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Abstracts Collection

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October 15, 2024.

Preface

The Technological University of Southwestern Guanajuato and its chapters of Agricultural Sciences, Natural and Exact Sciences, Engineering and Technology Sciences, Education, Social and Administrative Sciences, Experiences in the Formation of Academic Corps and Networks Administrative Sciences, Experiences in the Formation of Academic Corps and Networks, CICA 2024. Thus, the CICA's general objective is to create a forum for academics and researchers from different countries to present and discuss different countries to present and discuss results and proposals in relation to the thematic areas of the congress, promoting and strengthening and strengthening the dissemination of research and technological development of the collegiate and academic research groups and/or and academic research groups and/or academic corps of higher education institutions, from a global perspective higher education institutions, from a global perspective. This volume XI-2024 contains 95 refereed refereed that deal with these issues in Agricultural Sciences, Natural and Exact Sciences, Engineering and Technological Sciences, Education, Social and Administrative Sciences, Experiences in the Formation of Academic and Networks, chosen from among the contributions, we gathered some researchers and graduate students, researchers and researchers and graduate students, from 32 states of Mexico. We would like to thank the anonymous reviewers for their reports and many others who contributed greatly to the publication in these proceedings by reviewing the manuscripts. In these proceedings by reviewing the manuscripts that were submitted. Finally, we wish to Finally, we would like to express our gratitude to the Universidad Tecnológica del Suroeste de Guanajuato in the process of preparing this preparing this edition which can be consulted at <http://ecorfan.org/collections.php>.

*Guanajuato, Guanajuato
October 15, 2024*

*Cossio-Vargas, Enrique
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1 Physical and Mathematical Sciences and Earth Sciences

Influence of concentration, acid type and calcination temperature on TiO₂ synthesis

Influencia de la concentración, el tipo de ácido y la temperatura de calcinación en la síntesis de TiO₂

DEL ÁNGEL-SÁNCHEZ, María Magdalena and MARTÍNEZ-CARREÓN, María de Jesús



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Abstract

Titanium dioxide (TiO₂) is employed in various environmental science applications due to its exceptional photocatalytic activity and semiconductor behavior. The efficacy of TiO₂ in these applications is intrinsically linked to its crystal structure, morphology and particle size. Titanium dioxide exhibits three well-defined crystalline phases: Anatase (octahedral structure), Rutile (tetragonal structure) and Brookite (orthorhombic structure). This work studies the effect of different concentrations, types of acids, and calcination temperatures on the crystalline structure and morphology of TiO₂ synthesized via hydrothermal route using characterization techniques such as DLS (Dynamic Light Scattering), ATR-FTIR (Attenuated Total Reflectance Fourier Transform Infrared Spectroscopy), XRD (X-Ray Diffraction) and SEM (Scanning Electron Microscopy).

Influence of concentration, acid type and calcination temperature on TiO ₂ synthesis							
OBJECTIVE: Study the effect of different concentrations, types of acids, and calcination temperature on the crystalline structure and morphology of TiO ₂ via hydrothermal method; In Series I varying the percentage of nitric acid and in Series II varying the ratio of HCl:HNO ₃	SERIES I METHODOLOGY:			SERIES I RESULTS:			
	REACTANT	SAMPLE					
		I-1	I-2	I-3	I-4	I-5	
	HNO ₃	0M	1M	3M	1M	0.5M	
	Ti [(PO) ₄	0.15M	0.15M	0.15M	0.15M	0.15M	
	N ₂ F	-	-	-	0.01M	-	
	SERIES II METHODOLOGY:			SERIES II RESULTS:			
	REACTANT	SAMPLE					
		II-1	II-2	II-3			
	HNO ₃	0.5M	1M	1.5M			
HCl	2.5M	2M	1.5M				
Ti [(PO) ₄	0.15M	0.15M	0.15M				

Titanium dioxide TiO₂, Hydrothermal synthesis, Structural analysis

2 Biology, Chemistry and Life Sciences

Efecto of Dimethyl Sulfoxide Intratesticular Injection on Structure of Seminiferous Tubule: A Model for the Study of Testicular Dopaminergic Function in the Rat



Efectos de la Inyección Intratesticular de Dimetilsulfóxido Sobre la Estructura del Túbulo Seminífero: Un Modelo Para el Estudio de la Función Dopaminérgica Testicular de la Rata




MORÁN-PERALES, José Luis, MARTÍNEZ-AGUILAR, Pablo Isaac, HANDAL-SILVA, Anabella and GARCÍA-SUÁSTEGUI, Wendy Argelia

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Abstract

We study the effects of an intratesticular injection (ITIn) of infiltrating agent dimethyl sulfoxide (DMSO) on seminiferous tubule structure in adult rats. Experimental groups of 32 rats received a ITIn with 50µL of pure DMSO inside each testicle; the sham group were formed with 32 rats subjected to surgical technique but not received ITIn; to test the DMSO effectiveness like infiltrating agent, other rats group received the ITIn with 50µg of haloperidol (dopaminergic antagonist) dissolved in DMSO. All the rats were sacrificed at 4-, 8-, 12- or 16-day post ITIn. Compared with sham groups, DMSO doesn't alter the structure of seminiferous epithelium in no evaluated days, but the haloperidol ITIn showed progressive alterations on structure of seminiferous tubule from the 8th to the 16th day. Our results allow recommending the use of DMSO as an infiltrating agent in subsequent studies of dopaminergic testicular function.

Effects of Dimethyl Sulfoxide Intratesticular Injection on Structure of Seminiferous Tubule: A Model for the Study of Testicular Dopaminergic Function in the Rat.
Objective: An analysis of local effects of DMSO on testicular tissues structure.
Results: We find that DMSO has not altered the testicular structure.
Contributions: In a pilot study of testicular dopaminergic system, DMSO vehicle-like shows not interfere with the antagonism effects of haloperidol.
Methods: Groups of 32 rats received a intratesticular injection (ITIn) with 50µL of pure DMSO inside each testicle. Sham groups were formed with 32 rats subjected to surgical technique but did not receive ITIn. To test the DMSO effectiveness like infiltrating agent, others rat groups received the ITIn with 50µg of dopaminergic antagonist haloperidol dissolved in DMSO. All the rats were sacrificed at 4-, 8-, 12- or 16-day post ITIn.

Dimethyl Sulfoxide, Seminiferous Tubule, Haloperidol

3 Medicine and Health Sciences

An Overview Occupational Encroachment in the Health Sciences: Based on Teachers' Perceptions in Mexico

Una visión general del intrusismo laboral en las ciencias de la salud. Basado en las percepciones de los profesores en México.




RAMÍREZ-JIMENEZ, Alida, SALINAS-SÁNCHEZ, Igor, LARA-AGUILAR, Susana and XOLALPA-GONZÁLEZ Juan-Azael

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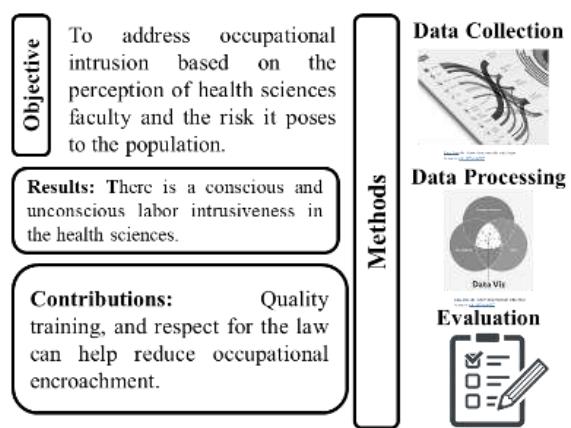
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Abstract

No one should be harmed while receiving health care, yet globally, at least five patients die every minute due to unsafe care. This study addresses the role of occupational encroachment based on the perception of health science faculty and the risk it poses to the population. It combines descriptive analysis with qualitative analysis of interpretative and semantic phenomenological observation. Involving 164 professionals in medicine, orthopaedics, psychology, and physiotherapy, the study argues that there is conscious and unconscious occupational encroachment in the health sciences. The characteristics most related to occupational encroachment were poor professional relationships (108 responses) and acts "outside the law" (84 responses). Professionals identify educational (68), professional (108), and social (60) factors as contributing to this issue. The study highlights that communication, quality training, and respect for the law can help reduce occupational encroachment, emphasizing the importance of ethical training in the health sciences to protect patient safety.



Education, Occupational encroachment, Ethics

Numerical modelling of hydrodynamic thrust in patients using the HidroWalk for gait rehabilitation

Modelación numérica del empuje hidrodinámico en pacientes que emplean el HidroWalk para rehabilitación de la marcha

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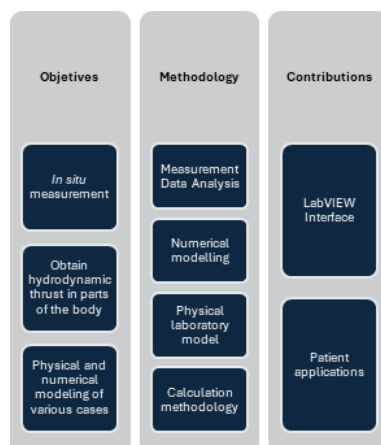
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Abstract

This study employs a quantitative experimental methodology to investigate the relationship between flow rate, velocity, and depth with the hydrodynamic thrust exerted on a person using the HidroWalk for physical rehabilitation at CLUSI, Celaya-Salvatierra Campus. Hydrodynamic variables such as flow rate, velocity, depth, temperature, slope, and geometry are manipulated in a scaled variable-slope channel prototype located at the Applied Mechanics Laboratory in DICIVA, Irapuato-Salamanca Campus, which simulates the conditions of the HidroWalk. Computational tools and sensors were used for real-time measurements in both the HidroWalk and the prototype. Additionally, the FLOW3D software was used for the numerical analysis of the velocity and pressure fields generated in a person using the HidroWalk, and software such as ARDUINO and LabVIEW was utilized for developing the user interface installed in the HidroWalk. The study population includes gait alteration patterns simulated with two mannequins of 11 and 30 cm, providing a deep understanding of the relationship between hydrodynamic thrust and the force a user needs to exert for gait rehabilitation.



Hidrowalk, Hydrodynamic-Thrust, Walk-Rehabilitation

Determination of total carbon stored in reforestations established in the National Park Iztaccíhuatl Popocatepetl

Determinación del carbono total almacenado en reforestaciones establecidas en el Parque Nacional Iztaccíhuatl Popocatepetl

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Abstract

The Natural Protected Areas, are considered highly efficient, given their natural vocation and the objectives which are to keep their forests and meadows in perfect condition The objective of this work was to generate allometric equations to estimate biomass and carbon from *Pinus hartwegii* and *Muhlenbergia macroura*, in addition to the carbon content in the soil, considered as carbon reservoirs. A destructive sampling of 94 trees from one to ten years old and 55 grass samples was carried out. The study was conducted in the Iztaccíhuatl-Popocatepetl National Park. Carbon from aerial biomass in reforestation and natural grassland was calculated using the generated equations and data obtained from 234 sampling sites. For the organic carbon determination in the soil, 35 samples were extracted at two depths (0-15 and 15-30 cm). The resulting equation for the estimation of the *Pinus hartwegii* biomass was $B=0.0092Db^{2.7303}$ and for *Muhlenbergia macroura* the equation were $B=0.075+0.00001393Db^2h$. The average carbon content was 50.3 and 42.1% for trees and pastures, respectively. In order of magnitude the total carbon storage in the 750 hectares was 76,566.7 Mg of C in the soil, 2,249.50 Mg of C in pastures and 37.12 Mg of C in reforestation.

Biomass, Destructive, Sampling, Reforestation, Reservoirs

Effect of enamel after immersion in carbonated and rehydrating beverages

Efecto del esmalte posterior a la inmersión en bebidas carbonatadas y rehidratantes



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Abstract

Introduction The daily consumption of soft and sports drinks has a certain impact on dental tissues, causing a decrease in the pH of the oral cavity and demineralization of enamel and dentin. **Objective.** The objective was to evaluate the effect of carbonated and isotonic rehydrating beverages on dentin enamel microhardness in extracted permanent teeth. **Methodology.** Longitudinal, experimental, prospective, invitro study carried out at the Micro and Nanotechnology Research Center of the U.V. **Contribution.** A significant decrease in the enamel microhardness values was found in all groups when subjected to the acidic action of the beverages, and the loss of surface microhardness was evidenced. It was demonstrated that all the industrialized beverages used produced a decrease in the microhardness of the dental enamel, but not in the same intensity, with Coca-Cola having a greater decrease followed by Sidral Mundet, then Powerade and finally Gatorade. **Discussion** The results agree with Sandra Vargas Casana, who found that Coca-Cola had the greatest decrease in microhardness.

Carbonated Beverages, Isotonic Beverages, Dental Erosion

Administrative factors that affect customs clearance in an electronics manufacturing company in Ciudad Juárez, Chihuahua


Factores administrativos que inciden en el despacho aduanero en una empresa maquiladora del sector electrónico en Ciudad Juárez, Chihuahua

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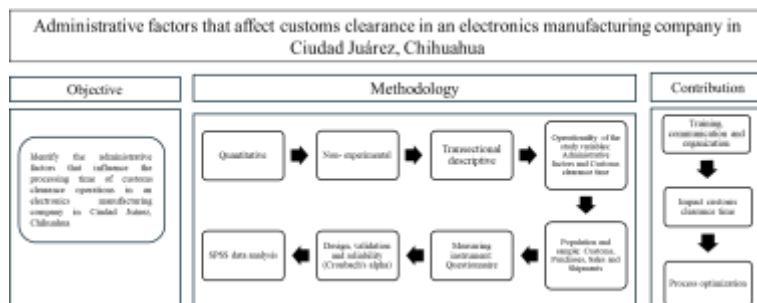
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Abstract

The objective of this research was to identify the administrative factors influencing customs clearance operations processing time in an electronics manufacturing company in Ciudad Juárez, Chihuahua. A quantitative methodology with a non-experimental, transactional, descriptive design was used. The study population consisted of personnel from the customs, purchasing, sales, and shipping departments. Data was collected through a survey using a validated questionnaire by experts, and the instrument's reliability was verified using Cronbach's Alpha coefficient. The questionnaire was administered to 19 employees considered in the study sample. The results show that there is a dependence between customs clearance time and administrative factors: training, communication, and organization.



Customs Clearance, Maquiladora, Import




4 Humanities and Behavioral Sciences

Reimagining Higher Education: Identification of Opportunity Areas and Innovative Post-Pandemic Strategies


Re imaginando la Educación Superior: Identificación de Áreas de Oportunidad y Estrategias Innovadoras Post-Pandemia

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








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Abstract

The purpose of this work is to present to readers the result of the analysis of different texts to achieve the objective: Analyze and determine the most significant areas of opportunity that emerged in higher education due to the COVID-19 pandemic, with the purpose of develop innovative strategies that improve educational quality and institutional resilience in the face of future global challenges. The logic of a methodology based on a qualitative approach with a hermeneutic orientation for the analysis of texts is followed, based on their semantic analysis. This work provides elements to identify areas of opportunity and innovative post-pandemic strategies in Higher Education

Reimagining Higher Education: Identification of Opportunity Areas and Innovative Post-Pandemic Strategies

Objective	Methodology	Contribution
		
		
		
		
		




Higher Education, Pandemic, Strategy

Challenges to overcome when implementing problem-based learning in math classes

Retos a superar al implementar el aprendizaje basado en problemas en las clases de matemáticas

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Abstract

The implementation of problem-based learning allows students to develop the ability to recognize problems, analyze them, establish solutions, and present results. The main interest of this work is to determine the variables that currently influence the implementation of problem-based learning as the guiding axis of a course and to establish a proposal to continue using it, given that the conditions of the student community have changed with everyday problems. The proposed research methodology was qualitative due to the controlled test method. applied to three groups of first semester, to identify existing problems on poor school performance, adaptation to collaborative work, reading comprehension, mathematical reasoning. With the results obtained in the diagnosis, improvement strategies were established and throughout the semester accompaniment was provided to the detected students, these strategies were modified according to the pre-results that were obtained.

Objective	Methodology	Contribution
To determine the difficulties that arise when applying problem-based learning as the Basic methodology of a mathematics course today.	The participatory qualitative paradigm is used, with the controlled test method. Applying it to three first-semester groups, to detect existing problems on academic performance considering as variables: <i>low school performance, adaptation to collaborative work, reading comprehension, mathematical reasoning.</i>	Given the conditions of the current student community, a proposal is established to continue using problem-based learning and achieve significant learning in mathematics courses.

Learning, Problems, Reasoning, Mathematics

Assertive training. An intervention in higher-level students

Entrenamiento asertivo. Una intervención en alumnos de nivel superior

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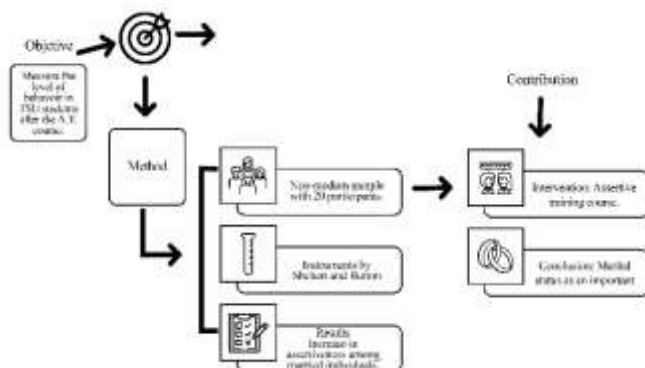
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Abstract

The objective of the quantitative study was to measure the level of Assertive behavior in university students after receiving an Assertive Training course. The sample, chosen for convenience through a non-random instrument, consisted of 20 participants. The average age was 20 years ($SD = 3.80$), with a minimum of 18 and a maximum of 31. All were male, 17 (85%) were single, and 3 (15%) were married. The Shelton and Burton Assertiveness instrument (2004) was applied. The data were analyzed using the statistical program SPSS 27. The results showed that married participants are significantly more assertive than singles; however, the level of assertiveness is similar among single students before and after the course. It is concluded that the marital status of the participants may be an important indicator to obtain a positive outcome in assertiveness training.



Assertiveness, Course, Technological University

Implementation of software and virtual tools in soft skills laboratory for Industrial Maintenance students

Implementación de software y herramientas virtuales en laboratorio de habilidades blandas para estudiantes de Mantenimiento Industrial

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Abstract

Nowadays, organizations demand professionals who, as part of their profile, have developed not only technical skills but also soft skills that allow them to make decisions, work in a team, solve problems, lead the personnel in their charge, communicate and transmit ideas in a correct way. According to Taylor (2016), the labor sector constantly complains that higher education graduates do not have the skills to develop certain jobs. Students of the Industrial Maintenance career pay more attention to the development of technical skills, however, when they join the labor sector, they face the challenge of having to develop soft skills to be able to grow professionally within companies. In relation to this, Florea and Stray (2018) analyzed job advertisements in 33 countries and found that companies want to hire engineers who are able to communicate, possess analytical skills and solve problems, they also found the existence of new skills such as work ethic, customer focus and working under pressure. The objective of this research is to support the implementation of software and virtual tools in a soft skills laboratory within the Industrial Maintenance career. It consists of a bibliographic and/or documentary research in relation to the different technological tools, as well as field research through interviews and surveys to teachers to determine the application of a soft skills laboratory in the graduate profile of both TSU (Higher University Technician) and Industrial Maintenance Engineering of the Technological University of Chihuahua.

Implementation of software and virtual tools in soft skills laboratory for Industrial Maintenance students		
Objectives	Methodology	Contribution
<p>General objective: Implement software and virtual tools in a soft skills laboratory for Industrial Maintenance students.</p> <p>Specific objectives:</p> <ul style="list-style-type: none"> Identify the feasibility and application of a soft skills laboratory for the industrial maintenance engineer. Identify software and tools that contribute to the development of soft skills. 	<p>General hypothesis: Soft skills are an important part of the graduation profile of Industrial Maintenance Engineering students at the Technological University of Chihuahua.</p> <p>Research techniques</p> <p>1. Bibliographic and/or documentary</p> <p>2. Field with interviews and surveys with teachers, students and graduates.</p>	<p>It contributes to the development of soft skills as an integral part of the industrial Maintenance engineer's graduation profile.</p>

Soft Skills, Artificial Intelligence, Students




Comparative study in the progress of the level of English in the BIS generations at the Technological University of Altamira



Estudio comparativo en el avance del nivel de inglés de las generaciones BIS de la Universidad Tecnológica de Altamira

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Abstract

The objective of this research work was to determine the BIS generation that has made the most progress in English proficiency to analyze the causes. Progress in English proficiency was compared among all BIS generations, from the beginning of their academic journey until the completion of the Técnico Superior Universitario (TSU) level, with the main difference being the modality in which their classes were taught. The research was quantitative and descriptive. The instruments used to collect data were the iTEP, The Anglia, and another exam designed by English teachers. The study population consisted of 750 individuals who were students of Mechatronics from the years 2018 to 2023. According to the results, it can be concluded that there is greater progress in the third BIS generation. These findings contribute to the study and implementation of future improvement actions for the BIS model, as one of its main challenges is achieving a competent level of English proficiency by the end of the engineering program. Therefore, the more knowledge acquired about the issue, the greater the likelihood of finding solutions.

Comparative study in the progress of the level of English in the BIS generations at the Technological University of Altamira		
Objectives	Methodology	Contributions
Compare progress in English proficiency among all BIS generations, from the beginning of their academic journey until the completion of the Técnico Superior Universitario. Determine the BIS generation that has made the most progress in English proficiency. Analyze the progress' causes.	The research was quantitative and descriptive. The instruments used to collect data were the iTEP, The Anglia, and another exam designed by English teachers. The study population consisted of 750 individuals who were students of Mechatronics from the years 2018 to 2023.	González Barrón María Teresa: Contributed to the Project idea, methodology, investigation, project administration, writing and editing original draft, data analysis. Alvarado Medellín Marisela: investigation, gathering and comparing resources ensuring facts, sharing findings with the whole research team. Barrios Rodríguez Lilia Gabriela: Contributed to conceptualization, review original-draft, sharing findings with the whole research team, provide feedback. Vazquez Pedraza Ingryt Karely: data analysis, translation of original-draft, sharing findings with the whole research team.


BIS, English Language Learning, Itep

The Importance of Netnography as a Research Methodology

La importancia de la Netnografía como una metodología para investigar


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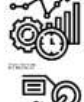







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Abstract

In the post-COVID-19 era and faced with the necessary changes in research and its methodological processes, new ways of doing research are emerging, as well as the use of methodologies that are in line with the current times. Today's researchers are faced with this challenge that motivates them and demands a new way of doing research and responding to society with new elements, thus new approaches emerge, especially in education, abandoning the face-to-face approach and moving towards virtual education where distances become shorter through a medium or device. Netnography emerges from the need for a way to interact in a globalized world, where one can be in different spaces at the same time, with different means, and it becomes necessary to investigate in order to understand the virtual as a continuation of reality. In this paper, Netnography is theorized as a new methodology for research and an exercise is proposed where its value and usefulness in the current moment is appreciated.

The Importance of Netnography as a Research Methodology		
Objectives	Methodology	Contribution
Innovation in the approach to methodological practice.    	Qualitative research and text analysis.    	The theorization of Netnography as a new methodology for research, and an exercise is proposed to demonstrate its value and usefulness in the current moment.    


Netnography, Virtual, Discourse, and Virtual Restricted Spaces

Evaluation of Experience in Higher Education, Innovating with Artificial Intelligence in the Implementation of Predictive Models

Evaluación de la experiencia en Educación Superior, Innovando con Inteligencia Artificial en la implementación de Modelos Predictivos

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Abstract

This study explores the impact of artificial intelligence (AI) and predictive models in higher education, focusing on the personalization of learning, student retention, and academic success prediction. In a constantly evolving educational environment, it is crucial for universities to implement innovative curricula that prepare students for the challenges of the current job market. The study's methodology is based on a descriptive approach, using a semi-structured survey administered to 250 higher education students. The survey included questions about academic performance, academic support, guidance, skills, and interests. The collected data were analyzed using regression techniques with SPSS software, allowing for the identification of relationships between predictor variables and student satisfaction. The analysis results revealed that, although the predictor variables explain a small proportion of the variance in student satisfaction, the identified patterns provide valuable insights for improving educational offerings. Personalization of learning and optimization of student retention emerge as key areas where AI can have a significant impact. In conclusion, while the implementation of AI predictive models presents challenges related to accuracy and ethics, these models have the potential to transform the educational experience in higher education. The study suggests that, with proper integration and alignment with educational objectives, AI can enhance the quality of education and meet the individual needs of students, contributing to a more efficient and personalized educational experience.

Objective	Methodologic	Contribution
		
		
		
		

Higher Education, Research Institutions, Technological Change




Comparison of ideal vocational profiles against real vocational profiles and their relationship with academic performance at the Technological University of León

Comparación de perfiles vocacionales idóneos contra los perfiles vocacionales reales y su relación con el desempeño académico en la Universidad Tecnológica de León

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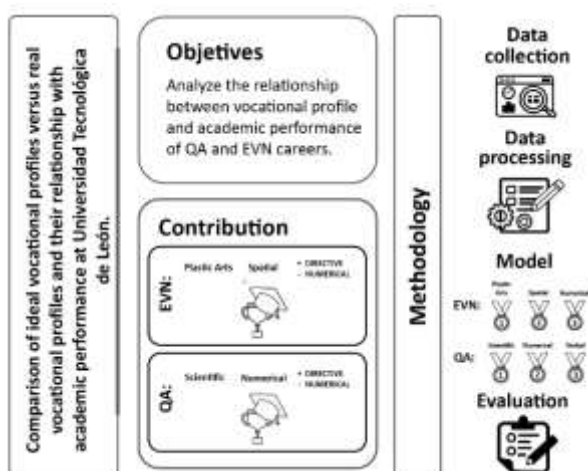
ID 1st Coauthor: Liliana, González-Arredondo /  **Researcher ID Thomson:** S-8366-2018,  **ORCID ID:** 0000-0002-1692-9602,  **CVU CONAHCYT ID:** 563829

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Abstract

In this research, the relationship between the ideal vocational profile and the real vocational profiles of students in the Virtual Environments and Digital Business (EVN) and Environmental Chemistry (QA) courses, generation 2020-2022, at the Technological University of León, was explored. The results of the vocational preferences of the Single Registration System for Higher Education Applicants (SUREDSU) were used and compared with the qualification of the stay process. The sample consisted of 88 students, 38 from the EVN course and 50 from the QA course. The results allow us to identify that the ideal vocational profile coincides with excellent performance, but there are also combinations with other complementary areas that enable good academic performance. This work invites us to expand the research to identify the additional factors that influenced these results, in order to recognize and enhance them.



Vocational Profile; Terminal Efficiency, Academic Performance

Soft skills in the graduate profile for the professional development of engineers

Habilidades blandas en el perfil del egresado para el desarrollo profesional del ingeniero

MORENO-AGUILAR, Ma. Antonia, SÁNCHEZ-LÓPEZ, Guillermina, LUNA-AGUIRRE, Jaime and REYES-OLIVER, Irma

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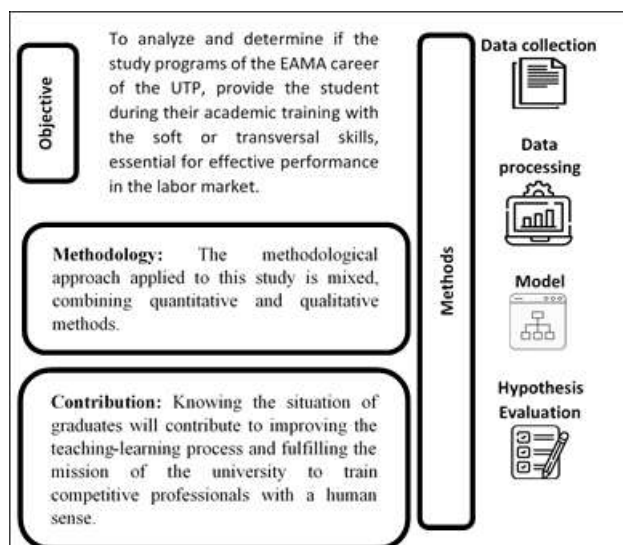
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Abstract

In a globalized and highly competitive world, people with leadership are required to make decisions critically and reflectively; Therefore, it is important to include in the student's professional training soft or transversal skills that allow them to function successfully in any area of life, mainly the work according to their graduation profile. The objective of this research is to analyze and determine if the study programs of the Alternative Energies and Environment (EAMA) career of the Technological University of Puebla (UTP), provide the student during their academic training with the soft or transversal skills, essential for effective performance in the labor market. Knowing the situation of graduates will contribute to improving the teaching-learning process and fulfilling the university's mission of training competitive professionals with a human sense who strengthen the processes of the productive and service sectors at the regional and national level that contribute to social development.



Competitiveness, Transversality, Reflective Critical Thinking

Social skills and bullying in secondary school students

Habilidades sociales y acoso escolar en alumnos de secundaria

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Abstract

Objectives The objectives of this research are to identify social skills and bullying among high school students. The particular objective consists in locating the correlation between the social skills that the student presents in relation to the bullying that exists in educational institutions. **Methodology** We work with high school students, Goldstein's Social Skills Checklist is applied, it contains six areas, which are obtained by answering fifty items with a Likert scale, with options of never, rarely, sometimes, frequently. and always. With a score of 1,2,3,4. And 5 respectively. Likewise, the Cisneros Bullying Self-Test is used. It contains three harassment indicators and eight areas. It presents fifty items on a Likert scale, with three response options, never, rarely and many times, with a score of 1, 2 and three respectively. Reliability and correlation will be obtained from the results. **Contribution** Identifying bullying and its form of existence will allow prevention and treatment of the phenomenon by improving the social skills of secondary school students.




Bullying, Social skills, High school students


The Academic Bodies in the system of Polytechnic Universities of the State of Hidalgo and their academic production

Los Cuerpos Académicos en el sistema de Universidades Politécnicas del Estado de Hidalgo y su producción académica

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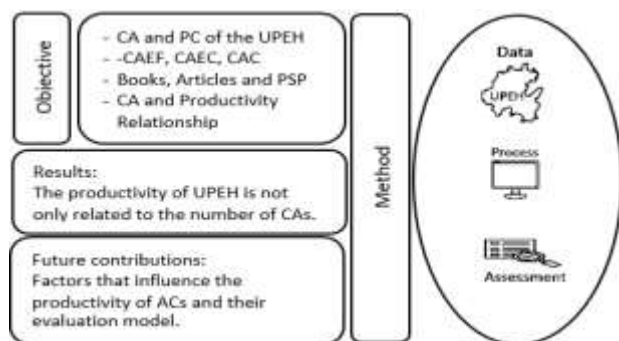
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Abstract

The CAs of the UPs are constituted by PTC around a common object of study, with goals, strategies and academic actions that allow their development and consolidation. Through their LIIADT in their CAs, the PTCs generate and apply new knowledge by providing PCs designated as valid by PRODEP. This work has the purpose of determining the level of productivity of the CAs of the UPEH, according to the number of valid PCs. The results show that the factors that determine the productivity of the ACs of the UPEH are not related only to the number of PCs. It is suggested to reflect on the relevance of the PTC, the integration of their AC, as well as the PC that are generated. As future research, all the factors that influence the productivity of the ACs will be determined to generate a model for evaluating the productivity of the ACs for the UPs.



Productivity, Academic Bodies, Polytechnic Universities

University teacher's perception of inclusive education

Percepción del docente Universitario sobre la Educación inclusiva

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Abstract

This study aims to identify the perception of teaching staff at a university in southern Sonora regarding educational inclusion. The research is descriptive and quantitative in nature, with a non-experimental design. 92 teachers who teach classes in the areas of Economic and Administrative Sciences, Social Sciences and Humanities, and University Extension were surveyed. The sample was non-probabilistic, selected by convenience due to the low participation and time limitation of the teachers. The criterion for participation was the availability of the teachers to answer the questionnaire. This research seeks to provide relevant information to create an inclusive university environment that promotes diversity and equal opportunities. Furthermore, it highlights the importance of providing teachers with the necessary tools and training to face the challenges of inclusive education.

University Teachers Perception of Inclusive Education		
Objetivo	Metodología	Contribuciones
Identify the perception of educational inclusion among teachers at the Universidad del Sur de Sonora. To Propose Improvement Strategies Based on the results obtained and thus contribute to a more inclusive and equitable educational environment.	Scope and focus of the Research Research focus. Information Collection Objective of The Study Population and Sample Instrument Application Results Report	Contribute to the creation of a more inclusive and equitable educational environment that full development of each student, regardless of their individual characteristics.

Education, Inclusive and teachers


5 Social Sciences

Financial transformation through Fintech in Mexico

Transformación financiera mediante las Fintech en México

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Abstract

In the year 2024, Fintech in Mexico have experienced significant growth and have established themselves as important players in the country's financial sector, these platforms to carry out financial transactions, manage their personal finances and access alternative banking services; Fintech have expanded their service offering beyond digital payments and transfers, now offering products such as loans, insurance, investments and financial advice, covering a wide range of users' financial needs. This research aims to provide a general overview of the use of Fintech currently in Mexico, as well as regulation, financing, strategies, transformation, and statistical data. The methodology used in the research is mixed because it takes up characteristics of quantitative studies, through data obtained from different and qualitative sources in accordance with the research to be carried out rationally in data theory. Greater investment and financing since Fintech in Mexico has attracted significant investments from both national and foreign capital, this has allowed Fintech companies to expand, improve their technologies and offer better services to their users. It is important to recognize that Fintech in Mexico in 2024 is at a point of maturity and growth, offering a wide variety of digital financial services and contributing to financial inclusion and the modernization of the sector in the country.



Fintech, Transformation, Finance

Inflation and the minimum wage in three North American countries: economic repercussions 2016-2024

La inflación y el salario mínimo en tres países de América del Norte: repercusiones económicas 2016-2024

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Abstract

This research work refers to the behavior of inflation and the minimum wage in three North American countries, Mexico, the USA and Canada in the last 9 years. A review of the evolution of these economic variables during the period 2016-2024 is carried out. We should note that an economic hypothesis holds that continuous increases in the minimum wage would immediately translate into growth in inflation, however, as of December 2018 in Mexico the minimum wage was increased and inflation was contained at levels acceptable to the financial authorities for the benefit of the working class. The increases in the last two years of Enrique Peña Nieto as president of Mexico and the six years of the current president Andrés Manuel López Obrador will be presented. The first with meagre and insignificant increases in the minimum wage and the second with considerable increases above inflation.


Mexico, Wage, Inflation, Economy




Proposal for Best Practices in the Candelilla Wax Extraction Process in the Acatita Valley

Propuesta de buenas prácticas en el proceso de extracción de cera de la candelilla en el Valle de Acatita

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Abstract

After years dedicated to the harvesting of candelilla in northern Mexico, two critical factors remain unchanged: the use of sulfuric acid in the extraction process and the extreme poverty in which the inhabitants of the candelilla-producing areas live. These factors not only impact the well-being of the community but also pose serious health and safety risks for the workers. In response to this situation, a detailed analysis of occupational, health, and environmental risks is conducted, highlighting significant threats to both workers and the surrounding community. This article proposes a series of actions aimed at implementing best practices in the candelilla extraction process in the Valley of Acatita, located in the municipality of Francisco I. Madero, Mexico, with the goal of reducing the identified risks and promoting a safer, healthier, and more sustainable working environment.



Extraction, Practices, Candelilla

Influence of Corporate Social Responsibility on the Competitiveness and Sustainability of Beach Restaurants in the Tecoman Valley: A Focus on the Academic Preparation of the Administrator


Influencia de la Responsabilidad Social Empresarial en la Competitividad y Sostenibilidad de los Restaurantes de Playa del Valle de Tecomán: Un Enfoque desde la Preparación Académica del Administrador

LINO-GAMIÑO, Juan Alfredo, MÉNDEZ-GONZÁLEZ, Carlos, RÍOS-SILVA, Luis Octavio and RAMÍREZ-CACHO, Sergio Iván

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Abstract

This study aims to analyze the impact of Corporate Social Responsibility (CSR) on the competitiveness and sustainability of beach restaurants in the Tecomán Valley, Colima, and how this impact varies according to the academic preparation of the administrator. The methodology employed includes a mixed approach that combines qualitative interviews with owners and managers. Statistical tools were used to evaluate the relationship between CSR practices and restaurant performance indicators. The results indicate that the implementation of CSR practices, such as waste management, the use of local products, and environmental training, significantly contributes to the sustainability and competitiveness of the restaurants. Furthermore, it was observed that the academic preparation of the administrator influences the adoption and effectiveness of these practices. This study contributes to the understanding of how CSR can be a driver of sustainable development in the restaurant sector and provides a framework for future research and business strategies. The conclusions highlight the importance of integrating CSR into business management and the need to promote education and training in this area.

CSR, Academic Preparation, Beach Restaurants

Quality of life in patients with Sjögren's Syndrome: habits and practices in Iberoamerica. A perspective from the Administration

Calidad de vida en pacientes con Síndrome de Sjögren: hábitos y prácticas en Iberoamérica. Una perspectiva desde la Administración

DE LEÓN-SIGG, Inés Angélica and PÉREZ-VEYNA, Oscar

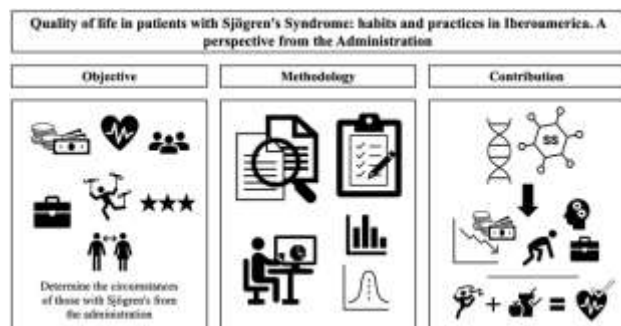
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Abstract

Objective: Determine the circumstances (labor, social, economic, emotional, physical) that accompany patients diagnosed with Sjögren's Syndrome from the perspective of administration and with a gender focus. The above in the context of Ibero-America and for a period that includes the first 20 years of the 21st century. **Methodology:** Theoretical review of articles related to Sjögren's Syndrome, quality of life in its health, economy and work dimensions, and legislative initiatives on rare diseases. A questionnaire was applied based on those already validated on Quality of Life, the responses were analyzed with SPSS, Excel, StatGraphics. **Results:** The disease affects job stability, economic stability, social relationships and decreases physical and mental health. Adaptations are required in the work environment. The financial costs are high if it does not have health insurance. Routine exercise and diet generate a perception of reduced symptoms to continue with a normal productive life.



Sjögren's Syndrome, Quality of Life, Administration

Evaluation tools and strategies used in customer service in micro and small businesses in the city of Chihuahua

Herramientas y estrategias de evaluación utilizadas en el servicio al cliente en las micro y pequeñas empresas en la ciudad de Chihuahua

MINOR-AVILA, Dulce Carolina, HELO-LEOS, José Roberto, ANDREW-SOTELO, María Elena and YÁÑEZ-CASTAÑEDA, Verónica

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Abstract

The general objective of this research is to explore the tools and strategies used by micro and small enterprises (MSEs) in Chihuahua to evaluate and improve customer service during the first half of 2024. Specific objectives include identifying the most commonly used tools, analyzing their application through interviews with entrepreneurs, and proposing activities to enhance customer service. The methodology involves exploratory research with focus groups and in-depth interviews, using 12 open-ended questions in the Gesell chamber at the Universidad Tecnológica de Chihuahua. Thirteen entrepreneurs from commercial and service MSEs participate, and nine in-depth interviews are conducted. The research reveals that evaluating customer service is crucial for obtaining information about service perception and capitalizing on business opportunities, which is reflected in increased profits.





Evaluation, Service, Clients

Joint mechanism of institutions of higher education for the creation a Social Innovation Ecosystem in Istmo de Tehuantepec, México

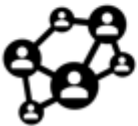


Propuesta de mecanismo de articulación entre Instituciones de Educación Superior para impulsar primer Ecosistema de Innovación Social en el Istmo de Tehuantepec, México

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Abstract

In 2023, was announced the Universidad Tecnológica del Sureste de Veracruz (UTSV) as the host of the first Industrial Innovation Center of the Isthmus of Tehuantepec. Since then, we develop mechanisms that facilitate the establishment of the first Social Innovation Ecosystem. The objective of this article is to describes the efforts made concerning the proposal and designing a Social Innovation Ecosystem. The first stage, the implementation of “The IES Articulation Mechanism” as an action complementary to the promotion of the Program for the Development of the Isthmus of Tehuantepec and the Interoceanic Corridor of the Isthmus of Tehuantepec. A critical path and articulation mechanism were designed based on the loose coupling proposal. The contribution of this article is the documentation of mechanisms for collaborative work to promote social innovation among Higher Education Institutions to achieve local development.

Propuesta de mecanismo de articulación entre Instituciones de Educación Superior para impulsar primer Ecosistema de Innovación Social en el Istmo de Tehuantepec, México.		
<u>Aim</u>	<u>Methodology</u>	<u>Conclusions</u>
<p>Describes the proposal and desing of a Social Innovación System in the Isthmus of Tehuantepec</p> 	<p>The design of a critical route for the first stage of a Joint Mechanism</p> 	 <p>Loosely coupled joint</p> <p>Coordinated according to Leyton</p> <p>Development according to Löwit</p> <p>CEIT (agreements, training, commitment letter, equipment catalogs)</p>



Social Innovation Ecosystem, Joint Mecanism, Istmo de Tehuantepec



Educational Lag in Higher Secondary Education Institutions in Ixtapaluca, Valle de Chalco, and Chalco



Rezago educativo en las Instituciones de Educación Media Superior en Ixtapaluca, Valle de Chalco y Chalco


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Abstract

Objective: The study entitled "Educational Lag in Higher Secondary Education Institutions in Ixtapaluca, Valle de Chalco, and Chalco" is to analyze the impact of the COVID-19 pandemic on school dropout rates and educational quality in these municipalities. **Methodology:** The research uses a mixed-methods approach, combining quantitative and qualitative data. Data collection included surveys, interviews with school principals, and focus groups with students and teachers. This methodology allows for a comprehensive analysis of dropout rates and educational quality, considering both statistical data and personal experiences of those affected by the pandemic. **Contribution:** The findings of this study are expected to provide valuable insights into the specific challenges faced by upper secondary education institutions in the target municipalities. The research will inform the development of effective strategies to address educational lag, improve retention rates, and enhance the overall quality of education. It aims to benefit policymakers, educators, and the student community by providing evidence-based recommendations to mitigate the adverse effects of the pandemic on education. The study highlights the importance of tailored interventions and support systems to help students address the challenges posed by the COVID-19 pandemic and ensure a more resilient and inclusive educational environment in the future.

Objective	Methodology	Contribution
 <p>Ixtapaluca, Chalco y Valle de Chalco</p> <ul style="list-style-type: none"> • School dropout rates. • Follow-up strategies. • Significant socioemotional effects. • Impact on educational quality. 	<p>Mixed study</p>  <p>1st. Stage, design of instruments and location of sources of data collection. 2nd. Stage, delimitation. 3rd. Stage, analysis and cross-checking of information. 4th. Stage, results.</p>	<p>Information</p>  <ul style="list-style-type: none"> • That it serves as a basis for the design of strategies for comprehensive follow-up and accompaniment of high school students. • It allows identifying policies and strategies that facilitate the improvement of educational quality.

Educational lag, School dropout, Educational quality

Impact of artificial intelligence on business transformation and efficiency: a contemporary analysis

Impacto de la inteligencia artificial en la transformación y eficiencia empresarial: un análisis contemporáneo

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



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Abstract

This article reviews the literature on Artificial Intelligence (AI) and its application in small and medium-sized enterprises, focusing on how they can integrate AI to optimize business processes. Unlike applications (Apps.), AI enables machines to perform tasks that require human intelligence, such as learning and decision-making. The integration of AI into applications has revolutionized technology, enabling customization and efficiency in services. AI offers benefits such as personalized recommendations, virtual assistants, voice recognition, and language translation. Additionally, key authors are mentioned who provide foundational theoretical frameworks for understanding AI. The adoption of AI in small Mexican businesses presents challenges such as technology investment, data privacy, and workforce transformation. However, AI can drive efficiency and competitiveness for these companies. Ethical and social concerns are also addressed.

Impact of artificial intelligence on business transformation and efficiency: a contemporary analysis		
Objectives	Methodology	Contributions
Relationship of Artificial Intelligence (AI) with companies 	Qualitative interpretative design Critical compilation of texts Bibliography of AI   	Operational efficiency through AI Reduction of costs Increase productivity   

Artificial Intelligence, Companies, Business efficiency

Preventive service interval extension on Caterpillar 789 and 793 off-highway trucks


Extensión de intervalo de servicio preventivo en camiones fuera de carretera Caterpillar 789 y 793

CÓRDOVA-VILLANUEVA, José Gabriel, LINO-GAMIÑO, Juan Alfredo, RÍOS-SILVA, Luis Octavio and MÉNDEZ-GONZÁLEZ, Carlos

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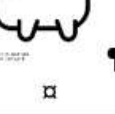
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Abstract

Objective: The project aims to develop and implement contamination control measures to extend the service intervals of Caterpillar 789 and 793 trucks. This will reduce operating costs by extending oil change intervals, maintaining oil quality throughout the lifespan of components and systems. **Methodology:** The feasibility of Caterpillar's "Committed to Customer Success" program was analyzed in collaboration with TRACSA. The project included simulating results to evaluate the impact of extending service intervals on reducing lubricant consumption, establishing machinery affinities, purchase volumes, suppliers, and maintenance schedules according to the manufacturer's recommendations. **Results:** The simulation showed significant savings in lubricant use, achieving a 50% cost reduction. Other benefits included prolonging the lifespan of components, better cleaning conditions, reduced handling of used oil, reduced carbon footprint, increased machine availability, and reduced downtime, improving work efficiency and safety.

Preventive service interval extension on Caterpillar 789 and 793 off-highway trucks.

Objective	Methodology	Contributions
		
		
		
		



Preventive Maintenance, Service Interval Extension, Cost Savings, Caterpillar


Sustainability and Environmental Care: Social Responsibility


Sustentabilidad y Cuidado Ambiental: Responsabilidad Social


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Abstract

The climate crisis is worsening as greenhouse gas emissions continue to increase; the availability of drinking water for the population; “Day 0” makes it more present; you practice it in agriculture and other economic activities; As the growth of the national population increases in urban areas where water conditions are overexploited, all of this compromises the availability of natural resources for future generations. The challenge we face to transform environmental conditions with individual activities is not impossible, political leaders and public institutions should unite all stakeholders to focus on the SDGs to strengthen collaboration, while building trust and accountability. In search of actions that make course, government institutions at state and federal level has the Legislative Strategy for the 2030 Agenda, the awareness of citizens in the state of Guanajuato and in the municipalities was given the installation and implementation of the Bodies for Monitoring and Implementation of the 2030 Agenda (OSI), clear actions, now is not the time for analysis and diagnosis, we must be aware respectful with us and with future generations.



Environmental Care, Sustainability, Social responsibility




Organizational Belonging of a footwear manufacturer in the city of León, Guanajuato



Pertenencia Organizacional de una manufacturera de calzado de la ciudad de León, Guanajuato

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Abstract

The purpose of the research is to understand the dynamics of the psychological and social environment through a diagnosis of the factors that affect the performance of workers in order to understand the problems in the direction and management of personnel and the high turnover of personnel. in a footwear company in the city of León Guanajuato. The method applied is quantitative, non-experimental, Cross-sectional: The data were obtained only once, descriptive statistics were used, the recording of the measurements was through observation of the workers' behavior, a structured questionnaire and analysis tools were developed. , the population is the workers in the production area, the census is 150 people. The result obtained is the need to apply internal marketing strategies to improve the work environment in the footwear manufacturing company in the city of León, Guanajuato.

Objective	Methodology	Contribution
To understand the dynamics of the psychological and social environment through a diagnosis of the factors that affect the performance of workers, in order to understand the problems in the direction and management of personnel and the high turnover of personnel in a footwear company in the city of León, Guanajuato.	Quantitative, non-experimental, Cross-sectional: The data were obtained only once, descriptive statistics were used. the recording of the measurements was through the observation of the behavior of the workers, a structured questionnaire and analysis tools were developed. the population is the workers of the production area, the census is 150 people.	Understanding the work environment contributes to detecting the problems that arise, containing risk factors, preventing and improving the work environment in order to reduce harmful situations, even more, the benefits it brings to the organization in general and the image that you want to transmit to customers.

Belonging, Stress, Work environment

Leadership and person management skills in a footwear manufacturer in the city of León, Guanajuato




Habilidades de liderazgo y gestión del personal en una manufacturera de calzado de la ciudad de León, Guanajuato



RIVERA-CISNEROS, Miguel Angel, FRANCO-BRAVO, Azeneth Irazú, PÉREZ-FLORES, Angélica Josefina and SERRANO-TORRES, Ma. Guadalupe

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Abstract

The purpose of the research is to understand the work environment through a diagnosis of the factors that affect the performance of workers and the lack of motivation in order to understand the problems in the direction and management of personnel in a footwear company. the city of León Guanajuato. The method is quantitative, non-experimental, the data were obtained only once, descriptive statistics were used, the recording of the measurements was through a structured questionnaire and analysis tools, a census of the 251 people who work in the company was applied. company. A questionnaire was designed with 47 questions on a Likert scale. The result is the need to develop leadership and management skills in middle management to improve performance, intra-organizational communication and staff motivation in a footwear manufacturing company in the city of León, Guanajuato.

Leadership and personnel management skills in a footwear manufacturing company in the city of León, Guanajuato.

Objective	Methods	Results
The purpose of the research is to understand the work environment through a diagnosis of the factors that affect the performance of workers and the lack of motivation in order to understand the problems in the direction and management of personnel in a footwear company. the city of León Guanajuato	The method is quantitative, non-experimental, the data were obtained only once, descriptive statistics were used, the recording of the measurements was through a structured questionnaire and analysis tools, a census of the 251 people who work in the company was applied. company. A questionnaire was designed with 46 questions on a Likert scale.	The result is the need to develop leadership and management skills in middle management to improve performance, intra-organizational communication and staff motivation in a footwear manufacturing company in the city of León, Guanajuato.

Climate, Leadership, Management

Knowledge Economy and Higher Education: An Analysis of the Role of the Student

Economía del Conocimiento y Educación Superior: Un Análisis del Papel del Estudiante

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Abstract

The main objective of this study was to investigate students' perspectives on how to take advantage of the opportunities that the knowledge economy offers them for their professional development and future entry into working life, taking into account four specific variables: international mobility, creativity and innovation. . , registration of patents and utility models, and command of the English language. A quantitative methodology with a descriptive transectional design was used to address the research questions, focusing on criteria that guaranteed the observation and measurement of the problem. Data collection was carried out through the application of the instrument "Knowledge Economy at a Higher Level" in a Technological University of Southeast Mexico, aimed at students of careers related to engineering and technology. The relevance of this study lies in understanding the generation, dissemination and application of new knowledge in the economy, fundamental aspects to promote innovation and technological progress for the economic growth of a state.

Abstract		
Objective	Methodology	Contribution
Investigate students' perspectives on the knowledge economy and their professional development.	Quantitative with a descriptive transectional design	Promote technological progress for economic growth through the training of its students.

Knowledge Economy, Creativity And Innovation

Financial education and its relationship with eighth-quarter students of the Bachelor's Degree in Business Innovation at a University in Cancun

La educación financiera y su relación con los alumnos de octavo cuatrimestre de la Licenciatura en Innovación de Negocios en una universidad de Cancún

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Abstract

Knowledge about financial education has gained greater importance among university students, as they now recognize the need to learn how to manage their finances and increase their wealth. In this context, the present research aims to evaluate the level of knowledge about financial education among students in the eighth semester of the Bachelor's Degree in Business Innovation at a university in Cancun. To achieve this objective, a questionnaire was designed and applied that favors the descriptive method, in a sample of 113 students who voluntarily agreed to participate as study subjects. The questionnaire covered several key dimensions related to financial education, including budget planning, consumption, credit, investment, and savings. The results of the research will allow the identification of strengths and weaknesses in students' knowledge of financial education, which can be used to design more effective and personalized financial education programs to improve students' financial skills.

Abstract - Financial education and its relationship with eighth-quarter students of the bachelor's degree in business innovation at a University in Cancun		
Objectives	Methodology	Contributions
Evaluate the level of financial literacy among students 	Quantitative with a descriptive cross-sectional design 	Improve the use of personal finances among students 

Financial education, Financial culture, Personal finance




Quantitative analysis of business perceptions of regional MSEs on sustainability

Análisis cuantitativo de las percepciones empresariales de las MyPEs regionales en sostenibilidad

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Abstract

The present work addresses a quantitative analysis of the perceptions of the owners of micro and small businesses (MSEs) in the city of Tehuacán, Mexico, of the actions they have undertaken to do sustainable business in the sense of achieving responsible business and consumption. for current and future businesses. The responses of 602 business owners were analyzed where descriptive statistical analysis tests were used to know what perception they have regarding their sustainability actions, what actions they have implemented, through a questionnaire of 6 specific questions, to demonstrate whether the actions correspond to concerns related to sustainability. The study shows that the most important concerns for businessmen are attracting more clients, obtaining workers who collaborate with businessmen and, to a lesser extent, actions to reduce pollution, achieving integration with the environment and offering products and services. services that allow for sustainability.

Quantitative analysis of business perceptions of regional SMEs in sustainability		
Goals	Methodology	Contribution
The present work addresses a quantitative analysis of the perceptions of the owners of micro and small businesses (MyPEs) in the city of Tehuacán, Mexico, of the actions they have undertaken to do sustainable business.	The responses of 602 business owners were analyzed where descriptive statistical analysis tests were used to know what perception they have regarding their sustainability actions.	The study shows that the most important concerns for businessmen are attracting more clients, obtaining workers who collaborate with businessmen and, to a lesser extent, actions to reduce pollution.

Quantitative Analysis, Perceptions, Undertaken Sustainable


Initiatives to create a tutorial support plan for new students




Iniciativas para crear un plan de acompañamiento tutorial para los estudiantes de nuevo ingreso




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Abstract

In a Tutorial Action Plan that has reference in the National Tutoring Program of the TecNM 2022, there is the first moment of the tutoring to the approach identified as Admission, which covers the first three semesters of the career, a fact that is a critical period for the student since it marks the beginning of their experience at the institution. During this phase, students usually present difficulties, which must be met with tutorial actions such as: educational guidance, development of skills, guidance within the institution, personal development and emotional and motivational support, which can help reduce failure and dropout rates, allowing the completion of the career successfully.



Tutoring, First Semester, Proposals

Corn as an alternative method for contributing to the country's public policies in terms of health, sustainable economy and food security, accordance with the 2030 Agenda and FAO

El maíz como método alternativo para la contribución de las políticas públicas del país en materia de salud, economía sostenible y seguridad alimentaria, acorde a la Agenda 2030 y a la FAO

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Abstract

The general objective is to determine the viability of corn as an alternative method for contributing to the country's public policies in terms of health, sustainable economy and food security, in accordance with the 2030 Agenda and the FAO, through its sowing, harvesting and processing, until it becomes a coffee substitute with a similar aroma, smell and taste to coffee, for its proof of concept. This project provides an alternative to reduce poverty through the sowing of corn, promoting the reactivation of the countryside and sustainable agriculture. Food security would be promoted with a product that is friendly to the environment and health; it would support sustained, inclusive and sustainable economic growth, full and productive employment for the sale and distribution of the product; consequently, products of this type can contribute favorably to the public policies of the country and the world.

Corn as an alternative method for contributing to the country's public policies in terms of health, sustainable economy and food security, accordance with the 2030 Agenda and FAO.	
Objective: To determine the viability of corn as an alternative method for contributing to the country's public policies in terms of health, sustainable economy and food security, in accordance with the 2030 Agenda and the FAO.	Contributions: Agenda 2030 (SDG 1, SDG 2 and SDG 8), FAO, Public policies of the country in the PND and PVD.
Methodology: Qualitative Nature. Field, documentary and multidisciplinary research. Areas: Agricultural and livestock food chain, environment and natural resources.	

Public policies, Agenda 2030, Corn



The role played by critical thinking in the fight against academic failure in the ISENCO High School, Tecomán campus: An approach from Habermas theory.

El rol que juega el pensamiento crítico en la lucha contra la Reprobación Escolar en el Bachillerato del ISENCO, campus Tecomán: Un enfoque desde la teoría de Habermas

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Abstract

School failure is an educational problem that affects academic performance and the trajectory of students, impacts their self-esteem, and contributes to social inequality. This phenomenon, which indicates low educational quality, is linked to a lack of motivation, poor performance, and a scarcity of resources. A critical approach proposes analyzing the institutional structures that perpetuate this situation, fostering dialogue among educational actors to find effective solutions. At the ISENCO high school in Tecomán, efforts are being made to identify internal and external causes, proposing alternatives such as improving reading comprehension, implementing tutoring, and strengthening educational infrastructure. Additionally, it is crucial to develop critical thinking and ethical skills in students, as well as to encourage community participation in the school. This partial report presents advancements and results obtained, using a mixed approach for in-depth analysis that leads to solutions that prevent school dropout and failure.

The role played by critical thinking in the fight against academic failure in the ISENCO High School, Tecomán campus: An approach from Habermas theory.		
Objectives	Methodology	Contribution
Analyze and understand the causes of school failure in the high school of ISENCO, Tecomán campus, through an approach based on critical thinking and action-research methodology."	Sociocritical Paradigm Quantitative-Qualitative Approach Method Action Research	The study helps identify the causes of school failure and proposes strategies based on critical thinking, fostering dialogue and community participation to improve academic outcomes
  	   	  

School failure, Critical thinking, Social inequality




Application of design thinking in EE Technological Competences in Education

Aplicación de design thinking en la EE Competencias Tecnológicas en la Educación

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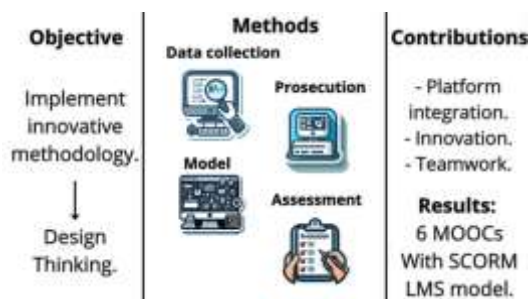
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Abstract

The present research refers to the implementation of an innovative learning methodology called Design Thinking with the students of the Bachelor's Degree in Administrative Computing Systems at the Universidad Veracruzana, Xalapa area, specifically in the Educational Experience Technological Competencies in Education. The Design Thinking model is a methodology for solving problems that is based on five stages and focuses attention on people. Applying this methodology in the development of the aforementioned educational experience generated, as a result, the development of 6 Massive Online Open Course (MOOC), using a Shareable Content Object Reference Model (SCORM) or Learning Management System (LMS) in any of the free platforms available and integrating educational technologies to create it, promoting teamwork, innovation, empathy and self-regulation in students.






Innovation, Design Thinking, Learning, Education


Influence of training as a strategy to promote organizational innovation in private sector service MSMEs




Influencia de la capacitación como una estrategia para impulsar la innovación organizacional en las MiPyMEs de servicios del sector privado




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Abstract

Training should not only be seen as an obligation of the company, it is essential to analyze the impact for the growth of both the company and the employees, and an essential factor is organizational innovation, therefore, it is necessary to face resistance both of the company as well as the employees and invest in it. The main objective of the study is to analyze the influence of training as a strategy to promote organizational innovation in private sector service MSMEs; for which a non-experimental quantitative research of a transectional type was carried out; with probabilistic sampling, having a sample of 132 MSMEs. Obtaining as the main result the regression and correlation analysis that was carried out shows a positive and strong relationship between the variables analyzed, which demonstrates that training helps to promote organizational innovation in MSMEs.

Influence of training as a strategy to promote organizational innovation in private sector service MSMEs

Goals	Methodology	Contribution
Analyze the influence of training as a strategy to promote organizational innovation in private sector service MSMEs.	Non-experimental quantitative research of a transectional type. Probability sampling	Delve into the importance of training to achieve organizational innovation.

Training, Organizational Innovation, MSMEs

Knowledge Management Factors in Companies and Their Association with the Performance of a Tourist Destination



Factores de la gestión del conocimiento en las empresas y su asociación en el desempeño de un destino turístico

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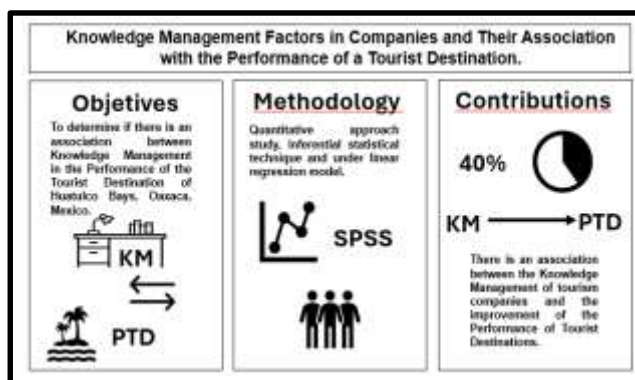
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Abstract

The present study aimed to determine whether there is a significant relationship between knowledge management and the performance of the “Bahias de Huatulco” tourist destination in Oaxaca, Mexico. A quantitative, correlational research approach was used, and the hypothesis was tested using inferential statistics through linear regression via SPSS software. The analysis revealed that knowledge management significantly impacts destination performance ($p < 0.05$), explaining 40% of the variability, thus confirming the research hypothesis.



Knowledge Management, Tourist Destination Performance, Tourism

Burnout en estudiantes universitarios de los programas académicos de Lic. en Contaduría Pública (LCP) y Lic. en Economía y Finanzas (LEF) del Instituto Tecnológico de Sonora

Burnout en estudiantes universitarios de los programas académicos de Lic. en Contaduría Pública (LCP) y Lic. en Economía y Finanzas (LEF) del Instituto Tecnológico de Sonora

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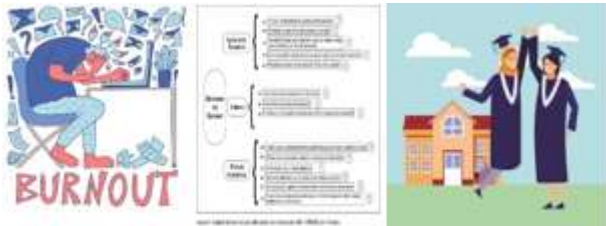
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Abstract

The challenges of adapting to this new world require universities to establish new actions that strengthen the preparation of their students. The objective of the research is to identify the degree of burnout that students of the Bachelor of Public Accounting (LCP) and Bachelor of Economics and Finance (LEF) programs of the Technological Institute of Sonora are experiencing. The research methodology is quantitative, non-experimental, with a cross-sectional design and descriptive scope. To collect the information, the Burnout Inventory-Student Survey (MBI-SS) was used, developed by Schaufeli, Martínez, Salanova, González-Romá and Bakker in 2002 in its Colombian adaptation and validation developed by Hederich and Caballero in 2016. The contribution is to determine the situation of the students of these academic programs in three major aspects: Exhaustion, Cynicism and Academic Efficiency, in such a way that interventions are established that support the academic transition of the student. Burnout in university students of the academic programs of Bachelor in Public Accounting (LCP) and Bachelor in Economics and Finance (LEF) of the Technological Institute of Sonora



Burnout, Cynicism, Exhaustion

ChatGPT: impact on Programming learning among students at the Technological University of Huasteca Hidalguense

ChatGPT: impacto en el aprendizaje de la programación en los estudiantes de la Universidad Tecnológica de la Huasteca Hidalguense

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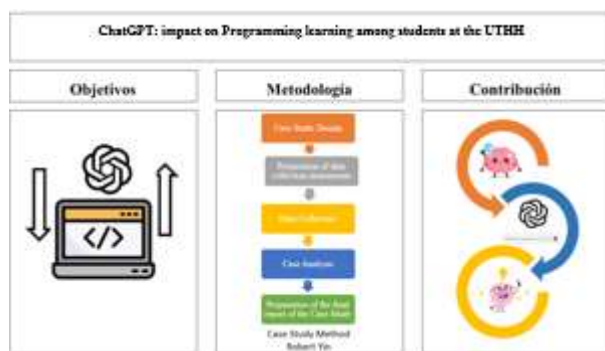
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Abstract

The emergence of generative AI in education has a revolutionary impact, which moves teaching-learning processes to change, thus requiring teachers and students to learn new skills to enhance their use in such a way that it favors meaningful learning. This research focused on knowing the impact of its use on the learning of programming in UTHH students; The Case Study Method proposed by Robert Yin was used. The analysis of the results does not lead to the conclusion that students strengthen the learning process through requesting guidance and correction on errors in the code, detailed explanation of the lines of code to ChatGPT, highlighting the fact that it can be used natural language for communication, which helps them better understand the problems raised.





ChatGPT, Learning, Programming

The adoption of digital skills influences decision making in organizations, case of a footwear company

La adopción de las habilidades digitales influye en la toma de decisiones en las organizaciones, caso empresa calzado

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Abstract

This research is a case study for a company in the Leather Footwear sector in the city of León, Gto. The objective was to discover in workers the digital skills they possess and relate them to decision-making in the organization. The methodology used was a questionnaire applied to managers and personnel who work in the quality area. According to the results found, the majority, but not all workers, have developed their digital capabilities; However, the results showed that there is still a percentage of the worker population that does not manage, do not know and does not identify relevant information in the digital area. The most interesting contributions is that there is an area of opportunity in training workers to improve their digital skills. Decision making is affected by the proposed variables, and it is worth improving this indicator.

Abstract

	Objective The objective was to discover in workers the digital skills they possess and relate them to decision-making in the organization.
	Methodology The methodology used was a questionnaire applied to managers and personnel who work in the quality area. According to the results found, the majority, but not all workers, have developed their digital capabilities.
	Contributions The most interesting contributions are that there is an area of opportunity in training workers to improve their digital skills. Decision making is affected by the proposed variables, and it is worth improving this indicator.

Digital skills, Case Study, Footwear Industry

Anxiety and money management

Ansiedad y gestión del dinero

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Abstract

The generation of stress and financial anxiety is the result of a person's inability to cope with adversities and unforeseen events of an economic nature, poor financial education and poor management of money, which can arise at any time. . Thus, this research seeks to identify the presence of psychosocial factors that people do not know how to recognize, associated with the interpretation of reality that converges between the subjective and objective, between a present desire and the anguish of the future future. A lack of cognitive capacity to unravel the psychological networks created by the individual for several years, based on beliefs, experiences and bad habits, mostly physical and cognitive - economic. Being a non-experimental, exploratory type of research, with a quantitative approach, using the inductive, analytical-synthetic method. Taking as a sample, 219 people between 20 and 40 years old, currently working and studying, using a questionnaire of 22 questions on a Likert scale. Which shows little information on financial issues, lack of knowledge of the symptoms and emotions that can arise as a result of stress and financial anxiety. Concluding that continuing education in financial issues and money management is necessary and indispensable; as well as recognizing that anyone can experience stress and anxiety in various contexts and going to specialized doctors for optimal treatment using therapies such as Gestalt that serve as a catalyst for emotions.




Money Management, Financial Stress And Anxiety, Emotions




Diagnosis of financial inclusion in the municipality o Tecamachalco Puebla, México

Diagnóstico de inclusión financiera en el municipio de Tecamachalco Puebla, México

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Abstract

Financial inclusion is a facilitating element to fight poverty and promote prosperity among the regions of the countries. In this regional research a diagnosis was conducted in the municipality of Tecamachalco, Puebla, through the DENUE (National Directory of Economic Units), of INEGI (National Institute of Statistics, Geography and Informatics), in which 65 financial services institutions were identified in the municipality under study. A survey from 289 questionnaires was applied to individuals and companies, in the first semester of 2024 to identify the access that people have to various financial products and services to meet their needs, identifying whether the service provided by the institutions is responsible and sustainable. Regional studies are very important to design public policies in financial services.


Diagnosis, Inclusion, Financial


Play and remembrance in young university students

Juego y recuerdo en jóvenes universitarios

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Abstract

Social coexistence and with oneself, in recent years, is characterized by an absence of tenderness and the presence of objectification of oneself and the other, the same thing happens in university classrooms, a reflection of this is the non-desire to play, to meet the other from the imagination of play. This research aimed to understand how students define play and what could trigger free and joyful play. It was a qualitative study, with the phenomenological and hermeneutical method based on the recovery of threads of life and the experience of playing with students. The results showed a devaluation of play because it is stripped of freedom and limits distance from ordinary life. Playful memory opens the door to free play, movement of the imagined body and world, triggering a humanizing game.

Resume gráfico en inglés

Play and remembrance in young university students		
Objectives	Methodology	Contributions
Define the idea of play in university students Know which situations trigger the free play	Qualitative. Method: Phenological and hermeneutical Study population: university students. Techniques: Threads of Life and Participant Observation Tools: questionnaire and field diary	Definition of play from university youth. Description of the process of play in young university students. Identify memory as a trigger for free play. Proposal to create spaces for free play




Play, Memory, Youth




Implementation of Mobile Monitoring Technology for Industrial Safety




Implementación de la Tecnología de Monitoreo Móvil para la Seguridad Industrial




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Abstract

This paper presents the development of a mobile application for safety monitoring, integrated into the "Safety Guardian" project at Universidad Tecnológica de León. The application allows remote management of safety reports generated by a line-following robot. Through an Android platform, users can access real-time reports, configure patrol routes, and ensure compliance with safety standards. The implementation of a centralized database using MySQL, combined with RESTful web services, enables seamless data storage and retrieval. The aim of this project is to provide a practical solution for industrial safety management, improving the efficiency of report generation and data access in educational and industrial environments.

Implementation of Mobile Monitoring Technology for Industrial Safety		
Objective	Methodology	Contribution
<p>The main objective of the "Safety Guardian" project, developed at the Universidad Tecnológica de León, is to implement an efficient and practical solution for industrial safety management through the use of a line-following robot and a mobile application. The aim is to improve the generation and access to real-time safety reports, optimizing processes in both educational and industrial environments.</p>	<p>The project follows a waterfall methodology, with the following key phases:</p> <ul style="list-style-type: none"> Requirements Analysis: Identification of the system's needs in collaboration with safety supervisors. System Design: <ul style="list-style-type: none"> Development of a centralized database using MySQL. Creation of a mobile application in Java for the Android platform, integrated with RESTful web services. Programming of a line-following robot using Python and OpenCV for image capture and processing. Development and Testing: Implementation of functionalities such as detecting proper use of personal protective equipment (PPE) through computer vision algorithms. 	<p>This project contributes to the field of industrial safety by offering:</p> <ul style="list-style-type: none"> Real-Time Monitoring: Supervisors can make quick and informed decisions due to the transmission of real-time reports from the robot to the mobile application. Process Optimization: It enhances the efficiency of report generation and reduces response times to potential safety risks. Integration of Emerging Technologies: Combines mobile robots with advanced computer vision algorithms to ensure the correct use of PPE in critical zones. Applicability: The system has demonstrated effectiveness in simulated environments, with potential for implementation in real industrial settings.

Mobile Application, Industrial Safety, Report Management

Analysis of the factors that determine the attraction, development and retention of human talent in Latin American and the Caribbean countries

Análisis de los factores que determinan la atracción, desarrollo y retención de talento humano en los países de América Latina y El Caribe

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Abstract

The purpose of the research is analyse which factors and how they influence determining the attraction, development and retention of human talent in the countries of Latin America and the Caribbean. This research is documentary-descriptive and the analytical-synthetic method was used. Data from the Global Talent Competitiveness Index 2023 were used. Both the input and output pillars were reviewed and to the end it was possible to identify the reasons why the countries of Latin America and the Caribbean are attractive, how it is generated economic development and why they retain human talent.

Analysis of the factors that determine the attraction, development and retention of human talent in Latin American and the Caribbean countries		
Objetivo	Metodology	Contribution
Analyze the entry and exit pillars of the Global Talent Competitiveness Index to determine how they influence the attraction, development and retention of human talent.	This research is documentary-descriptive and the analytical-synthetic method was used.	Based on the analysis of the input pillars: Enable, Attract, Grow and Retain, as well as the output pillars: Professional and technical skills, and Global knowledge skills, it is possible to design innovative strategies.

Competitiveness, Motivation, Human talent

The AI regulation and laws

La regulación de la Inteligencia Artificial y el Derecho

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Abstract

This article makes an approach to the study of some legal texts which regulate the uses of the AI systems, the high risks AI systems and problems of the application in some laws areas. This essay pretends making a reflection about some laws fields that would be crucial in the IA regulation, it is necessary to ask the question if the professional of laws would be replaced. It is important make the question if there is important the AI is contained whitin by the human beings. By the last, it will be treated an attempt at regulation of the AI in México.



Artificial Intelligence, Regulation, AI High risk systems

Intellectual property rights and AI regulation

El derecho de propiedad intelectual y la regulación de la IA


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Abstract

In this article is important to study some legal documents donde as the human need to regulate the AI and their use in the Intellectual property rights. It is Important to study the AI generative, because it create new content by using Works protected by copyright. We'll discuss if it is posible give the character of autor to an AI according to the US patent office.

Intellectual property rights and AI regulation	
Objectives Analyze the use of generative AI in productions with content protected by intellectual property law. Establish the importance of classifying an AI as high-risk system when they have negative consequences on fundamental rights, such as intellectual property rights.	Methodology Qualitative approach, analysis of legal texts that regulate AI. Analysis of cases dealing with AI and intellectual property issues.
	
Contribution	
This article emphasizes the need to regulate AI when generate content protected by intellectual property rights. We discuss criteria for registering a work generated with the use of AI can be registered.	

Intellectual Property, Generative AI, Confidentiality


Poverty and crime in Tabasco


Pobreza y delincuencia en Tabasco

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Abstract

This study analyzes the relationship between poverty and crime in Tabasco. Three Simple Linear Regression (SLR) models were analyzed, considering the Weighted Crime Index, the Social Lag Index, the lack of access to health services and the Public Security Contribution Fund (FASP). The results show that the lack of access to health services has a strong correlation and is a predictor of PDI. To reduce crime, a set of public policies aimed at improving the living conditions of society is recommended.

Poverty and crime in Tabasco		
Purpose	Design/Methodology/Approach	Originality/Value
This study analyses the relationship between crime and poverty in Tabasco, with the aim of recommending some lines of action in terms of public policy.	Official statistical data from INEGI, CONEVAL and SNSP were used. Three Simple Linear Regression models were fitted.	The authors consider that the results obtained contribute to the construction of public policies for the reduction of poverty and crime rates.

Poverty, Crime, Economy Of Tabasco

The role of soft skills in job performance: View from the Centennial generation

El rol de las competencias blandas en el desempeño laboral: Visión desde la generación Centennial

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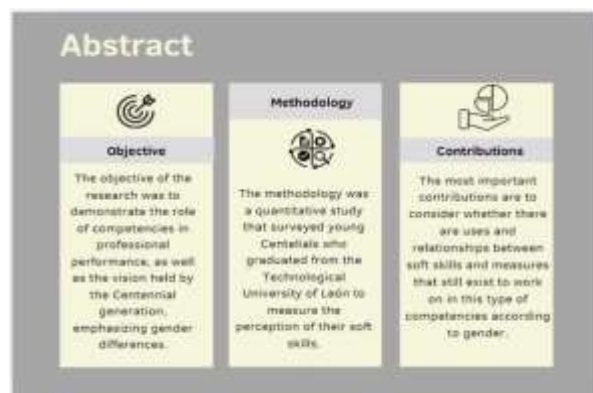
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Abstract

This article analyzes the importance of soft skills in the labor market in the State of Guanajuato and how the centennial generation perceives themselves regarding them. The objective of the research was to demonstrate the role of competencies in professional performance, as well as the vision held by the centennial generation, emphasizing gender differences. A study from the University of Celaya is mentioned, which mentions the importance of technical and soft skills that are crucial for the employability of professionals in Guanajuato. The methodology described was a quantitative study that surveyed young centennial graduates from the Technological University of León to measure the perception of their soft skills. Among the most important contributions is that there are uses and relationships between the soft skills measured and that there are still aspects to work on in this type of competencies according to gender.



Soft Competencies, Centennial, Soft Skills


Analysis of the school environment in a university of the South of Sonora


Análisis del clima escolar en una universidad del Sur de Sonora



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Abstract

The purpose of this proposal is to evaluate the level of school climate in students at a university in Southern Sonora to formulate recommendations aimed at improving or strengthening it. A self-administered instrument adapted from Gutiérrez (s/f) was applied, originally composed of 35 items, the final version applied was composed of 39 items grouped into two dimensions, general coexistence climate and satisfaction and fulfillment of expectations. In the analysis of the results, means were formulated by item, dimension and general school climate, the variables that summarize the characteristics of the participants were considered as categorical variables and were used to analyze whether or not they influence the evaluation of the school climate, at a general level. and by dimensions, an analysis was carried out through the Statistical Package for Social Sciences (SPSS) program. The levels of school climate, general coexistence climate, as well as satisfaction and fulfillment of expectations turned out to be high.

Analysis of the school environment in a university of the South of Sonora		
Objetivos	Metodología	Contribución
Evaluate the level of school climate in the students of the Bachelor's Degree in Tourism Business Administration of the Technological Institute of Sonora (ITSON) Navojoa to formulate recommendations aimed at its improvement or strengthening.	Using a quantitative methodology, the level of school climate in students of Bachelor of Tourism Business Administration (LAET) from a university located in the south of the state of Sonora.	This analysis evaluates the level of school climate in students at a university in Southern Sonora and generates recommendations aimed at improving or strengthening it.

Students, School Environment, University


The inbaund as a tool for the marketing of a Styrofoam-based sealant


El inbaund como herramienta para la comercialización de un sellador a base de unicel

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Abstract

This article discusses the adoption of the Inbound Marketing approach in a sealant made from recycled expanded polystyrene. In order to develop this topic, we start with a discussion of the concept of inbound marketing. The creation of a marketing strategy to publicize the attributes of the polystyrene-based sealant allows the market to know the benefits obtained from its use and the benefits it does to the environment. The development of the strategies is to highlight the benefits that will be obtained from the use of the polystyrene sealant, whose duration of the sealant on smooth surfaces is more than 100 years after its application, compared to other sealants with the same characteristics. so its competitive advantage is greater compared to its competition.


Sustainability reports in Mipymes with GRI standards


Informes de sostenibilidad en las Mipymes con estándares del GRI

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Abstract

The 2030 agenda of the United Nations (UN) issued a series of objectives regarding sustainability as a result of various problems that arise in our world, such as climate change, poverty, inclusion, equality, equity and education. Quality among others. In this context, the UN has been working for several years on strategies to have a better world. One of these strategies was the global pact of shared values and principles between businessmen and civil organizations, with the aim of giving a human face to the global market through the adoption of ten principles in the areas of human rights, labor standards, the environment and anti-corruption. In turn, 17 sustainable development goals (SDGs) were created, where all actors can influence by helping to implement strategies that contribute to a better world.

Sustainability reports in Mipymes with GRI standards		
Objective	Methodology	Contribution
Design a guide for MSMEs in Mexico to issue reports on sustainability.	The method used in this research is qualitative, exploratory and documentary.	Guide for issuing reports on sustainability in Mipymes in Mexico.



Sustainability reports, GRI, ODS



Tourism and Employment: Job satisfaction as a retention strategy and organizational effectiveness

Turismo y Empleo: La satisfacción laboral como estrategia de retención y efectividad organizacional

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Abstract

Tourism activity is a basic pillar for the development of a destination's economy, since it is a very important source of employment; however, this sector can face challenges inherent to retaining talent. This article explores how job satisfaction is a key element to build staff loyalty or that its absence can cause constant turnover, as well as its impact on the organizational effectiveness of hotels in the city of Guanajuato. This research used a quantitative approach with statistical data analysis and literature review. Among the main findings, it was found that employees are satisfied with factors such as physical working conditions, but not with the possibilities of growth or the recognition they receive, as well as low salaries and long working hours.



Job Satisfaction, Tourism, Hospitality

Assessment of the elements that characterize the willingness to pay and to act of individuals and communities in favor of urban green area governance

Valoración de los elementos que caracterizan la disponibilidad a pagar y a actuar de los individuos y comunidades en favor de la gobernanza de áreas verdes urbanas


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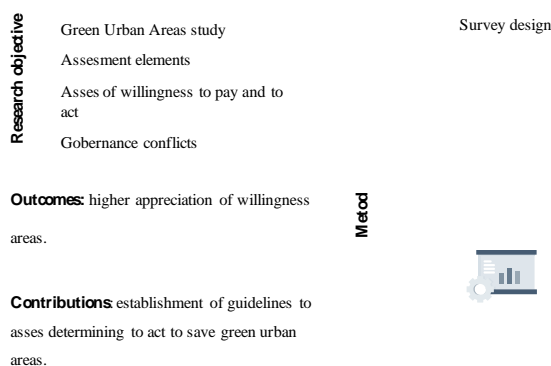
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Abstract

Urban green areas offer the possibility of carrying out activities related to the social, physical and mental well-being of citizens, improving the city's environment, security and landscape. This social and environmental benefits can be continually produced if conditions remain optimal, but they can be lost when conditions are not adequate. This is the context where the research takes place, refers to its governance and elements that make the well-being generated for its users and their communities last. A survey was applied to 202 respondents from the population of Cd. Obregón, Sonora. The main findings are the highest assessment for the willingness to act over the willingness to pay, an aspect that is justified by the age of the respondents, who mainly belong to the age range 18 to 24 years. Other outcomes shown the best valued ecological functions are the preservation of flora and fauna as well as biodiversity conservation.




Green Urban Areas, Assessment, Willingness To Pay Or Act

Measurement of Work Environment in a Savings and Loan Cooperative


Medición de Clima Laboral en una Cooperativa de ahorro y préstamo

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Abstract

The objective of this research is to analyze the Organizational climate in a Savings and Loan Cooperative, located in the municipality of Izúcar de Matamoros, Puebla, an organization with more than 60 years serving the savings, investment and credit needs of our region. through nine branches. The type of research to be developed for the study of this case is descriptive in nature, since its purpose is to study the current state of the different factors that can influence the formation of the Climate. An instrument was applied to measure climate, which was provided to 25 employees of the company, without discrimination, type of contract, age, or seniority. This study showed favorable results for it, which makes it possible to reach a conclusive result, since the workers have been very clear and their perceptions have coincided in many of the situations that have arisen.





Measurement, Diagnosis, Organizational climate

Learning styles: Trends among students in the economic and administrative area at the Technological University of León

Estilos de aprendizaje: Tendencia en estudiantes del área económico administrativa de la Universidad Tecnológica de León


QUEZADA-FLORES, Ma. de la Luz, GONZÁLEZ-ARREDONDO, Liliana, SERRANO-TORRES, Ma. Guadalupe and MEJÍA-GUERRERO, Mauricio

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Abstract

The learning styles according to Hermann's model indicate that each person has a preference for processing and retaining information, identifying four cognitive styles: analytical, practical, relational, and creative. This research aims to identify the trends in learning styles among new students in the September-December 2024 semester in the economic-administrative area of the Universidad Tecnológica de León, through the application of Hermann's Brain Dominance Instrument. The methodology includes a preliminary review of learning styles, followed by the application of the instrument to determine the predominant brain quadrant in the students. The main contribution of the study is to provide a detailed understanding of these styles, creating conditions for personalized learning and promoting equity in the university educational environment.

Identify the trends in the learning styles of new students in the September-December 2024		
Objectives	Methodology	Contribution
Identify the trends in the learning styles of new students in the September-December 2024 semester in the economic-administrative area of the Universidad Tecnológica de León.	Learning styles, followed by the application of Hermann's Brain Dominance Instrument to determine the predominant brain quadrant in the students' learning style.	The main contribution of the study is to provide a detailed understanding of these styles, creating conditions for personalized learning and promoting equity in the university educational environment.

Learning Styles, Hermann's Instrument, Educational Personalization

Study of the satisfaction of tourists visiting a destination: The case of the State of Sonora

Estudio de la satisfacción de los turistas que visitan un destino: Caso Estado de Sonora

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Abstract

The State of Sonora, located in northwest Mexico, is known for its rich culture, diverse landscapes, and unique cuisine. The general objective of this study is to determine the profile of the tourist who visits Sonora, analyzing their demographic characteristics, travel reasons, preferences, consumer behaviors and satisfaction. The methodology applied has been with a quantitative approach, non-experimental, transversal and descriptive design, the population under study is tourists who visit municipalities in the State of Sonora, a sample of 1262 people surveyed was obtained. The contribution of the study is to obtain a comprehensive vision that can be useful for the development of tourism promotion strategies in the region, thereby improving tourism activities and products of the destination based on the profile detected. Additionally, promote collaborative work between the government and the population, allowing the development of attractions that serve as a source of economic income for the population.

Study of the satisfaction of tourists who visit a destination: Case of the State of Sonora.		
Objetivo	Metodología	Contribución
<p>Determine the profile of the tourist who visits Sonora, analyzing their demographic characteristics, travel reasons, preferences and consumer behaviors.</p> 	<p>With a quantitative approach, non-experimental, transversal and descriptive design, the population under study is tourists who visit municipalities in the State of Sonora, a sample of 1262 people surveyed was obtained.</p> 	<p>Obtain a comprehensive vision that can be useful for the development of tourism promotion strategies in the region, thereby improving tourism activities and products of the destination based on the profile detected. Additionally, promote collaborative work between the government and the population, allowing the development of attractions that serve as a source of economic income for the population.</p> 



Tourist Profile, Satisfaction, Consumption

Correlational analysis of gender, professional training and financial performance in restaurant companies in Mexico

Análisis correlacional del género, formación profesional y el desempeño financiero en empresas restauranteras en México

VÁZQUEZ-JIMÉNEZ, Imelda Lorena, LANDAZURI-AGUILERA, Yara, VALDEZ-PINEDA, Dina Ivonne and RUIZ-PEREZ, Roberto

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Abstract

This research was born with the intention of analyzing the importance of professional training, as well as the gender of people who run restaurant companies in two States of Mexico. To meet the objective of the study, a quantitative research, non-experimental, and transactional design was carried out. Likewise, the study is correlational, since it seeks to study the degree of association between the behavior of gender variables, professional training and their relationship with financial performance considering the internal accounting control system and the financial internal control system. With Cronbach's alpha values above 0.5, using the Kolmogorov-Smirnov Test correlation coefficient using the Lilliefors significance correction. With six hypotheses, finding four of them accepted and two rejected. With very interesting results because financial performance is indistinct whether the manager is a man or a woman.


Correlational analysis of gender, professional training and financial performance in restaurant companies in Mexico		
Objective	Methodology	Contribution
Analyze the importance of professional training, as well as the gender of people who run restaurant companies in restaurant companies in Mexico	<ul style="list-style-type: none"> • Quantitative research, • Non-experimental design • Transactional • Correlational type, • Independent variables: <ul style="list-style-type: none"> • gender and • professional training • Dependent variables: <ul style="list-style-type: none"> • accounting internal control system • financial internal control system. • Hypothesis: 6 • Cronbach's alpha above 0.5 • Using Kolmogorov-Smirnov test correlation coefficient • Using the Lilliefors significance correction. 	<p>Currently in Mexico, the female gender represents more than 50% of the staff who work in restaurants, as well as 64.8% of the total owners.</p> <p>It is interesting to find in this research that financial performance is not associated with gender, both accounting and financial control systems are carried out regardless of gender at the management level.</p>



Financial Performance, Correlational Analysis, Gender, Restaurant Sector



Evaluation of economic growth considering the measurement of environmental impact through CO2 emissions in the main Latin American countries

Evaluación del crecimiento económico considerando la medición del impacto ambiental a través de las emisiones de CO2 en los principales países de América Latina

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Abstract


Objective To evaluate Kuznets' theory that economic growth reaches a tipping point and CO2 emissions will begin to decrease, benefiting future generations. **Methodology** The research is quantitative, with a descriptive scope, non-experimental design and a cross-sectional study. The subject of the study was analyzed from the "our world in data" database, which presents the environmental damages of Latin America from 2012-2021. Variables analyzed were CO2 emissions and GDP. **Contribution** Discrepancies were found in certain countries regarding Kuznets' theory, since it generalizes and groups the most developed and industrialized countries with the least developed and developing countries. Likewise, Mexico has had constant economic growth with less CO2 emissions in the last ten years

Economic Growth, CO2 Emissions, Kuznets Curve



Diagnosis to determine the degree of indebtedness of households in Ciudad Obregón, Sonora



Diagnóstico para determinar el grado de endeudamiento de los hogares en Ciudad Obregón, Sonora

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DIAGNOSIS TO DETERMINE THE DEGREE OF INDEBTEDNESS OF HOUSEHOLDS IN CIUDAD OBREGÓN, SONORA.		
Summary		
Objetive	Methodology	Contribución
To prepare a diagnosis of the level of indebtedness of families living in Ciudad Obregón, Sonora, in order to compare the level obtained in relation to the management of their economic resources and visualize the effect caused according to the level in which they are found.	The research was carried out using a quantitative approach, with a descriptive scope. The design is field-based, non-experimental, describing and analyzing the variables with their natural results, with a cross-sectional approach.	Valuable information for academic observation in the area of economics and finance as it provides a general overview of the levels of income obtained and the composition of debt in households in Ciudad Obregón, Sonora. It provides the financial sector with an analytical perspective on the types of credit most used and the debt behavior in households.

Household, Income, Debt

Capabilities affecting business performance: validity and reliability of a measurement instrument


Capacidades que inciden en el desempeño empresarial: validez y confiabilidad de un instrumento de medición


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Abstract

Ordinary capabilities allow for some degree of sufficiency in the performance of a well-delineated task (Teece, 2014). The objective of this study was to determine the validity and reliability of an instrument that measures the capabilities that affect business performance. This cross-sectional study was conducted on management-level workers in restaurant companies in southern Sonora. It was carried out in two stages: content validity and reliability of the instrument. The results showed that the instrument is valid and reliable to be applied on a larger scale, in addition to making a contribution to the state of the art of the literature cited and to future research. Finally, it was concluded that any instrument must meet the requirements of validity and reliability before proceeding with the collection of the sample, since the data collected have an impact on the decision making process of the companies.

Capabilities affecting business performance: validity and reliability of a measurement instrument.		
Objective	Methodology	Contribution
To determine the validity and reliability of an instrument that measures the capabilities that affect the performance of small restaurant businesses in southern Sonora.	Using the methodology of Prat & Doval, (2005) the aim is to carry out the content validity of the instrument and subsequently determine its reliability.	A valid and reliable instrument was obtained to measure the capabilities that affect business performance in the restaurant sector.

Validity, Reliability, Instrument

Economic and financial challenges of micro, small and medium-sized enterprises in Mexico

Desafíos económicos y financieros de las micro, pequeñas y medianas empresas de México

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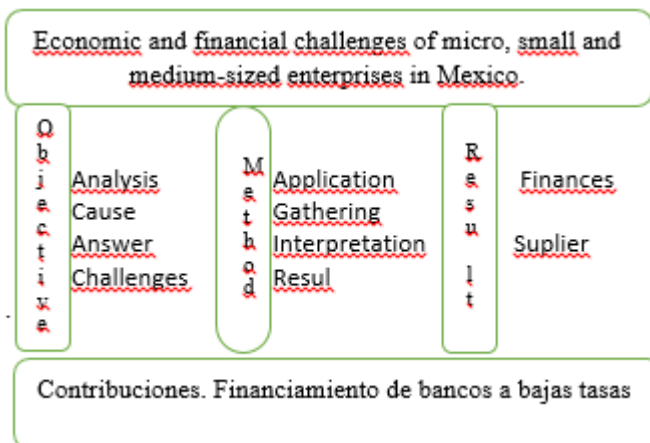
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Abstract

The objective of this research is to answer the research question: Why analyze the economic and financial challenges for micro, small and medium-sized enterprises in the city of León, Guanajuato, Mexico? The type of research is mixed because it is based on grounded theory and contrasts with findings from other national and international research that speak of the economic and financial challenges of MSMEs. For the quantitative analysis, 378 surveys were applied. The results obtained show: That the director of the MIPES has the challenge of properly managing his finances, knowing what he owes and what he has. It is concluded that one of the main economic and financial challenges is not to be financed mainly by its suppliers, but to use bank loans that charge a cheaper rate. Than the price increase made by their suppliers.



Economic And Financial Challenges, Permanence

6 Agricultural Sciences and Biotechnology



Characterization of *Ustilago maydis* strains by PCR amplification of the *Pra* and *Bw* genes




Caracterización de cepas de *Ustilago maydis* mediante la amplificación PCR de los genes *Pra* y *Bw*

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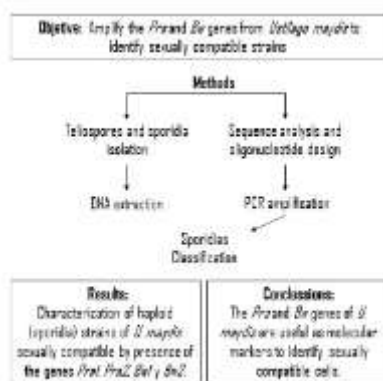
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Abstract

The mating of *Ustilago maydis* haploid strains is regulated by loci *a* and *b*, which must be different to establish the pathogenic form of the fungus. The *a* locus has two alleles, *a*1 and *a*2. The *b* locus controls filamentous growth and pathogenicity, independent of the *a* locus, and has several alleles. The main objective was to identify sexually compatible cells by amplify genes from alleles 1 and 2 of *a* and *b* loci. The haploid strains were isolated from huitlacoche samples (tumors) that were crushed and by centrifugation the teliospores (2n) were isolated, they were germinated and the yeast-like colonies (1n) were isolated, from each one the genomic DNA was extracted. The specific oligonucleotides were designed (Primer3Plus) from the sequence of the *Pra1* and *Pra2* genes, for locus *a*, *Bw1* and *Bw2*, for locus *b*. The genetic characterization of the strains was considered by the analysis of the presence or absence of PCR products. Distinguishing strains in alleles 1 and 2 will be of utmost importance to differentiate sexually compatible strains, and to monitor the experimental infection of the fungus in the plant



Compatibility, Pathogenicity, Esporidias

Microbiological Analysis of Biosolids Treated with Different Techniques for Agricultural Use




Análisis Microbiológico de Biosólidos Tratados con Diferentes Técnicas para su Aprovechamiento Agrícola

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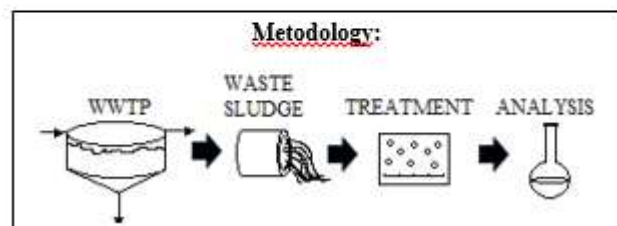
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Abstract

Microbiological analysis of four biosolid samples (A, B, C, D) was carried out in accordance with current regulations. In addition, microbiological tests were performed on water, with percentage of untreated biosolid (E) and on water with sludge treated with microalgae (F) after a period of 42 days. The results obtained show that samples B, C and D were within the L.M.P., sample A was found to be above with respect to *Salmonella* spp., with 1,100,000 NMP/g ST of Fecal Coliforms, 1,100,000 NMP/g ST of *Salmonella* spp., and 1 helminth egg in 2 g ST. *Salmonella* spp. was present in samples E and F. Subsequently, an analysis was carried out on a sample of sorghum and another of corn treated with biosolid for germination and growth, obtaining results of 250,000 CFU/g and 2,200,000 CFU/g respectively.

<p>Objective: Use of sludge from a WWTP.</p>	<p>Contribution: Environmental improvement.</p>	<p>Results: Elimination of microorganisms by drying.</p>
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Coliforms, Fecal, *Salmonella*


Perception of Animal Welfare in students of the Animal Health Management and Welfare of Veterinary Medicine course


Percepción del Bienestar Animal en alumnos del curso Manejo de la Salud y Bienestar Animal de Medicina Veterinaria

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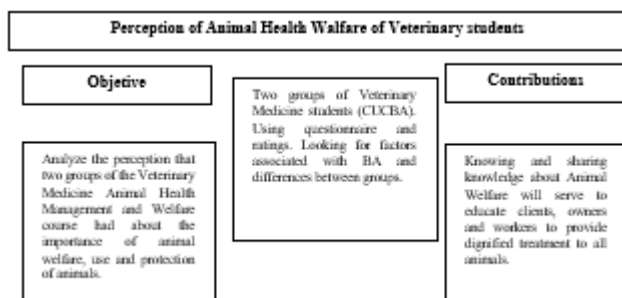
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Abstract

The students' perception provides information to design strategies aimed at teaching animal welfare, creating awareness of the quality of animal life, creating values in the student towards respect and care for animals. The objective was to analyze the perception of two groups in MSBA of Veterinary Medicine about the importance of animal welfare, use and protection of animals. 91% from Jalisco, 8% from other states and 1% foreign (data from 51 women and 36 men). The performance of both groups was favorable. 100% have a basic concept and consider animal welfare important. There are no differences between groups, in relation to animal welfare, being an essential issue that provides values and ethics. There is a relationship between animal welfare and veterinary medicine, it creates awareness to protect the health of animals, correct management and the conditions necessary for a better quality of life.





Welfare, Perception, Strategies

Effect of artificial light exposure time on color fastness in wool dyed with natural dyes

Efecto del tiempo de exposición de luz artificial en la solidez del color de lana teñida con colorantes naturales

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Abstract

The aim of this work was to determine the effect of artificial light exposure time on the color fastness of wool dyed with extracts of cochineal and purple onion peel. The methodology consisted of carrying out the dyeing on wool with different concentrations of the coloring extracts (50, 75 and 100%, based on the weight of the fiber), using the pre-mordanted method with alum, carrying out three replicates of each test. By measuring the color in Cielab* coordinates, before and after exposing the samples to artificial light at times of 24, 48 and 72 hours, the value of the difference between before and after the test (ΔE) was determined. It was found that artificial light exposure time does not affect color fastness. Both dyes have good fastness to artificial light. Although it is affected by the concentration of the dye used.



Natural Coloring, Dyeing, Fastness, Artificial Light



Production parameters in radishes (*Raphanus sativus* L.) using organic inputs



Parámetros productivos en rábanos (*Raphanus sativus* L.) mediante el uso de insumos orgánicos

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Abstract

The objective was to measure productive parameters in radishes grown using organic inputs. With a randomized block design and three repetitions. The treatments: commercial cultivation (RaT0); biofertilizer, worm leachate and bocashi (RaT1); biofertilizer and Mountain Microorganisms (RaT2). The parameters bulb circumference, bulb length, root length, stem to leaf length, stem circumference, number of leaves and weight. ANOVA and Principal Component Analysis (PCA) were performed. The PCA shows that RaT1 has the greatest positive impact on the diameter and length of the bulb and the weight of radish. Biofertilizers stimulate rooting and provide plant growth-promoting bacteria (GPCV), worm leachates provide humic acids and promote better absorption of minerals, and bocashi favors the availability of minerals due to the fermentation it undergoes during its preparation.



Bocashi, Humic Acids, *Eisenia Foetida*, Mountain Microorganisms, Biofertilizer, Auxins


Machine learning used for missing data in rainfall databases



Estimación de Datos Faltantes de Lluvia Usando Machine Learning

GONZÁLEZ-TRINIDAD, Julián, LÓPEZ-SERRANO, Cenoalli Aymé, VEYNA-GÓMEZ, Ana Isabel, JÚNEZ-FERREIRA, Hugo Enrique and ROBLES-ROVELO, Cruz Octavio

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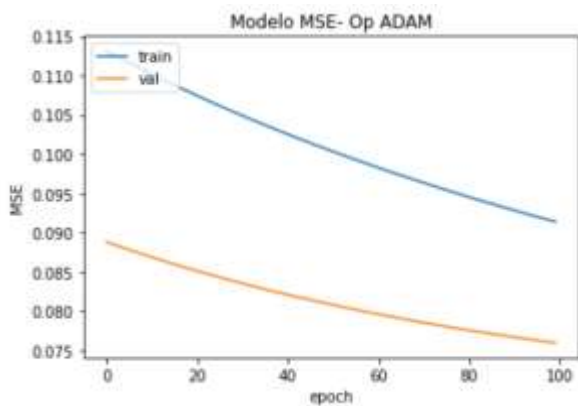
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Abstract

In Mexico, the National Water Commission (CONAGUA) is responsible for monitoring climate variables through rainfall networks, therefore, in this dependency of the Government of Mexico, information on rainfall, temperature, wind direction is available. among others. However, it has been detected that sometimes missing data is presented, due to the operation of the systems and the lack of personnel responsible for data collection. To provide a solution to this lack of data, traditional hydrological methods have been implemented, such as the rational-deductive method (MRD). However, thanks to technological development, new alternatives and proposals have been sought to obtain optimal rain predictions. Based on what has been previously described, this research focuses on the estimation of missing data of maximum 24-hour rainfall in some weather stations in the Zacatecas highlands region, this estimation is carried out by means of the MRD and by the proposed model of artificial neural networks (RNA), taking the mean square error (MSE) as a test.






Artificial Inteligence, Missing Data, Semiarid Mexican Region




Fortified tortillas to influence the health of the population and contribute to the achievement of SDGs 2 and 3




Tortillas fortificadas para incidir en la salud de la población y coadyuvar en el logro de los ODS 2 y 3

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Abstract

The tortilla-based diet has prevailed throughout history in Mexico. According to information from the National Household Income and Expenditure Survey, as of the third quarter of 2014, daily per capita consumption is 181 grams, that is, 66.1 kilograms per year. Its status as a basic food makes it unique to enrich it and thus help improve the nutritional status of the family. During the Nixtamalization process to obtain the corn dough, proteins are lost, in addition to the fact that the corn lacks lysine, ultimately obtaining a tortilla with 4.0/100g of tortilla (approximately 3 tortillas). By enriching the tortilla with mesquite flour (rich in lysine), we obtain a protein content of 6.3/100g; with the possibility of positively impacting the nutritional status of Mexicans and contributing to the achievement of SDGs 2 and 3.



Tortilla, Corn, Mezquite

Induction of natural organogenesis in succulent species under different growth conditions

Inducción de organogénesis natural en especies de suculentas bajo diferentes condiciones de crecimiento

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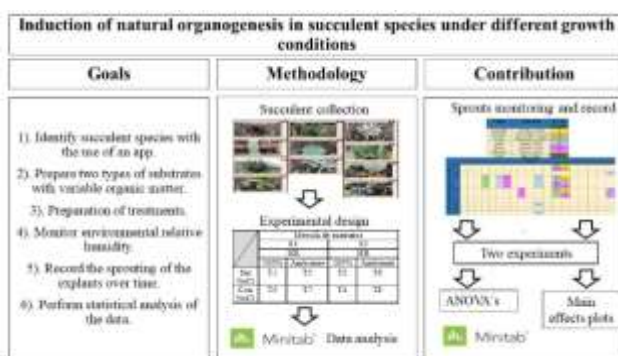
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Abstract

Direct and indirect organogenesis depends largely on the type of explant, especially if they are juvenile and poorly differentiated explants, these will respond better to *in situ* or *in vitro* culture. The formation of shoots and adventitious buds is generally a challenge in tissue culture, resorting to creating stressful conditions or the use of plant hormones. However, if the above has been successful, the rooting phase can become complicated and it is necessary to use growth regulators. In this study, salt stress, nature of the substrate and relative humidity were evaluated as a whole as factors that intervene in the processes of shoot formation in succulent plants in the region, without making use of growth regulators with the aim of guaranteeing optimal conditions. that improve their reproduction for subsequent commercialization and/or conservation of the species.



Organogenesis, Succulents, Stress, Salinity

7 Engineering

Internet of things prototype for water management in a house

Prototipo de internet de las cosas para la gestión de agua en casa habitación




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Abstract

This article presents the results of the creation of an Internet of Things prototype that was implemented in a house in the municipality of Tehuacán, Puebla in Mexico, where the water of a social interest house is monitored. The prototype is developed with the objective of controlling the filling and emptying of the water containers and presenting this information in real time about the status of the filling of the water tanks. This work was developed with quantitative purposes since data collection is carried out that It can be analyzed later, so far the prototype is working, presenting information in real time to the user and data is being collected, the operation is as expected, fulfilling the function of monitoring and control of filling.

Internet of things prototype for water management in a house		
Objectives	Methodology	Contribution
<ul style="list-style-type: none"> • Design an Internet of Things prototype • Monitor and manage water from available containers. • Know the variation in water level and consumption in your home. 	<ul style="list-style-type: none"> • Research: Mixed, qualitative and quantitative study in two different stages of project development. • Prototype design: Choice of electronic components, circuit box design, software development. • Implementation: It is implemented in a home with two containers and a water pump. • Results are stored in a Local Database for later analysis. 	<ul style="list-style-type: none"> • Characterization of homes in the Tehuacán region • Prototype for measuring levels and turning on a pump for water management. • Implementation in a real environment and data recording for subsequent analysis.

Internet of Things, Water Care, Water Management


Change Management Strategies In The Implementation Of Information Technologies: Comparison Between Mexico And Brazil


Estrategias De Gestión Del Cambio En La Implementación De Tecnologías De La Información: Comparación Entre México Y Brasil

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







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Abstract

The study analyzes change management strategies in the implementation of information technologies (IT) in Mexico and Brazil. The main objectives are to compare these strategies in both countries and discern the main practices employed. To achieve these goals, a mixed methodology combining qualitative and quantitative analysis is used. A textual analysis of theoretical sources is conducted, and the phenomenon is measured through structured surveys with a Likert scale, supported by descriptive and comparative statistics to validate hypotheses. The research contributes to the understanding of how organizations in emerging economies manage technological change. It offers perspectives on the importance of adapting change strategies to specific cultural and economic contexts, revealing key differences in the adoption and adaptation of technology between Mexico and Brazil. This knowledge is vital for leaders and managers seeking to improve the integration of IT into their processes, thus optimizing organizational efficiency and innovation.

Objectives	Methodology	Contribution
<p>The main objectives are to compare these strategies in both countries and discern the main practices employed</p>     	<p>A mixed methodology combining qualitative and quantitative analysis. A textual analysis of theoretical sources is conducted, and the phenomenon is measured through structured surveys with a Likert scale, supported by descriptive and comparative statistics</p>    	<p>It offers perspectives on the importance of adapting change strategies to specific cultural and economic contexts, revealing key differences in the adoption and adaptation of technology between Mexico and Brazil.</p>    

Strategy, Change Management, Mexico-Brazil

Camera Calibration Procedure for Extracting Form Deviation Features in Machined Parts through Computer Vision Algorithms

Procedimiento de calibración de cámaras para extraer características de desviación de forma en piezas mecanizadas mediante algoritmos de visión por ordenador

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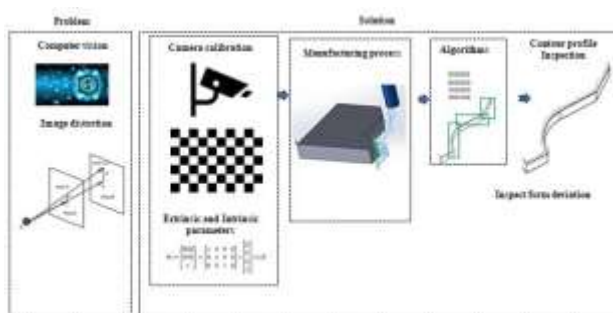
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Abstract

Camera calibration and computer vision algorithms have revolutionized form deviation analysis in machined parts. This study focuses on the camera calibration procedure for extracting form deviation features using 45 image captures of curves, lines, and slope geometries. The calibration process involves capturing high-quality images of a calibration pattern with known dimensions from various angles and orientations. The acquired images are then processed using computer vision algorithms to estimate the camera parameters. Once calibrated, the camera captures images of machined parts with curve, line, and slope geometries. Computer vision algorithms are applied to analyze these images and extract relevant form deviation features. The results demonstrate the effectiveness of the camera calibration procedure in accurately measuring form deviations in machined parts with curve, line, and slope geometries



Computer Vision; Calibration; Image Processing

Frontend and Backend: The new approach to the development of a Web platform for automating the control and administration of degree processes at ITESI

Frontend y Backend: El nuevo enfoque para el desarrollo de una plataforma Web de automatización del control y administración de procesos de titulación en ITESI

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Abstract

Technological advancements have enabled the development of information systems and the automation of educational processes. This project uses PHP, MySQL, and JavaScript to improve PDF report creation and data export to other platforms, storing all records in a MySQL database. The system offers basic CRUD functions (create, read, update, delete) for data such as projects, teachers, and students, and allows searches by student name, project, department, degree type, year, advisor, and deadline. The main objective is to automate and control the graduation processes, generate statistical reports and PDF documents, and export data to Excel for analysis. This program is a key tool in managing and tracking graduation processes.

Php, MySql, Administration, Software

Technology transfer through the development of software for extracurricular workshops for ENOI

Transferencia de tecnología mediante el desarrollo de un software para talleres extracurriculares para ENOI

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Abstract

Currently, the use of technological tools is essential in education. This project is relevant for the Escuela Normal Oficial (ENOI), especially for the workshops department, which lacks a system to manage the workshops given by teachers. This absence affects students, who do not have easy access to workshop information. The project's objective is to develop a web system to assign workshops, capture grades, and gather information about workshops and teachers. This will improve the management and accessibility of information, benefiting both students and teachers, and support decision-making for enhancing the educational offerings at ENOI.




Workshops, Administration, Software

Traceability and Efficiency in Supply Management: Business Optimization in Industrial Security Warehouses

Trazabilidad y Eficiencia en la Gestión de Sumistros: Optimización Empresarial en Almacenes de Seguridad Industrial

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Abstract

This study aims to implement an internal control system for supply management in industrial safety warehouses, improving operational efficiency and customer satisfaction. The methodology includes SWOT analysis and the 5 Whys Method to identify the root causes of supply management problems, facilitating decision-making and the implementation of effective solutions such as identifying inputs, product traceability, and process optimization. The implementation of specialized software for more effective management is proposed. The contribution of this project includes improving traceability and efficiency in supply management, greater transparency and control in the supply chain, reducing operational costs, optimizing inventory levels, and improving emergency response capabilities. Ultimately, it seeks to strengthen the competitiveness of companies in the industrial safety sector and promote a safer and more efficient work environment



Supply, System, Security




Linking Students With Marketing Companies Through IT Projects

Vinculación De Estudiantes Con Empresas De Mercadotecnia A Través De Proyectos De TI

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Abstract

Traditional advertising methods, such as print media, radio, and television ads, have been fundamental for small businesses and medium-sized enterprises to gain visibility. However, as these businesses have grown, it has become necessary to explore new strategies to reach a broader audience. With technological advancements, especially in mobile devices, advertising has evolved, allowing companies to reach various sectors of the population more efficiently. The growth of social media usage has facilitated connections between people from different places, driving businesses to adopt new marketing techniques. This technological and social shift requires restructuring traditional marketing strategies, focusing on tools such as website development and the use of social media to attract new customers and enhance communication interaction.



Technology, Marketing, Project

Design of digital ignition control of compact vehicle engine using fingerprint

Diseño de control digital de encendido de motor de vehículo compacto mediante huella digital

GUZMÁN-CORTÉS, Agustín, BARBOSA-SANTILLÁN, Luis Francisco, GONZÁLEZ-CONTRERAS, Brian Manuel and ÁLVAREZ-GONZÁLEZ, Ricardo

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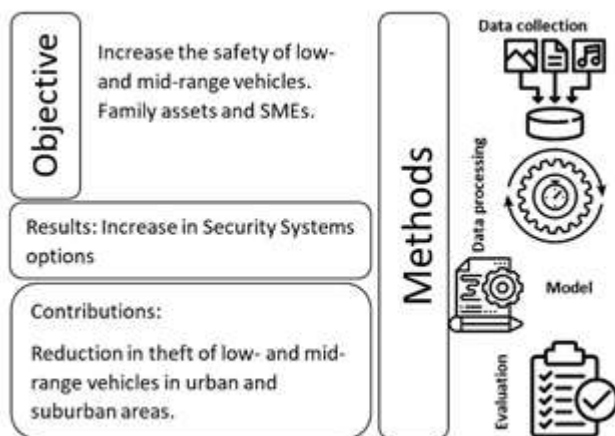
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Abstract

Over the past decade, vehicle thefts in México have increased, mainly due to the lack of accessible and effective security systems. Most engine ignition control systems are available only in high-end cars, while more than 90% of the population uses mid-range or low-end compact vehicles that lack this technology. To address this need, the design of a security system that uses a fingerprint reader, together with a commercial control card and communication modules, to offer an intuitive method of engine ignition control in low-end vehicles is proposed. This approach seeks to improve automotive security at a reasonable cost.



System; Automotive Engine, Fingerprint



Equity investment portfolio in renewable energy companies to influence the UN's 2030 agenda



Portafolio de inversión en acciones de compañías energéticas renovables para incidir en la agenda 2030 de la ONU



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Abstract

Companies need more and more financing, in particular energy companies can be a good instrument to generate a higher return by investing in their shares and to collaborate so that these companies have income from the purchase of their shares. In this work 5 companies related to the topic of renewable energies were considered, these are: Iberdrola, Gamesa, Vestas, General Electric (GE), and Brookfield Renewable Partners L.P. (BEP), this portfolio will be analyzed following the Markowitz model. The results yield a weighting in the distribution of money when invested in this way: 55% to Iberdrola shares, 20% to Gamesa, 2% to Vestas, 0% to GE, and 23% to BEP. It was found that the stocks with the highest risk are Vestas, and the lowest risk are Iberdrola. These results could motivate investment in this type of companies and the result would be to have more economically sound companies and thus meet the Sustainable Development Goals of the United Nations (UN).

Company	Country	Cotation	currency	Yrs
Iberdrola S.A. (IBE.US)	Spain	MIBEX35 Group	EUR	5
Gamesa Renewable Energy, S.A. (GRK.MC)	Spain	MIBEX35 Group	EUR	5
Vestas Wind Systems A.S. (VWS.CO)	Denmark	Copenhagen Stock Exchange	DKK	5
General Electric Company (GE)	United States	NYSE - Nasdaq Real Time Price	USD	5
Brookfield Renewable Partners L.P. (BEP)	Bermuda	NYSE - Nasdaq Real Time Price	USD	5



	Iberdrola	Gamesa	Vestas	GE	BEP
TBM (%)	0.847%	8.00%	3.280%	-0.020%	8.077%




Portfolio, Risk, Investment, Companies, Renewable Energy

Sustainable Development Goals and ISO standards in Industrial Maintenance

Objetivos de Desarrollo Sostenible y las normas ISO en el mantenimiento Industrial

HERRERA-SÁNCHEZ, Gustavo, MORÁN-BRAVO, Luz del Carmen, SILVA-JUÁREZ, Alejandro and DE SAMPEDRO-POBLANO, Héctor Manuel

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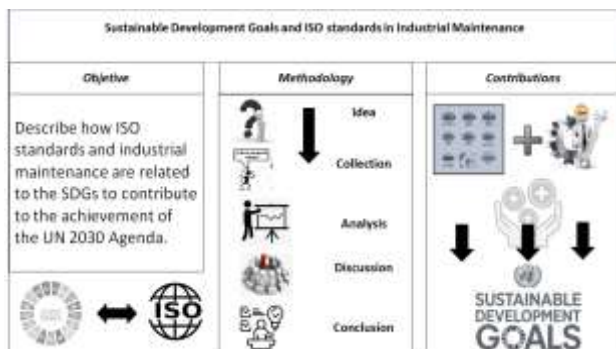
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Abstract

Currently, sustainability or sustainability is crucial for our planet and humanity, therefore, for companies, a response to this event is the Agenda 2030 of the United Nations that in 2015 designed a strategy through the SDGs to promote sustainable development, which is composed of three dimensions: economic, social and environmental. The objective of this analysis is to relate ISO standards and industrial maintenance for the achievement of the 167 goals of the SDGs to contribute to sustainable development by developing a research with a qualitative approach for the collection and analysis of information through an exploration of this relationship. The contribution of this article is to show how ISO standards contribute to the benefit of the SDGs and the actions taken by industrial maintenance, for example, ISO 55001 an asset management system has 0.04% of all certificates annealed by ISO, this leads us to new concepts such as green maintenance and sustainable maintenance.





Sds, Iso Standard, Sustainable Maintenance

Integration of electrolytic module into didactic prototype for application of chrome coating

Integración de módulo electrolítico a prototipo didáctico para aplicación de recubrimiento con cromo

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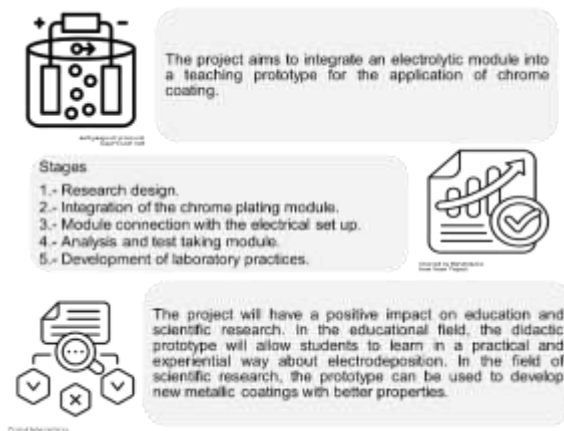
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Abstract

Electrochemistry is part of the teaching of several subjects in the educational programs at the Technological University of Chihuahua, aware of the importance of developing environments for teaching, experimentation and understanding the general principles of the discipline, a project is developed with the aim of integrating a chrome plating module into a didactic laboratory prototype that simulates the industrial electrodeposition process, where students can directly observe the process, strengthening the teaching and meaningful learning of the principles of electrochemistry in a practical and safe environment. Likewise, having this prototype encourages research and collaboration with companies that require electrodeposition treatments.






Electrodeposition, Chrome Plating, Corrosion

Determination of design specifications of an amashito chili seed fracturing machine using QFD tool

Determinación de las especificaciones de diseño de una máquina fracturadora de semillas de chile amashito utilizando la herramienta QFD




CERVANTES-CASTRO, Cintya Margarita, GARCÍA, Alejandro, ANGULO-CÓRDOVA, Raquel and DOMÍNGUEZ-GARCÍA, Arquímides de Dios

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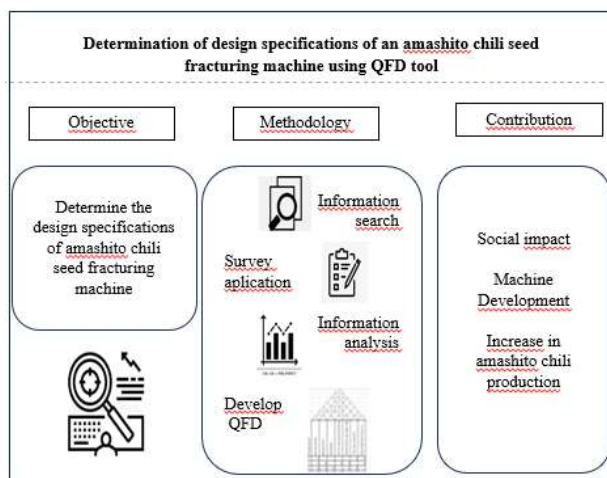
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Abstract

The objective of this work is to determine the design specifications of the amashito chili seed fracturing machine to facilitate its cultivation and provide farmers with a system that meets their needs. A survey was carried out in order to know the opinion of farmers. The survey was carried out in the public markets of Paraíso, Comalcalco and Jalpa de Méndez Tabasco, among merchants and producers who are dedicated to the sale and planting of chili. In the analysis of the results, the specifications that are necessary for the machine are found. The results show that sellers and/or producers of amashito chili require a seed fracturing machine to facilitate cultivation. The specifications were translated based on what the client needs using the Total Quality Deployment QFD tool.



Machine, Specifications, Qfd, Design

Interactive Business Card Prototype: Promoting Brands with Augmented Reality on Social Networks




Prototipo de Tarjeta de Presentación Interactiva: Impulsando Marcas con Realidad Aumentada en Redes Sociales

ORTEGA-GINES, Héctor Bernardo, HERNÁNDEZ-GUZMÁN, Julieta, COLMENARES-OLIVERA, Esperanza and CURIUCA-VARELA, Yedid

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Abstract

This project aims to develop prototypes of interactive cards using augmented reality (AR) to support SMEs and microenterprises in promoting and disseminating their products, goods, or services on social media. These interactive cards will offer an immersive and personalized experience, incorporating elements such as 2D and 3D objects, videos, images, sound, animations, and direct links to social media and websites, as well as other features like location and action buttons. With these capabilities, the project seeks to enhance brand visibility and reach in the digital environment, providing companies with an innovative and effective tool for their marketing strategy.

Interactive Business Card Prototype: Promoting Brands with Augmented Reality on Social Networks		
Goals	Methodology	Contribution
1. Develop a prototype of an interactive business card with augmented reality technology. 2. Evaluate the impact of augmented reality on brand promotion on social networks. 3. Improve the visibility and engagement of MSMEs through augmented reality.	Prototype development and implementation. 1. Development in Unity 2019.3.4f1 with Vuforia integration for image recognition. 2. Programming language: C# using MonoBehaviour in Visual Studio 2022. 3. Testing on Android devices starting with Lollipop version.	1. Innovation in business cards. Augmented reality allows for personalized interactive experiences. 2. Improvement of digital marketing. Increase visibility and engagement on social networks. 3. Technological accessibility. Works on Android devices from previous versions.


Prototypes, Interactive Cards, Augmented Reality



Electromechanical Ergonomic Assistance System for Lifting Trailer Boxes

Sistema Electromecánico de Asistencia Ergonómica para Elevación de Cajas Tráiler


CORONADO-ÁVALOS, José Osvaldo, ORTIZ-SIMÓN, José Luis, CRUZ-HERNÁNDEZ, Nicolás and ORTIZ-JIMÉNEZ, Cynthia

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Abstract

The growth of commerce between Nuevo Laredo, Tamaulipas, and Laredo, Texas, has increased the number of coupling and uncoupling maneuvers for trailer boxes, exposing operators to physical injuries due to the manual effort required to raise and lower the landing gear. Currently, existing solutions are fixed and limited in adaptability. This article addresses this issue through the development of a portable electromechanical system designed to automate these maneuvers and reduce physical strain. Equipped with a direct current motor (12V, 275W) and a 15:1 transmission, the system has been tested with loads of up to 7 tons. Field tests showed a significant reduction in operator fatigue, with an average operation time of 7 minutes. This portable ergonomic solution enhances safety and efficiency in logistics operations, allowing more flexible implementation across multiple trailer boxes.

Ergonomics, Electromechanical systems, Freight transport

Technological Tools for Multiplatform Software Development within the Labor Sector

Herramientas Tecnológicas de Desarrollo de Software Multiplataforma dentro del Sector Laboral

CURIOCA-VARELA, Yedid, GALICIA-GARCÍA, Christian, ALFARO-HERRERA, Julio Cesar and ORTEGA-GINES, Héctor Bernardo

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Abstract

This article presents the results of a research carried out by graduates of the Software Development and Management Engineering degree, generation 2019-2022 and 2020-2023 from the Technological University of Tehuacán; with the objective of identifying the technological tools that the software production sector currently implements in the development of multiplatform applications. A survey was applied to the graduates according to the Tuning Latin America project to be answered based on their professional experience developed during their stay and work activity. With the statistical analysis, the programming languages, frameworks and databases implemented and/or in trend could be identified. The results were of great impact to generate a comparison with the tools implemented within the curricular map of the Educational Program and thereby strengthen its academic activities and technical knowledge to guarantee the quality of the service offered by the institution at a professional level.

Technological Tools for Multiplatform Software Development within the Labor Sector

Objective	Methods	Contributios
Identify the technological tools that the software production sector currently implements in the development of multiplatform applications.	Data Collection: Survey. Data Collection: Digital survey form to emails. Data Analysis: Statistical analysis through an Excel software tool. The information was processed by creating dynamic tables.	The results obtained were used to generate a comparison with the tools implemented in the curricular map of the Educational Program of the Software Development and Management Engineering degree.




Multiplatform Software Development Tools, Labor Market, Graduate

Optomechatronic System for Robotic Arm Using Neural Networks for Educational Inclusion

Sistema optomecatronico para brazo robótico con el uso de redes neuronales para la inclusión educativa

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Abstract

The artificial vision system is crucial in technological advancements, offering innovative solutions for assisting people with disabilities. This study presents an optomechatronic system designed to control a robotic hand prosthesis using artificial vision to interpret hand movements and translate sign language into voice commands. The prosthesis operates through artificial vision-based control that maps hand positions to prosthetic fingers. This technology aids in direct communication between people with hearing impairments and others, enhancing inclusivity. The project emphasizes the use of low-cost and open-source software, making it accessible to a broader audience.

Optomechatronic System for Robotic Arm Using Neural Networks for Educational Inclusion		
Objective	Methodology	Contribution
<p>The main objective of this project is to design and develop an optomechatronic system for controlling a robotic hand prosthesis using artificial vision and neural networks. The system aims to enhance educational inclusion for individuals with auditory and physical disabilities by translating sign language gestures into voice commands, facilitating both communication and physical control of the prosthesis.</p>	<p>The project follows a structured methodology across four phases:</p> <ul style="list-style-type: none"> Hardware Development: The prosthesis was designed using 3D printing technology and equipped with servomotors controlled by an Arduino UNO board. Software Development: <ul style="list-style-type: none"> Use of Python and computer vision libraries like OpenCV for image processing and gesture recognition. MediaPipe implementation to extract key hand points and map them to specific prosthetic movements. A control algorithm that processes binary signals to move the prosthetic fingers. Testing and Calibration: The system was tested under various lighting conditions to evaluate the accuracy of the vision system and the responsiveness of the servomotors. Optimization: Adjustments in the control algorithm and integration of a text-to-speech engine to improve gesture translation. 	<p>This work makes a significant contribution to educational inclusion by:</p> <ul style="list-style-type: none"> Facilitating Communication: The system allows real-time translation of sign language gestures, enhancing interaction between people with hearing impairments and their environment. Improving Accessibility: The use of low-cost components and open-source software makes the project accessible and scalable to a broader audience. Precision in Control: The servomotors accurately replicate finger movements, enabling the prosthesis to perform complex tasks. Future Applications: Plans include optimizing the detection of complex gestures and improving functionality in low-light conditions, increasing the system's potential for real-world adoption.

Artificial Vision, Prosthesis Control, Sign Language

Optimization of preventive maintenance in the design of photovoltaic plants

Optimización del mantenimiento preventivo en el diseño de plantas fotovoltaicas

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Abstract

Two of the biggest problems worldwide are electrical energy and water, in this context the use of photovoltaic systems for the generation of electrical energy is increasingly profitable due to the constant reduction of prices in terms of the dollar watt and that supports the solution to the problem of energy supply at increasingly affordable prices. In this same scenario we have a reduction in CO₂ emissions, contributing to the reduction of greenhouse gases, supporting the Kyoto protocol and the Paris agreement. On the other hand, the incorporation of ionized air for cleaning the photovoltaic modules allows the use of natural and demineralized water to be reduced to levels of around 98%, which allows us to be on par in saving solutions for this vital liquid.

Optimization of preventive maintenance in the design of photovoltaic plants.		
Goals	Methodology	Contribution
<p>Optimize the maintenance of photovoltaic plants using ionized air technology, significantly reducing costs and water consumption.</p> 	<ul style="list-style-type: none"> ✓ Investigation of the notable elements that make up the 100 kW photovoltaic system ✓ Calculation of the calibre of the conductors based on the photovoltaic arrangements ✓ Inverter selection ✓ Dimensioning of protection and channels ✓ Additional considerations: <ul style="list-style-type: none"> • Preventive maintenance. 	<ul style="list-style-type: none"> ✓ Significant reduction in water consumption ✓ Decrease in operating costs ✓ Improved energy efficiency ✓ Positive environmental impact. 



Energy, Solar, Panel



Design of a two-seater solar car for urban-suburban transportation

Diseño de auto Solar biplaza para transporte urbano-suburbano

ARELLANO-YÁÑEZ, Ricardo and MORENO-VÁZQUEZ, Pedro

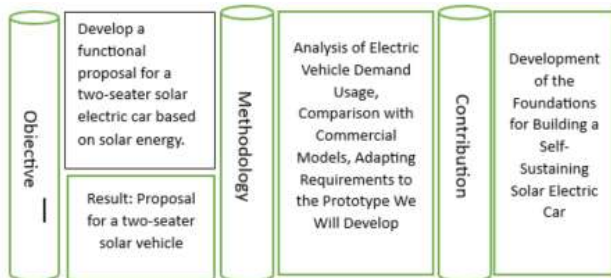
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Abstract

There is a trend towards using electric vehicles, which aim to reduce carbon dioxide (CO₂) emissions, a major contributor to global warming and other consequences of environmental pollution. Therefore, developing autonomous vehicles that can generate energy without relying on external infrastructure is important. This drives research to create functional prototypes that can serve as a foundation for developing a type of vehicle that meets the requirements of self-sustainability, mobility, safety, and efficiency demanded by potential users, paving the way for future commercialization. Through this research, we aim to subsequently develop a self-sustaining solar vehicle prototype that enables efficient, reliable, and safe mobility for people, based on the studies conducted.




Sustainable Electric Mobility

Integration of Green Technologies, for the generation of Electric Energy using Microgenerators and Atmospheric Batteries in the Irrigation District #043 Alejandro Gascón Mercado, Canal Centenario, State of Nayarit


Integración de Tecnologías Verdes, para la generación de Energía Eléctrica utilizando Microgeneradores y Baterías Atmosféricas en el Distrito de Riego #043 Alejandro Gascón Mercado, Canal Centenario Estado de Nayarit

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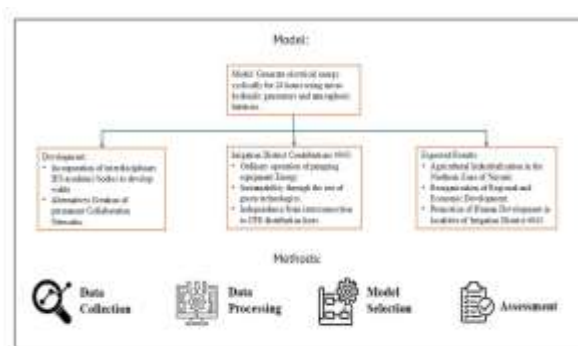
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Abstract

The project integrates the start-up of two modules: #1.- A revolutionary mechanical, hydrokinetic microgenerator that converts more than 50% of the slow flow of water into electrical energy, used in Irrigation District #043 in the State of Nayarit, Mexico, feeding three centrifugal pumps that operate with three-phase 10 Hp motors in each pump; module: #2.- It is proposed to carry out hydraulic works including elevated dams, where large quantities of water are momentarily stored, creating conditions for it to operate as an atmospheric battery and maintain the continuous operation of a generator driven by a Francis turbine with a continuous capacity of 0.25 to 0.5 MW at 60 Hz for a range of 8 hours. The sum of the two operating modules are called: Microgenerator Group and Pumping with Atmosphere Battery, being possible to triple the sum of the two modules through an arrangement to sustain a load of 0.25 a 0.5 Megawatts for a 24 hr cycle, exploring the increase in the number of microgenerators and consequently modify if necessary the capacity of the elevated dam, the general conditions of use and exploitation consider that it is not necessary to interconnect to the public state transmission network called Federal Electricity Commission (CFE). Achieving the sustainable operation of a new regional development engine that takes advantage of green energy in a cyclical manner.






Slow Movement Of The Water, Combination Of Technologies, Microgenerator Group, Atmospheric Battery And Economics Development

Implementation of mixed reality technology for the control of physical systems

Implementación de la tecnología de realidad mixta para el control de sistemas físicos

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Abstract

The integration of mixed reality (MR) technology into physical systems represents a significant advancement in bridging the gap between educational environments and industrial applications. This study explores the development of a robotic arm prototype controlled through MR technology, aimed at enhancing educational experiences in the field of robotics. By utilizing augmented reality (AR), virtual reality (VR), and real-time physical interactions, students gain a comprehensive understanding of robotic systems. The project combines open-source platforms with MR to provide a hands-on, immersive learning environment. The primary objective is to foster high-impact learning and practical training, thus reducing the gap between educational settings and real-world industrial applications.

Implementation of Mixed Reality Technology for the Control of Physical Systems		
Objective	Methodology	Contribution
<p>The main objective of this project is to develop a robotic arm prototype controlled by mixed reality (MR) technology to enhance the educational experience in robotics. This technology enables students to interact with an immersive environment, combining augmented reality (AR), virtual reality (VR), and real-time physical interaction, providing a comprehensive understanding of robotic systems while bridging the gap between educational theory and industrial applications.</p>	<p>The project methodology is divided into the following phases:</p> <ul style="list-style-type: none"> Robotic Arm Design and Fabrication: Use of CAD software to create a 3D model of the arm, which was manufactured using 3D printing in PLA. Robotic Arm Control Programming: Implementation of servomotors controlled by Arduino for precise movements, integrated with Unity for synchronization with the mixed reality environment. Mixed Reality Implementation: Vuforia and Unity were used to overlay virtual elements on the physical arm, with a gesture recognition system powered by MediaPipe to control the arm's movements. Testing and Calibration: Evaluation of latency, movement precision, and user feedback during educational trials. 	<p>This project contributes to enhancing technical education and training in robotics by:</p> <ul style="list-style-type: none"> Immersive Experience: Provides an interactive platform combining virtual and physical elements for hands-on learning. Accessibility and Scalability: The use of low-cost hardware and software makes the project accessible to a wider audience. Innovation in Education: Improves understanding of robotics concepts through real-time interaction with a physical system. Future Applications: The integration of MR into more complex simulations could replicate industrial scenarios, optimizing training and education.

Mixed Reality, Robotic Arm, Educational Systems, Immersive Learning




Augmented reality in the educational context for the digitalization of products and mathematical applications

Realidad aumentada en el contexto educativo para la digitalización de productos y aplicaciones matemáticas

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Abstract




The objective of this project was to develop an application using AR augmented reality technologies for the digitalization of products and learning in educational contexts. The extreme programming (XP) methodology was used for its development which comprises the stages: planning, design, coding, testing, launch. As a result integrating Vuforia into Unity enabled the creation of augmented reality (AR) applications for mobile devices in this project was used the operating system of Android, Tests were carried out to determine how Vuforia works in Unity using Image Targets and 3D Models, an installation manual was developed for beginners to integrate their knowledge, practical problem solving, Interactivity and meaningful learning









Unity, Vuforia, Augmented Reality




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