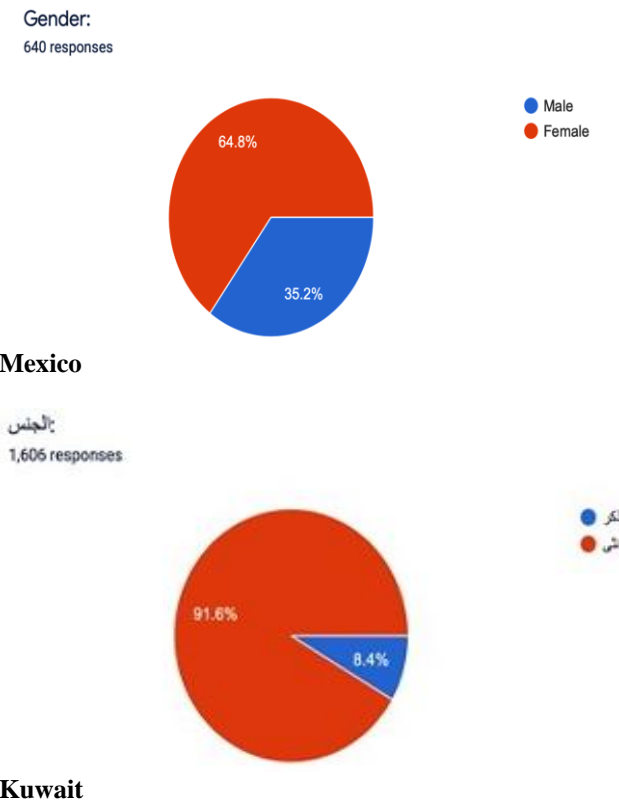
Is it the lack of TIC's, platforms and virtual tools training for teachers that gives rise to educational inefficiency?

What is the value of emotions in students and teachers to not only maintain but advance in the achievement of personal and professional goals?

The hermeneutic technique was applied for the analysis of the electronic information, the analysis of basic descriptive statistics for the results of the questionnaire in the first questions, and the qualitative analysis of the narratives of the answers to the last three questions. In addition to institutional and economic contexts, two fundamental elements were added to this study: cultural and religious environment. Finally, contact was made by telephone or video call with key informants, who were previously selected for the value of their open-ended responses and who agreed to answer the call or video call. With all this information, the results presented below were obtained.

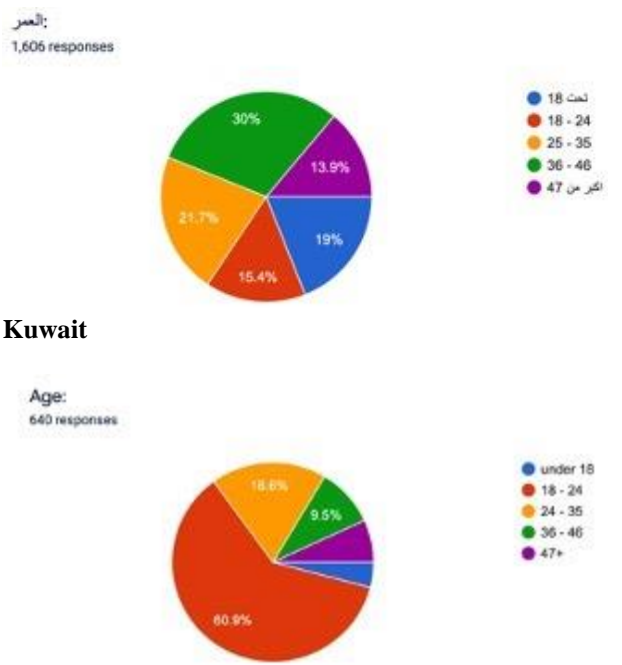
Results

The answers of 2,247 participants start to analyze who are they, next graph shows the people who participate giving us information. In both countries, the majority of respondents were female teachers and young female students who answered the data collection instrument. From this first result it can be said that women are more receptive to the topic of education than men: students and teachers. Regarding age, respondents in Mexico were between 18 and 24 years of age, which suggests that 64.8% of the respondents were students, in contrast to Kuwait, where 91.6% the age range was 35 years and older, inferring that they were teachers. In this sense, the analysis is oriented to information from students in Mexico and teachers in Kuwait.



Graphic 3 Gender comparison between participants
Source: Own elaboration

Teachers in Kuwait are mostly women who responded that they are more comfortable with distance education from home as they do not have to spend time and money. This situation coincides with the position of teachers in Mexico. In contrast with the response of students in Mexico who responded that online education was acceptable, this is due to the fact that this is a population of adolescents whose personal development is outside the home, and that confinement was not comfortable for them.

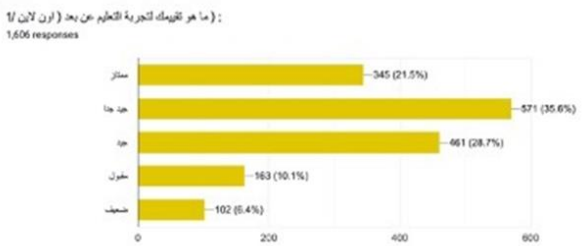


Graphic 2 Ages of participants

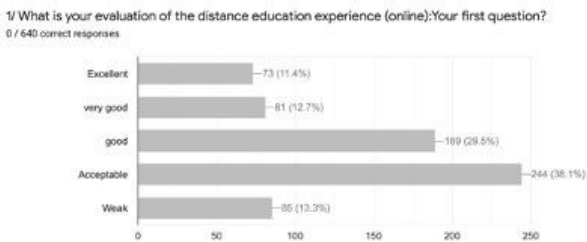
Considering the mayor participants were women teachers in Kuwait, students mix in México, bout countries participants answer because the education topic is of their interest. The questionnaire is voluntary tool for answer from the experience, position and experience with online education on pandemic time 2020 to 2022. At he begin the national context was analyzed to México and Kuwait, interesting and principals differences were identify as shows the next table.

Kuwait		México	
Before online education was an option for short courses of a specific subject or area of knowledge, it has a cost and it is only for adults, not everyone has access due to internet access problems.		Before online education was open free of charge for rural areas, for literacy and education of older adults, complete online careers of the National Autonomous University of Mexico.	
COVID-19 2020-2022			
(+)	(-)	(+)	(-)
95% of families with internet access.	Incremental cost of internet with the pandemic.	82% of families with internet access.	Fixed internet cost but connectivity problems.
Government gives different schedules by educational level:	There are still men's universities and women's universities.	Government orders to enter online education in March 2020 to all educational levels without distinction of schedules or previous training to teachers.	Mixed universities but with high levels of violence, harassment and sexual harassment.
Elementary school 3 to 4 pm. Most of the moms are teachers or are working, at this time they return home and there is always someone with attention to the school children.	Kuwait starts online classes in September 2020.	Teachers buy their electronic equipment to work.	Mexico went online in March 2020.
All schools have trained teachers both in person and online to teach online classes.	Families had to buy more than 1 computer.	Students receive support to obtain a tablet.	Families got tablet support but of short duration.
Teachers buy their own electronic equipment to work.	Online class schedules at universities flexible, but with strict restrictions for personal meetings. Teenage students open to online communication but closed to face-to-face communication.	National online libraries are opened free of charge for the entire population.	Online class schedules in universities all day, impacting the mood of university teenagers for not being able to go out.
Kuwait has no college dropouts in public education because the schools were flexible.	Government postpones school fee payments in the first 6 months of 2020 to match technology at home.	June 2022: All universities are with face-to-face education and only 15% with online education for special cases.	Modification of closed behaviors and introverted people to talk about their emotions.
June 2022. 90% of university students are attending university in person and have resumed their daily life.		Universities and Technological Universities are working with the implementation of action protocols to eradicate all forms of violence, harassment and sexual harassment against university women.	Government does not reduce fees or give payment extensions on school fees since public education in Mexico is free
			In Mexico, university public education dropouts are due to the economic crisis where students must start working.

Table 1 Comparative online education experience: México & Kuwait
Source: Own elaboration



Graphic 4



Graphic 5

Finally, the following key excerpts from the testimonies of 5 female teachers interviewed illustrate and reinforce the conclusions offered at the end:

"I suffered from seeing my depressed students trying to help without being a surrogate mother, ... they wanted to talk about their fears, about not being able to see the person they had fallen in love with, ... about the violence between father and mother fighting ... about their personal changes and their friends ... about their loneliness.... By talking I achieved empathy to move them to a proactive attitude, with a positive attitude and to become aware of their responsibility towards themselves. To the girls to take care of themselves and not to show themselves openly to others to avoid problems or major cybercrimes, but to fight for their first places for their skills and intelligence, especially in the hard sciences."

Source: Interview professor 04 MX.

"I live alone and many times I was afraid of catching, more than COVID of the negative energy of classmates and students due to their lack of control in the face of loneliness, pressure and affective need.... I had a good time, I was able to read the books I had long wanted to read for pleasure, paint or write. I do believe that male teachers have a hard time because they are always looking for someone to solve everything on their own".

Source: Interview professor 04 MX.

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To the Kuwaiti embassy in Mexico for their valuable cooperation.

Finally we dedicate this article to our sons and daughters:

- Samuel Trueba-Monsalvo
- Khadejah Alkhurainej
- Balqees Alkhurainej

Conclusiones

The main difficulty of distance education with teachers and students to detonate educational quality and efficiency in universities. Online education have to continue as a strategic tool for university education in order to open frontiers.

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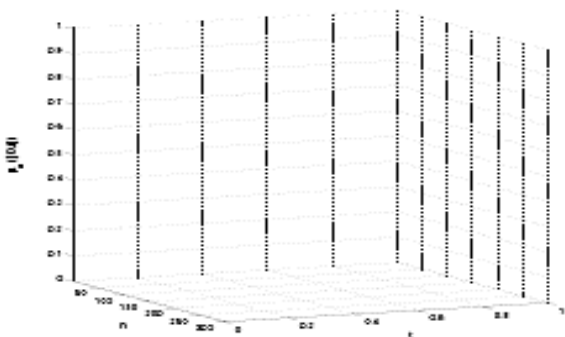
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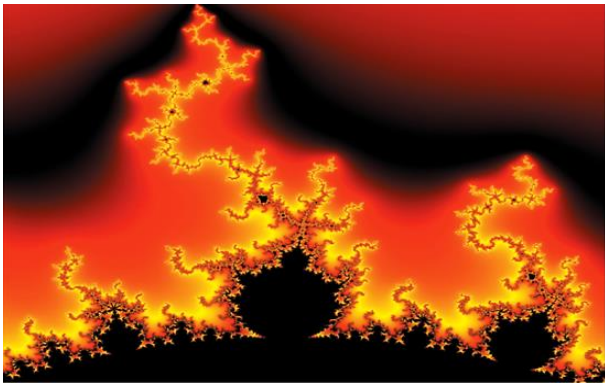


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