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Prefacio

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*CDMX.
Diciembre 11, 2020.*

Serrudo-Gonzales, Javier BsC.

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1 Ciencias Físico Matemáticas y Ciencias de la Tierra

Modelado matemático de la difusión de líquidos en fase gaseosa por evaporación

Mathematical modeling of the diffusion of liquids in the gaseous phase by evaporation

LOPEZ-VALDIVIESO, Leticia, ELISEO-DANTÉS, Hortensia, CASTRO-DE LA CRUZ, Jucelly e TEJERO-RIVAS, María Candelaria

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Abstract

The objective of this study is to analyze the behavior of liquid molecules during an evaporation process, a mathematical model is proposed through mass a balance that describes said behavior under steady-state conditions and the variation in composition is analyzed in detail, through a finite space. In order to know the concentration profile, it is necessary to characterize the behavior of the moisture present in the medium as part of the parameters that affect the system, which will at the same time allow knowing the molar composition of the water present in the medium or system of study. Temperature is another of the variables of great importance in the evaporation process, which is why a variation of the concentration profile will occur at different temperatures.

Evaporation, Profile, Concentration

Caracterización de casos SARS-CoV-2 en México utilizando minería de datos

Characterization of SARS-CoV-2 cases in Mexico using data mining

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Abstract

In this paper, it is realized an analysis of the data published by the Federal Government of Mexico on the cases related to the test for detecting the presence of the SARS-CoV-2 virus, that originates the COVID-19 disease. More than a million cases were analyzed, most of which were positive to the test. For this study, twenty-one significant variables were considered, included the result of the test and the cases of death, going through the different factors that complicate a person's health such as diabetes, chronic obstructive pulmonary disease (COPD), asthma, hypertension, obesity and smoking, among others. At the beginning of the study, the preparation of the data was carried out so that they could be treated using data mining techniques, based on the CRISP-DM methodology for extraction of knowledge. Thus, with the help of this type of techniques, data models were generated to characterize the development of the COVID-19 disease in the national and local (by States) panorama. As an important part of the models, various rules or correlations were observed among the different variables, which could be used to predict, in part, the future development of the COVID-19 disease in Mexico and, consequently, to establish best practices that target to reduce its social impact.

COVID-19, Data mining

Modelo de líneas de espera para eficientizar la atención al cliente

Waiting lines model to streamline customer service

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Abstract

The main objective of this research is to identify and analyze the waiting line behavior of a gas station in Delicias City, located in Chihuahua State; by performing a sample and statistical analysis in order to determine the customer's behavior while waiting in line, and by applying the waiting line system or queuing theory to determine the timing and efficiency of customer service and to detect the potential improvement opportunities. The queuing theory does not directly solve the problem, nevertheless it contributes to generate important information required to anticipate some waiting line characteristics, for instance, the average waiting time, customer service timing, customer's duration in the system, and the efficiency of the line. As a result, it can be established a balance between the number of servers and the number of customers of the gas station, which helps to define the correct strategy so that the found problems are solved.

Waiting line, Statistical analysis, Service efficiency

Geositos de interés como geopatrimonio de Jalisco, México. Avances

Geosites of interest as a geop heritage of Jalisco, Mexico. Progress

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Abstract

Conserving the geological heritage in Jalisco implies, identifying, classifying and substantiating the importance of geosites in Jalisco and its subsequent dissemination through geotourism. The above can contribute to the creation of geo-park (s), according to the definition and methodology of UNESCO, with the consequent economic benefit to the inhabitants of these regions. The disclosure of geological information encourages an appreciation and care of abiotic resources (rocks, minerals, fossils, morphology, soil and water), especially prior to productive activities, minimizing their damage or avoiding building in areas with geological hazards. Jalisco has a great geo-diversity, compared to other states, its history begins approximately 200 million years ago, recorded in the Sierra Madre del Sur and in the Jalisco Block, the most recent volcanic and tectonic activity is recorded in the Volcanic Belt Mexican. The previous provinces, together with the Sierra Madre Occidental and the Central Plateau, contain a wide range of rocks, fossil areas of economic and cultural importance (most of 70 places) and relate the geological history and its dynamics. Geothermal activity, is present in 400 locations.

Geological heritage, Geotourism, and Jalisco

Aumento de la intensidad de franjas de interferencia en Holografía Digital

Increased intensity of interference fringes in Digital Holography

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Abstract

Digital holographic interferometry is a full field optical technique, used in the measurement of dynamic and non-contact events, this technique works with arrays where the initial acquisition of interference fringes is not necessary, but rather involves the superposition of two wave fronts. Where from the holograms and by means of a Fourier window-based processing it is feasible to recover the information of both intensity and phase. However, the interference fringes resulting from the demodulation of the holograms may have low intensity, affecting their subsequent analysis. In this work, the combination of the holographic techniques, filters and the superposition principle is proposed to increase the intensity of the fringes, the results show that using the Fourier method in combination with the superposition theorem is possible to obtain greater intensity between the minimum and maximum of the fringes.

Digital holographic interferometry, Fourier, Filters

2 Biología, Química y Ciencias de la Vida

Efecto sobre el perfil de ácidos grasos de una cepa de microalga (*Dunaliella tertiolecta*) empleando técnicas diferentes de extracción de lípidos

Effect on the fatty acid profiles of a microalgae strain (*Dunaliella tertiolecta*) using different lipid extraction techniques

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Abstract

Biodiesel is subject of research because it is less polluting when used in pure form or mixed with petroleum diesel. Microalgae are now a material new in research for mass production of biodiesel, so the techniques used for cell growth, biomass extraction and lipid extraction influence the profile of fatty acids susceptible to transesterification and consequently the quality of biofuel. This work shows the effect on the fatty acid profile of a *Dunaliella tertiolecta* strain using two lipid extraction techniques. For this, the culture was carried out in the medium F/2, the recovery of the biomass was carried out by sedimentation-flocculation with NaOH and once dry it was subjected to extraction with solvent by Soxhlet and by ultrasound to obtain lipids under the methodology by Bligh & Dyer. The fatty acids were analyzed by gas chromatography and the profile is made up of saturated-monounsaturated-polyunsaturated fatty acids and shows differences regarding the presence-absence and dry weight content. This represents a contribution to analyze the effect on physicochemical parameters established in Mexican regulations regarding the quality of biodiesel and to determine the potential of the microalgae strain for such production.

Microalgae, Fatty acids, Biodiesel

Análisis espectroscópico de materiales orgánicos susceptibles a procesos de transformación

Spectroscopic analysis of organic materials susceptible to transformation processes

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Abstract

Carry out a spectroscopic study of various materials of organic origin, specifically residues from various processes, both biological and agro-industrial, in order to study their structural characteristics in their main functional groups, since their nature can determine the viability of a process of recycling to obtain new products. Some of the organic materials studied were of great importance because these materials can be susceptible to transformation through various processes such as thermochemical, biological, and biochemical transformation. Leaf samples from the Moringa plant (*Moringa Oleifera*), orange peels (*Citrus sinensis*), as well as leachate from the vermicomposting process of the Californian red worm (*Eisenia foetida*) were analyzed. The results obtained indicate a different composition, but in turn, show similarity in some specific bands, such as carboxylic acids, OH groups, methyl groups, as well as some aromatic groups in the case of citrus fruits. The importance of this research lies in the fact in the study of the transformation processes of these wastes, for future applications.

Thermochemical transformation, Spectroscopy, Waste

Caracterización bioquímica de *Pochonia chlamydosporia* Q30 como agente de biocontrol y promotor del crecimiento vegetal

Biochemical characterization of *Pochonia chlamydosporia* Q30 as biocontrol agent and plant growth promoter

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Abstract

Pochonia chlamydosporia is a natural soil fungi, which in recent years has gained importance for its ability to nematodes biocontrol and its beneficial plant interaction. The biochemical characterization of new isolates is important to determine their potential as biocontrol agent and plant growth promoter. In the present work, through the use of specific culture media, it was found that *Pochonia chlamydosporia* Q30 possesses chitinolytic activity, which could involve in the degradation of the egg Wall and the cuticle of the juvenile nematode stages, amilolytic and pectinolytic activity related to root colonization as endophyte was also found. Finally, phosphate solubilization (242.6 ± 27.1 mg/L) and indoleacetic acid production (10.0 ± 1.2 mg/L) were detected as plant growth promoting properties, which were later verified in watermelon seedlings, whose inoculation with 10^5 chlamydospores, increased the height and the stem diameter in a 13 and 6 %, respectively. In conclusion, *P. chlamydosporia* Q30 has potential to be tested as biocontrol agent for nematodes and plant growth promoter.

Indoleacetic acid, Nematodes, Endophyte

Composición química de *Tithonia diversifolia* (Hemsl.) A. Gray (Asteracea) y diversidad de usos en el medio rural

Chemical composition of *Tithonia diversifolia* (Hemsl.) A. Gray (Asteracea) and diversity of uses in rural areas

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Abstract

The objective of this study was to evaluate the nutritional quality of *Tithonia diversifolia*, a shrub species in the Asteraceae family and the diversity of uses in rural areas. A bibliographic review was conducted in Mexico and other countries in Central America, South America, Africa and Asia. Bromatological analyses of edible material (leaves and petiole) were performed to determine dry matter (DM), fat, ash, crude fiber, crude protein (CP), and nitrogen-free-extract (NFE). Fiber fractions were determined: neutral detergent fiber (FDN), acid detergent fiber (ADF), hemicellulose, cellulose and lignin, from two locations in Jalisco state and one from Colima. Herbarium specimens were reviewed for knowing geographical distribution and rural uses. Results indicate that even without being legume, CP percentages are high with values of 18.42 to 31.54% with high dry matter content up to 98.92%, fiber values (55.63 to 69.55%) for FDN and (31.02 to 40.84% for ADF). The bibliographic review highlights its forage use, for ruminants and monogastrics, in beekeeping for its content of nectar and pollen, such as medicinal, ornamental and Green fertilizer for its contribution of nutritious, mainly phosphorus. *T. diversifolia* is a good option for its nutritional value and diversity of uses are demonstrated as an alternative in semi-intensive animal production systems in both tropical and temperate areas.

Beekeeping, Crude protein, Dry matter, Fiber fractions and medicinal use

Evaluación sensorial de una tortilla de harina enriquecida con microcápsulas de betabel (*Beta vulgaris* L.)

Sensory evaluation of a flour tortilla enriched with microcapsules of beet (*Beta vulgaris* L.)

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Abstract

Beets (*Beta vulgaris* L.) have antioxidant compounds, with a characteristic color which is due to the presence of betalains. Microencapsulation is a technique used to protect aromas, flavors, colors and nutritional and antioxidant components. The objective of this work was to microencapsulate beet juice (*Beta vulgaris* L.) by spray drying using gum arabic as wall material, to later elaborate a flour tortilla incorporating the microencapsulated antioxidants from beet juice and evaluate it sensory. The microencapsulation process was carried out using a Mini Spray Dryer. The sensory evaluation used was descriptive and was carried out on 50 panelists (men and women) with an age range of 18 to 23 years. The flour tortilla was accepted by the panelists.

Antioxidants, Microencapsulation, Biopolymers

Estudios espectroscópicos y termogravimétricos de materiales homogéneos a partir de PU/PMMA/SiO₂

Spectroscopic and thermogravimetric studies of homogeneous materials from PU/PMMA/SiO₂

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Abstract

Polymers of organic-inorganic origin are incompatible by nature and a proposal to solve this behavior is the formation of Interpenetrated Polymeric Networks (IPN) using coupling agents. Coupling agents make it possible to create a crosslinking between the phases present that provides better mechanical, optical and thermal properties. These materials are known as Hybrid Networks. To obtain optically transparent materials, individual networks of Polyurethane (PU), Methyl Polyacrylate (PMMA) and Silica (SiO₂) were used. Binary and ternary networks were synthesized using bulk polymerization incorporating SiO₂ up to 10% by weight. In this research, coupling agents such as Trimethoxysilyl Propyl Methacrylate (MSMA) and Isocyanotopropyl Triethoxy Silane (IPTS) were introduced to the ternary networks in order to reduce the phase separation that occurs in these systems. Fourier Transform Infrared Spectroscopy (FTIR) studies demonstrated the presence of functional groups of binary and ternary networks. On the other hand, the thermogravimetric tests (TGA) carried out on hybrid IPN's with coupling agents, presented greater thermal stability and better optical properties, providing the new IPN's with the opportunity to have promising applications.

Interpenetrated networks, IPN's

3 Medicina y Ciencias de la Salud

La resignificación como parte de la logoterapia, para el bienestar de jóvenes en situación de anexo por adicciones

The resignification as part of logotherapy, for the well-being of young people in a situation of addiction annexation

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Abstract

Objective: Identify the self-perception of young people in a situation of addiction, drug use and the meaning of life, through a workshop focused on logotherapy. **Methodology:** Qualitative research, with which in addition to the collection of theoretical information on logotherapy and resignification; Data was collected from young people in a situation of addiction, participants of the workshop "The resignification of addiction" through a focus group conducted by FEIDEP specialists. Information that allowed contrasting data in the sections of results and conclusions. **Contribución Contribution:** Categories were elaborated that reveal the personal interpretation of the prevailing reality regarding the situation that young people live in a situation of addiction annexation, as well as the resignification of it by raising awareness of the possibility of freedom to choose through logotherapy. To achieve the above, the young participants externalized resources that enable a life project based on the capacity for change, motivations, attitudes and emotional skills, to achieve a situation of greater well-being.

Logotherapy, Resignification, Meaning of life

El papel de los probióticos en tiempos de la pandemia COVID-19

The role of probiotics in times of the COVID-19 pandemic

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Abstract

In December 2019, cases of a life-threatening pneumonia-producing disease were reported in Wuhan, China (COVID-19). There is not yet a vaccine or scientifically proven treatment at the moment. WHO recommends: washing hands, covering nose and mouth, correct cooking of food, avoiding close contact with anyone. Nowadays, individuals are interested in consuming foods that, apart from their nutritional value, additionally benefit as preventing diseases, that is why the consumption of probiotics originates a marked interest in Lactic Acid Bacteria (LAB) and their metabolites. Since when ingested, changes occur in the intestinal microflora and have a positive impact on the health status of the consumer. The intestine plays a very important role that has an impact on our tolerance and defense mechanism against diseases, concluding with the fact that by maintaining a better balance in our intestinal microbiota, our entire immune system will be strengthened, thus avoiding contagion by the current virus. It closed with a pilot survey in which it is inferred that most people are willing to consume probiotics to increase their defenses.

COVID-19, Probiotics, Immune system

Dispersión de partículas ultrafinas en el área metropolitana de Guadalajara, México

Ultrafine particle dispersion in the metropolitan area of Guadalajara, Mexico

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Abstract

Objectives: Dust, soil and leaf samples of *Ficus benjamina* were collected in the metropolitan area of Guadalajara (GMA) Peña-García *et al.*, 2017), allowing to identify the type of metallic particles, size, shape and spatial distribution. With the results obtained, the possible effects of metallic particles on human health were discussed (Peña-García *et al.*, 2019). **Methodology:** The sampling was in six municipalities of the GMA; Atomic absorption spectrophotometry analyses were carried out on leaves, which identified the presence of various elements that mostly exceeded the reference values. Through X-ray fluorescence, 23 elements were identified in soil, including Th and Ac in at least 14 sites. Using the scanning electron microscopy technique and elemental mapping analysis, coarse, fine and ultrafine metallic particles were identified in human bronchus and lung tissue, as well as fragments of cement, plastic, yeast and bacteria. The similarity between the metallic particles in the collected samples and those observed in lung tissue, warns of latent risks to the health of the GMA population. **Contribution:** The results obtained with the methodology used in this work allow us to glimpse the polluting potential in urban areas.

Urban dust, *Ficus benjamina*, Heavy metals

Peróxido de Hidrógeno al 35% y su efecto sobre la microdureza dental

35% Hydrogen Peroxide and its effect on dental microhardness

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Abstract

Peroxides are currently the most widely used products for tooth whitening, when peroxide decomposes it produces a decrease in the pH in the medium in which it is found, immediately in the enamel produces acid etching that varies depending on the pH of the product, contact time and concentration. Objectives. To know the effect of hydrogen peroxide at 35% on dental microhardness. Methodology. Experimental, transversal, descriptive study. Using 50 teeth that were cut 1 mm below the amelocemental junction to create two vestibular and palatal faces. The teeth were lightened with 35% hydrogen peroxide to find out how much micro-hardness the enamel loses, the Vickers unit of measurement. The microhardness was measured after making 3 indentations in different surfaces of the enamel at a force of 50 grams and a time of 20 seconds with a diamond tip that left a trace observed under the microscope in the form of a pyramidal diamond; based on the vertical and horizontal diagonals, the Vickers microhardness was determined. Contribution According to the results obtained, we found that the application of 35% hydrogen peroxide decreased dental microhardness by 25.08%.

Hydrogen peroxide, Microhardness, Enamel

Fuerza de unión adhesiva entre resina de ortodoncia y superficies acrílicas

Adhesive bond strength between orthodontic resin and acrylic surfaces

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Abstract

The use of orthodontic treatments in patients with temporary prostheses has been increasing, the purpose of this in vitro research is to measure the adhesive bond strength between orthodontic resin and acrylic surfaces by applying different procedures. Objective. To compare the adhesive bonding strength between orthodontic resin and acrylic surfaces under different application protocols. Methodology. Transversal, experimental, prospective study. In vitro with acrylic provisions, was carried out in the laboratory of the Faculty of Dentistry of the Universidad Veracruzana region of Veracruz. In the period of February-June of the year 2019. The sample was conformed by two control groups of specimens and four experimental ones, each group conformed by 20 specimens, in total 120 provisional ones were made in acrylic Nic Tone of quick self-cure. The tests performed by the ULTRATESTER machine were expressed in MPa. Later, the data obtained were processed in Excel tables (version) for statistical processing in SPSS version 24. Contribution. When comparing the pre-cutting protocol of acrylic surfaces with fine diamond bur and the protocol without pre-cutting, no statistically significant differences were found, therefore, this step could be omitted in clinical practice.

Adhesive System, Provisional, Acrylic Resin, Orthodontic Resin

Flujo y ph salival en pacientes en pacientes gestantes

Salivary Flow and ph in pregnant patients

CAPETILLO-HERNÁNDEZ, Guadalupe Rosalía, OCHOA-MARTÍNEZ, Rosa Elena, TORRES-CAPETILLO, Evelyn Guadalupe y TIBURCIO-MORTEO, Leticia

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Abstract

Saliva is multifunctional: cleaning of the oral cavity, lubrication, preservation, repair of mucous membranes and dental hard tissues; the pH and its buffering, also participates in the elimination of bacteria, digestion and speech. The salivary composition in gestational period is altered, with variation of salivary pH and buffer capacity. Objective. To determine the levels of pH and salivary flow that prevail in pregnant patients. Methodology. Descriptive, prospective and transversal study. Sampling for convenience: pregnant patients in the 1st, 2nd and 3rd trimesters who attended the UMF. 61 to medical control of their pregnancy. Using a calibrated JENWAY 3510 Ph Meter potentiometer. Saliva samples were collected at least one hour after eating. Contribution. The salivary pH in pregnant women is lower in the first quarter than in later ones. According to Spearman's test analysis, a positive correlation is reported ($r^2 = 0.34$), the correlation of ranges between pH and salivary volume is statistically significant even if it is weak. The salivary pH is lower in the first quarter than in the two subsequent ones, the salivary flow does not vary significantly in the first and second quarters, but it increases in the third quarter.

Saliva, Ph, Pregnant women

Tipos y frecuencia de posturas corporales y maloclusiones dentales

Types and frequency of body postures and dental malocclusions

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Abstract

The jaw is articulated with the skull through the temporomandibular joint. And the skull, in turn articulates with the spine (upper cervical). Important studies establish that up to 30-40 % of back pain can be caused or aggravated by dental malocclusion. Objective. To establish the types and frequency of body postures and dental malocclusions in the patients of the School of Dentistry in the period August-December 2019. Methodology. Transversal, descriptive and observational study. The sample was made up of a total of 50 patients between the ages of 19 and 70 who attended the Admission Clinic of the School of Dentistry. To which were carried out: verification of molar class, verification of midline deviation, verification of posterior crossbite, external lateral palpation of the TMJ, extraoral photographs, analysis of photographs. Contribution. It was found that there is a high frequency of one type of body posture and Angle Class I malocclusions, in patients from the School of Dentistry. In relation to malocclusions, Angle Class I predominated, as well as flattened posture, in Class II military posture and in Class III both flattened and military posture.

Malocclusions, Body posture, Spine

Uso de celulares en la transmisión de mensajes preventivos sobre COVID-19 a mujeres embarazadas de Yucatán, México. Datos preliminares.

Use of cell phones in the transmission of preventive messages about COVID-19 to pregnant women in Yucatan, Mexico. Preliminary data.

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Abstract

Objective. Present a strategy to rescue pregnant women from the pandemic through the use of mobile technology, to explore their health status and provide preventive information to limit damage. **Methodology.** Descriptive, cross-sectional study. Pregnant women from two municipalities of Yucatan participated. Based on national guidelines and direct questions to a sample of pregnant women, infographics were prepared on the main warning signs and most common questions about COVID-19, respectively. The infographics were sent to each pregnant woman's cell phone. Descriptive statistics were used and tables, graphs and figures were prepared to present the results. **Contribution.** 330 pregnant women were identified, of which 50 (15.1%) have already received infographics. The main doubts of a sample of 13 (3.9%) pregnant women about COVID-19 were: if something can happen to their baby if they get COVID-19, 13 (100%); if you can give COVID-19 to your baby in the hospital, 12 (92.3%); what measures to take and how to prevent COVID-19, 12 (92.3%); risks in childbirth if you get COVID-19, 7 (53.8%). It is important to continue with preventive information through digital means to improve the knowledge of pregnant women and prevent the risk of contagion. This study contributes to reduce the maternal mortality.

Cell phone, Pregnancy, COVID-19

4 Humanidades y Ciencias de la Conducta

Propuesta de atención a alumnos con niveles de depresión en el nivel superior, en el estado de Yucatán

Proposal of attention to students with levels of depression at the higher level, in the state of Yucatán

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Abstract

Objectives: Propose care strategies for students with levels of depression disorders in higher level students through the measurement of depression symptoms in higher level students and with the participation of experts in the psychosocial area, propose support measures of the cognitive model. **Methodology:** The research is of an exploratory and descriptive type and a non-experimental cross-sectional design (Hernández, et al, 2006), beginning with a documentary research, subsequently measuring the level of depression through instruments that detect the presence of depression in students to generate the proposal of attention and strategies according to the strongest causes to attend to students with levels of depression disorders. **Contribution:** In the January-June 2020 semester, the total number of registered students was 903 students. Of the total number of enrolled students, 473 students (53%) responded to the depression measurement instrument, it is important to highlight the committed participation of leaders and experts in the analysis of information for the generation of a comprehensive proposal for the care of higher level students, in the State of Yucatan

Depression, Anxiety, Environment

Ordenación, Planificación y Gestión turística de la junta auxiliar de San Baltazar Campeche, Puebla, México

Tourism Organization, Planning and Management of the Auxiliary Locality of San Baltazar Campeche, Puebla, Mexico

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Abstract

Puebla is one of the municipalities with the greatest wealth in cultural manifestations in Mexico, due to the historical process that begins from the period of the conquest. It is the holder of a historical center, Cultural Heritage of Humanity, which has allowed it to hold international events that attract national and foreign visitors. From the tourist point of view, tourism for meetings, congresses, conventions, fairs and exhibitions has been a guiding principle of this activity. The city of Puebla has 17 auxiliary locality that converge in its neighboring territory, some of these localities are already inserted in the urban area of the city, such is the case of San Baltazar Campeche, this locality was established in its beginnings as an indigenous people; Today it is an urban area with important commercial, social, educational and leisure infrastructure. Therefore, it is necessary to develop a Tourism Organization, Planning and Management Plan that allows it to generate social management actions in order to incorporate said territory into the tourist-economic dynamics of the city. Thus, allowing the generation of jobs, better living conditions for its inhabitants and an adequate urban development of this area, which was rural at the beginning and which today encompasses an urban territory of great dynamism for the development of the city.

Auxiliary Locality, Culture, Tourist Attractions, Tourist Management

Mayordomía: Conservación de una tradición, resiliencia basada en la fe

Stewardship: Tradition preservation, resilience based on faith

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Abstract

Considered as a religious tradition ingrained in many Mexican communities, the stewardship continues present, facing social and cultural changes that have made it disappear in capital cities. The objective of the present study is to highlights the stewardship importance in San Rafael Comac and Santo Domingo Tonahuixtla communities in, Puebla, Mexico, where the tradition persists, preserves and is spread, considering it as a resilience method for people, based on hope, faith and trust in their social and cultural environment. The qualitative research methodology used was Oral History, approached through interviews with the main actors of this study: the *mayordomos*, who share their experience on the religious position with respect, honor and privilege, with the firm conviction of preserving the tradition.

Stewardship, Resilience, Faith

Construcción del concepto de Currículum en los contextos educativos

Construction of the concept of Curriculum in educational contexts

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Abstract

This article elucidates the concept of curriculum, in an entitative way to educational processes. It consists of a documentary investigation that tries to account for the construction of the curriculum both chronologically in principle and from the educational perspective in a second instance. A panoramic tour is made of the main international authors and a small emphasis on national authors, since there is a great development in this disciplinary field by Mexican researchers. The importance of this work lies mainly in the former confining the term curriculum only to the curriculum or curriculum mesh, however it has countless elements that give directionality to the educational process in terms of actors, methodology, infrastructure, programmatic contents, etc.

Curriculum

Actitudes hacia el estudio y acoso escolar

Attitudes toward study and bullying

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Abstract

The objective pursued in this research is to identify the relationship between study attitudes and bullying in secondary school students from municipalities in the State of Zacatecas. Instruments and methods. The research is descriptive, non-experimental, prospective, cross-sectional, correlational. The population is secondary school students, whit a sample of 145 participants assigned by the authorities of the participating schools. It was carried out during the semester of January – July 2019. The variables to consider consisted of study attitudes and bullying. Statical processing is through the reliability of instruments such as the study habits questionnaire José Luis Diaz Vega and the Cisneros self-test of bullying for students, using Cronbach's alpha. Likewise the different areas of the Cisneros self-test were correlated whit the area of attitudes towards the study of the study habits questionnaire by José Luis Diaz Vega. The result obtained in the reliability of the instruments used was of a high reliability greater than .900 and terms of correlation, the results were of a low correlation. Instruments such as the study habits questionnaire by José Luis Díaz Vega and the Cisneros self-test of bullying for students, using Cronbach's alpha. Likewise, the different areas of the Cisneros self-test were correlated with the area of attitudes towards the study of the study habits questionnaire by José Luis Díaz Vega. The results obtained in the reliability of the instruments

Actitudes, Estudio, Acoso escolar

Actividades interactivas-auténticas para promover la producción oral en una plataforma virtual

Authentic-interactive activities to promote oral production on a virtual platform

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Abstract

Implementing learning or communicative strategies are not enough to develop oral production when learning English as a Foreign language; indeed, it is necessary to provide authentic activities that engage students in the act of speaking. The objective of this research is to know if the interactive activities operated in the Moodle platform promote oral production and identify the possible association between their scores from the instructional design and their speaking level from a standardized exam. For this, a longitudinal quantitative approach was carried out during spring 2020 in the Teaching English Bachelor at BUAP, having a sample of 20 subjects. The results demonstrated that the use of authentic-interactive activities improved the students' speaking competence significantly. Furthermore, this study pretends to contribute with useful theoretical information for teachers and students who want to select appropriate tasks to improve this competence. It is essential to clarify that this is an innovative study since it promotes the use of activities and strategies mediated by technology asynchronously and synchronously, which are flexible and suitable for students' needs in times of contingency.

Authentic-interactive activities, Oral production, Virtual environment

Inclusión educativa y laboral del adulto mayor en la UAEM

Educational and labor inclusion of the elderly in the UAEM

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Abstract

Objective. Analyze the process of educational and labor inclusion of the elderly in higher education of the UAEM. **Methodology.** An analysis of the process of educational and labor inclusion in the older adult population who are workers and students of the UAEM was carried out. The needs they present, the conditions in which they are found, and the supports provided were identified. This analysis was carried out from a cognitive, neurobiological perspective with or without the presence of disability or chronic-degenerative disease; as well as the search for socio-affective indicators or other psychosocial factors that may impact this inclusion process. **Contribution.** The results obtained will allow establishing strategies to improve the process of educational and labor inclusion in this population considered as vulnerable.

Elderly, Educational and Labor Inclusion, Higher Education

Resiliencia en adolescentes institucionalizados sin cuidados parentales en el Estado de Morelos México

Resilience in institutionalized adolescents without parental care in the state of Morelos México

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Abstract

Introduction. Resilience has been proposed as a novel research topic in environments with vulnerable populations, since it promotes healthy development in the face of adverse circumstances. In the case of adolescents without parental care, foster care in social institutions has been one of the resources most used by the State to offer protection and guarantee the human rights of girls, boys and adolescents in Mexico, who may or may not present a disability and who lack a father, mother or guardian, for which by means of these institutions they guarantee the healthy development of minors. **Objective.** Analyze the levels of resilience in institutionalized adolescents without parental care, with and without disabilities. **Method.** analytical cross-section. The Inventory of Assilient Anomie and Nomic Resilience (IAAR) was applied. 29 adolescents (men) with an age range of 12 to 19 years participated, 24 without disabilities (SD) and 5 with disabilities (CD). Statistical analysis was performed using the SPSS v.25 program. **Results.** 17 adolescents (58.6%) presented resilience, 12 (41.3%) did not present resilience according to the IAAR. Therefore, it can be asserted that, according to the results obtained in both tests of resilience, being institutionalized adolescents does not prevent the development of this capacity. **Conclusions.** In our study, more than half of institutionalized adolescents show resilience according to the IAAR.

Resilience, Adolescents, Institutionalization

Estrategias de competitividad turística, una propuesta para el Municipio de Huichapan, Hidalgo

Tourist competitiveness strategies, a proposal for the Municipality of Huichapan, Hidalgo

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Abstract

The purpose of this investigation was to know the current situation in terms of resources and tourist attractions of the Municipality of Huichapan Hidalgo, to determine the potential in this field and to propose the ideal strategies for tourist competitiveness that allow positioning this Magical Town as a Competitive municipality at the state level. The methodology used in the research was carried out under a mixed type and approach, likewise a hypothetical-deductive method, non-experimental cut, was used. Documentary, having carried out a theoretical investigation of the variables: Tourism, Strategies and Competitiveness, as well as the search for information in various documents created by governmental organizations for the determination of diagnoses, among which are the geographical-environmental and socio-economic, in addition to carrying out a list of the main tourist attractions, both natural and cultural; and field research: since unstructured interviews were applied to both the director of tourism and the chronicler of the municipality, which allowed to know the situation that the municipality is currently going through in terms of tourism competitiveness, as well as a structured questionnaire to the director of tourism in order to determine the tourism potential. Thus, then the results found were that the Magical Town of Huichapan is a destination with tourist potential that lacks complete or new tourist products where ignorance of the cultural and natural wealth, as well as the appropriate strategies for the destination does not favor the existence of tourist competitiveness, compared to four Magic Towns of the State of Hidalgo.

Tourism, Strategies and Competitiveness

Intervenciones educativas para la inclusión en el aula de estudiantes con aptitudes sobresalientes

Educational interventions for the inclusion in the classroom of students with high abilities

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Abstract

The educational attention of students with outstanding abilities, in the regular school, has become a great challenge for the Mexican educational system, therefore, the objective of this article is to know the educational intervention programs and educational strategies that can be carried out conducted in a regular classroom to greatly ensure the inclusion of gifted students. To this end, the design of this research is descriptive with a search of scientific literature that has included the period of time 2010-2020 in the Researchgate, Scielo, Scopus, Dialnet and Redalyc databases. In addition, the official information of the Secretariat of Public Education of Mexico (SEP) and a bibliographic review in national libraries have been considered. Once the previous objective has been achieved, it is expected that the teacher's knowledge of the educational intervention strategies and the intervention programs presented here will favor the design and implementation of curricular adjustments for the educational inclusion of students with high abilities in regular schools.

High abilities, Educational intervention, Inclusive education

El manejo de emociones en niños de educación primaria

Managing emotions in Elementary school children

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Abstract

The objective of this research is to compare the management of emotions in elementary school children from two schools, one with secular education and the other with training in religious values. We worked from a comparison design where there was a sample of 104 sixth grade students from primary school, 52 from a private school and 52 from a public school. The instrument has 49 variables of which 5 are signal. The information was processed both qualitatively and quantitatively in the Statistica program. Among the main results is that the solidification of society occurs from the responsibility of parents and that working on the socio-emotional development of students. Therefore, one of the main conclusions is that healthy coexistence between parents enhances academic efficiency and the management of emotions in students, as well as the recognition of qualities enhances the self-esteem of students, thus helping to reduce the rates of violence inside classrooms. It is proposed to generate an intervention model in schools for the inclusion of subjects of socio-emotional origin as compulsory.

Emotions, Secular education and religious values

La formación de Niños como investigadores en la Feria de las Ciencias y Creatividad de Coahuila

The training of Children as researchers at the Coahuila Science and Creativity Fair

MUÑOZ-LOPEZ, Temistocles, RAMOS-JAUBERT, Rocío I., ESPERICUETA-MEDINA, Marta Nieves y MARTINEZ-SOSA, Vanessa

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Abstract

This work is a study of children in the fourth, fifth and sixth years of primary school who carried out research projects for the 2018 science and creativity fair organized by the State Council of Science and Technology of Coahuila in coordination with Conacyt. The research was carried out with the purpose of having a profile of the research process that children carry out when they are asked to develop a project to present it at the fair. The results of the projects were evaluated by 17 evaluators and researchers selected by the State Council for Science and Technology with pre-established formats on Likert-type scales and classified into scientific, technological and citizen types. The original scales were transformed with a standardized method of the Spanish version of the SF-36 Health Questionnaire to work the data on a scale from zero to 100, in such a way that multivariate analyzes such as discriminant analysis and factor analysis could be performed. The results show a profile of child researchers where there are eight variables that constitute the basic structure as researchers and a complementary profile that refers to the information and communication of the results of their projects. These variables of his basic profile are: Identify problems, have Clarity about the Project, Collect data appropriately, Make and record field observations, Plan and carry out an investigation in the local environment, with a defined purpose, Relate their learning to the everyday life, uses reliable sources of information, and develops new knowledge.

Research in children, Research skills, Training of researchers

Formación normalista que limita o desarrolla el desempeño universitario en estudios de postgrado

Normalist training that limits or develops university performance in postgraduate studies

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ID 3^{er} Coautor: *Emiliano-Castillo, Carlos Daniel* / **CVU CONACYT ID:** 1095096.

Abstract

Quantitative non-experimental research studies of basic teachers training and its pedagogical relevance to develop or limit the updating of learning towards the professionalization of postgraduate teachers. The academic sufficiency of students of basic teachers to access higher studies has been discussed. The research proposes of these students teaching practice as learning to continue higher professional development. The research has vertical transactional data collection applied to the random sample of 47 students of basic teachers from a population of 224 master's students. The descriptive analysis is carried out in six signal variables, three axes: systems of teacher training discipline, school achievement in normal school and efficiency in master's studies, inserted are five complex variables. The analysis is descriptive correlational (Pearson) and multivariate factorial. The results show the achievement of the objectives of teaching experiences in professional practice and the relationship with productive learning. Attributes of basic teachers' students support learning based on teaching experience are being fair, consistent, and productive, with a positive attitude, respectful, goal-oriented, proposing alternative solutions to real problems in teaching. The research provides information for the integration of public educational policies that impacts the training and updating of the impacts the training and updating of the teaching profession, attending to educational problems for the teaching development towards postgraduate degrees. The assertive students of basic teachers training with practices and professional teaching is constituted in formative learning for development in higher education The intentional educational training and teaching develop in students of basic teacher skills such as: self-awareness, self-esteem, conscience, moral judgment, empathy, social perspective, self-regulation and formation of values.

Students of basic teachers training, Academic achievement, postgrads studies

Formación profesional. Significados psicológicos desde la perspectiva de género

Vocational training. Psychological meanings from the gender perspective

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Abstract

Psychological representations, as a reflection of beliefs, norms and values, are spiced up by individual perspectives as a result of their experiences and expectations, which are the result of the constant interaction of students with their sociocultural context, which allows studying, based on the palabra estímulo vocational training, the reflection of culture in the cognitive configurations of students. The objective of the research is to analyze the differences in psychological meanings of professional training in women and men from the studied career; the research design is qualitative, cross-sectional and sampling by availability; The results are based on the perspective of 57 students who show the interactions through the psychological meanings that women and men express with the Natural Semantic Networks (RSN) technique. The contribution of the present study is the use of the RSN technique to identify the shared codes of the students that reflect the psychological meanings about their own professional training.

Professional training, Gender perspective, Psychological representations

Interacciones en la enseñanza musical infantil con fines educativos artísticos y/o profesionalizantes

Interactions in children's musical teaching with professional and artistic educative ends

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Abstract

Through the ages, music has always been a fundamental element in the cultural development of mankind. Musical apprenticeship among children has had a positive impact in their psychomotor development, as well as in their sociocultural medium, either coming from general arts education, or, a specialist-oriented musical training. There are certain parameters that contribute to the broad arts education of children, and others that impact specifically the children that are perceived as future professional performers. The information that integrates this work was gathered from a comparative study and analysis of documents. The objective in this article is to observe the interactions of the infants' musical teaching processes with professional and artistic educative ends, highlighting identity values and the methods applied, which contribute to a better integration of a child's musical culture, his own formative needs considered.

Artistic teaching, Methods, Specialized musical teaching

La tutoría herramienta fundamental para el discente universitario

Tutoring fundamental tool for university students

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Abstract

The objective is to analyze whether or not there is a relationship between learning, tutorials, and the values presented by the students of the Faculty of Nursing. Population: made up of 480 students. The sample was 178 students and it is non-probabilistic. Instrument, consists of 66 reagents and is divided into 4 sections, a centesimal scale is used. Cronbach's Alpha Reliability of .87. Results, are analyzed: frequencies and percentages, integrational level and all possible regressions. The ages range from 18 to 26 years, the majority are women. The learning that occurs in this is closely related to the reflection that takes place, strengthening in the subject values such as friendship, happiness and trust, improving in the same way personal growth and the development of skills, intelligence is another of the learning values that are improved in the subject when we link it with the tutorials and their tutors. What is intended with the results is to bring together managers and teaching staff and show the results so that relevant decisions are made, especially that it is given the relevance that this program has and the benefit that students obtain by providing them.

Students, Tutoring, Learning

Los adultos mayores, el cuidado de los nietos y su calidad de vida

Older adults, caring for grandchildren and their quality of life

PONCE-CONTRERAS, María Guadalupe, GONZÁLEZ-ÁLVAREZ, Mireya del Carmen, PÉREZ-BRIONES, Nancy Griselda y TELLO-GARCÍA, María Ascención

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Abstract

Grandparents are today a fundamental piece for the functioning of the country. They were before, they probably always were as a family and social reference, but the years have reinforced their role and significantly expanded their responsibilities. This research aims to describe the activities of caring for grandchildren and the quality of life of grandmothers. The research is descriptive, transversal, Sample; was of 13 women 60 years or older who care for at least one grandchild and who are part of the support group of the Sunflower Health Center, in Saltillo Coahuila. 4 instruments were used, 1st a sociodemographic data card which included the following information: age, place of birth, marital status, schooling, illnesses suffered, number of children, number of grandchildren, ages of the grandchildren they care for and who you currently live with. The 2nd describes the care of grandchildren, the 3rd measures the quality of life and the 4th measures the perception of the health of the elderly. Results: 85.7% of older women do not currently have a job, only 7.1% of our sample currently have a job. All grannies take care of at least one grandchild.

Adults, Grandmother, Quality of life, Grandchildren

Desarrollo de habilidades socioemocionales a través de un curso de tutorías B-Learning para alumnos de nivel Bachillerato de la Universidad Autónoma de Zacatecas “Francisco García Salinas”: Estudio realizado en el Programa de Preparatoria No. XIII

Development of socio-emotional skills through a B-Learning tutorial course for high school students of the Autonomous University of Zacatecas "Francisco García Salinas". Study carried out in the High School Program No. XIII

HERNÁNDEZ-LARIOS, Martha Susana, GARCÍA-VILLALOBOS, Alejandro Rodolfo, BARRIOS-GARCÍA, Esmelda y HERNÁNDEZ-BERUMEN, José de Jesús

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Abstract

As part of the institutional strategy to prevent failure and school dropout, seeking better academic performance by upper-secondary students, a project is established where the tutorial part is related to the use of technological tools and resources. A course in B-Learning is developed, developing strategies that modify their behavior and performance, said course consists of four units, where strategies are developed to improve attention, identify emotions and the strategies necessary for their concentration, allowing them to develop social-emotional skills achieving better academic performance.

Strategy, Socio-emotional skills, B-learning

Evaluación de un taller en habilidades sociales para las prácticas profesionales en estudiantes de psicología y terapia de la comunicación humana en la FPyTCH de la UJED.

Evaluation of a workshop on social skills for professional practices in students of psychology and human communication therapy in the FPyTCH of the UJED.

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Abstract

Objective: To present the result obtained from the evaluation of a workshop on social skills for professional practices in students of Psychology and Human Communication Therapy within the Community Services Center at the Faculty of Psychology and Human Communication Therapy belonging to the Juárez University of the State of Durango. **Methodology:** Mixed in a sequential explanatory design (DEXPLIS), through the statistical analysis of a constant sample from the results obtained in the social skills scale tests (Gismero), EMES-C and EMES-M in three different moments using the IBM SPSS®, applying the bifactorial analysis of variance by ranges or Friedman's test. **Contribution:** Achieve a correct interpretation of the results from the established hypothesis, paying attention to the particularities of the professional work, seeking that the student of Psychology and Human Communication Therapy near to graduate has a repertoire of competent social skills, that contribute to efficient professional performance and personal fulfillment, as well as the development of positive attitudes and the reduction of emotional exhaustion.

Social skills, Students, Psychology, Therapy, Human communication, Professional practices, Residencies, Evaluation and workshop

Instrumentos para identificar los factores de riesgos psicosociales en el trabajo: Una revisión sistemática

Instruments to identify psychosocial risk factors at work: A systematic review

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Abstract

The human factor within organizations is exposed to different types of risks, especially those that cause damage to their physical and psychological health, which if not identified and treated in time can generate irreversible damage to them. In recent years, investigations have been carried out that address the subject, in which different instruments have been implemented to identify and evaluate this phenomenon, so the purpose of this systematic review article was to analyze the instruments that allow identifying the factors of Psychosocial risks at work (FPR) in Latin America. The information search included databases on the web, such as Redalyc, Dialnet, Scielo and ProQuest. Three people independently selected the articles for review, in a period from 2015 to 2020, where the methodological quality of each of them was evaluated, as well as the inclusion and exclusion criteria considered for the research. It was observed that in recent years different methods and instruments have been implemented to evaluate this phenomenon from different areas, so it is important to determine which are the optimal instruments to identify FPR in workers.

Psychosocial risk, Scale of psychosocial risk, Latin America

La importancia de la autoeficacia y la resiliencia en el estilo de aprendizaje del alumno universitario

The importance of self-efficacy and resilience in the learning style of the university student

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Abstract

The present research aims to identify the attributes that integrate learning styles with positive psychological functioning. The methodological value is explained from the application of two standardized tests with a Cronbach's alpha of 0.89, made up of 102 variables in total; For this, an instrument composed of the self-efficacy section of the Schmeck learning styles inventory and the second the Merino positive psychological functioning scale was developed. I surveyed a total of 133 subjects. The statistical analyzes processed included the reliability and internal consistency test of the instrument; the selection of significant variables; descriptive analysis, measures of central tendency and variability; comparative analysis with Student's t test for independent samples, Pearson's correlation, integrational analysis from factorial and finally regression analysis. From the statistical results, it is highlighted that those students who lack a developed resilient ability have difficulty being self-effective with respect to academic activities. Likewise, students who adequately reconcile their work, social and personal life, have high self-esteem, are creative, which allows them to be resilient and self-effective.

Learning styles, Self-efficacy, Resilience, Academic performance

Violencia escolar y calidad de vida relacionada con la salud en niños de escuelas primarias

School violence and health-related quality of life in primary school children

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Abstract

The objective of this article is to analyze the dimensions of school violence and its impact on the health-related quality of life of primary school children at social risk in the city of Saltillo, Coahuila. The methodology used is quantitative, observational, cross-sectional, prospective and descriptive. The information was collected through two instruments, CUVE3-EP to measure School Violence and KIDSCREEN-27 for Health-Related Quality of Life, where 416 children aged 5 and 6 were taken as a sample. Primary education. The sampling method used is convenience sampling. The statistical techniques used were descriptive, correlational and comparative. The contribution of the study starts from the identification of the different types of school violence and its association with the quality of life of primary school children. Being verbal violence between students a factor that decreases psychological well-being, as well as their autonomy and relationship with parents.

School Violence, Health-Related Quality of Life, Children

Calidad de vida relacionada con la salud y satisfacción académica de estudiantes universitarios

Quality of life related with health and academic satisfaction of university students

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Abstract

Satisfaction of university students. The methodology used was quantitative, observational, cross-sectional, prospective, descriptive and correlational. The compilation of the information was carried out through a battery made up of two scales; a) the SF-12 questionnaire and the Academic Satisfaction scale. The sample consisted of 467 students, the sampling method that was used was non-probabilistic, through the convenience sampling strategy. The statistical techniques that were used were descriptive and correlational statistics. The contribution of the study lies in the statistical empirical evidence that allows affirming that the dimensions of physical role, emotional role and vitality favor the academic satisfaction of university students. If students feel comfortable with their school atmosphere, enjoy their school activities, and are enthusiastic about their majors, they will have better physical and mental health.

Quality of life related to health, Academic satisfaction and university students

Maquillaje como proceso de desarrollo socio-emocional

Makeup as a process of social-emotional development

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Abstract

The objective is to know the educational process of socio-emotional development in the construction of personality, which is extremely important today, since educational models revolve around this axis. In the world, approximately 74,200 million dollars were spent in 2019, in Mexico in 2019 it could exceed 154,000 million pesos. A qualitative ethnomethodological research was carried out with 100 higher education students, men and women, period April-June 2019. The data was collected through a survey / interview with an instrument of 123 questions. The different students of the subject processes related to the importance of studying the educational ones in the socio-emotional development as part of the personality through the use of makeup, recognizing that there is a lack of information in this area. Women use cosmetic products to show in a physical way how they feel, whether it is sophisticated, elegant, daring or calm with natural makeup. The project contributes to future lines of research to delve into the abuse and exaggerated use of makeup and its relationship with deception, lies and control that creates dependence on products such as neon shadows, false eyelashes, highlighters and contour in everything the body.

Makeup, Personality, Socio-emotional development

Paradigmas laborales expresados en un modelo de desarrollo y capacitación de personal para el sector productivo

Labor paradigms expressed in a model of development and training of personnel for the productive sector

SALINAS-AGUIRRE, María del Consuelo, HERNÁNDEZ-CUETO, Jaquelina Lizet, YAÑEZ-FLORES, Sara Margarita y EMILIANO-CASTILLO, Carlos Daniel

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Abstract

Based on the results of an investigation "Alternatives of human development with labor qualification", attributes are extracted as inputs that the workers indicate as important in: job performance, training, human development and job reality expressed in task variability, job identity, importance of work, autonomy of functions and performance feedback. Integrated results reflect an innovative development and training scheme based on worker needs parallel to personnel administration. The integrated results reflect an innovative development and training scheme based on worker needs parallel to personnel management. Personnel development has four levels: 1st Strategic planning of work development. In this part, the organization reviews: job profiles, recruitment and selection techniques; 2nd Diagnosis of training and development needs: the employee's trajectory is evaluated from: induction, interview to visualize the worker's expectations, skills, attitudes and experience, a personalized business career design is built; 3rd Development and job training with an apprenticeship program: application in three strata: staff who make managerial decisions; employees of administrative, management and logistics services; line operators and maintenance services; 4th Context, work processes and aspects of the employee's personality, experience, work climate, type of work and level of command, nature of the work, high-performance collaborative tasks, operations management, production, technologies, etc.

Staff training

Capacitación: Evaluación áulica y desarrollo de habilidades docentes

Training: Classroom assessment and teaching skills

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Abstract

The objective of this article was to show the training needs in classroom evaluation that affect teaching skills. The methodology used was quantitative and qualitative, observational, cross-cutting and descriptive and correlation. The collection of information was through a questionnaire with reagents in relation to training needs in classroom evaluation and teaching skills. The sample consisted of 435 Basic Education teachers working in 31 municipalities of the State of Coahuila de Zaragoza, the sample method was non-probabilistic for convenience, according to the diagnosis of the teacher training necessities, performed by the Secretary of Education of the State of Coahuila. The techniques used were descriptive statistics, multivariate and analysis of textual data. According to statistical empirical evidence, it is stated that if training courses provide teachers with strategies that develop the skill of creative thinking; through practical elements such as observation techniques and student performance analysis will impact their classroom evaluation.

Training, Classroom assessment, Teaching skills

Historicidad, continuidad y neoortodoxia en el judaísmo actual

Historicity, continuity and neo-orthodoxy in contemporary Judaism

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Abstract

Judaism is not a uniform religion. In it, different groups are differentiated, among which stand out, for their fundamentalism, the orthodox and the ultra-orthodox. The first ones strictly comply with religious precepts, although they coexist with "gentiles" and even lay people, adapting to certain "modern" social behavior. On the contrary, the second ones, called *haredi jews* or "God-fearing", follow extreme judaism in their interpretation and practice. These groups are today affected by heterodox and secular overmodern influences to such an extent that in the jewish media there is already talk of the emergence of a "new orthodoxy".

History, Judaism, Neo-orthodoxy

El manual de procedimientos: Una guía para la impartición de talleres

The procedures manual: A guide for giving workshops

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Abstract

The education has evolved and with it, it must be integrated towards to the students at professional level, the present investigation has as fundamental purpose the delimitation in scientific vocations for students of superior level, as well as the integration from certain processes according to a manual of processes, establishing the design, elaboration and impartation of formative workshops integrated to the vocation. The present work integrated the planning of the problems which big, medium, small and micro companies can present even if they do not have the document, as well as the purpose and importance of this in the internal and external part of the organizations. For economic units in education services registered in Mexico, micro companies represent the majority and the rest are classified as small, while medium and large organizations represent a small percentage. The school modality says that the professional level can be classified from the highest technical level and that only a percentage of them continues their studies at the degree level. For the research, the methodology is identified by integrating the instrument applicable to teachers who will give the formative workshops by knowledge of the cathedra.

Educational, Manual processes, School modality

Validez y confiabilidad de una rúbrica para evaluar planeaciones didácticas en la formación docente inicial

Validity and reliability of a rubric to assess didactic lesson planning of preservice teachers

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Abstract

It is presented the results of a study whose purpose was to reliability and validity of building an analytic socioformative process rubric to evaluate didactic planning in Teachers during their training process for Basic Education. The study involved 226 teachers. At first, reliability was determined through the Alpha Coefficient by Cronbach, having as a result .703. Results show that the instrument is reliable. Afterwards, an exploratory factorial analysis (AFE in Spanish), was carried out through the Maximum Authenticity Method with promax rotation and cluster analysis. This analysis showed the existence of a factor that explains 53.046% of the variance and is consistent with didactic planning. There was no need to eliminate any item according to the results of the factorial analysis. From these studies on, it can be conclusive that the target rubric of study has the adequate levels of reliability and construct validity. It is necessary to carry on new studies to confirm the results.

Didactic lesson plan, Reliability, Rubric, Teacher training, Validity

5 Ciencias Sociales

Pobreza y Marginación: El caso de cuatro localidades de la Presa Hidroeléctrica Aguamilpa, en el estado de Nayarit

Poverty and Marginalization in Nayarit: four communities of the Aguamilpa Hydroelectric Dam

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Abstract

The research work that is presented, aims to carry out an analysis of the living conditions that prevail in the population, of four marginalized rural communities located in the banks of the Rio Grande de Santiago, in the State of Nayarit. In addition to analyzing the implications of social policy to reduce poverty and marginalization, phenomena closely related to social deprivation. Each approach and methodology used for its analysis, have shed light on the different studies on social deprivation that lead individuals or groups to suffer this situation. In the study that is presented, it is observed, that the construction of the PHA and the social programs implemented by the government at its different levels, have not been sufficient to solve the problems of extreme poverty in which the population of marginalized rural localities is found. In the same way, it is concluded that it is necessary to advance towards the articulation of concepts and ways of measuring poverty and marginalization, as well as, on the ways of evaluating, social policies, with the understanding that the interventions of the three orders of government, will be more effective as long as they achieve a multidimensional approach that prioritizes the human being.

Poverty, Marginalization, Politics Social

Estudio del capital intelectual en el área académica del nivel medio superior, en el estado de Tabasco, para generar una propuesta de mejora

Study of intellectual capital in the academic area of the upper secondary level, in the state of Tabasco, to generate a proposal for improvement

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Abstract

Objectives: Generate a comprehensive scenario that facilitates designing a proposal for the development of Intellectual Capital in Higher Secondary Education Institutions, in the state of Tabasco through an instrument that allows to measure intellectual capital, to make a comprehensive diagnosis and generate the proposal. **Methodology:** A methodological scheme is structured to establish a guide, which is useful for the author during the development of the research. The stages of the methodology are described, it should be clarified that each stage is divided by the period of time in which it is elaborated, Stage one: emergence of the idea, stage two: research protocol where the actors and experts are detected, stage three design of the instrument, stage four: obtaining the scenario and design of the proposal. **Contribution:** The study carried out in a decentralized public body of Higher Secondary Education, in such a way that it was possible to identify various limitations for obtaining Intellectual Capital, as well as areas of opportunity that could complement its obtaining. The results revealed that cultural, social and technological aspects originated little development of the system to obtain Intellectual Capital, this with the active participation of the experts.

Intellectual capital, Experts, Institutions

La importancia de la Sustentabilidad, en las bibliotecas en Villahermosa Tabasco, para el diseño de una propuesta

The importance of sustainability, in libraries in Villahermosa Tabasco, for the design of a proposal

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Abstract

Objective. Analyze the Sustainability in the libraries, through applied research, in Villahermosa City, Capital of the Tabasco State. Methodology. The research is non- experimental, descriptive and correlational. In this research, the sustainability of libraries is analyzed considering the behavior of the research variable (Sustainability) in the different international, national and local contexts, as well as the theoretical foundations, on which this research variable is based. Then an instrument is designed that was applied to the libraries of the city of Villahermosa, for the collection of information through the Self-diagnosis tool based on ten elements (Measurements related to the end user, Measurements and / or performance of the process, Alliances with providers, Documentación, Training, Benchmarking, Adaptability Process, Continuous improvement, Human resource evaluation, Management level evaluation), which generated results on the current situation of the libraries, which served as a basis for their analysis. Contribution. From the results obtained in the application of this instrument, a model was designed to improve the sustainability of libraries, which will allow them to be more competitive in their field.

Sustainability, Library, Variable

Diagnóstico organizacional en una empresa de servicios de consultoría, en Villahermosa Tabasco, para el diseño de una propuesta

Organizational diagnosis in a consulting services company, in Villahermosa Tabasco, for the design of a proposal

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Abstract

Objective: Carry out an Organizational Diagnosis, through applied research in the field of a service company to the industry. Methodology. In the first instance in this project, each of the areas and / or departments that make up the company are known, and each of the functions that make up the departments, which will serve as a basis for their study and analysis. Formats are designed to collect the information, information was collected for the design of the Contextual Framework, Conceptual Framework and Theoretical Framework. The research is non-experimental, descriptive and at another time correlational. Techniques such as brainstorming, the Likert scale and the Self-diagnosis scale were applied, which serve as the basis for determining the current situation of the company and determining opportunities for improvement in the specialized consulting services offered by the company. Contribution. Once the results are obtained, a proposal is designed for the company through a Development Model, so that it can increase its Productivity and allow it to be more competitive within the market.

Organizational diagnosis, Context, Productivity

Estrategias para propiciar la inclusión de personas con discapacidad visual en el Instituto Tecnológico de Villahermosa

Strategies to promote the inclusion of people with visual disabilities in the Technological Institute of Villahermosa

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Abstract

The objective of this article is to show the actions generated in the initial educational program of the Technological Institute of Villahermosa for the inclusion of persons with visual disabilities, from which mechanisms for improvement were established in a positive way with a view to becoming an inclusive institution. Interest in people with special educational needs for a bachelor's degree is growing; in Tabasco State, there are higher middle-level institutions working for inclusion. Therefore, it is necessary to create opportunities for improvement not only in the curricula and programs of study, but also to make the actors become aware, trained and takes action to meet this demand. To involve competent authorities of the needs required in infrastructure, training, furniture and various adaptations that involve the teaching-learning process. Some of these necessities were identified in the Institute through the routes and surveys carried out on the basis of the Standards for the Accessibility of Persons with Disabilities.

Inclusion, Disability, Opportunity

Diagnóstico de las patologías de un puente, tramo: Puente Champotón

Diagnosis of the pathologies of a bridge, section: Champotón Bridge

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Abstract

Objective: The present work seeks to expose the current pathological samples in the Champotón bridge, using its own methodology. **Methods:** It consists of an initial determination on the investigations in the structure and finishes. A non-destructive study of the property was carried out, through an eminently field study, in a qualitative, quantitative, descriptive and longitudinal way, first carrying out a visual inspection, preparing a photographic record, determining a diagnosis that would allow us to information on the object of study, an analysis of the deteriorations found, make a catalog of bridge factories to know the types of design materials, an own evaluation and finally, the most appropriate maintenance plans and proposed criteria were updated with their symbols correspondent. **Conclusions.** When carrying out a detailed visual inspection of the existing pathologies of the bridge, it is concluded that it requires constant routine maintenance and the pathologies found demand a short-term preventive rehabilitation, in order to prevent further progress and generate probable damages.

Approach, Concrete structure, Scour

Aprendizaje de la parábola mediante registros semióticos en estudiantes universitarios

Learning the parabola through semiotic records in university students

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Abstract

Learning achieved by students in their first course of mathematics at the university reflects a low achievement, which is especially observed in the topic of the parabola. Due to this problem, the objective of improving the academic achievement of students in that topic, through a didactic strategy based on semiotic representations, was proposed. To this end, a quantitative inquiry was carried out, with a pre-test post-test design, on both a control group and an experimental group. There, a total of 44 students, of an average age of 19 years who were taking the subject of Mathematics Foundations, participated. It was found that the gain between the post-test and pre-test measurement was significantly higher ($p < 0.01$) in the experimental group with respect to the control group, where the conventional strategy for the course was being used. It is concluded that it is possible to improve the learning of the parabola in students through the strategy based on semiotic representations, and that it is highly recommended to apply it for the learning of other mathematical objects in the basic sciences courses of the engineering division.

Learning, Parabola, Semiotic Representation

Estrategias de aprendizaje mediadas por tecnología: Percepción de los estudiantes

Learning strategies mediated by technology: Students' perception

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Abstract

Nowadays, the incorporation of technology in the educational field has transformed the scenario of the teaching-learning process, generating a change in the role of its actors, where it determines the vertices of the perfect triangulation between teachers, students, and content (Coll, 2011). Therefore, it is crucial to explore the virtual universe and implement technology-mediated learning strategies that promote the appropriation of knowledge and assess students' perceptions to contribute to new virtual teaching proposals. This research aims to explore the students' perceptions of the Regional Enrique Cabrera Barroso High School, BUAP, regarding the use of strategies applied in the Schoology platform to promote Biology learning. For this, a descriptive quantitative study was carried out in a focus group using a Likert-type scale questionnaire, obtaining the following results: the students demonstrated a high level of satisfaction with the virtual course evaluating virtual strategies as an ad hoc complement to achieve the learning objectives. They also stated that the assimilation and appropriation of knowledge depend on those technology-mediated strategies, contributing to a highly positive perception.

Learning strategies mediated by technology, Perception, Virtual environment

El proceso de aprendizaje de la asignatura de Biología en modalidad blended learning

The learning process of the Biology subject in blended learning modality

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Abstract

The teaching of biology demands the constant search for innovative learning strategies that allow the achievement of established purposes in the curricular programs. There are a large number of learning strategies in blended settings, so it is essential to identify their scope in a blended context due to the contingency that is taking place. The objective of this research is to evaluate if the learning process of 2nd-grade biology students is accomplished on the techno-pedagogical design operable on the Teams platform in the blended learning modality. The research is mixed, with an explanatory scope. It starts with obtaining qualitative data related to the performance criteria of each student, and subsequently, they are quantitatively analyzed to identify the appropriation of knowledge to the specific content of Biology. The results make crucial contributions to the educational field since it provides an instructional design based on strategies that foster the learning of Biology in a blended learning modality according to the current contingency needs as well as evaluation instruments that demonstrate the achievement of the purposes raised according to a competency-based educational program.

Learning process, Assessment, Blended learning modality

Formación de estudiantes universitarios en responsabilidad social: Hacia la construcción de una propuesta metodológica

Training university students in social responsibility: Towards the construction of a methodological proposal

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Abstract

University Social Responsibility is a complex phenomenon where different processes that are developed in the Higher Education Institutions converge. The universities must accomplish the mission that was entrusted to them and they must guide their functions to social transformation. Although the concept has evolved allowing Higher Education Institutions to adapt it to the context and their needs, it is still necessary to have a common framework to guide their actions, specifically regarding the social responsibility, that allow them to train responsible professionals, not only with their actions, but also for the impacts generated in a social and environmental level. This study uses a qualitative approach using a phenomenological method and its aim is to identify the methodological orientations to train students in Social Responsibility based on the experiences collected from socially responsible projects in 13 mexican and latin american universities. The main results present six emergent categories to train in SR: a) communitary empathy, b) citizen participation, c) linking with organizations, d) teaching accompaniment, e) social dialog and f) knowledge application, from which a methodological proposal is presented.

University Social Responsibility, Socially responsible training, Methodological orientations

Prácticas de RSE que impactan el desempeño financiero de las empresas públicas mexicanas moderadas por la legitimidad de las acciones sociales

CSR practices that impact the financial performance of Mexican public companies moderated by the legitimacy of social actions

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Abstract

The objective of this research is to identify the dimensions of Corporate Social Responsibility (CSR) that impact the financial performance of Mexican public companies, moderated by the legitimacy of social actions. A measurement instrument was designed for the variables, with this a contribution to the literature of a reliable and valid scale on the subject of CSR and legitimacy is made with an instrument of 27 items with a 6-point Likert-type scale. The sample for the data collection was 42 socially responsible companies, listed on the Mexican Stock Exchange and published their sustainability results through their identity page. A theoretical model has been proposed with the hypotheses to be tested, and it has been validated with a multiple linear regression model with a moderating variable. The results obtained show that legitimacy moderates the effect that CSR has on business performance. The effect is positive in the economic and social dimension, in the environmental dimension the effect was negative but significant.

CSR, Legitimacy, Public companies

Fricción del conocimiento en Instituciones de Educación Superior, planteamiento desde la Teoría de Juegos

Knowledge friction in Universities, approach from Game Theory

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Abstract

In today's market economies, organizations see knowledge as one of their most valuable and strategic resources and seek to properly manage it so that it becomes a competitive advantage (Tece, 1988; Hamel and Prahalad, 1990, Drucker, 1994; Nonaka and Takeuchi , 1995; Boisot, 1998; Spender, 1996; Senge, 1990). Although many organizations make significant investments in technology and tools to promote knowledge sharing, cultural, behavioral, and structural aspects are the main determinants of success (Sharma and Bhattacharya, 2013). Organizational knowledge processes are, by their nature, generally social and complex. The behaviors related to sharing knowledge of organizational agents are full of situations of conflict of interest or dilemmas in which they receive different payments based on their strategic decisions. Such situations can be modeled as games. This article presents the approach to a particular dilemma, that of the knowledge friction in an Institution of Higher Education through Game Theory, describing a non-cooperative game model that allows showing the scope of said situation according to the decisions considered to be done by employees and employer and their related payments, exploring different decision-making scenarios.

Knowledge management, Game theory, Knowledge dilemmas

Experiencia sobre el empleo de actividades para el desarrollo personal y ciencias duras, en los estudiantes de educación superior

Experience on the use of activities for personal development and hard sciences in higher education students

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Abstract

Objective: To carry out activities called "awakening" in which students are intended to make students aware of their thoughts and their emotions derived from them to make decisions more assertively and not only by imitation or by mere automation. Methodology: They were provided with life reflections in the first 15 days of class for no more than 15 minutes at a time and later, a WhatsApp group was formed with volunteer students, in which they received small reflections and a daily exercise, for 21 days to realize their thoughts and control them for the benefit of their peace and tranquility. Contribution: As a result, more than 70% of both groups considered these activities to be beneficial and useful for their lives. Subsequently, more than 50% of both groups continued in mental diet activity receiving messages and a small exercise, daily for 21 days. In the classroom, there was better at-the-way behavior between them and the teacher during class development compared to previous semesters where this activity was not present.

Mental diet, Personal development, Emotions

Acceso a la educación virtual en alumnos de nivel licenciatura en el Estado de San Luis Potosí

Access to virtual education in students of degree level in the State of San Luis Potosi

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Abstract

The life changes associated with the health emergency caused by the SARS-CoV2 epidemic have tested the adaptation skills of the population, and the education sector has been no exception. This study aims to have an approach to the real panorama that the students of the Biochemistry Degree of the Faculty of Professional Studies of the Huasteca Zone of the Autonomous University of San Luis Potosi live with respect to the conditions that they have with the new form of learning. An electronic survey was used, solved by 232 students (76%). Among the most important results, it was found that 85.7% of the students do not have an electronic device of exclusive use to carry out academic activities and that 10.8% do not have internet services at home, which can seriously affect their academic performance; situation that should be analyzed in due time.

New normality, Learning conditions, Digital gap

Estrategias utilizadas por las PyMEs para adaptarse a la industria 4.0

Strategies used by SMEs to adapt to Industry 4.0

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Abstract

In the last decade, organizations around the world have acquired a great interest in adapting their processes to an Industry 4.0. The objective of this research is to identify and analyze the strategies implemented by some Latin American and European companies in order to be competitive. The methodology used was a systematic review, with a search for information where databases such as Redalyc, Scielo, Dialnet, CONRICyT and ScienceDirect were included. 17 of 7,945 articles were selected for review, published in a period from 2015 to 2020. As a result, 12 studies carried out in Europe and 5 in Latin America were analyzed, 29% were carried out with a qualitative approach, 23% quantitative, 24% mixed and 24% case studies. The results indicate as strategies, the creation of awareness in i4.0, the generation of laws and regulations that benefit SMEs in this sense, generate cybersecurity schemes, promote research and technological development, and generate alliances with universities. It is concluded that the main recommended strategy is training in the use of technological tools so that they can understand the general panorama and become familiar with their use.

Industry 4.0, SMEs, Strategies

Disparidad del ingreso en el sureste de México: Una reflexión a partir de indicadores económicos

Income disparity in southeastern Mexico: A reflection from economic indicators

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Abstract

The objective of this document is to analyze the distribution of income in the states of the southeast region of Mexico during the period 2010-2016, to identify the levels of inequality in economic matters. For this, a documentary, descriptive and longitudinal investigation was carried out, analyzing six economic indicators reported by the Consejo Nacional de Evaluación de la Política de Desarrollo Social (CONEVAL) for the period studied: 1) Gini coefficient, 2) population in poverty situation, 3) vulnerable population by income, 4) population in extreme poverty, 5) population with income below the extreme poverty line by income and 6) population with income below the income poverty line. The results indicate that Chiapas, Guerrero and Oaxaca were the most vulnerable states due to low income levels, high poverty in general, and prevailing inequality in the region. In contrast, the state with the least economic vulnerability was Quintana Roo. The main contribution of the study lies in the identification of the poorest and most vulnerable states in the southeast of Mexico, as well as in the formulation of recommendations for the better distribution of income and poverty reduction in the analyzed region.

Distribution, Income, Inequal

Sistema para evaluar tres servicios municipales de utilidad pública. Caso de estudio de ABP.

Customer Information System for performance evaluation of three Public Utilities. Case study PBL.

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Abstract

In the present work we show an extra academic activity (EAA) developed through a university innovation project: "Design and construction of a system to evaluate the quality of municipal public services" developed at the Instituto Tecnológico Superior de Alvarado by a group of teachers of Computer Systems and Basic Sciences, with student participation of Engineering in Computer Systems. Our objective is to analyze the contribution of the Project-Based Learning (PBL) methodology to university education and professional development of teachers. We use the qualitative research method Participatory Action Research (IAP), field experience log and portfolio of evidence for data collection and coding and scales for processing. As a result, we found that the educational experience created meaningful learning, as well as verifiable academic products, and verifiable competencies and professional experience for the mutual benefit of students and teachers. Therefore, we conclude that the ABP is an effective Strategy for Creating Meaningful Learning Experiences in technological higher education, because its results have a positive impact on university education and Professional Development of Teachers. To conclude from this experience we offer recommendations to obtain better results.

Project Based Learning (PBL), Case studies, Participatory Action Research (PAR)

Prácticas socialmente responsables y acoso laboral, en un municipio como organismo político administrador

Socially responsible practices and workplace harassment, in a municipality as a political administrative organism

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Abstract

Corporate social responsibility, in recommendations or international guidelines, sets forth in the section of labor standards respect and care for the integrity of workers as an interested party within an organization. Workplace harassment in organizations harms workers morally, psychologically and physically. It is undeniable that in plenty of organizations workers are either mistreated or harassed when they are either no longer required in said organization or are new entrants or there is some rivalry in between. Due to the aforementioned, it was pertinent to investigate the existence of these variables in the government of the Municipality of San Juan del Río, Querétaro, as an administrative political body, in the 2015-2018 administration, with the aim of knowing the practices in labor matters with respect to dependency, as a socially responsible body. The problem was analyzed through a quantitative approach with descriptive scope using the types of documentary and field research, using the case study of the Municipal Culture and Tourism Directorate, with the hypothetical deductive method and non-experimental design. The results derived from the research instruments show that the agency has good labor practices in a percentage of 40%, in the same way, they show that the existence of workplace harassment or abuse is low, since 25% of the dependency workers were surveyed and harassment practices were found in 16.66%.

Corporate social responsibility, Workplace harassment, San Juan del Río, Qro

Estudio de satisfacción del proceso enseñanza aprendizaje de los estudiantes próximos a egresar de la licenciatura de cirujano dentista

Satisfaction study of the teaching-learning process of students close to graduating from the bachelor of dental surgeon

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Abstract

The growing technological innovations, the claim of society that demands increasingly efficient services and the strong competition between educational institutions, forces them to offer increasingly better options especially in the field of health; In this context, the Universidad Veracruzana has assumed the task of implementing strategies to carry out an exhaustive analysis of the satisfaction of the students who are about to graduate from the Bachelor of Dental Surgeon. Objective: To know the level of satisfaction of students with respect to their Bachelor of Dental Surgeon upon graduation. Methodology: The Student Satisfaction Questionnaire was carried out with eight chapters, it consists of 11 dimensions and 104 items. The instrument used was designed based on the specifications of the National Association of Universities and Institutions of Higher Education ANUIES, and was adapted to the information needs about students close to graduation, the respondents were kept anonymous to avoid bias . The students close to graduating from the Bachelor of Dental Surgeon at the UV are 31% satisfied, 54% between satisfied and quite and very satisfied; for the poorly satisfied and dissatisfied indicators, only 12% was counted. Contribution: The educational program is socially relevant.

Satisfaction, Teaching-learning process, Dental surgeon

Análisis de la evolución de las Asesorías Académicas en el periodo 2014-2019 en una DES

Analysis of the evolution of the Academic Advisors in the 2014-2019 period in a DES

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Abstract

Concerned about a quality education, with challenges of growing uncertainty about the future of Higher Education Institutions, overcoming the challenge of entering and successfully transitioning students to this level of studies, has been the reason for this analysis, in the institutions Academic studies is an effect that has been generalizing and spreading, achieving a result where what has been learned can be made to last, understanding the issues that are addressed in class, Academic Advising has been, in effect, the resource to guide the student. The purpose is to obtain school success with the Institutional Program of Academic Counseling in a Higher Education Unit, so that the analysis of the trend and evolution of approval and disapproval is the way in which it has been carried out by collecting data about the failure rates, approval, population of advised in the courses taught. Once these data were obtained, they proceeded with their organization and analysis using a statistical model that shows us the positive impact, in turn, there is a period of contributing to improve the indicators of the academic competitiveness of the Unit.

Academic advising, Dropout, Failure

Territorio, vulnerabilidad y sustentabilidad en la franja costera-turística de la bahía de Acapulco

Territory, vulnerability and sustainability in the coastal-tourist strip of Acapulco bay

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Abstract

The objective was to synthesize the vulnerability of the coastal-tourist strip of Icacos beach in Acapulco, Guerrero, Mexico to the phenomenon of the sea in the background. The methodology used was documentary developed during 2019 and complemented with fieldwork between January-August 2020, which included the application of 750 questionnaires of 14 items to national and foreign tourists, tourism service providers and residents. The results achieved were: 1) promote early warning of the swell phenomenon in order to safeguard human lives, 2) contribute to the reduction of economic losses in hotel infrastructure (fixed and mobile) and 3) promote resilience between tourist service providers and residents. The conclusions were: a) the swell will be a recurring hydrometeorological phenomenon, b) tourism service providers are committed to preserving the Blue Flag distinctive and c) establishment of a greater link between the authorities of the municipal-state branch, the service providers, residents and academics. The contribution is the proposal of a risk traffic light in order to contribute to decision-making in favor of human life and local territorial development.

Urban development, Tourism, Vulnerability

Evaluación de los elementos de la competitividad en las áreas operativas de pymes industriales

Evaluation of the elements of competitiveness in the operating areas of industrial smes

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Abstract

Systemic competitiveness is related to the neoclassical theory according to Gil and Torres (2009), which defines the efficient use of the allocation of production resources and the opportunities to concentrate their products in a market niche. To be competitive, organizations need to align their internal processes, especially in the operations that are carried out on a daily basis and that are the substantive basis for competing. This research shows the evaluation carried out in the operations functions of small and medium-sized enterprises (PyMES) in the industrial sector in the main cities of Sonora México. The model used was the one that describes systemic competitiveness, supported by the Economic Commission for Latin América (ECLAC, 1990) under the argument (Suñol, 2006). This methodology describes the steps that were required for the application of the instrument in the main cities of the state, and thus the objective of evaluating the activities and elements of the micro level that validate systemic competitiveness as indicated by various theoretical models on how to compete for the companies. The results describe the evaluation of the elements that contribute to administrative management, internal processes and elements of administrative management. Presenting the main findings in the conclusion.

Competitiveness, Elements Operative and SMEs

Propuesta de modelo de un competitividad para empresas de la Industria del Pan y Tortillas: Caso Microempresas de Ensenada

Proposal of a competitiveness model for companies of the Bread and Tortilla Industry: Case of Microenterprises of Ensenada

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Abstract

The article shows preliminary results of an investigation on the proposal of a model on how competitiveness (Y) influences business capacities to stay in the market (X1) and organizational capacities (X2) in microenterprises of Ensenada Baja California of the flour and bread industry. The objective of the research is to determine which variables are significant for the generation of a model that establishes causal relationships. The research is quantitative with the establishment of causal relationships for testing the hypotheses. An instrument with five variables was developed taking as a reference the National Survey on Productivity and Competitiveness of Micro, Small and Medium Enterprises (ENAPROCE). For the sample, the National Statistical Directory of Economic Units (DENUE) was used, in which 382 companies are listed, with an error of 10%, 58 companies are required to be surveyed. SMART PLS was used for the information processing of the database. The preliminary results reveal that there is statistically significant evidence between the causal relationships of the dependent variable with two of the independent variables.

Competitiveness, Business capabilities with the market and organizational capabilities

Relación comercial México - Latinoamérica

Commercial relationship Mexico - Latin America

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Abstract

In this work, commercial exchanges are quantitatively analyzed (imports and exports) of Mexico with respect to its commercial partners in Central and South America, for this purpose, the existing commercial balances between the various countries have been taken into account, subjecting the analysis of the information to the correlation of two variables: on one hand, the correlation coefficient, in such a way that a dependent relationship can be established between the aforementioned economics; likewise, the implication of the treaties in the increase in exports is determined and analyzed. The interpretation of these data is useful for those who intend to acquire a panoramic perspective of the foreign trade that the Latin American countries affect and that keep Mexico as their destination. Taking into account these data and the comparative advantage of these nations, some sectors are provided that could represent niches of opportunity for the export of goods to Mexico for micro, small and medium-sized Latin American companies.

Free trade agreements, Latin America, Correlation

6 Ciencias Agropecuarias y Biotecnología

Actividad antibacteriana de *Costus pulverulentus* (Costaceae) C. Presl

Antibacterial activity of *Costus pulverulentus* (Costaceae) C. Presl

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Abstract

Antimicrobial resistance is a great concern in public health. Therefore, it is necessary to obtain new compounds to treat diseases caused by bacteria. Medicinal plants are an alternative to search natural compounds to improve human health, including antioxidants, anti-inflammatory, and antimicrobials compounds. *Costus pulverulentus* (Costaceae) C. Presl is a plant used traditionally in Huasteca Potosina to treat bacterial infections. However, the compounds involved in this activity remain poorly understood. To determine the antibacterial activity of *C. pulverulentus*, an ethanolic extract was obtained. Plant stem was macerated in ethanol and then was fractionated with hexane, chloroform, ethyl acetate, acetone, ethanol, and methanol. Ethanolic extract and derived fractions were tested against bacteria by the disk-diffusion agar method. The results showed that the ethanolic extract of *C. pulverulentus* exerted activity against *Chromobacterium violaceum* CV026 and *Bacillus* sp. at 10 and 30 µg/disk, whereas only the methanolic fraction showed similar activity to complete extract. Fraction 8 obtained from methanolic fraction showed inhibitory activity against *Bacillus* sp., *S. aureus*, and *S. aureus* Oxacillin resistant. Gas Chromatography-Mass Spectrometry characterization of active fraction 8 showed that it contains vanillic acid and coumaric acid suggesting that they are involved in the antibacterial activity of *C. pulverulentus*.

Antimicrobials, *Costus pulverulentus*, *p*-coumaric acid

Caracterización varietal de dos variedades de sorgo (*Sorghum bicolor* L. Moench) con fines de registro y derecho de obtentor

Varietal descriptors of sorghum varieties (*Sorghum bicolor* L. Moench) for registration and breeder's rights

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Abstract

The registration and breeder's rights of varieties and hybrids in our country is very low compared to developed countries, however, the generation of this technology is frequent and they are marketed without an official registration. That is why the objective of this work is to characterize two pre-commercial varieties of sorghum, one with white grain and another with red grain in order to obtain the breeder's right. The characterization was carried out in the experimental fields of the University Center for Biological and Agricultural Sciences of the University of Guadalajara in the spring summer cycle of 2019 on two sowing dates. The methodology that was considered was the technical guide for varietal characterization approved by the International Union for the Protection of New Varieties of Plants UPOV. Central tendency analyzes were performed, the variation within materials was statistically analyzed using dispersion measures for grouped data such as range, variance, standard deviation, coefficient of variation and mean. Which provided the information for the decision of compliance with the main characteristics that allow each variety to be differentiated and to comply with the precepts that it is a new, homogeneous and stable variety.

Varietal character, Variety register and varietal description

Actividad de biocontrol de microorganismos sobre aislados de *Botrytis* provenientes de viñedos

Microorganism biocontrol activity on *Botrytis* isolates from vineyards

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Abstract

Botrytis cinerea causes postharvest fruit rot of an infinity of crops, the infective capacity is due to its physiological diversity that shown, even inside the same crop. For its control, the use of antagonistic microorganisms is emerging as a sustainable option. In the present work, 40 *Botrytis* isolates from three vineyards were characterized by their ability to infect grape fruit (Thomson Seedless), the results showed that all produced lesions diameters from 6.5 to 22.2 mm. Ten of these isolates that presented differences in terms of their virulence, were subject to *in vitro* antagonism test, using the yeasts *Metschnikowia* sp. NB9 and FLL17 (*Kodamaea* sp. FLL17 and the bacteria FR4B12 *Bacillus* sp. R4B12 from must and flower and fruit, respectively. The results showed that, on average, FRB412 had the highest inhibitory activity on the growth of *Botrytis* strains, exhibiting mycelial growth inhibition percentages from 51 to 81 %, followed by FLL17 (21 to 53 %) and NB9 (15 to 51 %). In conclusion, the three study strains have different ranges of biocontrol on *Botrytis*, whose application could reduce gray rot in grapes.

Gray rot, Vineyards, Virulence

Plataforma web para la sistematización de cultivo aeropónico

Web platform for aeroponic culture systematization

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Abstract

Today there is a tendency to automate almost everything around us because of the circumstances that arise in the world. So, the growing boom in online platform creation, they are allowing from managing until controlling the automation of information or processes of the different sectors: productive, agricultural, economic, productive, etc. The agricultural sector relies more on the implementation of such digital platforms. Therefore, this work presents a web platform that allows to systematize an aeroponic greenhouse to improve the quality of the processes in the production of them. It aims to record planting dates, monitor environmental variables, establish spray cycles depending on the type of crop, register crops and users, among other functionalities. Thus allowing the producer to have information wherever and whenever he wants or needs to consult for decision making.

Aeroponics, Web platform, Crop monitoring

Evaluación del sistema de manglar en el estero “Arroyo los coamiles”(Punta de Mita, Nayarit, México)

Evaluation of the mangrove system in the estero "Arroyo los coamiles" (Punta De Mita, Nayarit, Mexico)

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Abstract

In March 2019, the current state of the mangrove structure in the Arroyo los Coamiles estuary (Punta Mita Bay, Nayarit) was evaluated. The method of circular plots centered on a point was used (Cottam and Curtis, 1956). The mangrove structure is made up of the species *Laguncularia racemosa*, *Avicennia germinans*, *Conocarpus erectus* and *Rhizophora mangle*. The greatest forest development is found in the second third of the estuary with a border-continental structure. The average height of the mangroves was 6.17 m, (SD 7.35 m), the diameter at breast height was 19.21 cm and the total basal area was 57.36 m². The data are associated with young trees in a good state of development and conservation. The C / N ratio was determined as an index of the quality of the soil organic substrate, the values ranged between 3.74 and 14.91 and the percentage of organic matter was from 1.45 to 8.04. The fragility of the soils reinforce the proposal to take care of the natural drainage of the property. Mangroves have been impacted by tourist developments around the world, the environmental and economic benefits that these ecosystems provide are ignored by inhabitants and authorities, which allow their destruction.

Mangrove, Structure, Nayarit

Vigorización de semilla de cártamo (*Carthamus tinctorius* L.) mediante pre – hidratación

Safflower seed (*Carthamus tinctorius* L.) invigoration by pre-hydration

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Abstract

For seed storage, a low moisture content index is recommended, while in sowing, a rapid and homogeneous hydrolysis is important to reactivate its metabolism during germination and seedling development. The goal of the study was to establish the effect of pre-conditioning treatments on safflower seed, through the germination and emergence of seedlings. The pre-imbibition treatments were: distilled water, gibberellic acid and a biostimulant based on humic and fulvic acids, in periods of 0 (control) 2, 4, 6 and 8 hours. The seed was produced in spring-summer 2019 and 2020. The results indicate that imbibition of seeds in water by a period of 4 hours was the most effective treatment, showing the highest germination percentages, in addition to presenting a faster and more uniform emergence of seedlings,. The pre-conditioning with Gibberellic acid even reduced the germination values and the biostimulant generated homogeneity in the emergence of seedlings

Pre conditioning, Safflower seed, IVE

Aplicación del modelo AIDS en el consumo de aguacate hass en México

Application of the AIDS model in hass avocado consumption in Mexico

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Abstract

Avocado is a product of national importance because it is exported, but part of its production is dedicated to national consumption, in this study the behavior of the demand for this product at the national level was analyzed, involving seven additional products that were: corn, green chili, tomato, lemon, beef, pork and chicken; For the study, the model of the almost ideal demand system (AIDS) was used and the method of apparently unrelated equations (SUR) was used with the support of the SUR / SYSNLIN function of the SAS system; The Marshallian, Hicksian and Expenditure elasticities were obtained for monthly consumption from 2004 to 2015 reported in the agricultural and fishing information system (SIAP), it was concluded that avocado has a normal inelastic demand with respect to expenditure, in addition to being a good substitute for corn, green chili, lemon, beef and chicken; and complementary to tomato and pork.

Substitute goods, Complementary goods, Marshallian elasticity, Hicksian elasticity, SUR funct

Diseño y desarrollo de una tarjeta de radiocontrol para adaptarlo a un sistema de riego convencional con activación de radiofrecuencia

Design and development of an electronic card of radio control for adapt it to a system of irrigation conventional with activation of radio frequency

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Abstract

A radio control card was designed and developed to adapt to a conventional irrigation system with radio frequency activation for the State of Puebla, Mexico. In the design of the double-layer printed circuit board, the modules of decode of dual tone multi frequency and two of record and playing of audio were employed. The control functions were carried out with a microcontroller, the power stage was adapted using two triodes of alternating current to activate two contactors, in addition, three relays were placed; the first has the function of regulating the temperature, the second activates the radio transmitter and the third turns on the lighting in the cabinet, temperature control is carried out through a sensor. An electronic radio control card was obtained with the ability to connect to a radio transmitter to activate and deactivate loads of high demand for electrical energy at a distance of 2 linear km, allowing to reduce the times in the irrigation system and to confirm the audio messages on the mobile radio, the card is low cost compared to the market and its operation is simple.

Radio frequency, Irrigation system, Radio control

Diseño de un instrumento para medir la Calidad Ambiental

Design of an instrument to measure Environmental Quality

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Abstract

The criteria for selecting the methods that allow the calculation of pollutant emissions, establish that monitoring and direct measurements are preferably carried out at the sources. The drawback lies in the high costs in time and money, the difficulty in accessing the sampling points and the need for a physical, technical and specialized human resources infrastructure. On the other hand, there are indirect methods based on emission factors, activity rates, estimation using historical data, material balance, engineering calculations and mathematical emission models. In this work, the design of an instrument to measure environmental quality is presented.

Environmental Quality, Indirect Techniques, Estimates

7 Ingeniería

Diseño y construcción de un prototipo para el análisis de vibraciones en un motor de inducción para la detección de fallas

Design and construction of a prototype for the analysis of vibrations in an induction motor for the detection of faults

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Abstract

The contribution of this work is to present the design of a prototype integrated by an induction motor, a data acquisition system, accelerometers and control devices for stop and start, to generate and identify different types of faults by means of vibration analysis. in the domain: time, frequency or frequency-time, through the use of the Fourier Transform, Fast Fourier Transform or Wavelet Transforms (wavelet transform). In this prototype, failures can be generated in the induction motor such as: unbalance, different types of misalignment, mechanical looseness, and electrical failures such as broken bars or short-circuited rings, an example of a misalignment failure is presented to show the process of analysis and detection.

Motor, Vibrations and faults to motor

Análisis comparativo de métodos para determinar la deflexión en vigas de acero: Análisis teórico, elemento finito y experimental

Comparative analysis of methods to determine deflection in steel beams: Theoretical analysis, finite element and experimental

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Abstract

This work makes a comparative study of two methods to determine deflection in steel beams: (a) Theoretical and (b) Finite element. For method (a) the solution of the differential equation associated with the modeling of the deflection of a beam is found, while for method (b) a simulation is made in Solidworks. Both methods are compared with experimental data in order to analyze which of the methods presents less uncertainty and show the usefulness of the theoretical part in the modeling of physical systems.

Steel beams, Deflection, Punctual load

Mejoramiento de la calidad en la recepción de materias primas, mediante la implementación de un plan de muestreo por variables

Quality improvement in the reception of raw materials, through the implementation of a sampling plan by variables

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Abstract

Objective: To guarantee the adequate inspection of raw material and packaging material by the inspection-receipt area by implementing an effective sampling plan that allows reducing the percentage of defective raw material and its impact on the production process. **Methodology:** It is based on the continuous improvement cycle (PHVA) within which a diagnosis is made to determine the current state of the inspection process, which will allow defining new action strategies aimed at standardizing the inspection process, through the implementation of a sampling plan by variables based on the MIL-STD 414 standard, once implemented, this process is documented, at the same time the integration of suppliers is carried out, through periodic evaluations in order to know the dynamics of the new inspection process and work only with those suppliers committed to the quality of their inputs. **Contribution:** Reduction of the percentage of defective raw material, from 21% to 13%, which means an acceptable quality level of the materials of 87%.

Sampling plan, Acceptable quality level, Supplier

Externalidades Económicas y Residuos Sólidos Urbanos en México

Economic Externalities and Urban Solid Waste in Mexico

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Abstract

In the last century, garbage has been considered as an energy resource, on one hand, because when it is deposited in landfills or dumps it produces biogas with a major component of methane (more than 50%), methane is considered as a greenhouse gas that has negative impacts on the environment. On the other hand, garbage could be treated in thermochemical processes of incineration or gasification, resulting in energy generation that could be by vapor generation in the case of incineration, or a mixture of gases mainly composed by CO₂, H₂, and CH₄ by the gasification process; The last two gases could be used to generate vapor as well or used as fuel in internal combustion engines or fuel cells in a near future. The information obtained from the urban solid waste in Mexico is limited concerning to the inventories of generation, on the volume estimation of handling and disposal, according the National Institute of Geography and Statistics (INEGI by the initials in Spanish), from the Municipals Governments National Census until July 2016, Mexico City occupies the first place in recollection of urban solid wastes generating 16 tons daily, the second one is Mexico State with 13 tons, Jalisco with 6.9 tons and Veracruz with 6 tons, on average Mexico generate 42 millions of tons of urban solid waste per year, and only 38% are organic waste. As a result of the complexity of handling urban solid waste, this paper presents a study in situ of the exploitation of biomass within an organic fraction of urban solid wastes, by means of biogas estimation in a landfill with potential to be exploit in clean energy generation, transforming the negatives externalities because of the disposal of urban solid wastes into positive externalities due to the utilization of the calorific potential from the biomass.

Urban Solid Waste, Economic Externalities, and Clean Energy Generation

Aplicación de la Inteligencia artificial en la predicción de la supervivencia de cáncer de mama en mujeres mexicanas

Application of Artificial Intelligence in the prediction of breast cancer survival in Mexican women

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Abstract

In Mexico, the leading cause of death caused by malignant tumors in women is breast cancer and the general survival of five years treated in facilities of the Public Health System is between 75 and 80%. There are applications that determine the survival of patients with breast cancer, based on the use of drugs that are not prescribed in Mexico, so cancer specialists cannot consider the information offered by these programs for decision-making with patients Mexican. This article describes the development of an expert system that, by applying artificial intelligence techniques, allows the evaluation and prediction of patient survival, based on a model generated with data mining techniques. Rules were obtained from the patterns obtained with data collected from patients with breast cancer since 2006. The development of the system is governed by the Knowledge Discovery from Databases (KDD) methodology, supported by the WEKA tool for modeling data mining techniques. There is a data warehouse of 4,773 women with breast cancer provided by two tertiary hospitals in Mexico City: an INCan cohort of 4,300 patients diagnosed from 2006 to 2013 with a median follow-up of 40.5 months of survival and an INCMSZ-provided cohort of 473 patients from 2011 to 2018 with a median of 39 months.

Survival, Breast cancer, Data mining

Diseño de pieza de mampostería ecológica para muros no estructurales

Design of ecological masonry piece for non-structural walls

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Abstract

In the research work in the methodological aspect, the tongue and groove Block was designed (geometry) in AutoCad, based on the NMX-C-038-ONNCCE-2004 standard; It was included in the material with which the Block was manufactured, crushed polypropylene plastic (PP) to reuse materials that are polluting, and in this way an ecological Block was made, later it was manufactured complying with the NMX-X-159 standard. ONNCCE-2004 the steel mold for the Block. For the analysis and results, a press was used to test the compression pieces established by the NMX-C-441-ONNCCE-2013 Standard for non-structural blocks. In the laboratory, the initial water absorption test was carried out with the NMX-C-037-ONNCCE-2005 in three pieces of blocks, in addition, the MATLAB software was used to obtain the effort-time graphs of the pieces of block with the different dosages of recycled plastic material. The research concludes that the reuse of polypropylene plastic to make blocks will help reduce environmental pollution. The results of the compression tests were satisfactory for non-structural blocks. The initial maximum water absorption tests to which the blocks were subjected, comply for exterior and interior walls.

Masonry, Ecological, Assemble

Islas de calor en la ciudad de San Francisco de Campeche: Detección y solución

Heat Islands in the city of San Francisco de Campeche: Detection and solution

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Abstract

This paper presents the identification of heat islands in the city of San Francisco de Campeche, period 1990 - 2020 and their relationship with changes in the vegetation cover areas. To identify the heat islands in the city, 6 Landsat 5 (TM), 7 (TM) and 8 (OIL) images were obtained from the USGS database (<http://earthexplorer.usgs.gov/>). In geographic information software, soil temperature was calculated from a mathematical algorithm applied to thermal infrared bands 6 and 10, in addition, the Normalized Difference Vegetation Index (NDVI) was calculated, in order to find a relationship between changes in temperature and vegetation cover. It was found that the green areas have reduced their surface by more than 50% and the soil temperature has increased up to 7 ° C.

Landsat, Campeche, Heat Islands

Mobile app with reading speech-translated OCR images for visually impaired people

Aplicación móvil con lectura de imágenes OCR traducidas a voz para personas con discapacidad visual

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Abstract

This research allows to have an overview of the different technologies that can be used to benefit people with visual disabilities. In the association "Sentir con los ojos del corazón" located in Tehuacán, Puebla, México, people with visual disabilities are served who do not have the technological tools available to understand their environment, such as restaurant menus, signs on doors, reading a book and any setting that contains a text, making life difficult in a world where most texts are oriented towards visual people. There are few applications for people with visual disabilities that allow them to improve their lives in the different areas in which they operate. Therefore, it is proposed to design a mobile application that interacts with a virtual assistant to translate the images into text to speech through optical character recognition (OCR), allowing them to function in different educational, work, social environments, among others. This project allows the inclusion of people with visual disabilities to improve the quality of life using applications for mobile devices and to be self-sufficient in their daily life, later managing to translate in different languages, with different intensities and tone of voice, using different platforms.

Visual impairment, OCR, App, Inclusion

Retos y perspectivas para la Implementación de la Industria 4.0 en el sector industrial mexicano

Challenges and perspectives for the Implementation of Industry 4.0 in the Mexican industrial sector

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Abstract

The objective of this project is to implement an engineering proposal to optimize resources and tools, as well as knowledge methodologies to improve assets and carry out Industry 4.0 solutions, which will help manufacturing companies to be more efficient with said assets in every stage of the supply chain. This will allow them to keep up with inventory, quality and optimization opportunities related to logistics and development, assurance and changing flexibility to adapt to the technological pace of the new Industry 4.0. The implementation of the IoT (Internet of Things) will be vital for the operation of the factory, and thus be able to obtain better visibility of the assets worldwide. The project's contribution is to provide the information needed to streamline and adjust assets, so that standard asset management tasks such as asset transfers, dispositions, reclassifications, and adjustments can be streamlined and centrally managed in real time.

Industry 4.0, Methodologies, Supply chain, Optimization, Internet of Things

Análisis exergético del ciclo de refrigeración por absorción utilizando economizadores

Exergy analysis of the absorption refrigeration cycle using economizers

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Abstract

This paper presents the study of a simple effect absorption refrigeration system (SRA) using the ammonia-water working couple, with the incorporation of three economizers and their analysis of the first and second law of thermodynamics, emphasizing the effect of the operating temperatures and the efficiency of the exchangers on the refrigerant circulation ratio (RC), the coefficient of performance (COP) of the system and the destruction of exergy. In order to determine the thermodynamic properties at each point of the system and evaluate the performance of the SRA, was programmed a tool in MATLAB with the governing equations. The results show that: the exergy efficiency increases when the temperature in the evaporator decreases; and RC decreases with increasing temperature in the generator. As conclusion, an increase in the effectiveness of heat exchangers cannot only decrease the refrigerant circulation rate, but also increase the inlet temperature of the solution to the generator, so that the temperature difference between the solution and the heat source decreases, causing a decrease in the rate of exergy destruction in the generator and the increase in COP.

Second law analysis, Economizers, NH₃-H₂O

Control de acceso mediante tarjetas RFID y Raspberry Pi

Access control using RFID cards and Raspberry Pi

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Abstract

This project seeks to strengthen the Information Center of the Universidad Tecnológica del Norte de Aguascalientes through an access control system for all those who use the facilities. These types of systems usually rely on biometric sensors such as fingerprints or face identifiers, however, RFID cards will be used for our case, because the University already has them. Embedded computation was used for the development of the prototype based on the development board known as Raspberry Pi and also the sensors to read card information. This project allows a better control within the Information Center and generates data that will be transformed into useful information for various areas of the University. While the main objective is to keep a check, the system will allow in the future to generate certain types of reports that will be very useful in the different certifications.

Access control, RFID technology, Embedded computing

Diseño, construcción y automatización de un tamizador axial, para el uso y manejo en el laboratorio de plantas químicas de la UTSV

Design, construction and automation of an axial sieve, for use and management in the chemical plants laboratory of the UTSV

GONZÁLEZ-TOTO, Jorge, CRUZ-ANTONIO, William, FLORES-NARCIO, Higinio y AGUIRRE-GARCIA, María Luisa

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Abstract

Objetivos: The present project allows an axial sieve to be put into operation, whose purpose is to determine the efficiency in the grinding of solids, in the screening of particles of different sizes from Tyler sieves, whose purpose is to characterize solid raw materials, by dry method, applied to chemical engineering. **Métodología:** This research work describes the design of the physical structure as a design based on a CAD environment, computer-aided design, as well as the electronic design and programming that is carried out to configure the time sequence that must be developed in the horizontal linear motion sieve, which is defined as a prototype that is functional to screen and characterize solid raw materials. **Contribución:** Acquiring a sieve for technical use is very expensive, its movements are shaky and noisy, in addition its control systems do not allow the user to modify variables such as time, that is why it is decided to innovate and start up an axial sieve from a mechanical system, with speed and timing control which will allow the user to regulate said variables in relation to the material to be sieved. With C + programming tools, use of LABVIEW software, ARDUINO. Uniting two areas, Chemical and Mechatronic engineering, of the UTSV.

Engineering, Processes, Prototypes

Evolución y desarrollo de sistema interactivo para ayudar a infantes con Trastorno de Espectro Autista en su integración a escuelas convencionales

Evolution and development of an interactive system to help infants with Autism Spectrum Disorder in their integration into conventional schools

ORTIZ-SIMÓN, José Luis, AGUILERA-HERNANDEZ, Martha, MURILLO-RODRÍGUEZ, Miguel Randall y OLIVARES-CABALLERO, Daniel

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Abstract

The cognitive abilities of children with Autism Spectrum Disorder (ASD) are different from those of children who do not have this characteristic. Parents, teachers, scientists, and therapists strive to develop neuropsychological systems, ludic software, and others systems that help children with ASD improve their attention to learn faster. According to the experience of experts from the Multiple Attention Center 51, a mechanical system that forces them to use their two cerebral hemispheres, as allowed by a pedaling system and with a specific protocol of tasks, will help them to focus their attention allowing them to learn basic tasks that allow them to integrate into conventional schools. There are not many Educational organizations focused on treating children with ASD so they need to improve and develop different learning conditions for infants with ASD to accelerate their integration into conventional schools. This article presents the evolution of a dynamic pedaling system that is used as a parallel complement to the education of a child with ASD, which we believe will accelerate the development of their abilities and the possibility of integrating more quickly into their social environment.

Autism Spectrum Disorder, Dynamic Pedaling, Mechanical Design, Asperger's Syndrome

Diseño de protocolo para evaluar la atención de niños con Trastorno de Espectro Autista

Protocol design to assess the attention of children with Autism Spectrum disorder (ASD)

ORTIZ-SIMÓN, José Luis, HERNÁNDEZ-SILVA, Gabriela Abigail, AGUILERA-HERNÁNDEZ, Martha y CRUZ-HERNÁNDEZ, Nicolás

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Abstract

A correct assessment of the academic level of students with attention deficits is essential for any teacher and parent who is interested in integrating the student into a conventional education school. Centros de Atención Múltiple (CAM) that care children with Autism Spectrum Disorder (ASD) do not always have the right way to evaluate a student with these characteristics. This work presents the design of a protocol for evaluating students presenting ASD by using simultaneously a mechanical pedaling system as an aid element to focus the student's attention on assigned tasks.

Asperger's Syndrome, Attention Deficit, Autism Spectrum Disorder

Plataforma para la red informativa del programa de reactivación económica del TecNM campus San Martín Texmelucan

Platform for the information network of the economic reactivation program of the TecNM campus San Martín Texmelucan

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Abstract

Web system that allows small entrepreneurs in the San Martín Texmelucan Region and its surroundings to register information about their businesses, such as their address, business hours, information on the products they sell, data from their social networks, the types of shipments and deliveries. In order to promote the information to the outside public, and among the merchants themselves, to know who their suppliers may be. Searches are carried out according to the lines in which businesses were registered, and are presented to users according to opening hours. The project was born out of the need to offer a web platform in which businesses in the San Martín Texmelucan region can register online their products or services that they offer, thus allowing the economy in this region to be reactivated, to face the COVID-19 pandemic, which affected all sectors and economic sectors

Platform, Reactivation, Informative

Análisis de pruebas para implementaciones de sistemas mecánicos y robóticos en aplicaciones de terapia

Test analysis for implementation of mechanical and robotic systems in therapy applications

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Abstract

This article presents the results of tests performed on the mechanical system of wheeled robots, so they can be implemented as therapy instruments for people with different capacities (ASD). The results displayed show the robot's behavior following a trajectory and its dependence on operator handling. In this way, results can be extrapolated about the importance of design for the development of mechanical systems that can be reliable to be implemented as therapy tools.

Wheeled Robots, Therapy, Trajectory following

Innovation and development of self-sustained wooden residues blocks "Madeblock" for homes and buildings

Innovación y desarrollo de block de residuos de madera autosustentable "Madeblock" para viviendas y edificios

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Abstract

The south-central region of Chihuahua State has 150 transformation industries of timber forest resources, these industries dedicate to produce different types of timber furniture, which generates a huge amount of organic scraps that are deposited mostly in the intermunicipal landfill that covers 5 municipalities. Within the field research, it was detected that only one of all companies produces 20 tons of scrap per week. Hence, it is considered ground-breaking developing a model to produce sawdust blocks destined to build sustainable houses and buildings. In order to frame this research, it was also analyzed the problem of September 19th, 2017 earthquakes, presented in the following states of the Mexican Republic, Oaxaca, Chiapas, Puebla, Morelos and Mexico City, where 111,668 houses and buildings had a partial damage and 60,302 had a total damage, in other words, there were 171,990 affected houses and buildings. The prototype's construction was developed by performing destructives and mechanical resistance tests, inside the testing laboratory of a social enterprise, La Cosa in Delicias City, a town of Chihuahua State, which is accredited by the EMA (Entidad Mexicana de Acreditación).

Innovation, Sawdust Block, Sustainable Environment

A modified p-median model to optimize the location of facilities considering the source plant

Un modelo p-mediana modificado para optimizar la ubicación de instalaciones considerando la planta matriz

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Abstract

The present general model of the distribution of the logistics value chain considers the production processes, as well as the economic factors and logistics costs operating in the different stages of a purified water company. The model has a general application for companies that distribute goods and services, and serves as support in the choice of policies and operating scenarios. Operating conditions typical of the industry in Mexico are contemplated, specifically of bottled water purification companies. It is intended to evaluate the different operating conditions that optimize delivery points, distribution centers and production plants, considering a holistic vision to meet the objectives of a distribution system, considering their random variations and their impact on the global system to take the preventive and corrective actions to improve the logistics of operation. The above is exemplified with some adjustments that are made on the P-median model where it is shown how this variation would be applied, not considering the source or parent plant as a distribution center option. The improved model offers fundamental advantages over the rest of the techniques reviewed in the literature, such as introducing the information obtained into the model by making the distribution network more optimal, thus collecting not only objective data but also the preferences and forecasts of the decision maker himself.

P-median model, Facilities location, Optimization

Optimization of the supply chain through decision models in aggregate planning

Optimización de la cadena de suministro a través de modelos de decisión en la planeación agregada

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Abstract

The study consists of the design of a decision analysis model for the supply chain, based on the Aggregate Planning strategies; the present investigation is of a transversal exploratory type. This arises from the need for Pymes and MiPymes to carry out a correct scheduling of purchases for the supply of products in its three basic levels from the supplier to the end customer. The objective of this project is to present a model that allows reducing the level of risk in supply chains using aggregate planning tools and decision analysis. The decision analysis model designed based on uncertainty will serve as a general plan for operations and will establish the parameters within which it would facilitate the performance of the supply chains of Pymes, allowing to improve capacity distributions. Therefore, it is important to execute the aggregate plans in a very broad scope of the chain, as proposed in the model proposed and applied in a Pyme company, with adequate and promising results.

Supply, Risk, Uncertainty, Shortage

Metodología de superficie de respuesta dual con variables de ruido cualitativas

Dual response surface methodology with qualitative noise variables

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Abstract

The application of the response surface methodology in the optimization of industrial processes has had a great boom in recent decades, however, with a significant limitation, the null inclusion of qualitative factors in the noise variables. Since the methodology assumes the behavior of the noise factors as a continuous behavioral variable that follows a normal distribution. But what happens if this is not the case? How to treat a qualitative noise factor? What probability distribution would best fit the qualitative noise factor? What would be the correct inclusion of this type of noise factor in the methodology? This article summarizes the four-year research work from the mathematical approach to the new equations, case simulations using mathematical software and 2 real cases in maquiladora plants that manufacture plastic parts.

Response surface, Qualitative noise factor, Process optimization, Probability distribution

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Objetivos
Metodología
Contribución

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