Journal Educational

Theory

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The works must be unpublished and refer to topics of Education economics, school demography, education history, education sociology, education philosophy and other topics related to Humanities and Behavioral Sciences.

Presentation of Content

In the first article we present, *The Broken Glass of Education in Mexico from Neuroeducation and the Pymes*, by JIMÉNEZ-GALÁN, Joel Luis, MONTALVO-VIVANCO, Miguel Ángel, GARZA-VAZQUEZ, Luis Humberto and SARIÑANA-ROACHO, Vianey, with adscription in Universidad Autónoma de Tamaulipas, Universidad Autónoma de Aguascalientes, La Normal Rural La Aguilera, México, as the netx article we present, *The choral song for the integral training of students in Nursing*, by OSA-RICARDO, Arlena, JONES-SÁNCHEZ, Elisneisis, RODRÍGUEZ-JUAN, Arién and BARREIROS-LÓPEZ, Silvia Elisa, with adscription in Escuela elemental de música Alejandro García Caturla, Universidad de Ciencias Médicas, Facultad 10 de Octubre and Universidad Autónoma de Zacatecas, as the netx article we present, *Evaluation of the use of library resources and services in Higher Education*, by OCHOA-ALCÁNTAR, José Manuel, ALDRETE-CASTELO, Juan Carlos, RIVERA-IRIBARREN, Maricel and GARCÍA-LÓPEZ, Ramona Imelda, with adscription in Instituto Tecnológico de Sonora, México, as the netx article we present, *Proposal for a solution to increase the use of the digital heritage at the Universidad Tecnológica del Estado de Zacatecas*, by BARRIOS-GARCÍA, Jorge, SAHAGÚN-MONTOYA, Lucila, BAÑUELOS-RODARTE, Miguel and NAVA-DE LA ROSA, Martha Griselda, with adscription in Universidad Tecnológica del Estado de Zacatecas.

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The Broken Glass of Education in Mexico from Neuroeducation and the Pymes

Los cristales rotos de la Educación en México desde la Neuroeducación y Las Pymes

JIMÉNEZ-GALÁN, Joel Luis†*, MONTALVO-VIVANCO, Miguel Ángel, GARZA-VAZQUEZ, Luis Humberto and SARIÑANA-ROACHO, Vianey

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Abstract

As testimony, the situation that prevails in Mexico and the concept of the broken glass in education is seen with a sad argument where there are diverse and complicated broken pieces of educational reforms, for this reason neuroeducation was considered as a strategy to improve teachers and students. The objective was to identify the professionalization of teachers that allow raising the academic performance of students, which allows obtaining a recognition of PYMES based on education, The methodology, was considered to public universities and normal schools in Mexico. Methodology and a total of 3 instruments were applied in a sample of 150 students from a universe of 1500 students, through a multicenter observational design, where an evaluation instrument was a strategy. The study was carried out with a non-experimental quantitative approach of an instrumental type with the age and average. 100 teachers from educational institutions participated. The results of the exploratory factor analysis technique validated subscales related to strategies with a learning context, the contribution was among the main data, it was found that pedagogical skills, emotional affective and psychosocial aspects affect academic performance. It was detected that 10% of the students manifested emotional affective disorders.

Cognitive strategies, Pedagogical ability, Teacher professionalization

Resumen

Como testimonio, la situación que prevalece en México y el concepto del cristal roto en la educación se ve con triste argumento donde hay diversas y complicadas piezas rotas de las reformas educativas, por esta razón se consideró a la neuroeducación como estrategia para mejorar a docentes y alumnos. El objetivo fue identificar la profesionalización de los docentes que permitan elevar el rendimiento académico de estudiantes, lo cual permite obtener un reconocimiento de las pymes sustentado en educación, La metodología, se consideró a universidades públicas y escuelas normalistas en México. Metodología e aplicaron un total de 3 instrumentos en una muestra de 150 estudiantes de un universo de 1500 alumnos, mediante un diseño observacional multicéntrico, donde un instrumento de evaluación fue estrategia. El estudio se realizó con enfoque cuantitativo no experimental de tipo instrumental con la edad y promedio. Participaron 100 docentes de instituciones educativas. Los resultados de la técnica del análisis factorial exploratorio validaron subescalas relacionadas con las estrategias con contexto de aprendizaje, La contribución fue entre los principales datos, se encontró que las habilidades pedagógicas, afectivo emocional y aspectos psicosociales afectan al rendimiento académico. Se detectó que un 10% de los alumnos manifestaban trastornos del afectivo emocional.

Estrategias cognitivas, Habilidad pedagógica, Profesionalización docente

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† Researcher contributing as first author.

Introduction

A broken glass, we wonder what you can do with the pieces of glass? Well, something very useful, as in all things, that during life we are always accumulating broken glass recognized as experiences, likewise, for example, having studied for several stages of studies (kindergarten to postgraduate), where each level of growth that goes from early learning to adolescence and various educational reforms were experienced in Mexico, without knowing that all this formed pieces of a single crystal. Therefore we form a crystal according to the professional profile of the graduate and we go out to sell it, which is what it will reflect, our image of what we are really going to have to face before society.

Therefore, neuroeducation was used, which is a science that has biological intelligence to govern its actions, motivations, learning abilities and instincts about the environments that surround us and the natural phenomena that occur, such as empathic attitudes and behaviors with our crystal of life or what happens in these times of the COVID-19 epidemic with its variants as he said "Greek philosopher platter who was a physical formation; vulgar music and the vices of the body which can lead the soul to its slavery" , which is an integral process correlated in its various cycles, ranging from preschool to higher education.

They have little knowledge of the type of their glass and the professional profile of the careers and study programs in which they are enrolled. In addition, not having the entrance to the career that they really wanted, where this is considered as a factor that stimulates the abandonment or desertion of the university or technology, this being one of the main problems of academic performance. According to the main statutes responsible for educational policy in Mexico, I mention that some or most of them are related to the educational reforms that have happened, where, for example: Pdte. Venustiano Carranza. He said "that teaching is free" according to his crystal; but it will be secular that is given in the official educational establishments, also Pdte. Lazaro Cardenas. I mention that "education will be socialist. Plans and programs will correspond to the State.

Primary education will be compulsory and the State will teach it free of charge ", because it is reported that the economic factor is often not a determining factor for academic dropout and that students who drop out of preparation at the institution are not because of the university system but because of the type of formation according to your life crystal, such as Pdte. Avila Camacho. "He pronounced that love had as a priority the homeland, solidarity, democratic, national. All education provided by the State will be free "and other options to survive economically in the form of informing in most cases. Returning to the presidents and education in Mexico, Pdte.

Adolfo López Mateos. In his mind according to his crystal, "he put his eleven-year plan, promoted by Jaime Torres Bodet in 1959 secretary of the secretary of education" García Leos J. L. (2019) and Pdte. José López Portillo. He considered that "the Congress of the Union, would take education according to its rights, in order to unify and coordinate education throughout the Mexican Republic, it will issue the necessary laws, destined to distribute the educational social function." I know He intended to structure primary and secondary education by his vision according to his type of crystal, the Pdte. Salinas de Gortari.

He specified that "education must be based on scientific progress. All education that the State imparts will be free ", according to Article 3 of the aforementioned Mexican Constitution: Everyone has the right to receive education. The State —Federation, States, Mexico City and Municipalities—, will impart and guarantee initial, preschool, primary, secondary, upper secondary and higher education. They will be mandatory. "Reformed paragraph DOF 11-12-2002 and 02-09-2012. Without taking any reference from governors of the States of the Republic Chamber of Deputies (2020), nor any type of formation according to its crystal only that of the president. The Pdte. Vicente Fox Quezada. From his crystal of life he proposed "Preschool, primary and secondary school would be mandatory, alliance for the Quality of Education, opposition competitions", The Pdte. Felipe de Jesús Calderón Hinojosa.

He considered that according to his piece of glass, "education was based on respect for Human Rights. A new Curriculum 2011, Compulsory Higher Secondary Education ", El Pdte. Enrique Peña Nieto, argued that "education was of quality, based on constant improvement and maximum academic achievement of students, teacher professionalization, the professional teaching service is created", Pdte. Andres Manuel López Obrador. According to its crystal "education must be of excellence. The State will impart and guarantee initial, preschool, primary, secondary, upper secondary and higher education and teachers are fundamental agents of the educational process, they will have the right to access a comprehensive system of education, training and updating, fed back by evaluations that diagnose Education of excellence. (Table 1).

The crystals of Sexennial Educational Reforms	
Year President	Proposed reform
1917 Venustiano Carranza Teaching is free; but it will be secular that occurs in official educational establishments	
1934 Lázaro Cárdenas Education will be socialist. Plans and Programs will correspond to the State. Primary education will be compulsory and the State will provide it free of charge	
1946 Ávila Camacho Love for the country, solidarity, democratic, national. All education provided by the State will be free	
1959 Lopez Mateos Eleven Year Plan, promoted by Jaime Torres Bodet in 1959	
1980 Lopez Portillo The Congress of the Union, in order to unify and coordinate education throughout the Republic, will issue the necessary laws, destined to distribute the educational social function. It was intended to structure primary education with secondary education	
1993 Salinas de Gortari Education based on scientific progress. All the education that the State imparts will be free. The Federal Executive will determine the study plans and programs of primary, secondary and normal education for the entire Republic. Compulsory primary and secondary	
2008 Vicente Fox Preschool, primary and secondary compulsory,. Alliance for the Quality of Education. Opposition contests	
2012 Calderón Hinojosa Education based on respect for Human Rights. New Study Plan 2011.. Compulsory Higher Secondary Education	
2016 Peña Nieto Education will be of quality, based on constant improvement and maximum academic achievement of students.	
Teaching professionalization, the Professional Teaching Service is created	
It focuses on addressing infrastructure deficiencies.	
Entry into the teaching service and promotion to positions with management or supervisory functions in basic and upper secondary education will be carried out through competitive examinations that guarantee the suitability of the corresponding knowledge and skills.	

The National System of Educational Evaluation is created. National Institute for the Evaluation of Education
Considered by some as punitive, since the Complementary Law establishes the rules of permanence
2019 Lopez Obrador Education of excellence
The State will provide and guarantee initial, preschool, primary, secondary, upper secondary and higher education
Teachers are fundamental agents of the educational process. They will have the right to access a comprehensive system of education, training and updating, fed back by diagnostic evaluations.
The admission, promotion and recognition of the personnel that exercise the teaching, directive or supervisory function, will be carried out through selection processes to which the applicants attend under equal conditions and established in the law provided for in the previous paragraph.
Greater relevance to Civic and Ethical Training and nutritional education in children

Table 1 Educational reforms and their main six-year objective
Source: Self Made

In this table the list of educational reforms in their most essential objectives according to the six-year period in Mexico is written According to the crystal there is a report published by the Organization for Economic Cooperation and Development (OECD2016), PISA 2015 exam. Obtaining as key results, among 15-year-old students, where there is a life satisfaction level of 8.3 on a scale of 0 to 10 (OECD average) In addition to this, following this same source, a level of motivation that is very low on the part of teachers towards performance higher than the OECD average: 83% of students declared that they want to be the best, whatever they do and that motivates them to start a company from their perspective of their crystal, but they need to join more pieces of other crystals, because without sufficient preparation and less without the knowledge of how to act in the face of problems such as It is the covid-19 pandemic, which forced the country's economic activity to be suspended for periods of time, on any type of educational modality of training or informing, the risk factors, without understanding how to maintain er a reflection on how the brain should be healthy and the functioning of its parts that intervene during learning, where it is very important to manage the appropriate decision-making on the economic-administrative characteristic that should be considered when forming a PYMES (small and medium-sized companies).

JIMÉNEZ-GALÁN, Joel Luis, MONTALVO-VIVANCO, Miguel Ángel, GARZA-VAZQUEZ, Luis Humberto and SARIÑANA-ROACHO, Vianey. The Broken Glass of Education in Mexico from Neuroeducation and the Pymes. Journal Educational Theory. 2021

And that is why UNESCO advocates for the promotion of peace and for all children to have access to education, as well as to achieve inclusion, with the focus directed on adapting the public administration of poor countries and that they should be advised, with advanced educational systems, since the dynamics of globalization, such is the case of international provisions such as the 2030 agenda, whose objectives are sustainable development, that is why neuroeducation, (neuroscience and education) should be an important part that could help to increase up to a high 96% of academic performance in educational institutions, likewise for the type of teaching that teachers address, with 90% in their motivation and guarantee higher grades in all or nearly all subjects in an educational program.

The important part about the type of discussion on the interesting academic topics, the results that were obtained when identifying the problem of low academic performance was to feel how the different academic crystals look and about each of the aspects of academic performance, in each educational institution and how the participant contributes to positively highlight the improvement of academic achievement, especially when there is a negative status regarding six-year educational reforms, where there are certain indicators on the types of learning, multiple intelligences, retention memory and an increasingly low afferent uptake, for example in a study carried out by the BBC (British Broadcasting Corporation) mentions that the Latin American countries "with the worst academic performance".

This time it is a study by the Organization for the Economic Cooperation and Development (OECD), based on the data where the 64 countries participating in the Program for International Student Assessment (PISA), which indicate that the region is below the global standards of school performance, In fact, among the nations that appear in the report are: Peru, Colombia, Brazil and Argentina, which are among the ten most deficient, whose students have a lower level in areas such as mathematics, science and reading.

Latin American countries were well below the average established by the OECD. As well as the four South American countries - along with Indonesia, Qatar, Jordan, Tunisia, Albania and Kazakhstan, which are the ones with the highest number of 15-year-old students below the average performance in mathematics, reading and science. (PISA evaluation, 2015). Considering this research work represents some of the constitutional norms of any Latin American government, they helped to consider and identify the strategies used by each government administration of different periods, with the idea of establishing better future foundations for education and its citizens having access to their Results obtained, this study will serve according to the analysis and results obtained in the diagnoses made, where the inclusion of new academic lines and research models is proposed that includes neurotechnoeducation, neuroeducation, within the cognitive development for teachers and students of any school level and continue to carry out longitudinal studies of next generations and previous cohorts, both of the qualitative and quantitative model, or mixed, thus allowing the correlations between the dependent and independent variables that are really s to be analyzed. ignifying, with variables from cross-sectional studies in the short, medium term, based on their findings in education.

Academic performance has to establish criteria by linking psychic, somatic and physiological, cultural and scientific aspects in each institution, especially in those concepts of the use of the main parts of the brain and use of the technology involved in this research such as virtual reality . On the other hand, it is important to see what happens with PYMES and the academic level of the family, that is, the positive or negative influence on the monthly personal income, since a 10% increase in the academic level would cause an increase in personal income. 2.4% monthly in an SME. The foregoing agrees with the analysis carried out by Preoţiuc, Volkova, Lampos, Bachrachy y Aletras (2015) due to correlations that show that a higher educational level indicates higher income. Picatoste, Pérez and Ruesga (2018), mention that the higher level of education in a country leads to a higher level of income per capita, because it translates into higher labor productivity.

Therefore, it is considered, as with the educational level, the monthly personal income can be seen as a fundamental piece. Various authors mention that by investing in human capital (education and learning skills). Income can be improved and is considered one of the most effective ways to reduce income inequality in the long term (Jaumotte, Lally Papageorgiou, 2008; Abdullah, Doucouliagosy Manning, 2011; Gruber, Kosack, 2013; and Shahabadi et al. ., 2016). This research makes it possible to clarify that family support, the school environment, psychic anxiety and somatic anxiety in higher-level and normal institutions of the state such as: Autonomous University of Tamaulipas, Autonomous University of Aguascalientes, La Normal J. Guadalupe la Aguilera in Canatlán Durango. When supported by neuroeducation they can increase their rates of memorization ability, learning processing, and better mental logic. However, in the sample it is contemplated that university and normal students also suffer the type of somatic anxiety that increases and that sometimes manifests itself with attacks of psychic anxiety, considering that there is little income and family economic support.

The main strength of this research is that it is possible to establish a well-founded basis starting from a biofeeback, to be able to carry out an analysis on the training and electroencephalic signals of the brain with the intention of monitoring the alpha and beta signals of the brain and analyzing different learning processes. Finally, this work can be a reference base for a more detailed analysis due to the characteristics that could be obtained on how the educational reforms in the government of Mexico, academic performance and anxiety (analyzed in detail) helped or not on the growth of the academic performance.

There is the possibility of implementing new types of more rigorous analysis at specific intervals on the school averages such as: results of the evaluations in the subjects taken, the teaching of new subjects for newly hired teachers according to the current reform 2021, for which a multivariate analysis (ANOVA and multi ANOVA), which will serve as the next phase of the next research project on biological neurotechnology with the use of virtual reality and educational models, dedicated to the interpretation of the instructions that are handled on the PISA exams and observe attitudes and skills.

This study allows us to extract a database, to have good information on the research work, which was proposed under the follow-up of a doctoral thesis with the title on psychosocial factors in academic performance of the Autonomous University of Tamaulipas and that allowed contrast its variables with local scenarios, to the national management, thus allowing to visualize with greater representativeness the management of instruments and information focused on academic performance. Regarding the objective where it was possible to find and identify that academic performance is a function of the psychosocial factors and abilities of the teachers, where there are negative differences and important positive aspects, which must be taken into account in the students of the Public universities such as the Autonomous University of Tamaulipas, the Autonomous University of Aguascalientes, Normal schools, in Durango and the country's PYMES. Considering that this work is a reference, which agrees with authors that the indicative aspects are very important in some Universities such as the Autonomous University of Hidalgo, Mexico.

Because it was identified that academic performance is a huge problem, which must be attacked with innovative strategies and methodological models of the fourth generation, on teaching and learning, where the hiring of teachers until their entry and the graduation profile of the student, wherever is the congruent definition of the professional profile of a graduate, in any academic program. Considering the improvement of this research, it was possible to identify the use of new variables to improve future research such as: the school profile, tutorials, counseling, the semester average, student nutrition, etc. With the idea of improving and identifying solutions for the new generations based on better values and indicators in the public universities of the participants.

The education policy is in accordance with the regulations as long as its concepts are revised, such as that of Mexico, which says, "It will be of quality, based on constant improvement and maximum achievement." As well as being able to determine the frequencies, correlations, regressions, standard deviations, coefficients, Bootstrap specifications and descriptive statistical data to identify the following points:

Regarding the variables and their indicators in the means were: the human profile, academic responsibility, psychic anxiety and somatic anxiety, they considered the improvements, they were positive correlations, with an effectiveness greater than 99%. This agrees with what has been previously stated by other authors due to the fact that there is indeed a lack of family support, the school environment with violence, attacks of psychic anxiety and somatic anxiety is used as a means to indicate low or high academic performance; on the other hand, a higher academic level should generally translate into greater motivation and emotion on the part of the student and therefore obtain a higher level of knowledge. Mainly in those related to teamwork, because, to obtain the economic and social benefits of the adoption of these tools, appropriate educational programs must be designed, implemented and evaluated that allow individuals to develop better educational skills by creating new SMEs according to andrology and pedagogy. Performing an exhaustive analysis of the cross-correlation matrices that provide useful information on the performance of academic performance. The observations that were made were for different time lags in the Spearman coefficient of variation correlation matrix due to the interdependence between the variables. Regarding p. A punctual correlation cannot be made with its respective counterpart, because it does not have useful information that can be used to describe its respective behavior and order.

Neuroeducation

In the regulations of the last educational reform 2019 it is mentioned that education in Mexico, there have been several models applied for the learning of Mexican citizens. With the start of the 2018-2019 school year, the new way of associating the reorganization of the system in three axes was also launched, first; human beings develop their full potential in school, where it will allow them to make decisions in a comprehensive manner, such as academic training, which consists of subjects of national observance; second, Personal and Social development, which include socio-emotional skills; third;

Curricular autonomy, which gives school communities the opportunity to define a part of the curriculum, according to their interests and needs, "the Ministry of Public Education reported in a statement. But this requires going beyond the cognitive and addressing the social, emotional and physical needs of all children and adolescents. This new look is provided by neuroeducation with an integrative and transdisciplinary approach whose objective is to improve the teaching and learning processes based on scientific knowledge around the functioning of the brain. Jesús C. Guillén (2017)

Here neuroeducation has the socio-emotional skills, they have as a substantial part from the own experience with the students. One of the main concerns that has been had is the meaning and importance of each of the emotions that I still remember today, both positive and negative in different instances of the school learning process itself. Regarding the face-to-face modality "The presence of the teacher who fully inhabits his class is immediately perceptible. The students feel it from the first minute of the year, we have all experienced it: the teacher who has just entered is absolutely there, can be seen by his way of looking, greeting his students, sitting down, taking possession of his table and he has not dispersed for fear of their reactions, he has not shrunk in on himself, he goes about his business, right off the bat, he is present, he distinguishes each face, where for him, the class exists immediately "(Pennac, 2008), because of what the brain does. "In our emotional repertoire, each emotion plays a unique role, as revealed by its characteristic biological attunements.

PYMES literature review

When we refer to students and not precisely in relation to the educational reforms they interpret, but rather to the opportunity to create new PYMES, it is a question of the crystal that they manifest as being an entrepreneur, for example, small and medium-sized enterprises (pymes) As a very important sector both in Mexico and in the world, for example in Latin America, it reaches an average of 99.25% of the total business units, generating 35.5% of employment, thus fulfilling an important role in leveling inequality economic, which characterizes this region (Saavedra and Hernández, 2008).

For example, in Europe 99% of companies are pymes (CE, 2006), in the United States they are 99.7% of all companies (Leebaert, 2006).

There are numerous studies about the influence of public policies on the development of SMEs (Bibu, Stefea & Sala, 2009, Carree, Van, Thurik, & Wennekers, 2002, Carroll, Holtz-Eakin, Rider, & Rosen, 2000, Choi and Phan, 2006, Cohen and Baralla, 2012, Di Tomaso and Dubbini, 2000, Dussel, 2004, Ramírez, 2007, Rivera, 2002, Roper, 2005, Smallbone and Welter, 2001, Zevallos, 2006), all agree on the importance of the government's role in promoting the development of these companies. On the other hand, policies that aim to reduce poverty through the creation of new jobs pay special attention to PYMES.

Improving their access to finance, and the business environment, as well as general market conditions, these can have a positive effect on the number of jobs created by PYMES, especially in the long term (De Kok, Deijl & Veldhuis- Van, 2013).

For their part, Haltiwanger, Jarmin and Miranda (2012) also found that the growth rate of job creation is higher in small companies than in large ones, however, they found that young companies have high generation capacity as well as job destruction. Affecting job satisfaction Likewise, Neumark, Wall & Zhang (2008) found that the negative relationship between the size of the establishment and job creation is much less clear for the manufacturing sector, that is, they did not find a higher employment growth rate. in small companies in the manufacturing sector compared to large companies. The economic crisis generated by the coronavirus disease (COVID-19) has a significant impact on the countries of Latin America and the Caribbean and hits a productive and business structure with weaknesses that have originated over decades. On the other hand, activities intensive in Knowledge, when it exists, are enclaves that are not very articulated with the rest of the economy in which the possibilities of modernization and improvement for the mipymes (micro, small and medium-sized companies) that operate in them are scarce (Dini and Stumpo, 2019).

Finally, the high informality prevailing in many labor markets (which reaches 54% of total employment, according to the International Labor Organization (ILO)) makes the development of micro and small enterprises especially difficult. three stages, linked to the stages that will be experienced in relation to the epidemic in each country.

– The first is related to the emergency and the measures to be taken in a very short time.

– The second will occur when, once the outbreaks of this epidemic have been controlled, it is necessary to "live" with a virus that, without health and social controls, can spread again. Some (many) of the restrictions on economic and social activities will be maintained and the economy will operate "in mid-gear", with differences between sectors. This stage is what is usually called reactivation. • The third will take place when there is no danger of contagion (once the vaccine exists) and will involve a new economic and social reality. This reality will be different in each country according to the duration and intensity of the first two stages, the economic and social measures that have been taken and the institutional, productive and technological capacities accumulated. In addition, there will be changes in the international economic and political scenario since countries will enter the second and third stages at different times and under different conditions.

In Mexico, on the other hand, the activity of the manufacturing industry fell by 10.9% in the first four months of the year and the sectors most affected have been leather and footwear (-29.5%) and transport equipment (-26.9%), while the food industry registered an increase of 2.5% (INEGI, 2020). Therefore, the role of education in terms of these labor economic data is questioned, when we know that noneducational reform has contemplated this important concept of talking about education before companies, nor the role played by universities that create professional or graduate profiles.

Methodology

The methodological framework was observed by the different institutions participating in the research, it was exploratory to be able to know the impact of academic performance in the different public universities of Mexico or normal school in Durango, it was a cross-sectional study carried out at the Autonomous University of Tamaulipas, including variables independent: examination dates, semester average, age, family support, school environment, psychic anxiety and somatic anxiety, among others, as well as the correlation which is the overall academic performance of the group, the age according to the semester that they attend, (Table 2). A random sample was carried out through which a sample of 150 students who study the upper degree level was obtained in the year 2020.

The applicable formula for the finite sample was Where: N = Total population; Zα = 1.96 squared (if the reliability is 95%); p = expected proportion (in this case 5% = 0.05); q = 1 −p (in this case 1-0.05 = 0.95), and d = precision. According to the sample obtained, a sample size equivalent to 150 questionnaires was obtained. The Likert scale was used for the instruments as a measurement tool that, unlike dichotomous questions with a yes or no answer, allows measuring attitudes and knowing the degree of conformity of the respondent, by establishing a certain scale as the benchmark in the instruments for each of the items considered, according to the independent and dependent variables used. coverage "at the level", that is, part of the students who access an educational service of the expected level given their age, which is usually known as the net enrollment rate; and coverage "in grade" or "timely", fraction of the PYMES population served at the expected level and grade according to the age of working in a PYMES. In no case are the «gross enrollment ratios» used, since in these the numerator is not a subset of the denominator, so it does not measure a proportion and coverage is a proportion, but rather the volume in relative terms. (Guadalupe 2002 and 2015). Keep in mind that coverage is computed using (in the numerator) enrollment information and (in the denominator) estimates from the interviewees.

Thus, for example, if the indicators of a population are overestimated, this could lead to an underestimation of coverage. Similarly, the discrepancy between the sources can generate estimation errors that are evident, but are not limited to when the rates exceed 100%.

Various criticisms were presented, described as: a) what is the filling of the questionnaires, b) the number of participating students per questionnaire, c) how the formats are presented, d) the material for filling in (pencil, # 2). This is when the analytical approach proposed by (Lucas, 2001) arises, which mentions "who analyzes the effects of social origin, both in the probabilities of transition at different levels". As in the location of people by their academic performance, age, date of the test and the average of the student and the curricular choices that they have adopted, it is necessary to establish if the anxiety manifests itself according to the day they take the test and the years completed (Table 3), where it refers to the student's age and date of the test, in order to determine if the day, month and year of the test affects their semester average (Table 4), likewise it can be seen if the age is to do with the semester average, the mean and the standard deviation (Table 5), which indicates that a certain educational level is not universal, the most socioeconomically favored use its advantages and resources to ensure access to that level (quantitative advantage) ; when access to the level becomes almost universal, inequity of origin will not disappear. In other words, the most economically favored people will seek to occupy better positions within a stratified educational system.

		Date	Age
Academic performance	Pearson Correlation	1	-.001
	Sig. (2-tailed)		.991
	N	150	150
Age	Pearson Correlation	-.001	1
	Sig. (2-tailed)	.991	
	N	150	150

Table 2 Correlation between academic performance and the age of the students
Source: Own Elaboration

This table is where your variable, description and type of relationship are described as; dependent variable academic performance and independent variable age.

	N	Minimum	Maximum	Mean
Age	**150**	**16**	**23**	**18.89**
Test of date	150	05-May-2019	09-Jun-2019	07-May-2019
Valid N (listwise)	150			

Table 3 Statistics of age and date of application of the Test
Source: Own Elaboration

This table describes the test date variable and the minimum or maximum age of the students

	Cases					
	Included		Excluded		Total	
	N	Percent	N	Percent	N	Percent
Age * Semester average	150	75.8%	150	24.2%	150	100.0%

This table describes the percentage of the relationship between the age of the young people and the group semester average.

Semester Average	Mean	N	Std. Deviation
6.0 - 6.5	19.00	10	.
6.6 - 7.0	19.09	21	2.166
7.1 - 7.5	18.67	16	1.751
7.6 - 8.0	19.22	19	2.108
8.1 - 8.5	18.80	15	.837
8.6 - 9.0	19.45	20	.759
9.1 - 9.5	19.05	20	1.099
9.6 - 10	18.75	12	.866
X - 5.9	17.88	17	1.500
Total	18.89	150	1.428

Table 5 Relationship of averages by school semester, the mean and standard deviation
Source: Self Made

This table describes the rating relationship indicator with the mean and its standard deviation.

Results

The results of the analysis of the points on the risk factors to identify professionalization in teachers and job satisfaction from the pymes perspective, is achieved through direct participation with students who are in the last semester of their professional career, who are involved in this research with decisive and direct action on teachers at the Autonomous University of Tamaulipas (Victoria Faculty of Commerce and Administration), the Autonomous University of Aguascalientes and the Aguilera Rural Normal School in Canatlán, Durango, which are educational institutions interested in knowing what indicators are three that are affecting or benefiting their graduates.

First in the face of the natural factor of the covid-19 pandemic, second in those who abandon academic programs, due to anxiety or somatic issues at the time of presenting final exams of their semester, third the economic situations that prevent continuing with your s studies, thus aggravating problems for both education and pymes that require trained professionals, as well as identifying which are the independent variables that support the dependent variable of academic performance that intervenes in business competitiveness and its factors external.

The multivariate analysis is defined by Hair et al., (1999) whose purpose is to measure and explain and predict the degree of relationship of the theoretical values, they are linear combinations of composite variables from the empirical weights applied in this work, towards the pymes, relating risk factors and job satisfaction. The correlation matrices show how the dependent and independent variables are related, highlighting that there may be a low or high significant correlation with variables such as: exam dates, which in many cases is not contemplated if there is availability by the student or is finds in difficult situations, semester averages that are mostly low grades due to lack of financial resources, the age of the student that has a lot to do with the lack of maturity and reasoning, since they are under 25 years old, serious anxiety, somatic problems, etc. Considering the Pearson correlation (r) is greater than 0, therefore it will correspond to a positive correlation with direct sense and if its closeness to 0 is positive but low.

Discussion and Conclusions

In Latin American countries, such as Mexico, they were well below the average established by the OECD. That the highest number of 15-year-old students have below the average academic performance in administrative mathematics, reading and economic science. (PISA Evaluation, 2015) Considering in this work it shows how COVID-19 affects constitutional norms, which surely helped to consider and identify the strategies used by each government for the foundations of virtual education and that they dedicate to their peoples, so that in this study it serves according to the analysis and results obtained.

Where new lines of research in neuroscience are proposed, neurotechnology education within cognitive development under neuro-leadership in PYMES and to continue carrying out a longitudinal study of previous generations and cohorts, both of the qualitative and quantitative model, thus allowing its shape variables to be really significant, with short cross-sectional studies, medium and long term, starting from their dependent and independent positions, according to the findings in competitiveness and external factors that are developing.

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Article

The choral song for the integral training of students in Nursing

El canto coral para la formación integral de los estudiantes en Enfermería

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Abstract

This research constitutes a response to the current need to contribute to the comprehensive training of students of the Higher Education Level of Short Cycle in Nursing with the use of choral singing, where the study of the theoretical referents of choral singing is outlined. in contribution to the comprehensive training of Nursing students. For its development, singing skills are necessary, technical-musical procedures and elements are used that favor the formation of human values and an aesthetic attitude, which are subsequently applied to other contexts, on the platform of ethics that this discipline requires. In addition, it allows to express the accumulated historical-social experience, based on feelings, emotions, moods and experiences. This is a way of realization that intertwines its implementation with technical-training elements. Research methods were used for the theoretical and methodological study with international and national authors in relation to the subject in question, which allowed the assumption of scientific positions, supported by systematized references, as a significant contribution that is reversed in practice, with social and social relevance. Scientific novelty, which makes it relevant within the Professional Training Model of the Short Cycle Higher Education Level in Nursing.

Choral singing, Comprehensive training, Nursin

Resumen

Esta investigación constituye una respuesta a la necesidad actual de contribuir a la formación integral de los estudiantes del Nivel de Educación Superior de Ciclo Corto en Enfermería con el empleo del canto coral, donde se traza como objetivo el estudio de los referentes teóricos, del canto coral en contribución a la formación integral de los estudiantes de Enfermería. Para su desarrollo es necesario habilidades para el canto, se emplean procedimientos y elementos técnico-musicales que favorecen la formación de valores humanos y una actitud estética, que se aplican posteriormente a otros contextos, sobre la plataforma de la ética que exige esta disciplina. Además, permite expresar la experiencia histórico-social acumulada, a partir de sentimientos, emociones, estados de ánimos y vivencias. Esta es una vía de realización que entrelaza su implementación con elementos técnicos-formativos. Se emplearon métodos de investigación para el estudio teórico y metodológico con autores internacionales y nacionales con relación al tema en cuestión, que permitió asumir posiciones científicas, sustentados en los referentes sistematizados, como un aporte significativo que se revierta en la práctica, con pertinencia social y novedad científica, que lo hace relevante dentro del Modelo de formación del profesional del Nivel de Educación Superior de Ciclo Corto en Enfermería.

Canto coral, Formación integral, Enfermería

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Introduction

Music is a universal artistic language, which has a great educational and communicative power; it has the possibility of being contagious and bringing people closer together, expanding their world of relationships. One of the most natural expressions of music is singing, which favors the development of aesthetic taste, knowledge, sensitivity, emotions, and feelings.

The human voice, as the first musical instrument and the most perfect, has its origin since ancient times. Throughout its evolution, man has communicated through various systems of codes. One of humanity's most successful and enduring legacies has been speech and singing. As language became richer and perfected, sung language emerged. Historically, singing is configured as a musical practice exercised and disseminated in different ethnicities and cultures.

Magical-religious ceremonies of the primitive communities, war contests of the ancient peoples, hunting rituals, propitiatory episodes of rain, among others; they were organized by a guide, priest, sorcerer or leader who received a response from the monodic collective (to one voice) or polyphonic (to several voices) and allowed to unify the collectivity, seed of choral singing, as an organized exercise of people who respond to a director.

Choral singing was present in the Middle Ages, in the Renaissance, in the Baroque and Classicism period (seventeenth and eighteenth centuries), during Romanticism (nineteenth century) and then twentieth century, faithful reflection of what was happening; it became a phenomenon of socialization, for the development of (solidarity and the formation of individuals. In the twenty-first century, creative and artistic potentialities are used and perfected as a process, through the instruction of contents of the theory and practice of choral singing.

Particularly in young people, choral singing is revealed as an attractive, enriching, and formative alternative that teaches to coexist, share, be disciplined and respect the other, by communicating experiential experiences; that is why it is significant in the movement of amateur artists, because it contributes positively to the integral formation of the personality, fundamentally at this stage of human development.

The choir is a representative institution within the universities of the world. Within the artistic-cultural universe of this educational level, it has been present, in one way or another, in the formative process. Choral singing is of special interest due to its characteristics, because it allows the integration and acquisition of values that make a group of students, ethically and aesthetically committed human beings, by incorporating the awareness of the individual and collective act. This is precisely one of the specific social commissions of this type of grouping, the teaching-research-extension relationship.

The University Extension has an essential role in the interrelation of the university with society, and in turn, integrates the presence of a formative process with the aim of promoting culture in the interuniversity and extra-university community. The National University Extension Program of the Ministry of Higher Education (MES), since March 2004, establishes the Guidelines for artistic-cultural activity in Cuban universities.

The University of Medical Sciences of Havana, with its networks of faculties, must demonstrate its relevance in this area, and be a promoter of universal values, mainly humanistic value, ethics, intercultural dialogue, mutual understanding and peace. As a substantive process, the University Extension, part of the link of the health-university-community system, coexisting the professional training of students within these scenarios.

This university, a trainer of health professionals, supports its projection towards culture intertwined with the content of human activity. The University Extension provides attention to the community, where it exerts a social impact on the training process.

One of the specialties that is studied at the University of Medical Sciences of Havana, is the Nursing of Higher Education Level of Short Cycle, where the specialty is carried out for 3 years, whose object of study is the care of the person, the family, the community and the environment.

In addition, it is responsible for diagnosing and treating in the area of its competences the individual and collective responses to the manifestations of the health-disease process.

It applies the logic of the nursing care process as a scientific method of the profession, considering actions of promotion, prevention, cure and rehabilitation to guarantee the physical, mental and social well-being of the human being. It also uses the teaching, administrative and research processes to obtain the quality and optimization of these services, in the search for excellence.

For the achievement of this purpose, choral singing can be a way for the integral formation of the student, and build the relationship of trust and cohesion with peers; singing in a group, consciously and unconsciously incorporates human values, appreciates harmony in order and discipline, both personal and collective, since to sing all together, you must go to the same rhythm, follow the guidelines of the director, tune and sing well, as well as know how to listen.

Based on the experience in choral singing, the student learns musical elements, through the technical-vocal exercises, the qualities of sound, vocal typology, the texts of the songs; coming to internalize knowledge about vocal education, to then be able to apply to other contexts and create from them. In addition, it develops the affective-volitional sphere and enriches interpersonal relationships with ethics, as an important aspect.

When consulting different authors, who address issues related to choral singing in professional training, important studies have been revealed, which are reflected in master's and doctoral theses, scientific articles at the national and international level such as: Estrada, A.T and Hernández, M (2001); Castle, J. A (2008); Guerra, D & Sánchez, P (2008); Rivas, M, Bastanzuri M.A, Olivera, M (2013); Alessandroni, N and Etcheverry, E (2013); Fernández, Y, Ramírez, C.Y and Briceño, J.M (2013); Duque, M.C (2015) and Narain, J (2016).

As a result of this exploratory stage, the fundamental shortcomings that led to the following scientific problem were reveralized: How does choral singing contribute to the integral formation of students of the Higher Education Level of Short Cycle in nursing? and the study of the theoretical-methodological references of choral singing in contribution to the integral formation of Nursing students is outlined as an objective.

Development

Singing is an activity of the human species, a natural means of expression common to all races. Its origins date back to prehistory, naturally to the fascination of the human being for rhythm, the emission of sounds to identify objects, phenomena and people. These very elementary sounds in their beginnings, would later form the inflections of language.

To express himself, primitive man performed singing as a means of communication, where he linked his activity to the rhythmic process, that is, by hitting one stone with another, by patting with joy for a good hunt or the arrival of rain, by drawing his living reality, as well as other ways of manifesting his primitive art or culture.

According to Hurtado, A. (2003), the emergence of music is related to singing, because man gave a characteristic stamp to his voice to stimulate the animals that accompanied him to his agricultural tasks or to help himself with rudimentary farming instruments. Thus appeared the songs of work, which exist and are used today in some countries. In periods such as the Paleolithic, Mesolithic and Neolithic, this type of singing was also used, and constitute the antecedents of what would later be called the choir.

According to Risquet,S, the word chorus comes from the Greek *ronda*. It also states that Greek choirs were formations of men, women, mixed, or men and boys who sang only monodic music (with one voice), usually in the theater (Risquet,S. 2012, p.8).

This author affirms that choral singing did not always mean a meeting of singers who made music collectively, because in Ancient Greece the term corresponded to the site intended for the dancers of tragedies and 11 comedies. Later the dance itself was called a choir and the number of singers who accompanied it also received that name (p.3).

The denomination of choir that is known today comes from the Middle Ages, a time when the Catholic Church stopped the fantasy of the creators of music conceived for collective singing, by establishing strong dogmas in this regard.

García, I (1984), expresses that there were several typologies of this practice such as: choirs accompanied by dances in mythical ceremonies, collective, liturgical and congregational songs, multitudinous songs where customs of ethnic groups and peoples are manifested, as well as spontaneous songs performed by an audience from the initial impulse motivated by the solo singer (p. 45). Choral singing was used to worship their deities (gods). Also, in other cultures such as the Hindu, it was used to tell legends, about the creation of the world.

In Ancient Egypt, only men were allowed to sing, because music was regarded as the immediate hierarchy to the pharaoh and the main musicians of the royal palace orchestra were like relatives of the king. In Mesopotamia, it was intimately associated with rites of worship to the stars and gods, also women's choirs were organized, when they received the men who returned victorious from the war. In the Old Testament, the existence of organized choirs in Israel is documented. They were scholastic choirs with instrumental accompaniment whose repertoire was transmitted from generation to generation.

In the Middle Ages, a time when the Catholic Church stopped the fantasy of the creators of music conceived for collective singing, by establishing strong dogmas in this regard; but even so in this period the liturgical chant, derived from the East, is formalized: the Ambrosian chant, the Hispanic chant and the Gregorian chant; the first motets appear, and a primitive polyphony: the organum and the discanto. It is also in the Middle Ages, when he creates a musical notation that reaches our days and that allows us to build the choral repertoire.

In the Renaissance, new forms of choral singing appear, which exchange melodic themes with profane singing: masses, motets and other religious compositions. At the end of the Renaissance, the first(oratorios) appear, although there were precursors of the genre and works, long before the 1600s. Finally, the period provides the Protestant Choir.

At the beginning of the tenth century, in the period known as ancient Ars, polyphony appeared, which made possible the development of vocal groupings.

In the fourteenth and fifteenth centuries, in the period known as Ars nova, children become part of the choirs, In the sixteenth century, there is an increase in the number of members and the voices are named according to their tessitura (cantus, altus, tenor and basses). In the seventeenth and eighteenth centuries, in the periods called Baroque and Classicism, the choirs continue to increase the number of members and the voices that designate their tessitura are named with the current terms (soprano, contralto, among others).

In the twentieth and twenty-first century, choral singing continues to have an impact of socialization and fulfills functions inherent in the life of a people, both as a way for the expression of community feelings, and as resources of religious, political and even military utility. Agroup of singers who gather to perform a musical work. (Muñoz, A, M. 2008, p.122). Whereas, for the Colombian researcher Gallardo J. (2011), a choir is the set of people who simultaneously sing a piece of music (p. 69). Both definitions are similar and respond to the collective utility of a group of people.

The presence of the choir in Cuba dates from the early sixteenth century, however, there are very few references that have reached the present day. With the arrival in Cuba of the colonizers, with the Spanish and African migrations, they were forming a new culture with manifestations and practices of both roots. However, in the seventeenth century, musical practice acquired some importance, including choral, but always linked to the Cathedral of Santiago de Cuba and the Parroquial Mayor of Havana. In the eighteenth century, Cuban musical historiography always reserved a privileged space for Esteban Salas, who was the first important composer of choral music.

Throughout the nineteenth century and part of the following century, religious choral music was written, which begins to take boom within it, Italian opera and choral activity in Cuba. The program for the development of choral music in Cuba, expresses that choral singing is based on musical roots. From the third and fourth decade of the twentieth century, and in which the illustrious composer Alejandro García Caturla appears, pioneer in aspects of Cuban music and initiator of choral song.

In 1919, the choir director and pedagogue María Muñoz de Quevedo arrived in Cuba from Spain. Graduated from the Santa Cecilia Conservatory of Cádiz, born in La Coruña in 1894, she received classes from the teacher Manuel de Falla. Since his arrival in Cuba, he realized the need to create new cultural institutions on the island that promoted national and universal music, so he developed this work. Itsgreatest achievement was the foundation in 1931, of the Choral Society of Havana, a group that had its debut on November 25 of the same year in the Teatro Principal de la Comedia.

After the disappearance of the Havana Choir, existing groups such as the National Choir, the University Choir of the East and the Philharmonic Choir, choral singing continued to spread in Cuba. With the revolutionary triumph, the rise of choirs as a fundamental element of work with the masses increased, for the rescue of forms and values of our identity. At the end of the twentieth century, work with amateurs was resumed, mainly the creation of children's songs. This work was followed by other musicians in the twenty-first century, throughout the country with excellent results.

According to EcuRed (2019), choral singing is an artistic manifestation of a collective nature, through which it is possible to develop the vocal technique (of singing) in the individual, its organization and distribution in a choir, as well as the assembly of different national and international works that are interpreted. It is done in a work in unison or by well-crafted strings (p. 2). Ingeneral, the artistic activity of the choir itself, its repertoire, assembly of voices and other musical elements, depends on a musician in charge of preparing and coordinating the different voices for the interpretation of the musical work, that musician, is the Director.

According to the composer, pedagogue and researcher Kodály, Z (1967), the best way to reach the musical aptitudes that we all possess is through the instrument most accessible to each of us, the human voice (In: Ponsoda, A. 2005, p. 71). Within the process of musicalization, the work of choral singing in the choirs is important. According to Gallardo (2011) by their disposition and participants, the choirs can be classified as follows: From white voices or children's choir, Male or female, Mixed male and female voices (p.143).

The musicality of the aspirant is an important factor for his admission into the choral group, which means being tuned and rhythmic. The musical ear as previously proposed, is closely linked to the development of the musical culture of each individual and is the starting point of any activity in this sphere of art.

In many cases, only the extent of the voice is considered and not its color. It is possible that the aspirant can reach high-pitched sounds, but without the characteristic timbre of tenor or soprano. For this condition, it should not be located in these strings, because then the quality of the choral sound that is intended to be achieved is threatened and the voice could be damaged, it is the selection of the repertoire as the basis of the content of the choral activity, since it carries the message that is transmitted to the viewer. Its planning depends on its characteristics and objectives; its raison d'être is closely linked to the organization of its life.

The repertoire must satisfy demands of a pedagogical-musical, technical, aesthetic, dramaturgical and above all social nature; this wide universe demands from the Director a continuous planning and a deep study of works that allows him to make a successful selection. He has the responsibility of ensuring the musical training of his singers, so that the works he selects must have a pedagogical character that forms in them aesthetic, ethical and moral values.

The first works should be easy, where the singers can experience the success of their work, with works that sound quickly, with a clear melody and not very long phrases for the breath toreach. For this stage, songs where the voices are melodic and are easily captured, without chromaticism, surprise modulations and rhythmic, metric or harmonic complications are appropriate; In addition, the work situation of the choir will be taken into account so that the voices are not damaged by an overload in the acute or low register. The text must be in correspondence with the intellectual level and age of the singers, as it must capture the meaning of the message to achieve an interpretation that convinces him and the public.

That is why, a choir that begins, integrated by singers who participate for the first time in the choral activity and have no training, it is recommended to start the work with songs in unison and accompaniment.

Afterwards, they can perform canons of two or more parts, in preparation for the study of works in several voices. With the canon, the training of the harmonic ear and auditory independence begins.

This methodological order is not invariable, since the characteristics of the choir (vocal quality, musical quality, experience) indicate the strategy that must be followed in relation to the repertoire. The correct methodology of choral singing depends essentially on the ability of the Conductor to guide its members towards a homogeneous work, aimed at a truly achievable goal. In this way, it contributes not only to acquiring vocal faculties, but to benefiting the individual human values that serve him for his personal integrity.

In this sense, the occupational profile of the Senior Nurse of Short Cycle, declares that, with acquired skills, he will perform his care functions related to the attention to people who are tributaries of specific care in the Maternal and Child, Clinical Surgical and Intensive care and emerging areas. The specific nursing care will be manifested in the areas: Maternal and Child, Clinical Surgical and Intensive and Emerging Care according to the profile of the graduate. (MINSAP. 2018, p. 5)

Humanistic training is a mainstay in the career. Nursing stands out for its prominence for the impact of education at work for the development of professional and citizen morality and the subjects' physical education, English and psychology are added.

The Faculties of Nursing, as an educational and cultural institution, assume a marked responsibility with the formation of their human resources in society. Considering that the nursing student must put into practice, the exercise of their profession within the training process for their future performance, all this, with the acquisition of general and specific professional skills. It is then a question of achieving an integration between the positive qualities for a professional, which corresponds to the social commission.

Integral formation requires the harmonious development of all the processes that make up the educational institution, as well as the contents of the study plan, through a system of actions, aimed at the different spheres of personality. To achieve this and meet the demands of today's Cuban society, universities have the responsibility to graduate professionals capable of solving the complex problems they face. For the achievement of the integral formation of the students, it is necessary to incorporate contents related to different artistic manifestations, and choral singing as a form of collective musical expression, can contribute to develop knowledge, skills, habits, personal and social aspects in the students, which help, in the acquisition of a solid basic competence, manifested in the demands of the Model of the professional in nursing.

The pianist of Shola Cantorum from Venezuela, (Raga, A.M (2005) expressed: "Choral singing is therapeutic, it facilitates the identification of people, it allows them to accept themselves as they are by the magic of the union of many diverse people for a common good. Choral singing is a school of life." (In: Ecured. 2019, p. 3). This approach is assumed by the author of the research, since in nursing students, choral singing stimulates, has a mobilizing effect, allows the knowledge of socio-cultural roots and constitutes an ideal tool in the restoration of human balance, so that it is applicable for life; It is an accurate representation to use useful and creatively time, channel concerns and simultaneously realizes in the individual an ethical and aesthetic elevation, as well as the possibility of expressing through singing, feelings, emotions and perceptions of the world.

In addition to developing collectivism, responsibility, humanism, solidarity, patriotism, anti-imperialism, respect, honesty, honesty, modesty, simplicity, humility, self-denial, selflessness, the sense of equity, love of study and work, among other values that perfect the behavior of the individual and enhance the mode of action in the personality. Proof of this vision is expressed by the pedagogue Ponsoda, A L (2005) who proposed, that choral singing is very important for the pleasure that derives from the effort to achieve good collective music, providing disciplined men and women, and noble character, its value in this aspect is incalculable (p. 79).

The above allows us to affirm that choral singing in the training of students in nursing, can provide the following benefits:

It helps build self-confidence, the level of personal well-being and cohesion with peers. It contributes to relate the techniques of singing with the contents of subjects of the career, can be applied in pre-professional practice and give an interdisciplinary character to its training. It favors the appropriation of communicative skills. Cooperation between the people who make up the choir. It consciously and unconsciously promotes values such as: affection for harmony, order, mutual respect, discipline both personal and collective responsibility, as well as companionship and solidarity.

You learn to respond to patterns such as; the rhythm, the guidelines of the Director, tune well and listen to the one next to you. This aspect guarantees for his profession, respect for his superiors, working under a balanced and equitable pace in line with his colleagues, as well as paying good auditory attention to the command voice, which, in this case, it is the doctor who indicates what he should do.

It educates the control of breathing, the regulation of relaxation or tension of the vocal cords, an adequate resonance, the emission and the correct pronunciation of sounds. It produces an interaction between different lived experiences, spending time together creates an enriching and natural relationship in the improvement of the human condition within society. Improves concentration and memory. Develops aesthetic values. It generates cognitive operations: attention, concentration, analysis and interpretation, which allows you to know and manage your body in the face of an immediate response.

García, I (2002), identified five aspects of socio-psychological well-being related to the contributions of choral singing for people, which are fully assumed in this research, they are the following:

Positive relationships: The choir facilitates interpersonal relationships. Mastery of the environment: choosing and identifying with a choral group satisfies communication, expression and/or enrichment needs. Purpose in life: The choir exists from collective goals.

Personal growth: Choirs enhance personal enrichment by creating skills related to both artistic and extra-artistic practices. Integration: they integrate the singer to the micro society that creates each group and to the general society that serves as a real or ideal reference as environments of musical formation and structures of dynamization of the sociocultural environment (p. 64).

The nurse has to perform, for choral singing, relaxation, breathing and vocalization exercises, know their vocal possibilities, be aware of the physiological processes in singing (resonance, breathing, emission and support of sound), try to emit an even and balanced sound since they are singing collectively, in the search for safety and expressiveness when singing, taking into account the knowledge of the proper use and care of the voice and the organs involved. All this allows you to have a clear, fluid, coherent and efficient communication.

In the attitudinal and the relationship with others, choral singing offers nursing students resources to express themselves in a socially acceptable way, allows them to assume responses in front of the group, which helps them to issue criteria and react to an immediate response, increases social interaction and verbal and non-verbal communication, accesses cooperation and challenge, provides training and recreation of the general therapeutic environment, where you must use therapeutic communication, which aims to help the patient, family member or community, and in turn to work together to solve their problems.

In addition, understanding and considering, in addition to their knowledge, a clear language that attracts the patient to remain calm in the specific situation they encounter, provides bedside care and direct care to patients in the hospital and consultations with doctors and other members of the health care team, on the most suitable care plan. On the cognitive-affective plane are assumed in this research, the psychological criteria and presuppositions of Vygotsky, LS when expressed, thought and language turn out to be the key to understanding the nature of human consciousness (1982, p.361). In addition, the student experiences his self-esteem, byvarying his skills.

As for the affective, it allows you to act more confident in yourself, be more cheerful, independent, accept challenges and by recognizing your personal value, you can be more tolerant of your limitations; Consequently, this student is able to manifest human values such as: thinking about others, the capacity for empathy, understanding and tolerance, cultivating patience, cooperative sense, solidarity, love for music, sensitivity, discovering and experiencing the cause-effect relationship of effort, organization at work, enjoying the result, after an effort or experiencing the aesthetic character of choral singing.

Another important element is social self-esteem. The student of Nursing, when practicing choral singing, feels that he develops his abilities, which allows him to take advantage of his potentialities more depending on the subjects of his career, he is more persevering before some projected result, he strives and assumes positive expectations, which serve him for his professional performance.

For all the above, it is considered that choral singing can contribute to ethics, that it feels like a competent individual, capable of fulfilling its commitments, assumes responsibilities, respects human values and is perceived with more virtues than defects. Individual and collective stimulation plays a fundamental role in the process of applying choral singing in the integral formation of students in Nursing.

The Faculty of Nursing is one of the ideal spaces for the use in students of tools and resources to stimulate their creativity and artistic development, which allows them to promote their experience, expressive sensitivity and at the same time, expand their culture.

To fulfill these purposes, the selection and adaptation of the works to be used in choral singing is important, in addition to what is related to the interpretation that includes tuning, rhythm, vocal technique, nuance, diction, text, intonation and sound quality; encourage participation in cultural, political and festival activities, both inside and outside the center. All this also contributes to the integral formation of the student.

Therefore, despite the differences and complexities in the contents of choral singing and the study of nursing, they complement each other, and their link is positive and advantageous, enabling students to be responsible human beings in the mission and projected towards the future, for the benefit and fulfillment of the demands required by a public health professional in Cuba.

Conclusions

The assessment of the theoretical references of Choral Singing, had as a starting point in a general way, the historical background and the benefits it provides in the integral formation of the students of the Level of Education of Short Cycle in Nursing. Theoretical-methodological considerations of Choral Singing were deployed for the usefulness and development of vocal and educational skills, which strengthens in a positive way, not only musical skills, but the personal qualities of students in Nursing. The analysis of the referential theoretical framework allowed an approach to the reality and timeliness of the subject, its particularities in Cuba and in the context of comprehensive training in Nursing, which made possible conceptual positions established by Sánchez P (2003) and Col (2006), by constituting the premises in the benefit and importance of Choral Singing for the integral formation of students, timely aspect due to its relevance in this training scenario.

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Evaluation of the use of library resources and services in Higher Education

Evaluación del uso de los recursos y servicios bibliotecarios en Educación Superior

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Abstract

In order to evaluate the use of library resources and services by the students of the Technological Institute of Sonora and determine their level of general satisfaction with library services, a quantitative investigation was carried out, with a non-experimental design, transversal type and with a descriptive scope. The population was made up of undergraduate (N = 17,532), master's (N = 414) and doctorate (N = 72) students, a total of 18,818 students enrolled in August 2019 in the Obregón, Navojoa and Guaymas Academic Units of said university. The instrument used was designed for this perception assessment exercise, which consists of 25 multiple-choice and 1 open-ended questions. A total of 1,454 valid responses were obtained that averaged a satisfaction level of 4.00 points, which means that users are "satisfied" with the services received in the evaluated cycle. It is recommended that these numerical indicators be used to increase satisfaction in the areas that were well evaluated, but, on the other hand, corrective actions should be taken in those services whose mean has been the lowest.

University libraries, Evaluation, Quality

Resumen

Con el objetivo de evaluar el uso de los recursos y servicios bibliotecarios por parte de los estudiantes del Instituto Tecnológico de Sonora y determinar su nivel de satisfacción general con los servicios bibliotecarios, se llevó a cabo una investigación cuantitativa, con un diseño no experimental, de tipo transversal y con un alcance descriptivo. La población se conformó por estudiantes de pregrado (N=17,532), maestría (N=414) y doctorado (N=72) siendo un total de 18,818 estudiantes inscritos en agosto de 2019 en las Unidades Académicas Obregón, Navojoa y Guaymas de dicha universidad. El instrumento utilizado fue realizado para este ejercicio de evaluación de la percepción, el cual consta de 25 preguntas de opción múltiple y 1 de respuesta abierta. Se obtuvo un total de 1,454 respuestas válidas que promediaron un nivel de satisfacción de 4.00 puntos, lo cual significa que los usarios se encuentran "satisfechos" con los servicios recibidos en el ciclo evaluado. Se recomienda que estos indicadores numéricos sean usados para el aumento de la satisfacción en las áreas que salieron bien evaluados, pero, por otro lado, deben realizarse acciones correctivas en aquellos servicios cuya media haya sido la más baja.

Bibliotecas universitarias, Evaluación, Calidad

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Introduction

The purpose of university libraries is to support the academic programs of a university by providing relevant information to respond to the information demands of users, that is, students and academic staff. The 21st century poses radical challenges to university libraries, as their functions and services are influenced by issues that affect the way services are provided in a library on a regular basis (Opoku, 2011).

These challenges require that the evaluation of university library services continue to be valuable as it represents the surest way to ensure that information is obtained to determine whether the expected objectives are being met and that the necessary adjustments are made for the effective provision of library services. information services. In line with this, the purpose of evaluation (of a library), according to Knighty (cited in Emokiniovo, 2012) is to collect information on how its objectives are being achieved with the intention of improving the provision of services.

Background

Academic libraries are an integral part of an institution of higher education or a research center (Reitz, 2004), and are managed to meet the information and research needs of its students, faculty, and administrative staff. The university library is defined as "a library or a library system established, managed and funded by a university to meet the information, research and curriculum needs of its students, faculty and staff" (Reitz, 2004).

Aina (2005) affirms that the purpose of a university library is to support the objectives of a university, specifically the areas of learning, teaching, research and service. Ekere (2006) also shares this point of view by stating that the main purpose of the university library is to support the objectives of the university by promoting teaching, learning and research. Thus, the university library is intended to serve undergraduate (undergraduate), graduate students, professors and other members of the university community.

As a result, libraries in higher education institutions are often considered the most important resource center of an academic institution. Roseroka (2004) considers that university libraries derive their mission from the university; that vision, mission and strategies that are selected by universities as a guide to fulfill the central functions of teaching, learning, research and the provision of community services. Okunu, Akalumhe and Monu (2011) conclude that the university library is the heart of the university.

However, university education in Mexico faces a critical challenge in meeting the new demands of the 21st century, with ever-increasing population growth, inadequate library facilities, resources, and insufficient funding (CONPAB, 2015). Opoku (2011) also perceived this when he stated that: "the academic library service is a complex and dynamic collaboration between the library staff and the user. Many problems affect the way library services are delivered on a regular basis.

The increasing influx of students into the university, together with the advanced development of information and communication technologies (ICT) every day, has created a new type of library users demanding more efficient library services. If checks and balances are put in place, and the components of the library are managed efficiently and effectively, the library is likely to meet the expectations of users in the provision of its services.

Therefore, it is necessary for academic libraries to promote and provide quality information services that meet the needs of students and teachers and motivate them to make more use of library services. The library needs to continually optimize the interactions of all its components to ensure that the changing goals of the library are met and to improve both user interaction and relationship over time "(p. 198).

Therefore, considering these challenges, the evaluation of the use of libraries by students and staff in the universities of Mexico is an important exercise that must be carried out frequently, systematically and correctly planned, because some factors influence the how library services are delivered and in the use of library students and staff.

Emokiniovo and Ogunrobi (2012) mention that evaluation (of a library) is the process by which information about its perceived use by students is systematically collected and analyzed through the use of evidence (tests), numerical values for evidence (measurement) and the use of the results to make decisions (evaluation). The purpose of the evaluation is to collect information on how the library is achieving its objectives with a view to improving the provision of its essential services (Knightyas, cited by Emokiniov and Ogunrobi, 2012).

Objective

The main objective of this study is to evaluate the use of library resources and services by undergraduate and graduate students of the Technological Institute of Sonora (ITSON) in its 4 academic units that comprise the library system with 5 buildings in Ciudad Obregón (Náinari and Centro Libraries), Guaymas, Empalme, and Navojoa:

- Determine the general level of user satisfaction with library services.
- Determine the user's particular level of satisfaction with library services
- Determine if there is a difference in satisfaction between libraries.

Research questions

The following research questions were posed to guide this study:

1. To what extent are students satisfied with the services and facilities provided?
2. To what extent are students satisfied with the services and facilities provided in a particular way?
3. Is there a difference in the level of satisfaction that depends on the particular service of any of the 5 libraries?

Type of study

The present investigation is a study of a quantitative methodological nature, with a non-experimental design, of a cross-sectional (or transectional) type and with a descriptive scope. It is quantitative because magnitudes or occurrences of the phenomenon were estimated; not experimental because variables were not deliberately manipulated.

Cross-sectional because the data were collected in a single moment; descriptive because its objective was to specify the nature of a demographic segment, without focusing on the reasons why a certain phenomenon occurs, that is, the research topic is described, without covering why it occurs (Gall et al., 2007; Hernández-Sampieri and Mendoza-Torres, 2018; Kerlinger and Lee, 2002).

Participants

The population is made up of undergraduate (N = 17,532), master's (N = 414) and doctorate (N = 72) students that make up a total of 18,818 students enrolled in August 2019 in the Obregón, Navojoa and Guaymas Academic Units of the Institute Tecnológico de Sonora, in the state of Sonora, Mexico (see Table 1).

Unit	Bachelor's degree	master's degree	Doctorate	Total
Obregon	12,502	330	72	12,904
Navojoa	2,566	49	0	2,615
Guaymas - Empalme	2,464	35	0	2,499
Total	17,532	414	72	18,018

Table 1 Total enrollment in the August 2019 cycle, by Academic Unit and by academic level.
Source: Self Made

Sample

The type of sample that was used was non-probabilistic or directed by quotas, the sample size being 377 students, even so the instrument was distributed to the total population and the valid responses obtained were 1,457, which represents 8%. of the total enrollment of the university in the aforementioned school year (see Figure 1).
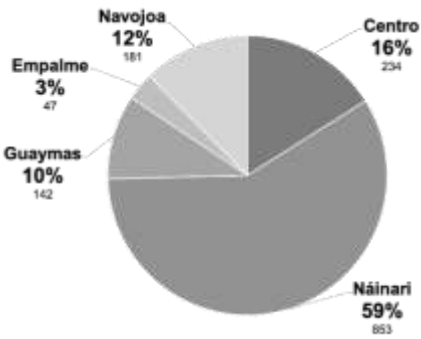

Figure 1 Total participants per unit and affiliation campus
Source: Self Made

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Instruments

The instrument used was carried out for this perception assessment exercise, which consists of 25 multiple-choice questions and 1 open-ended question:

−   Demographic or identification questions: 2.
−   Reasons for attending the library: 1.
−   Evaluation of satisfaction with the library: 20.
−   Library qualification summary: 1.
−   ITSON qualification summary: 1.
−   Open question for additional comments: 1.

The survey was distributed electronically using the email of all students enrolled at the time, to whom the invitation to participate was sent, providing their response no later than December 18, 2019 and providing the appropriate information related to confidential treatment. of your personal data.

Analysis of data

For the data analysis, we first proceeded to the data capture and analysis in the SPSS statistical package; A description and summary of the variables was made using descriptive statistics (frequency tables, use of measures of central tendency and graphs).

Results

Once the information collection instrument was closed to student participation (on December 18, 2019), the responses deposited there were downloaded and prepared to be transferred to the SPSS statistical package for processing.

The student body was asked about the main reasons why they attend the library, knowing in advance that they not only do it for the use of the physical collection, the most common answer (fashion) was to attend to study, followed by the performing teamwork and thirdly, performing work individually (see Figure 2).
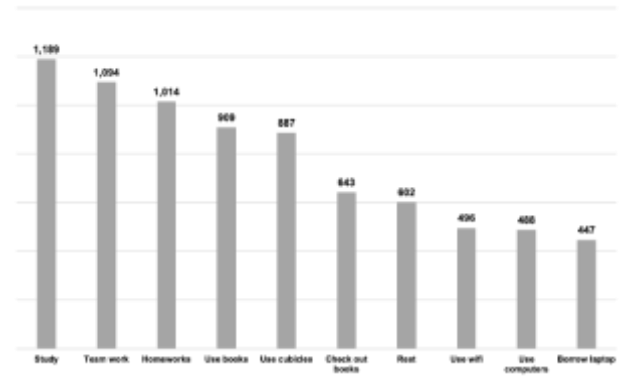
Figure 2 Reasons for attending the library.
Source: Self Made

The next 20 questions were related to the level of satisfaction they present with respect to aspects that library staff consider crucial for their evaluation for immediate continuous improvement. The response scale that was used in all of them is the following, so the means will be expressed in a minimum of 1 point and a maximum of 5 points:

−   Very dissatisfied (value = 1)
−   Dissatisfied (value = 2)
−   Undecided (value = 3)
−   Satisfied (value = 4)
−   Very satisfied (value = 5)

The question related to the hours refers to the opening and closing hours of the buildings, where the average satisfaction was 4.17 points, which according to the scale used is equivalent to "satisfied" (see Figure 3).
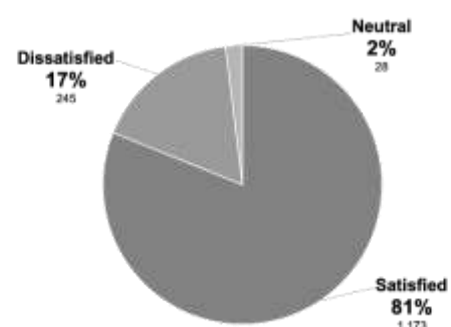
Figure 3 Level of satisfaction with the schedule
Source: Self Made

Regarding the attention received by the staff of the various areas of the library (from the headquarters, coordination, reference, circulation), the students showed a level of satisfaction "satisfied" with an average of 4.04 points (see Figure 4).
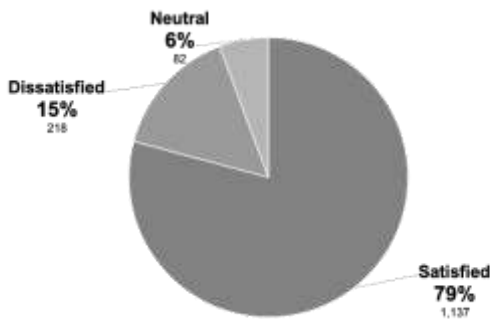
Figure 4 Level of satisfaction with the staff working in the library
Source: Self Made

The search catalog is the web tool that is made available to students as a browser, whose objective is to find the physical and digital heritage that is part of the library system. The average that the students gave to said system is 3.93 points, which is equivalent to satisfied (see Figure 5).
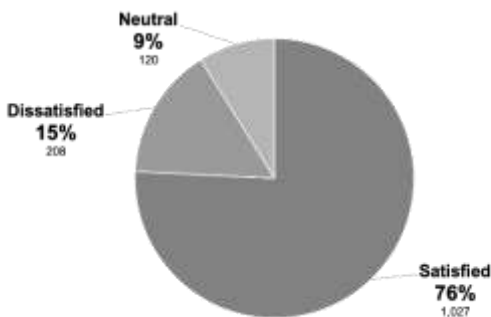

Figure 5 Level of satisfaction with the search catalog
Source: Self Made

The availability of basic bibliography and reference books is one of the main functions of a library, so the next question measures your level of satisfaction with this element, as can be seen in Figure 6, the mean satisfaction was 3.95 points which means they are satisfied.
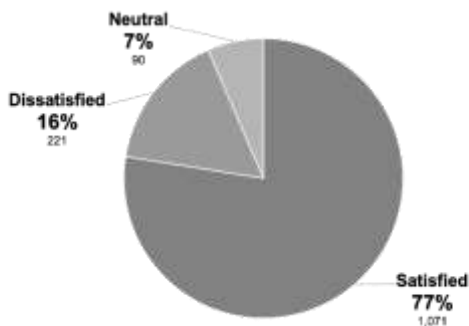
Figure 6 Level of satisfaction with the availability of books
Source: Self Made

Ease of finding books refers to the collection being easy to locate on the shelf, not being placed in the wrong place, and signage supporting the search. The mean obtained was 3.83 points (satisfied). See Figure 7.
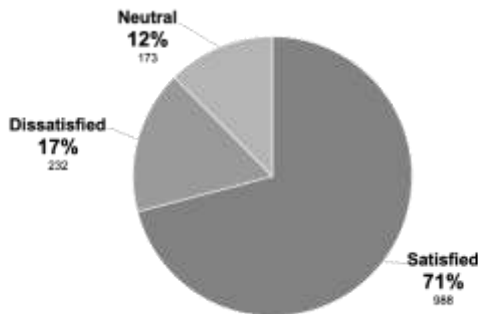
Figure 7 Level of satisfaction with the ease of finding books
Source: Self Made

The deadlines for students to return to the library all that collection that they have requested for their use at home, in addition to the amount of collection that they can take home, had lacked updating and consultation with the end user, so it was asked their opinion in this regard, obtaining an average of 3.96 points for the deadline to return the books to the library, and 4.00 for the number of books allowed to take home (satisfied). See Figures 8 and 9.
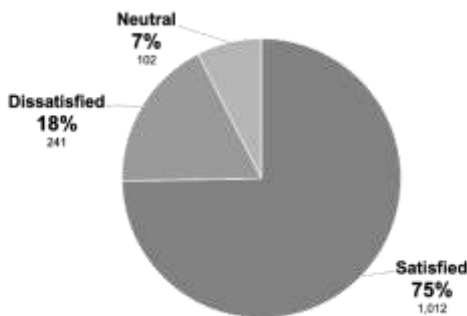
Figure 8 Level of satisfaction with the deadline for returning books
Source: Self Made
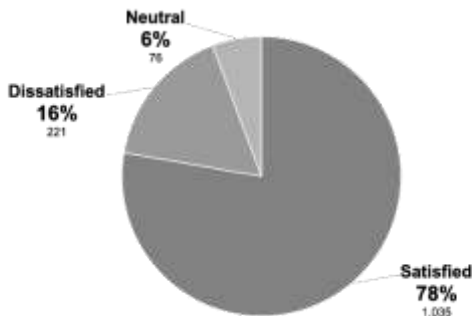
Figure 9 Level of satisfaction with the number of books allowed at home
Source: Self Made

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The physical cleaning of the building (general), but specifically of the bathrooms, was addressed in the following two questions (see Figures 10 and 11), in which an average of 4.27 points was obtained in general cleaning and 4.05 points in the cleanliness of the bathrooms, both satisfied.
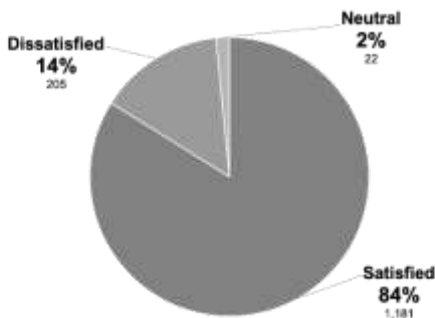
The average obtained was 4.10 points (satisfied). See Figure 13.

Figure 13 Level of satisfaction with the cubicles
Source: Self Made

Figure 10 Level of satisfaction with the cleanliness of the building
Source: Self Made

The technology services evaluated refer to the loan of laptops in the rooms, where an average of 3.78 points was obtained; laptops for internal use had an average of 3.94 points; wireless internet was rated with an average of 3.91 points; and the loan renewal web system with an average of 3.98 points. The 4 services were found to be "satisfied". See Figures 14, 15, 16 and 17.
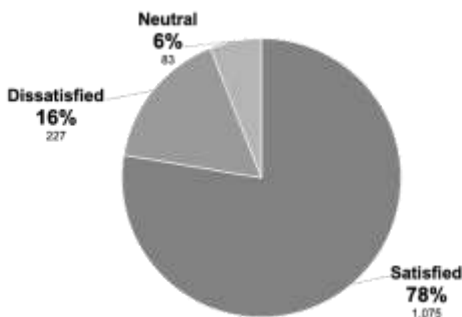
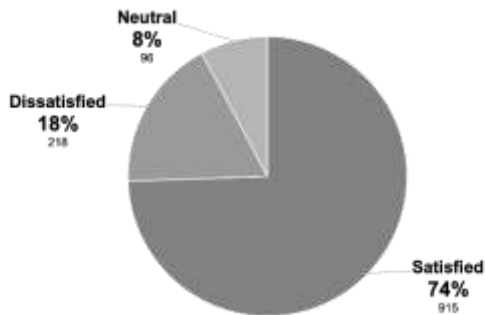**Figure 11** Level of satisfaction with the bathrooms
Source: Self Made

The next question addressed their satisfaction with the furniture, specifically, tables, chairs and armchairs, for which an average of 4.19 points was obtained (satisfied). See Figure 12.
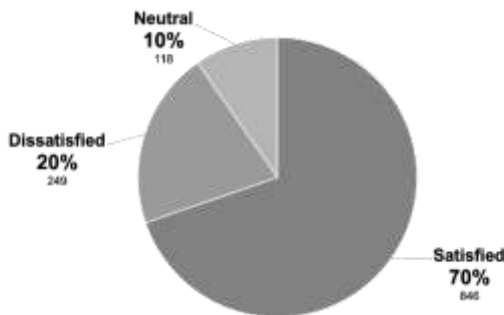
Figure 14 Level of satisfaction with the loaner laptops in the room
Source: Self Made

Figure 12 Level of satisfaction with the furniture.
Source: Self Made

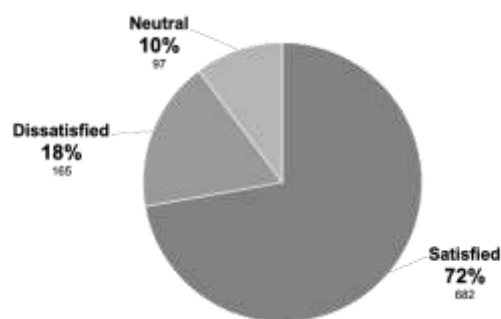**Figure 15** Level of satisfaction with desktop computers (computer room)
Source: Self Made

The cubicle loan is a service that is provided for the realization of teamwork and where conversations can be carried out with a moderate voice.
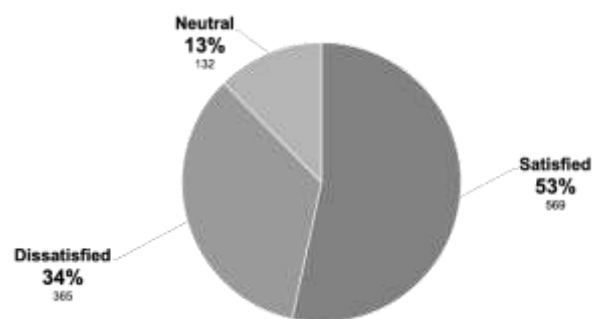
Figure 16 Satisfaction level with wireless internet
Source: Self Made

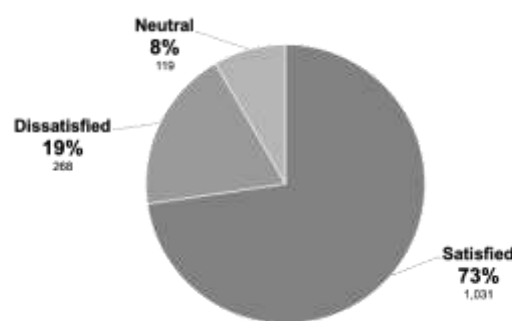**Figure 17** Level of satisfaction with the web renewal of home loans
Source: Self Made

The reference service was evaluated through the face-to-face courses that were offered during the August-December 2019 cycle in the different libraries, which received an average of 3.86 points, which is equivalent to "satisfied" on the scale used (see Figure 18).

Figure 18 Level of satisfaction with the training courses of the reference service
Source: Self Made

The physical infrastructure was evaluated through the level of satisfaction with various aspects; the first of them was air conditioning (Figure 19) in which an average of 4.21 points was obtained; the noise level (Figure 20) with an average of 3.88 points; and the internal lighting of buildings (Figure 21) with an average of 4.20 points. The 3 indicators resulted in a level of "satisfied".

Figure 19 Satisfaction level with the air conditioning
Source: Self Made

Figure 20 Level of satisfaction with noise.
Source: Self Made
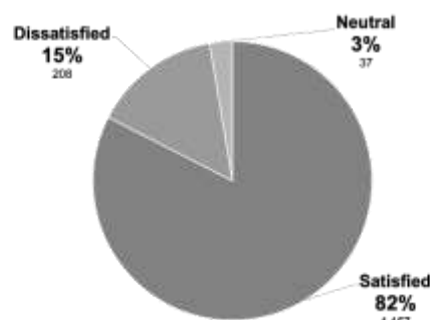
Figure 21 Level of satisfaction with the internal lighting of the building
Source: Self Made

Finally, the service of the copy center was evaluated, which is available in all libraries except the Navojoa Unit. This was the lowest indicator in the survey, as it obtained an average of 3.32 points, which is equivalent to the "undecided" level of satisfaction (see Figure 22).
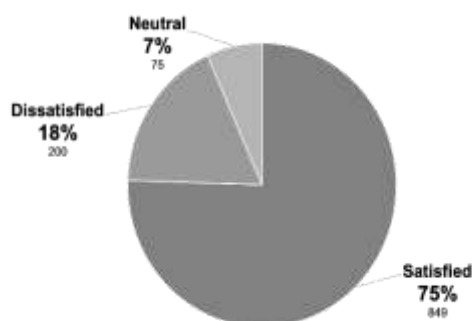

Figure 22 Level of satisfaction with the copy center
Source: Self Made

As a summary, Table 2 is presented, where you can see the average obtained in each of the 20 questions of the evaluation questionnaire, being able to observe that the 5 best evaluated elements were cleanliness (M = 4.27), air conditioning (M = 4.21), lighting (M = 4.20), furniture (M = 4.19) and opening and closing hours (M = 4.17).

The 5 services with the lowest average in the evaluation were the copy center (M = 3.32), the internal loan of laptops (M = 3.78), the ease of finding books (M = 3.83), the courses that were impart (M = 3.86) and noise level (M = 3.88).

Aspect to evaluate	Average
Cleaning	4.27
Air conditioning	4.21
illumination	4.20
Furniture (tables, armchairs, chairs)	4.19
Schedule	4.17
Cubicles	4.10
Toilets	4.05
Library staff	4.04
Number of books allowed at home	4.00
Online loan renewal	3.98
Deadline to return borrowed books at home	3.96
Book availability	3.95
Desktop computers	3.94
Collection search catalog	3.93
Wireless Internet	3.91
Noise level	3.88
Courses taught	3.86
Ease of finding the books	3.83
Laptops	3.78
Copy center	3.32

Table 2 Average for each of the evaluation items.
Source: Self Made

Finally, we proceeded to verify whether the ratings obtained by each of the libraries independently were statistically different between them. The averages for each of the facilities and their services can be seen in Table 3, where it can also be seen that the overall rating was 4.00 points, which is equivalent to a satisfaction level of "satisfied".

Library	n	Average
Central	234	4.03
Nainari	850	4.00
Navojoa	181	3.90
Guaymas	142	4.05
Empalme	47	4.01
Average	1,454	4.00

Table 3 Participants by library and general average awarded in the evaluation
Source: Self Made

A one-factor analysis of variance (ANOVA) indicated that there is no significant influence of the variable "ascription library" (independent or qualitative variable) on the variable "general average satisfaction", (dependent or quantitative variable) with values of $F_{(4, 1449)} = 0.422$, $p = .793$

The foregoing means that, although a difference of tenths or hundredths could be perceived in the marks given by students to the library that they frequent the most, these means do not differ between them statistically speaking; the level of satisfaction is not influenced or altered by which library is being evaluated, the one that the student frequents the most, in such a way that even so it could be said that the Navojoa Unit Library obtained the lowest average, this difference is not statistically significant.

Conclusions and recommendations

The educational, learning and quality evaluation are areas where an educator can perform thanks to the training received throughout their preparation, so evaluating the satisfaction of a service that is considered of vital importance for the academic life of An institution of higher education, such as library services, represents an opportunity to put into practice various knowledge and skills that will result in continuous improvement and for the benefit of the academic staff and the students that depend on it.

The first objective set out in this study was to determine the general level of user satisfaction with library services. This objective was met by obtaining a total of 1,457 responses from a total of 18,018 undergraduate, master's and doctoral students, which is equivalent to 8% of the population. It was their responses that allowed obtaining a precise numerical reading of 4.00 points on a scale from 1 to 5, where it can be stated that users are satisfied with the services received by the ITSON library system.

The second objective was to determine the user's level of particular satisfaction with library services. This objective was achieved by being able to show the average scores obtained in each of the evaluated items, which allows the user of this report to be able to make decisions based on objective numerical evidence and not only on subjective impressions or assumptions.

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The third objective established was to determine if there is a difference in satisfaction between libraries. It was concluded that the rating given to libraries in particular does not depend on the student's affiliation, which was evidenced using the ANOVA Analysis of Variance statistical test.

To conclude, and in light of the findings, the following recommendations can be made to the library system staff: the Library administration should embark on activities that improve user satisfaction because if users are satisfied, their patronage will be assured and the economic investment made by the university will be reflected in said indicator.

One of the principles of continuous improvement indicates that evaluations should lead to improvement projects in the short term, so these numerical indicators should be used to increase satisfaction in areas that came out with a high average, but On the other hand, corrective actions must be carried out in those services whose average was the lowest on the list.

Finally, it is recommended to make these results known to the entire academic and administrative community, since they reflect the work of some, the investment of others, and the use of all. Requesting participation in a study must entail the obligation to communicate the results, their socialization, and the express commitment to improvement.

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Proposal for a solution to increase the use of the digital heritage at the Universidad Tecnológica del Estado de Zacatecas

Propuesta de solución para incrementar el uso del acervo digital en la Universidad Tecnológica del Estado de Zacatecas

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Abstract

With this work it is intended to offer a solution proposal to the problem of the little and/or null use of digital collections in the Technological University of the State of Zacatecas. The construction of the prototype of the digital library aims to have an electronic means for consulting bibliography, in addition to disseminating the use of the computer platform for online resources. This portal facilitates access to the digital library of the ECEST (Common Space for Higher Technological Education), thereby allowing the 243 workers and 2,138 students of Guadalupe y Pinos to have access to this platform. to a greater collection of popular science magazines and peer-reviewed articles, among other digital resources, including their own.

Digital library, Common Space for Higher Technological Education (ECEST), National Consortium of Scientific and Technological Information Resources (CONRICYT), Portal, bibliographic collection

Resumen

El presente trabajo tiene como objetivo ofrecer una propuesta de solución al problema del escaso y/o nulo aprovechamiento de los acervos digitales en la Universidad Tecnológica del Estado de Zacatecas. La construcción del prototipo de biblioteca digital para la Universidad Tecnológica del Estado de Zacatecas, tiene como objetivo proporcionar un medio digital de consulta bibliográfica y difundir el uso de la plataforma informática de recursos en línea. Este sitio permite el acceso a la biblioteca digital ecest (Espacio común de educación superior tecnológica), permitiendo así que 2381 trabajadores y estudiantes de Guadalupe y Pinos, tengan acceso a esta plataforma. Se pretende que posteriormente puedan tener acceso a un mayor acervo de revistas científicas y artículos arbitrados, esto entre otros recursos digitales.

Biblioteca digital, Espacio Común de Tecnología de la Educación Superior (ECEST) , Consorcio Nacional de Recursos de Información Científica y Tecnológica (CONRICYT). Portal, bibliográfico

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Introduction

The use of technology has been changing the way in which daily and professional activities are traditionally carried out in the different areas of our lives. This is not something new, rather it has been inevitable due to the dynamism required by an accelerated pace of life, which requires doing a greater number of things in less time. Speaking of digital resources, we can realize that they have permeated all countries and all social classes.(Alice Kefer, 2007)(Moscoso & Ortiz-Repiso, 2002)

This situation can also be observed in the academic and research activities of educational institutions, such as the Technological University of the State of Zacatecas (UTZAC), in which it has been decided to take advantage of the existing electronic bibliographic collection by implementing the use of the digital library through which it is desired to increase the use of these resources and make available to students, teachers and researchers access to the contents of collections of books and existing resources digitally on the web.

This digital library will then be in charge of providing electronic resources of documentary information and library services that support the study programs and academic activities of the institution. It is not the intention of this project to replace the use of the library in the usual way, that is, through books and printed bibliographic resources that are consulted in the reading rooms that the institution has, rather it is intended to strengthen this service by making these resources available to the university community electronically from any site where they can be accessed Internet and therefore have a greater coverage of library resources reaching a greater number of users.

Likewise, it is intended to increase the amount of electronic consultation resources by managing agreements that allow access to other libraries in addition to the one that is currently known to be the ECEST Digital Library. It is also intended to make use of free digital libraries, which can provide a much more enriching collection for the use of our student and academic community.

There are no other similar works in the Technological University of the State of Zacatecas, it is the first one that is carried out with the purpose that the university community uses digital technological resources as library services, however some digital libraries have been found on the web, such as the Tecnológico de Monterrey, in which they are only available to current students, professors and collaborators of the Tecnológico de Monterrey and Universidad TecMilenio. Other libraries are free and can be accessed by the general public, such as the digital library of the Latin American Institute of Educational Communication(Educational, 2015), the digital library of open access books(Metalibrary, 2015), and the world digital library(UNESCO, 2015).

The contributions of the prototype of the digital library for the university are the following: Allow the university community to have easy, timely and expeditious access to documentary information in digital format that supports study and research programs. Meet the information needs of the academic community through documentary information resources and other resources. And Collaborate and/or contribute to the professional training of the student and updating of teachers and researchers in relation to the use of documentary information.

Problematic

Libraries physically installed in buildings and printed bibliographic collections have been and continue to be an important part of the success of academic and research work in universities and educational institutions in general. However, the use of this tool has gradually decreased in direct relation to the existence of other media that offer information quickly. The consultation service offered by the web is becoming more accessible to everyone, with the advantages offered by being able to use it from different places such as at home and even several public places already have internet access.(Alice Kefer, 2007)

It is necessary to comment that the web has the inconvenience that practically anyone can upload information without any validation that the published information is current and true. If this is contextualized to the academic environment, we realize that it is very problematic for students to carry out their research tasks and base their work in general on sources of dubious origin.

This is even more serious with teachers and researchers who cannot in any way trust that the information on the Internet can be useful to them because they cannot verify its veracity and timeliness. Traditional libraries depend on the presence of library staff to serve users and on the building being open during certain business hours. This affects users who increasingly require more information quickly, at different times and from different places.

The UTZAC has a traditional library, which is made up of a physical bibliographic collection that has been intended to be the source of information for members of the university community that may require it (students, teachers and researchers).

It is already known that the use of the traditional library has been declining, this may be due to the fact that access to information through the Internet network is more practical for purposes of obtaining information quickly, but this does not guarantee that the students access reliable information, rather it has tended to decline in the quality of the work done by students by not using information sources that contribute to good research.

Users have had access to the ECEST digital library for some time now, however there have been several factors that have not had the expected impact: on the one hand, it has not been adequately disseminated in the student community, On the other hand, strategies are needed in the academy so that this digital heritage can be used in a planned way in the academic activities of the different programs.

The university, aware of the need to have a tool that encourages reading and research by the community, requests that it be put into operation and its use made more efficient. For this, through the Academic Coordination, it has commissioned the Digital Library project to the Academic Body of Information Technologies Applied to Software Engineering.

Overall objective

Launch the digital library of the Technological University of the State of Zacatecas to provide electronic resources of documentary information and digital library services that support the study programs and academic activities of the institution.

Specific objectives:

– Have a digital medium for consulting bibliography, magazines, among other resources, digitally.
– Disseminate the use of the digital library to the university community.
– Generation of agreements to strengthen the bibliographic heritage.

Scope

Its main functions are:

– Provide easy, timely and expeditious access to documentary information in digital format that supports study and research programs.
– Satisfy the information needs of the academic community through documentary information resources and other resources.
– Contribute to the professional training of the student and updating of teachers and researchers in relation to the use of documentary information.

The users who will use the platform are:

Internal users: all members of the academic community of the University; students of all educational levels, teachers and researchers, teaching and research assistants; personnel who provide support services for academic activities such as: rectors, academic secretaries, career directors, academic coordinators, tutors, advisors, laboratory technicians and librarians.

External users: People who have some relationship with the institution and the authorization to make use of the resources of the digital library.

Justification

The little or almost null use of electronic library resources in the university makes evident the need to increase the use of the digital library. The most obvious advantage that this platform offers is availability; 24 hours a day, 365 days a year without location restrictions and at the same time it is a way of guaranteeing that the consultation sources are reliable and current by having access to specialized journals and bibliography in general.

Resolution Techniques

It seeks to launch the Digital Library of the Technological University of the State of Zacatecas to provide electronic resources of documentary information and digital library services that support the study programs and academic activities of the institution.

The project will bring advantages that will be useful for the university community in general since it will greatly modify the traditional way of working with physical libraries to virtual libraries, an increase is expected not only in productivity but also in the quality of academic work. and research developed by teachers and students of the institution.

The web portal described in this work was developed using the prototype development methodology, specifically the so-called "Reusable Prototyping Model": Also known as "Evolutionary Prototyping".

The reason for using this methodology lies in the simple way of being able to reinforce content and functions that ensure the proper use and quality of the computing platform.(J. Court, 1996)The steps followed by this method are as follows:

− Requirements gathering and refinement
− Modeling, rapid design
− Prototype Construction
− Development, evaluation of the prototype by the client
− Prototype Refinement
− Engineering Product(Pressman, 7th Edition)

The most outstanding resources and characteristics in the development of the digital library project are detailed below:

Material resources

The following table shows the material resources necessary to carry out this project, the requirements to be used can be seen in detail.

Resource	Description
server space	A minimum of 1Gb for hosting the WEB portal of the digital library at the moment, In the immediate future, considerable space will be needed to house its own collection.
League on the official UTZAC portal	For broadcast.
Computer equipment	To create the site and administer it.

Table 1 Material resources

The web portal was carried out with HTML and CSS technology using World Wide Web Consortium standards.(W3C, 2014), emphasizing usability, in such a way that users can navigate smoothly on the site and find information in a simple and effective way.

Diagnosis

It has been established as a starting point to update the user records of the ECEST digital library, for which support has been requested from the Technological University of León, to clean the digital library records database, and to be able to then collect official information from the student community and feed the database with real and updated information. With this information collected we can say that up to now 2381 Users have been registered, distributed in 2138 Students and 243 Research Professors.

Setting

The proposed portal for the Digital Library of the Technological University of the State of Zacatecas consists of the following components:

Start

This section refers to the portal itself on its home page.

UTZAC

Link that leads to the official website of the University.

Services

This option contains documentary information and digital library services that will improve the substantive activities of technological higher education institutions and promote research, learning and student training by reducing the barriers of time and distance.

Fast guide

Its objective is to present a complete overview of the Digital Library of the Common Space for Higher Technological Education (BiDig-ECEST).

Through the description of each of its elements, in order to guide the user in a basic way in the use of each of the services and recovery options of the available information resources.

Contact

Information through which you can contact the administrator staff of the digital library portal.

Strengthening

The next step is to investigate in depth what refers to the National Consortium of Scientific and Technological Information Resources (CONRICYT) in terms of its mode of operation and access to the libraries and resources that this website includes and thereby increase the collection to which You have access from our portal.

In addition, it is intended to search and analyze the free digital libraries that are available to the general public to add them to the repository of resource links, in such a way that the increase in digital collections is constant.

Likewise, seek the formalization of agreements if necessary with more organizations that offer digital library services.

Diffusion

It is intended that the dissemination be done through the university library, using the appropriate means so that the community can enter the platform and make use of this site.

In addition, the following activities will be sought together:

1.   Place a hyperlink on the institutional page.
2.   Presentation of the Digital Library to the university community.
3.   Distribution of users to both students and research professors.

This is intended to be done in 2015.

Management

The digital library requires carrying out its own user management activities, that is, registrations, cancellations, changes and consultations of the accesses that can be given on the platform.

Currently, the ECEST platform is configured in such a way that it is only through this means that users and passwords can be managed, for this reason our site serves as an access link to this library.

It is necessary that each end of the semester a count of the users who are part of the university community and those who are not is made, in such a way that user administration can be carried out in that period. Another important activity to consider will be related to the generation of agreements for new digital collections, and the analysis of free digital sites in order to add them to the platform.

Results

Existing users of the system of the Common Space for Higher Technological Education (ECEST) were unsubscribed, in order to start a clean database and assign a username and password to the entire university.

A computer portal was developed that allows easier access to the digital library, which contains links to the UTZAC page, to the services offered by the digital library, and a quick guide that aims to help users learn about BiDig-ECEST, and also contains contact information, through which users can send emails to the administrator of the digital library

The following figure shows the proposed portal for the Digital Library of the Technological University of the State of Zacatecas:
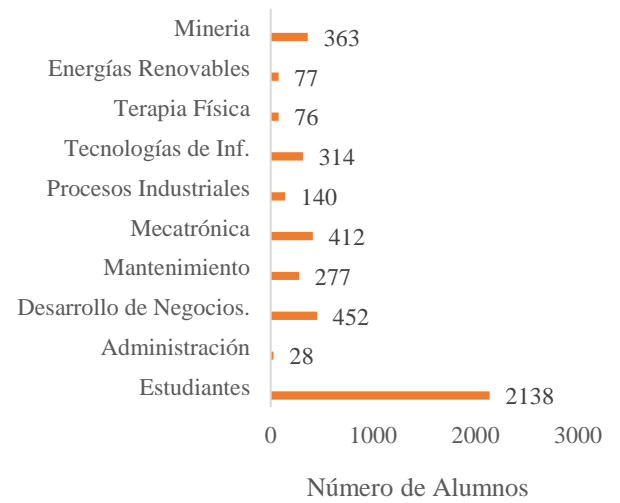
Figure 2 Access to Digital Library

The following users were registered:

- UTZac 243 workers
- 2138 students including Guadalupe campus and Pinos campus.

In the following graph we can see the number of students by major who currently have access to the Digital Library.

Número de Alumnos

Graphic1 Student users by career

Conclusions

The digital library of the Technological University of the State of Zacatecas is launched to provide electronic resources of documentary information and digital library services that support the study programs and academic activities of the institution. There is currently, at the Technological University of Zacatecas, a digital medium for consulting bibliography, magazines, among other resources digitally.

The use of the digital library has been disseminated to the university community.

The generation of agreements will be sought to strengthen the bibliographic heritage. The work carried out has been productive and this will be reflected shortly when the resources with which access is achieved are disseminated, so far the ECEST digital library is available, but this is only the beginning.

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* Correspondence to Author (example@example.org)
† Researcher contributing as first author.

Scientific, Technological and Innovation Publication Instructions

Introduction

Text in Times New Roman No.12, single space.

General explanation of the subject and explain why it is important.

What is your added value with respect to other techniques?

Clearly focus each of its features

Clearly explain the problem to be solved and the central hypothesis.

Explanation of sections Article.

## Development of headings and subheadings of the article with subsequent numbers

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Including graphs, figures and tables-Editable

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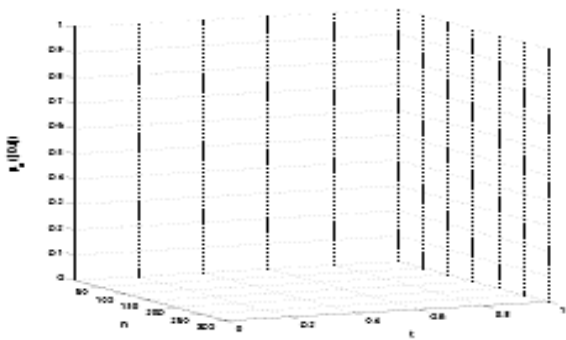
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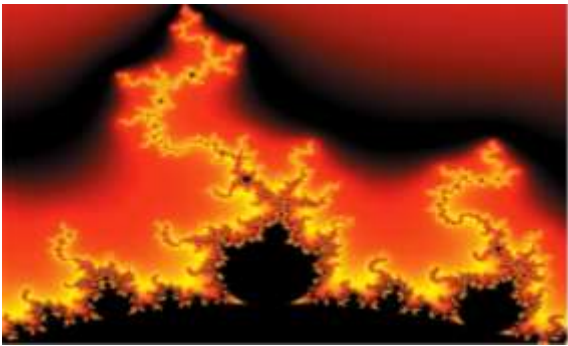
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$$Y_{ij} = \alpha + \sum_{h=1}^{r} \beta_h X_{hij} + u_j + e_{ij}$$

$$(1)$$

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Methodology

Develop give the meaning of the variables in linear writing and important is the comparison of the used criteria.

Results

The results shall be by section of the article.

Annexes

Tables and adequate sources

Thanks

Indicate if they were financed by any institution, University or company.

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Explain clearly the results and possibilities of improvement.

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Use APA system. Should not be numbered, nor with bullets, however if necessary numbering will be because reference or mention is made somewhere in the Article.

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