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CIT BOOK OF ABSTRACTS 2009
COLLEGE OF 
ENGINEERING 
AND ARCHITECTURE
ENERGY-EFFICIENT OPERATIONS AND MANAGEMENT AT CEBU INSTITUTE OF TECHNOLOGY, CEBU CITY: BASIS FOR LOW-COST STRATEGIES

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Mechanical Engineering Department
Cebu Institute of Technology, Cebu City

Abstract

The main purpose of this study was to investigate the energy-efficient operations and management of the Cebu Institute of Technology, Cebu City in terms of energy tracking and accounting, energy awareness, maintenance, organizational setup, staff training and monitoring. The results of the study are the bases for the proposed low-cost strategies of the school.

The study utilized a descriptive method of research with a researcher-made questionnaire as the main instrument for data collection. Interviews and actual physical survey of all physical facilities of the school are also conducted.

Respondents of the study included the administrative personnel, facilitative staff, teachers, and working students of Cebu Institute of Technology.
DESIGN AND IMPLEMENTATION OF A ROTARY INVERTED PENDULUM USING PID CONTROLLER

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Cebu Institute of Technology, Cebu City Philippines
Member, Institute of Integrated Electrical Engineers of the Phils., Inc. (IIIE)

Abstract

A Rotary Inverted Pendulum (RIP) is a non-linear and unstable system and is one of the most important and popular topics for control system engineers. The paper discussed the solution to this inherently unstable system problem.

The RIP system in this study is composed of 18 volts PMDC motor, 19:1 two-stage gear head, a 10kΩ single-turn conductive plastic potentiometer, arm and the pendulum. A 335 mm arm is coupled with the shaft gear driven by DC motor and a 250 mm pendulum connected to the arm constrained to swing within a predefined limits of ± 30° on either side of the vertical axis. A potentiometer is used for sensing the pendulum position.

The study involves the derivation of mathematical model of the system by means of Euler-Lagrange equation. System’s transfer function is obtained by substituting system’s parameters.

A Proportional-Integral-Derivative (PID) controller was used as the compensator of the system. The design of the controller was done via root locus techniques.

The mechanical set up is machined using aluminum as the material. The implementation of the controller was made using analog circuit composed operational amplifiers.

Finally, the PID controller was tuned and the pendulum was stabilized to its vertical position during actual implementation.
Abstract

Small and medium enterprises (SMEs) represent 99.6% of all businesses registered in the country and employ 69.9% of the total labor force and account for 32% of the country’s GDP. For the period 2002 to 2005, growth in global furniture exports averaged about 14.1% yearly.

However, overall yearly growth in Philippine furniture exports for the time frame 2000 to 2006 was a negative 5%. Providing relevant and updated information, trends and techniques that augment the methods of manufacturing for the survival, growth and profitability of these enterprises is an imperative of higher education institutions. This micro-economic study involves the analysis of the existing scheme of managing the manufacturing system design and operations of a furniture company in a systemic standpoint with which propositions are based.

Evaluated in this research are plant location, product and its materials, process selection and facility layout, design of work systems, facilities and equipment, inventory management, quality control, and waste management. The inquiry made use of document analysis, shop-floor observation, administration of questionnaire, interview and desk research to collect factual data.

With the foregoing findings, the company can address its system defectiveness through using reliability and adaptability as competitive advantages.
PASSIVE COOLING FOR THE IMPROVEMENT OF THE THERMAL ENVIRONMENT OF ROOMS

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Research Coordinator, CIT-Research and Development Coordinating Office

Abstract

A proposed passive cooling system that relies on night ventilation and high thermal mass technique for improvement of thermal environment of an office has been theoretically evaluated. Computations showed that the system can achieve lowering of floor and wall temperatures of the room in the range of 0.6°C to 1.2°C based on the months April, May, June and July of 2006. The system is fully passive and night ventilation air is solely driven by the stack effect created across the entire height of the 2-storey building.

Keywords: passive cooling, night ventilation, high thermal mass, indoor thermal environment
DESIGN AND FABRICATION OF A PIPE NETWORK APPARATUS AND DEVELOPMENT OF A SIMULATION PROGRAM FOR THE FLUID MECHANICS LABORATORY OF CEBU INSTITUTE OF TECHNOLOGY

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Department of Mechanical Engineering, Cebu Institute of Technology, Cebu City

Abstract

The project presents a design, fabrication, and computer simulation for pipeline networks. The framework of the project is supported by the Department of Mechanical Engineering of Cebu Institute of Technology.

Pipe carrying capacity depends on pipe size, pressure, flow velocity, and head loss resulting from friction. Friction factors include roughness of pipe, flow velocity, and pipe diameter. The mathematical model is based on the continuity equations for the mass balance at every node of the network and the energy balance in every loop of the network.

Head losses in the network are solved using the Darcy-Weisbach and Hazen-Williams equations.

Colebrook’s equation is used to establish the value of the friction coefficient with application of successive substitution. The resulting non-linear system of equations is solved by a combined method based on the classical Hardy Cross simple iteration method and Newton-Raphson method.
Abstract

This project aims to develop a prototype of a rotational casting machine. The project has three purposes. First, to design a rotational casting machine that will increase the productivity of the casting process. Second, to produce a prototype that will ensure a uniform thickness, smooth surface finish of the castings. Third, to enhance the competitiveness of the local entrepreneurs in the world market through the reduction of the overall production cost.

The project is carried out in two phases. Phase I is innovation, design and fabrication of a single mold prototype rotational casting machine. Phase II is innovation, design and fabrication of a multiple (bi-axial) mold prototype rotational casting machine.

The design and fabrication of the said project is done at the Mechanical Engineering Department of the Cebu Institute of Technology, Cebu City.
IMAGE ANALYSIS ALGORITHM FOR SORTING MANGOES

Rachel M. Chong,  MEng.
Faculty, Electronics and Communications Engineering Department
Cebu Institute of Technology

Abstract

An image analysis algorithm has been implemented to measure the size, roundness, and percent defect of a mango. The nearest neighbour technique with Euclidean distance was used to determine the quality of the mango since the data points could not be easily separated.

The size was determined using thresholds since the data points with the same size lie nearer to each other. The processes that lead to the final segmented image were very important since the result will be used for feature extraction. The threshold used in classifying the object’s pixels properly identified the defective areas of the mango.

The algorithm correctly segmented the mango even if its position was changed. However, it cannot correctly identify the stem since it can be brown and green. The green stem pixels were classified as healthy while the brown stem pixels were classified as defective.
STUDIES ON THE GASIFICATION OF COCONUT SHELLS WITH AIR AND STEAM

Ely P. Dimagiba, PME, MEng
Mechanical Engineering Department, Cebu Institute of Technology
Cebu City, Philippines

Abstract

Experimental studies made at the University of the Philippines showed that: (1) Coconut shells are suitable for gas producer and (2) The gas produced from coconut shells at various operating conditions have more or less acceptable calorific value.

It does not possess caking characteristics and therefore proper distribution of gases occurred in the gas producer; this condition is essential factor for successful gasification. Tar information did not present much trouble as it did not clog the gas passages.
THE AERODYNAMIC PERFORMANCE OF A NOVEL – TYPE COLLAPSIBLE – SAIL WIND MACHINE

Alfredo Arenajo, MEng
Mechanical Engineering Department, Cebu Institute of Technology
Cebu City, Philippines

Abstract

The nature of this project is experimental. It dealt with the aerodynamic performance of the collapsible–sail rotor for possible use as an alternative source of energy. It is a horizontal rotating device employing the principle of drag as its propulsion. The collapsible sail is a new innovation in the installation of the wind machine’s most important part – that is which captures the kinetic energy of the wind.

The main objectives of this study were: 1.) to evaluate the Collapsible–Sail machine’s aerodynamic performance with respect to its ability to capture the wind’s energy, 2.) to determine its suitability to function convincingly on the prevailing local wind conditions based on PAGASA’s 2.5 minutes per second average wind velocity record of a 27 – year period. 1

During experimentation, two set-ups were organized: 1.) outdoor test which was done outside to evaluate it at near actual conditions, 2.) indoor test which was executed inside to assume laboratory controlled conditions.

The indoor test provided a more credible evaluation since no cross-wind influence its performance and its velocity profile characteristics were more responsive to simulated wind velocity settings. It is hoped that the study’s outcome makes a modest contribution as an alternative source of energy for the rural areas.
THE DEVELOPMENT OF WEB-BASED SIMULATION MODELS OF MANUFACTURING SYSTEMS

Raul Raymond A. Kapuno Jr.
Chemical Engineering Department, Cebu Institute of Technology

Abstract

Prominent in the list of disadvantages in using simulation are cost and development time. A simulation model may become expensive in terms of manpower, computer time and tool used. Extensive development time may also be encountered since most simulation models are large and complicated.

However, incorporating principles of flexibility and reusability may help every model builder leverage the time spent on model development. But looking at the present medium where simulation is built, it is difficult to develop flexible simulation. The environment limits the reuse of model to few users due to non-portability across different computer platforms.

On the other hand, with the advent of the web that encourages the reuse of objects within simulation models, this provides a solution to development time and cost reduction.

This study explores the possibility of that concept by integrating Web and the field of simulation, focusing on its effect on model development, distribution, analysis and training within the context of manufacturing system application.

Implementing web-based simulation by building SimProd, a web based simulation library for simulating manufacturing system. Although the result shows that web-based simulators are inherently slow compared to native application, being more reliable, reusable, inter-operable and platform independent makes it an attractive option for simulating in the manufacturing environment.
CODE HOPPING IN CAR SECURITY SYSTEM

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Cebu Institute of Technology, Cebu City, Philippines

Abstract

Poverty, drugs, and out-of-the-blue ambitions are some of the reasons what drive certain people to do foolish things, like burglarizing not just homes but cars, as well. To prevent crooks from doing harm not only to our possessions but also to us, remote control security systems were made. Since these crooks have become more sophisticated as technology improves, there is a need for a secure security system.

The in thing today is DIP-switches, which were later used in transmitters to send a particular code. If eight (8) DIP-switches were used, $2^8$ or 256 codes will be available. The problem with this is that the transmitter spurted out exactly the same code every time the button is pressed. Within a few meters away, with suitable receiver called “code grabber”, the crooks could scan for the RF signal and record the code without the owner knowing about it. Using the same code grabber, the security system can now be hacked.

This problem can be solved using a system called code hopping or rolling code. With this system, different codes will be transmitted every time the transmitter button is pressed. An advantage of this is that the receiver “learns” the algorithm that controls the code.

Even though it is pseudorandom, it knows that the next code to be transmitted is. It is more secure in the sense that it can be used to control a garage door or gate, a car and/or home alarm, or lights remotely. An important aspect of this system is the algorithm for the encryption and decryption of codes. Encryption is the conversion of data into a form called ciphertext; decryption is the process of converting encrypted data back to its original form.
DESIGN AND IMPLEMENTATION OF CARRIAGE BALANCED INVERTED PENDULUM

Rommel D. Luna, MEng.EE

Faculty, Electrical Engineering Department
Cebu Institute of Technology

Abstract

The inverted pendulum is one of the most well known subjects in control engineering and has become a widely used benchmark for testing feedback control algorithms. In this project, a single input single output inverted pendulum system was developed with the pendulum mounted on a four wheeled cart which is directly driven by a dc motor via belt and pulley system. The output angular position of the pendulum is feed back to the controller using a high precision single turn conductive plastic rotary potentiometer.

An analog PID controller was designed using root locus technique and implemented using operational amplifiers. Though the PID controller that was designed via root locus method did not give an impressive result when implemented due to the negligence of the rolling friction and the belt-pulley system efficiency, an online manual tuning of the derivative gain successfully stabilized the pendulum.
SUPPRESSION OF CLOSELY-SPACED MODES GALLOPING WITH TUNED MASS DAMPER (TMD)

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Cebu Institute of Technology, Cebu City

Abstract

Some structures have vibration modes with closely-spaced frequencies. An example of such structures is a pylon or tower of a cable-stayed bridge. The feasibility of tuned mass damper in suppressing the closely-spaced modes galloping of this tower is studied. Beforehand, the equations of motion applicable to structure with closely-spaced natural frequencies and attached TMD are formulated. The structure is modeled as a linear two-degree of freedom system with proportional damping. The bridge tower of Higashi-Kobe cable-stayed bridge whose natural frequency of the in-plane second mode is close to that of the first mode is used as the case study.

The applicability of tuned mass damper (TMD) in suppressing the galloping behavior is studied based on the analytical results obtained in order to investigate the aeroelastic instability phenomena. A nonlinear quasi-steady wind force is assumed and asymptotic analysis is made to solve the nonlinear and coupling equations of motions. The results showed that the galloping of this tower is a steady-state motion in either one of the modes in galloping, depending upon the initial disturbances.

The effectiveness of TMD at various wind velocities is examined. It was found that the TMD can effectively reduce the response as well as increase the onset wind velocity of galloping. On the other hand, for structures with certain properties, e.g. non-uniformly distributed mass, galloping is a steady-state motion in two modes. The effectiveness of TMD for this type of structure was also examined. It was shown that the effectiveness of TMD depends on the initial phase lag.
AIR FLOW MANOMETER WITH
COMPUTER INTERFACING

Alrahji Hamis, Ace Albert Ouano, Dennis Pacquiao
Chris Jordan Aliac, Engr. Marlito Patunob
Engr. Edgardo Concepcion
Department of Mechanical Engineering, Mechatronics Group
Cebu Institute of Technology

Abstract

The flow of air and other gases is encountered in many engineering application such as combustion, heating and ventilating, and process of heat transfer. Undergraduates and students of mechanical engineering and allied technologies should be therefore familiar with basic techniques. These aspects are essential requirements for professional engineers and they are becoming increasingly important to process plant users and equipment operators.

An air flow apparatus is an equipment that measures the volume flow rates of fluid in cross-sectional duct using a pitot tube that is attached to a manometer that measures the pressure heads; static, velocity, total, depending on the installation. This device is mainly used as a training module for mechanical engineering students.

Using the apparatus manually may result to some errors. These errors are the basis on how well students perform certain experiments. Thus enhancing the apparatus is much appreciated by mechanical engineering students for it may minimize these relevant errors. Enhancing in such a way that the apparatus is used with a computer interface, C#, wherein the pressure heads can be acquired automatically with respect to its section area.
Abstract

Technology invades man’s way of living, especially when it comes to devices used in his day to day of existence, which made him dwell in a push button world. This phenomenon creates a demand on Engineering professionals and aspirants to modify instruments present in laboratories inside and outside the school.

With the advent of the new technologies, the necessity for upgrading equipments have become a practical, convenient and beneficial way to improve processes that eliminates human errors. Henceforth, the group developed an Analog Sonometer, a device that measures the frequency of sound.

The purpose of the project is to enhance and add new features on the device such as displaying at the monitor the wave formed from the sound produced by a plucked string on the sonometer and at the same time measures the frequency of the said sound.

It is an efficient device, in a way that it minimizes the time required in performing the experiment and at the same time reduces exertion on the part of the performers.
DESIGN AND FABRICATION OF A REYNOLDS FLOW APPARATUS

Engr. Marlito Patunob, Engr. Edgardo Concepcion, Mark Tano, Monico Presbitero, Earlon Navarro
Department of Mechanical Engineering
Cebu Institute of Technology

Abstract

A Reynolds Flow visualization apparatus was designed and built for the Mechanical Engineering Department of Cebu Institute of Technology. This project furnished a bench top unit that demonstrates laminar, transitional and turbulent flow in a pipe using visualization technique similar to the classic experiments of Osborne Reynolds.

The apparatus was built such that it can be used in a standard classroom environment. The unit was used for classroom demonstrations for aspiring students. Hence, the apparatus built was safe, self-contained and portable. The unit was made of available parts at a cheaper cost.
PRODUCT MIX OPTIMIZATION AT JFK FURNITURE USING LINEAR PROGRAMMING

Shellame R. Pepito & Engr. Aries Rivero
Department of Industrial Engineering
Cebu Institute of Technology

Abstract

Some manufacturers would only produce or manufacture products in accordance with the orders of the customers. When there is no order, they would stop their production. In this case, a number of labor and machine hours would be idle. On the other hand, at times of higher demand, the company would need additional laborers just to meet with customers’ deadlines.

However, this should not be the case. They ought to utilize all their resources at the maximum. Sometimes, too many workers are employed even if only few are actually needed. There would also be times that materials purchased would be excessive and sometimes lacking. This does not mean that companies should purchase only the exact amount of raw materials for particular order since materials are bought on amounts that might not correspond to an order’s need.

In linear programming, the right product mix or the desired number of units per product and the proper utilization of resources is determined in order to maximize profit. Data were collected through interview, factory observation and actual measurements. Gathered data were then analyzed and POM Linear Programming software was used in treating those data.

The results were used to come up with the desired marketing strategy, appropriate quantity of materials to purchase per month, and how to maximize their profit through right product mixing and proper utilization of resources.
INTEGRATED PLANT SURVEY OF XYZ INDUSTRIES:
BASIS FOR PRODUCTIVITY IMPROVEMENTS

Remalyn W. Rafaela & Engr. Alein Navares
Department of Industrial Engineering, Cebu Institute of Technology

Abstract

XYZ Industries is a garment manufacturer, wholesaler and retailer specializing in t-shirt, factory uniforms, school and sports uniforms, and made to order uniforms, catering to the domestic market.

The company is situated in 513 Lopez Jaena St., Wireless, Mandaue City. There are around 28 people working for the company. The production department consisted of many functions that include sewing, cutting, embroidery and printing with about 23 workers. More than 90% of manpower is female operators. The firm’s working hour is from 8 AM to 5PM with a one hour lunch break every Monday to Saturday, a total of 25 working days a month. Now, the company boasts of being a competent garment factory due to its flexibility in accepting made-to-order garment items and various special machines, skilled workers and technical know-how.
SIMULATED DESIGN OF MANUFACTURING
WOODEN TOY DUCK DESIGN PROJECT

Vernon Joseph M. Go & Engr. Nendell Corbeta
Department of Industrial Engineering, Cebu Institute of Technology

Abstract

The strong desire for most of the people to venture into business is one good reason why this research is indeed very relevant. This study can be used as a basis for putting up a similar facility. With this, the potential business owner will best benefit if put into actual setting by knowing the technicalities through this study.

Data gathering were mostly done and obtained from books related to system evaluation, prescription, and integration; from the internet and books from the school library were also made to supplement the data gathered from actual settings. Necessary information was gathered from interviews and the system simulation software was also applied.

This study focuses on the relevance of designing a manufacturing plant with a greater emphasis on the methods and techniques that deals with its operation. Product designing is considered here as the initial point of creating a business because it represents the purpose of every details that will be created as an overview on the capacity decisions and ability of the plant to provide goods and services.

Designing normally requires a designer to consider the aesthetic, functional, and many other aspects of an object or a process, which usually requires considerable research, thought, modeling, interactive adjustment, and re-design.
Abstract

This study is the start of the continuous improvement that CIT is seeking for. In its pursuit for excellence, the school welcomes various researches in order to enhance the operation of the school.

The main objective of this study is to determine the health of the market of CIT with its strengths and weaknesses that will serve as the basis for improvement. There are five different respondents used in this study which includes CIT students, CIT parents or alumni, CIT students who quit or transfer, Non-CIT students and Non-CIT parents or alumni. Questionnaire is used in order to gather data. The results are treated using the different techniques in statistics. The respondents rated the attributes of their ideal school and the school that they enrolled.

With the foregoing findings, the researchers find out using z-test (two sample mean test) that the level of students’ satisfaction among the attributes being rated differs according to the school classification (CIT, preferred school and ideal school).

Based from the results the school should focus on improving the attributes where CIT is poor and invest on the areas where it has advantage from the others.
AN INTEGRATED PLANT SURVEY OF ABC INCORPORATED: BASIS FOR PRODUCTIVITY IMPROVEMENTS

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Abstract

“The future of our business depends upon our ability to increase productivity.” – Bill Peach, The Goal

The Philippine economy is poorly performing in almost all aspects of economic activities. The industry sector is actually experiencing a decline in overall performance. It is mainly played by the SMEs (small and medium enterprises) which make up 99.5% of all manufacturing and service establishments and account for about 67% of the country’s job pool. The industry faces persistent issues and concerns; the peskiest among them is still the low productivity which reduced the competitiveness of local furniture in the global market.

Thus, there is a great need for these furniture manufacturers to improve and enhance productivity in their total operations so as to stay alive in the fierce competition in this industry. One practical move to do so is to assess the current operational activities of these manufacturing firms and provide solutions to the problems diagnosed.
PROBING THE REDOX STATES OF IRON IN STEAM-TREATED ISOMORPHOUSLY SUBSTITUTED [Fe,Al]MFI Catalyst

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Abstract

Fe enriched isomorphously substituted [Fe,Al]MFI zeolites with varying aluminium content were prepared and subsequently calcined, proton-exchanged, and steamed to render them active in the direct oxidation of benzene to phenol using N₂O as oxidant. The different post-treatment steps cause the migration of iron from framework to extra-framework positions creating various Fe-sites as deduced from Fe Mössbauer spectroscopy.

An extraordinary high concentration of Fe species (which were correlated to the formation of α-sites that was claimed to be responsible in the catalytic benzene-to-phenol reaction) was obtained for the sampling containing 1.1% w/w aluminum. On the contrary, for the aluminum-free sample (Fe-silicalite) only Fe species were observed. In-situ Fe K-edge XANES were performed to study the reactivity of the Fe-species in the steamed samples under reducing/oxidizing environment. Reduction - oxidation (redox) behavior was observed only for aluminum-containing samples, whereas the Fe species in the Fe-silicalite maintain their oxidation state.
COLLEGE OF COMPUTER STUDIES
VISION-BASED BALL-ON-BEAM BALANCER WITH FUZZY LOGIC CONTROLLER

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Abstract

Determining the behavior of a controller involving nonlinear systems is very difficult to test and develop. As a benchmark to test this controller, the ball-beam balancing problem has been used due to its inherent nonlinear dynamics. This study presents a ball-beam balancing system that uses camera vision to determine the position of the ball on top of the beam and beam’s angle. A fuzzy logic algorithm is used to control the motion of the beam to position the ball at its center.

Image processing and fuzzy logic concepts are the two main areas applied to this project. Ball’s distance and beam’s angle produced by the image processor are fed as inputs for the fuzzy logic controller to produce the appropriate response for balancing. The next beam angle (output) is sent by FLC to the balancer based on the gathered distance and current beam angle. The results show that the balancer can really put the ball at the center of the beam starting at any position.
REAL-TIME VISION-BASED ROBOT MANIPULATOR CONTROL USING SELF-ORGANIZING MAPS

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Abstract

This paper presents a solution to the kinematics problem of a robot manipulator in 2D workspace exhibiting a pick and place task using a self-organizing map. A two-dimensional array of neural units is used for the map. It is shown that after the learning process, the input space is topographically represented on the competitive layer and finally on the output space. Supervised learning is used for the extended model of SOMs, and the results for 2D workspace show that SOMs are effective tools for controlling manipulators.
WEATHER MONITORING SYSTEM
USING SMS

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Abstract

This paper presents an alternative system of monitoring weather conditions from different locations with the use of SMS technology. The system works with a series of sensors for reading wind speed, temperature and wind direction connected to a microcontroller. The microcontroller, interfaced with a mobile phone, sends data from the sensors to a data center via SMS. The data center is a mobile phone interfaced to a computer.

Software collects data coming from different weather condition sensing modules and presents them in a user interface map. Data is also saved for future analysis. Data communication from the microcontroller to the mobile phone is made possible using Packet Data Unit protocol and data retrieval from phone to computer system with the ATC Commands. Results show the system is able to provide data that could be implemented for wide scale use in a cost effect way.

Key Words - PDU, PIC Microcontrollers, Serial Transmission, SMS, ATC.
DEVELOPMENT OF A REVERSE BIPED ROBOT AND A MOTION SEQUENCER USING LINEAR INTERPOLATION

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Abstract

This paper presents a cheaper alternative for developing a 12 DOF reverse biped robot and an application to control the remote device. The robot is a twelve servo biped walker with six degrees of freedom per leg. This is controlled by an application from a computer using Bluetooth technology.

The application’s interface uses the click and drag function of the mouse adding points to create a graphical interpolation of lines to define the servo’s motion.

This graphical representation of the servo positions is used to simplify the task for multiple servo manipulation. The application also includes an editor for users to add voice commands and utilize the generated motion sequences.

Key Words – Biped, Bluetooth Technology, Linear Interpolation, Speech recognition
Abstract

This paper presents an evaluation strategy for student’s learning performance. It uses the expert system’s approach to reasoning with uncertainty. Given the answer sheets of students and the point assignment to each question of an examination, the strategy computes for the total scores. These scores will be ranked from the highest to the lowest.

Students clustered with the same scores will be re-ranked by considering the difficulty, complexity, and significance of each question in the examination. The individual rank of students that belong to a cluster will be determined by utilizing adjustment values. Each question will have a distinct adjustment value which is inferred using a forward-chaining inference procedure with fuzzy logic as the backbone for reasoning under uncertainty considering the degree of difficulty, degree of complexity, and degree of significance.

The sum of difference of students belonging to a cluster will be determined using the adjustment values, points assigned to each question, and the scores obtained by the student for each question.

By sorting the sum of difference of each student in descending order, the true ranking of the students will be revealed. Experimental results show that this method is able to really evaluate the true and distinct learning performance of students.
BI - DIRECTIONAL HARDWARE INTERFACE
FOR MOBILE PHONES

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Abstract

This paper presents the creation of a bi-directional input/output hardware interface for communicating a mobile phone to either a computer system or a microcontroller system. The hardware interface works under a serial data transmission and uses the packet data unit (PDU) protocol to communicate between the mobile phone and the microcontroller. A series of steps will be shown on how to decode PDU data into information that can be processed by the microcontroller.

Testing methodologies will be presented to ensure the accuracy of data transmission and robustness of the interface hardware. To test the hardware interface, results will be shown based not only on the testing methodologies but also on the results of two student projects using the created hardware interface. This paper shows the capability of Filipino ingenuity to create mobile interface circuits similar other countries with only using parts that are easily available in the Philippine setting.

Keywords:

PDU, RS232, MAX232, PIC Microcontrollers, Serial Transmission, F-Bus Cable, SMS.
ROBOTIC ARM

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Abstract

The Project design is called a Robotic arm. Its main purpose is to simulate function and movement of the human arm. It will be able to pick, lift, and transfer objects of minimal weight to another location within its workspace. It aims to assist workers in carrying out their task. And, when further develop, may be use to industries in transporting larger objects.

The robotic arm is made up of digital servo motors. It is develop with the application of PIC microcontroller and interface with the computer using C# programming language. It will function through its main control section (PC). Once it starts running, you’ll be controlling the robotic arm by pushing the desired keys for each servo motors.

This robotic arm has gripper end effector which will be the last process in motor movement. Its function is to pick up the object and place it to the desired location.

With this project the user will be able to use an alternative arm to do their work.
ARTIFICIAL INTELLIGENT ROVER

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Abstract

The “AI Rover” is an artificial intelligent electro-mechanical four-wheeled robot capable of terrain traversal and short range transfer with the aid of a Maze Solver program equipped with a Breadth First Search Algorithm and an Image Filter system. The input for the Maze Solver is the captured image of the terrain to be traversed by the rover.

The rover is put in a terrain (a set up of obstacles with the destination point) to move towards the destination. An overhead camera captures the view of the terrain and feeds it to the Maze Solver. The captured image is converted to bitmap for determination of the point of origin, obstacles and destination point.

With these factors considered, the Maze Solver, then, plots the shortest path towards the destination point and evades possible collisions with the obstructions present therein.

Once the path is plotted, signals are sent to the AI rover to execute the traversal. The AI rover can be adjusted to traverse different terrain set up. It can also be remodeled to fit the kind of application the user wants.

Results show that the Maze Solver program is capable of determining the shortest path to be traversed by the AI rover. Furthermore, the AI rover evades obstructions along the shortest path provided that the image capture of the terrain is done on favorable lighting conditions.
BALL’S EYE

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Abstract

This project is a revised version of Pooyan. Pooyan is played by hitting balloons. Arrows and a slab of meat are the weapons. Pooyan has also a number of bonus rounds within the game. Pooyan can also be played by a two-‐player game. Through this Ball’s Eye has come into shape. The game is a single-player only. The objective of the game is to shoot many balloons.

There types of balloons to look into; the Special, Ordinary and Multiple. It has two characters to choose from the Magician and the Archer. Each character has its unique special features. The Archer uses the bow and arrows to shoot or hit the balloon and the magician uses fire ball as well. The characters are given the opportunity to use their weapons wisely; there are unlimited numbers of weapons within the game.

The game has three (3) levels or stages of difficulty in each level the number of balloons increases and balloons move faster and faster. The player is given three (3) lives.

The player only looses life when he/she misses five (5) balloons in every stage. The player has to reach 500 points in order to win the game. The scoring of the game is based on the balloons that were hit. Every balloon had corresponding values. The project is implemented by a Java Programming Language. The use of Threads and Randomization is also applicable.
MEPZCEM

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Joan Bacusmo, April Marie Baraga, Catherine Bato-on
Dianiece Dacayana, Kathleen Generalao, Lea Gonzaga
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Abstract

MEPZCEM is composed of almost 200 local and international companies. Within the chamber, there are seven different associations where company members can be affiliated with. The chamber needs a new dynamic website wherein postings of important events and news can be done. This project is developed to meet the needs of MEPZCEM, to provide an information-supplier website for everybody in their organization and for the possible clients outside the organization.

The project developed is a dynamic, easy to maintain and user-friendly website where users can read news articles, latest and upcoming activities of the chamber as well as the different activities of its associations. Links to government agencies are also provided. Photo collection through album grouping is also available in the site.

There are four different access levels for the website: The super admin, the association admin, the association member and the general public. The super admin manages all the contents of the page.

The association admin has the power to manage the contents of its association. The association member can enjoy the forum in the associations the companies are affiliated with. The general public has viewing/reading capabilities only. The users can read some news articles in the homepage that the administrator will post.

The company members can request the super admin to post their job vacancies on the website. With the job postings section in the site, more unemployed citizens can search for job vacancies in the chamber. The website has also spaces for some advertisements in which the super admin can manage it. The website is equipped with a simple, user friendly content-management system that allows the super admin to make some changes on the different sections of the whole site and also for the association admin for their association’s page.
UPGRADED SUMO ROVER

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Abstract

Sumo rover is installed with sensor in which it is the device that tells the PIC on what operation should be done. Once any sensor detects an object with in the ring, it gives data to the PIC so that a certain movement of operation should be done. For instance, a sensor installed in the left side of the rover sensed an object inside the ring, it automatically give data to PIC.

The micro controller gives a certain output that helps the motor driver to execute what motor rotation should be done. By the time motor driver executes the instructions, the rover automatically moves at the rotation pattern it corresponds. The rover movement is now facing the object, and then it initiate to push until object reached outside the ring. Another sensor was installed at the bottom part of the rover.

It is used to give data to the PIC, in which the PIC would instruct the motor driver to stop by sending data that correspond a no motor movement data. Upon receiving the no movement data from the PIC, the rover is partially stop, after a few seconds the rover will now move backward then turn left.

When any of the sensors detect nothing inside the ring, PIC will give instruction or data to the motor drivers that would allow the motor to turn. In this manner, the rover is roaming around, searching for an object inside the ring.
Abstract

The use of technology has brought us in a global competence and the ability to organized process accurately has made it a necessity for the demands of information technology. This has shift to a fast-paced in its development that remarkably becoming a powerful tool to interact users from all dimensions of the world in doing ordinary things extraordinarily.

The purpose of the project is to provide a system that is accessible for the HR administrator, HR nas, faculty members, and department heads that belongs to the institution. The system is locally networked that is designed for the Human Resource department. It will generate reports for daily attendance verification and sick leaves. And also generate top ranks of absences, lates, early dismissal and improper attire of the faculty members.

The system will provide the HR Nas on the creation of daily attendance verification reports of the faculty members.

The HR administrator can add/ update/ delete department, add/ update record for employees and HR nas, create schedule of duty for the HR nas, upload pictures, create accounts for the users, activate and deactivate accounts and update profile of the users. The faculty members can also view and confirm their daily attendance verification (DAV).

The accessibility of the department head is to verify and approve sick leaves and DAV’s of the faculty members under her/his supervision, to plot schedule of classes of the faculty, and to view the classes of all the faculty members.

Data gathering of the project comes from the idea of the adviser and also from the proponents. The completion of our project is very useful to the human resource department since the tracking of the daily attendance verification is accurately implemented.
Electronic Bill Payment System (EBPS) offers online internet-based bill payment service exclusively for VECO and MCWD customers. It provides greater convenience to these customers, thus making it suitable for today’s modern lifestyle. EBPS assures a hassle-free payment of their monthly utility bill through the internet.

EBPS employs PHP as its programming language; and the following are software tools for its development: JavaScript, HTML, Apache, MySQL, PHP package, Macromedia Dreamweaver and a Web Browser which is the Internet Explorer.

Primarily, EBPS allows online processing of bill payments. It supports transactions for single payments or multiple payments. It is assured that all information needed by EBPS is directly fetched from the databases of VECO, MCWD, and the Bank. Once payment has been verified, the system automatically charges the payment to the customer’s credit card account. It also features a system administrator’s log in and some other features that an EBPS administrator needs especially in generating reports for the companies.

EBPS also allows customers to post comments and suggestions regarding the offered services in which will help EBPS improve the services offered. EBPS generates a printable receipt after every payment done by the customers. It also generates a printable report for VECO and MCWD as a summary for all transactions done with in the system whether weekly or monthly.

With the development of EBPS, both customers and the companies are given the benefit of a more convenient and a more reliable way of making bill payments with just a click away. The development of EBPS will give an idea to many people that it is possible to make difficult things easier. Other system developers can improve EBPS through further research on the system’s security and robustness.
MEDICAL TRANSCRIPTION TRAINING SYSTEM

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Abstract

Medical transcription, also known as MT, is an allied health profession which encompasses the process of transcription or converting voice-recorded reports as dictated by physicians and/or other healthcare professionals into text format.

In recent years, things have change considerably. Filing cabinets have given way to desktop computers connected to powerful servers where patient records are processed and archived digitally. For this reason Medical Transcription services and Medical Transcription department work closely with programmers and information systems.

Medical Transcriptionist or medical transcriber is the person responsible for converting the patients medical records into typewritten format rather than handwritten to the term transcriber also describes the electronic equipment used in performing Medical Transcription, for example, a cassette player with foot controls operated by the Medical Transcription for report playback and transcription.

Education and training can be obtained through traditional schooling, certificate or diploma programs, distance learning, or on-the-job training offered in some hospitals. Medical Transcription Training System is an online system aims to provide preparatory practices for free, for users who have the interest in pursuing a career wherein its main features involved typing tutorial, uploading of voice file to transcribe, library of medical terms and a spelling checker.

On the other hand, the integrity of Medical Transcription Training System was not that quite good because it doesn’t show the accuracy of the trainee during transcribing, the voice file be uploaded is limited only to .wav filename extension and the transcript keys (sample reports which need to be type) were not retrieved dynamically (doesn’t change).

Therefore Medical Transcription Training System needs enhancement in order to be more dynamic and effective in serving the user.
AN APPLICATION THAT TALKS AND LISTENS
(MANIPULATING TEXT FOR MOBILE
SHORT MESSAGING SYSTEM)

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Abstract

Text-To-Speech and Speech-To-
Text (TTS&STT) application was a tool that converts SMS text (also known as
SMS Language, or Textese, or TxtSpk1)
into speech and vice versa. It used the
English language as its base language.

The conversion process used an
SMS dictionary of words – which were
stored in a database file, to contrast
every SMS text to an English word or an
English word to an SMS text. TTS&STT
was implemented using Microsoft .NET
technology and Microsoft Speech Application's Programming Interface (SAPI).
SAPI aided in the conversion processes
of both speech recognition and text to
speech.

The conversion technology was
built-in of the Speech API and would not
be part of the development of this pro-
ject.

Aside from speech recognition
and reading out of text (from a text file,
WAV file, or text typed in the user inter-
face) in which the TTS&STT application
was capable of, it could also pro-
duce a converted SMS text into a text
file or into a WAV file. With these types
of outputs produced by TTS&STT application, it could become usable to other applications that rely on speech recogni-
tion and text to speech.
COLLEGE OF EDUCATION
WORKING CONDITIONS, COMPETENCIES, AND DEVELOPMENT NEEDS OF THE SENIOR TEACHERS OF THE CEBU INSTITUTE OF TECHNOLOGY: BASIS FOR AN INTEGRATED PROGRAM

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Abstract

The purpose of this study was to determine the working conditions, competencies and development needs of the senior teachers of the Cebu Institute of Technology as perceived by themselves and the administrators in order to design an integrated Faculty Development Program for the school.

The following guide questions comprised the guidelines of the study:

1. As perceived by the teachers, what were the working conditions of the senior teachers in relation with their selves, their peers, their superiors and their organization at large?

2. As evaluated by the senior teachers themselves and the administrators, what were the quality of performance of the senior teachers in the following competencies; teaching skills; application of psychology in teaching-learning situation; use of teaching methodology; classroom management; use of instructional media; and, on test construction and interpretation?

3. Was there significant difference between the evaluation conducted by the senior teachers’ compared to the evaluation conducted by the administrators?

4. What were the development needs of the CIT senior teachers as perceived by them?

5. Based on the findings of the study, how many an Integrated Faculty Development Program be designed for the faculty of the Cebu Institute of Technology?

This study utilized the descriptive-survey method with the questionnaire as instruments of data collection. There were three questionnaires. One determined the working conditions, the second questionnaire determined the quality of performance of the senior teachers of CIT, and the third questionnaire identified the development needs of the faculty.

The study was conducted among 113 senior teacher respondents and the 68 subjects or department chairpersons, principals, and deans who were working at the Cebu Institute of Technology responsible of the identified senior teachers under his or her department.
A PROPOSED GUIDE ON THE SELECTION AND UTILIZATION OF THE CLASSROOM INSTRUCTIONAL MATERIALS

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Abstract

The study aimed to assess the appropriateness, worth, need and the extent of the utilization of the classroom instructional materials of the High School Department of the Cebu Institute of Technology through a survey as a basis of a proposed guide for the effective use of the classroom instructional materials.

Specifically, this study sought to answer the following sub-problems:

What factors were considered in the selection and utilization of the classroom instructional materials?

Are the chosen classroom instructional materials appropriate and worthy, and do they best suit to the objective purposes of subject matter mastery, skills improvement and valuing?

To what degree are the chosen classroom instructional materials needed in relation to their relevance to the attainment of the learning objectives and as instructional aids?

To what extent are the chosen instructional materials used in the conduct of the lessons?

What guidelines for the effective use of the classroom instructional materials be proposed based on the findings of this study?

The study used the school survey and descriptive methods as methods in the appraisal of the appropriateness, worth, need, and the extent of the utilization of the classroom instructional materials. Five hundred fifty (550) students, three hundred (300) from the current batch (2007 – 2008) and two hundred fifty (250) from the previous batch (2006 – 2007), and forty-five (45) teachers handling the different subjects in the High School Department of the Cebu Institute of Technology, a total of five hundred ninety-five (595) students and teachers, were the respondents to the school survey. The simple percentage and weighted mean were the statistical formulas used in the analysis of the data.
FACTORS AFFECTING THE TEACHING OF ENGLISH IN THE BARANGAY HIGH SCHOOLS OF THE DIVISION OF CEBU CITY

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Abstract

From many indications, English will continue to be a language of instruction in the Philippines schools for sometime. The demands on the students’ ability to understand, speak, read, and write in English will be the same, if not greater. The teachers must be helped in getting better results in teaching the subject. Admitted as fast are the numerous and grave problems which need reforms. Hence, crucial factors in the teaching and learning situation in Philippine schools have to be considered to assist both teachers and students in gaining knowledge and skills essential in developing a responsible citizenry essential in a strong nation, as well as in giving the youth an education that does not only respond to present special and economic needs but also anticipate the demands of the future. Egleson theorized that test situations readily revealed that Filipinos are not able to communicate in English as is thought they can. Different geographical areas, social circles, age groups, occupations, and organized recreational activities develop special vocabularies with meanings clear to members of one group but not easily grasped by others. Angara said that the previous problem of access to Education had shifted to deteriorating standard of education.

While access to education has somehow improved over the years as shown by the growing number of students from the ranks of the poor through the enactment of the Free Secondary Act, he said that the educational system has become an “Academic Wasteland”. Hence, the idea of producing quality graduates has become more imperative because of the existing realities, e.g., seeing a high school graduate who could hardly communicate effectively either in writing or orally. With the emerging Philippine English, the problem will be the one of intelligibility. It is not clear whether Philippine English will be mutually intelligible with the third world varieties of English in Asia and Africa. It is agreed that the graduates of the current curriculum are found very deficient in English Communication. Senators and Legislators decry the quality of graduates who do not get jobs because they can hardly read. Therefore the secondary level of education, the ladder which is often mistakenly branded as the weakest link in the Philippine Educational System, should be further strengthened through continuous search for possible solutions to improve the program of instruction in the various fields under the secondary curriculum.
SCHOOL DROPOUTS IN MAMBALING DISTRICT, DIVISION OF CEBU CITY: ITS CAUSES AND IMPLICATIONS TO GUIDANCE AND COUNSELING

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Abstract

This study attempted to determine the causes of dropouts in the district of Mambaling, Division of Cebu City from school year 1984-1985 to 1987-1988 along the following indicators:

1. What was the profile of the public elementary school pupil dropouts with regards to:
   - age
   - sex
   socio-economic status in terms of:
     1.3.1 education of parents
     1.3.2 occupation of parents
     1.3.3 religion of parents
     1.3.4 combined family income size of the family

2. To what extent did the factors affect their leaving school?

   2.1 school factors
   2.2 teacher factors
   2.3 socio-economic factors
   2.4 pupil factors

3. What were the remedies undertaken by the teachers?

4. What are the implications of the findings to guidance and counseling and to education?
LEVELS OF MOTOR SKILLS & PERFORMANCE IN VOLLEYBALL CROSSCOURT ATTACKS

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Abstract

The following were the significant findings of the study:

The level of motor skills for the crosscourt attacks, on ready position and footwork and the area of landing were excellently executed by the volleyball attackers. While on the areas of vaulting and wrist snap, the volleyball attackers positively executed the motor skills in above average level.

Out of the five areas of concern on level of performance only in target direction and landing were perfectly accomplished while the rest were accomplished substantially or above average by the volleyball attackers in hitting the crosscourt attacks.
PERFORMANCE OF SPED ADMINISTRATORS IN PUBLIC SCHOOLS OF CEBU: SPED TRAINING PROGRAM

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Abstract

The study focused on the administrative and supervisory performance of the SPED administrators of public schools in Cebu province and its component cities during the school year 2008 – 2009. After the study, the researcher will be designing a program as an enhancement for more effective SPED administrator.

Operationally, the study sought the answer the following pertinent sub-problems, as follows:

This is a descriptive survey using a self-made questionnaire, observation guide relative to special education as a whole, ocular inspection of the furnitures, equipment and other facilities and casual interview of the respondents plus official documents from the DepED for further validation of the data gathered from the site of studies in the SPED Centers in the province and its components cities.
A PROPOSED REMEDIAL PROGRAM
FOR THE HIGH SCHOOL DEPARTMENT,
CEBU INSTITUTE OF TECHNOLOGY

Deusdedith C. Parrilla
Research Coordinator, College of Education, Cebu Institute of Technology

Abstract

It was the main purpose of this study to assess the effectiveness of the Remedial Program of the High School Department of the Cebu Institute of Technology, Cebu City during the school year 1999-2000 through a comparison of the performances of those who were actually subjected to it and those without it, utilizing the findings as basics for proposals. Specifically, this study sought answers to the following sub-problems:

What are the main features of the existing remedial program of the secondary department at the Cebu Institute of Technology?

How does the performance of the students subjected to remediation compare with those without it in:

- English
- Mathematics;
- Science?

How can the existing remedial program be redesigned to be truly responsive to the needs of the slow learners in English, Mathematics and Science?

Hypothesis: There is no significant difference in the academic performances of students subjected to remediation and those without in English, Mathematics and Science.

The study used the experimental method of research. A total of 742 students, 31% of the first to third year students of the CIT-HS Department were recommended to take remediation by the end of the school year 1999-2000. Of this number, 477 subjected themselves to the summer remedial classes and 154 did not enroll, while 111 transferred to other schools. A total of 631 students (477 with remediation and 154 without remediation) with their first grading ratings in the school year 2001-2002 considered, were the subject of this study.

The mean, standard deviation, t-test and ANOVA were the statistical formulas used in the analysis of data.
COLLEGE OF NURSING
CLASSICAL MUSIC AND MUSIC FROM THE MUSICALS ON THE LEVEL OF PAIN OF PATIENTS AT THE SURGICAL WARD AND OBSTETRIC WARD OF CEBU CITY MEDICAL CENTER

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Abstract

This research study identified the effect of classical music and music from the musicals on the level of pain of major postoperative patients at the Surgical Ward and Obstetric Ward of Cebu City Medical Center. Specifically, it sought to answer the following questions about the level of pain of 1-4 day major postoperative patients before and after undergoing music therapy using Classical Music. The level of pain of 1-4 day major postoperative patients before and after undergoing music therapy using Music from the Musicals. The difference in the level of pain of the respondents from Classical Music and Music from the Musicals.

This study compared the effect of classical music and music from the musicals on surgical patients’ postoperative pain and physiologic parameters. This played an important part in promoting the patient’s sense of well being during the postoperative period.
ACOUSTIC ALTERNATIVE MUSIC APPLICATION AND THE SPATIAL ABILITY OF LEVEL II NURSING STUDENTS

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Abstract

This study identified the effects of Acoustic Guitar Music on the Spatial Ability Test Scores of Level II N1 Nursing Students.

Preferred music genre was determined from the subjects. Random sampling was utilized in the selection of the subjects. Experimental and control groups were chosen as subjects. Post test sampling design identified the effects of acoustic alternative music to the spatial ability of Level II nursing students.

Post test scores of the experimental and control groups were determined if there was a difference in their mean post test scores.
THE INFLUENCE OF TELEVISION SHOWS ON THE
BODY IMAGE AND SELF-ESTEEM OF THE LEVEL I
FEMALE NURSING STUDENTS

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Abstract

The study determined the relationship between the influence of Television Shows on the Body image and Self-esteem. Difference between television shows on body image and self esteem according to age was determined.

Adolescents of Level I specifically the female nursing students were taken as the respondents of the study. Simple Random Sampling was employed in the taking the samples. Questionnaires on the influence of TV shows on body image and self esteem measured their perceptions. Data were analyzed through descriptive and inferential statistics.
THE WORK ETHICS AND CLINICAL PERFORMANCE OF STAFF NURSES IN CEBU CITY MEDICAL CENTER
A PROPOSED INSTITUTIONAL WORK ETHICS PROGRAM

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Abstract

The study determined the work ethics and the clinical performance of staff nurses of Cebu City Medical Center,

Purposive sampling was employed in obtaining samples of the study. Through descriptive correlation method the relationship of both variables was studied.

The level of work ethics and their performance in terms of age, gender, area of assignment and length of service were determined using ANOVA. The relationship of the two variables was measured through Pearson Coefficient of Correlation.
KNOWLEDGE AND PRACTICE LEVELS AND ITS RELATIONSHIP TO BREASTFEEDING PRACTICES AMONG PRIMIPARA AND MULTIPARA MOTHERS: BASIS FOR A PROPOSED ENHANCEMENT PROGRAM

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Abstract

The study determined the extent of implementation of breastfeeding program on the knowledge and practice levels of primipara and multipara mothers at selected hospitals in Cebu City.
COLLEGE OF
COMMERCE
Factors Affecting Nutritional Status in Region VII, Central Visayas

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Abstract

The focus of this paper was on the different factors affecting the nutritional status of children in Central Visayas Region, Philippines. This paper examined how household's weekly food expenditure, other household socio-economic characteristics, time inputs spent by mother to children and material input such as household's visit to health facility can affect the nutritional status of children as indicated by prevalence of: underweight (below normal weight-for-age), stunting (below normal height-for-age) and wasting (below normal weight-for-height).

The objectives of the study were, firstly, to identify the factors affecting nutritional status of the children aged 0-7 years old in Central Visayas, and secondly, to assess the nutritional status of the children and its three forms of malnutrition such as underweight, wasting and stunting. This study used descriptive research design by conducting a secondary data analysis of the 2003 Early Childhood Development Project Evaluation Study (Phase 3) conducted by the USC-Office of Population Studies Foundation, Inc.

The researcher employed descriptive statistics and linear regression analysis.

Results of the study revealed that majority of the children in the region are normal in the weight-for-age status with 74.7% with only 24.5% underweight and 0.8% over weight. In the height-for-age status there is 63.4% of children that were normal, 36.6% stunted and only 0.1% tall. In the weight-for-height status, 97.0% of the children are normal, 1.9% wasted and 1.1% overweight. Generally, with the presence of the three statuses, majority of the children in Region VII is in normal condition. The Central Visayas data set has interviewed 1,909 households with 3,269 eligible children and 1,742 mothers. Among the household's socio-economic characteristics associated with nutritional status were age of mother, mother's educational background, mother's working status, place of residence and the household size. On the other hand, household's weekly food expenditure, mother's time input to children such as time spend for feeding, cooking and preparing meals for children and household's visit to health facility as material input were seen to be factors affecting the nutritional status of the children. The findings of the study were essential for further health and nutrition study in the field of social science especially in health economics.

Keywords: child's nutritional status, factors affecting nutritional status
Career Placement of the CIT College of Commerce
Business Administration Department
Graduates From Year 2002-2006:
Basis for a Proposed Intervention Program

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Abstract

This study aims to determine the Career Placement of the CIT College of Commerce Business Administration Department graduates from year 2002 – 2006. The findings of the study shall be the basis for a proposed intervention program. It was conducted to find out whether the gainful employment of Business Administration graduates in their respective line of work is relevant to their professional, cognate or core courses and to determine whether or not the graduates benefited from the institute through its program of instruction.

The method used in this research was the descriptive survey method. A researcher-made questionnaire was the tool to be used in gathering the data. These were supplemented by interviews and observation techniques with those who are working near the school. All the respondents within the country and abroad were contacted by mail. An enclosed self-addressed envelop was provided for convenience.

Based on the findings of the study, a program to re-align the curriculum towards better human resources development responsive to the various employment needs of industry will be designed; and the methods of teaching used in the college will be improved so that the students will be ready to face the world of work after graduation.
COLLEGE OF ARTS AND SCIENCES
A GEOMETRIC MORPHOMETRIC ANALYSIS: CLAW AND CARAPACE SHAPE VARIATION ACROSS SWIMMING CRAB PORTUNIDAE COLLECTED FROM ILIGAN CITY AND KAUSWAGAN, LANAO DEL NORTE, PHILIPPINES

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Abstract

For years, many studies have been done on the taxonomic classification of swimming crabs but not much on geometric morphometric analysis. Swimming crabs collected belong to Family Portunidae. They are crabs with broad carapace, often with sharp lateral spines. The last pair of legs is flattened at the end, with a paddle like expansion used to swim or to dig in the sand. In this study, the portunid crabs collected from Bayug Island, Iligan City and Kawit Occidental, Kauswagan, Lanao del Norte, Philippines were analyzed applying geometric morphometrics (GM) techniques. GM analyses were utilized as tools to assess intra- and interspecific right claw and carapace shape and size variation of the three species of Portunidae crabs. Only the right claw and carapace of these crabs were the specific structures understudy since they are known to present allometric trends. Generalized Procrustes superimposition (GLS), thin-plate spline (TPS), partial warp analysis (PW) and relative warp analysis (RW) were the GM applied for landmark analyses; elliptic Fourier analysis (EFA) and Eigenshape analysis (EA) were employed for outline shape analyses. Procrustes coordinate values, partial warp and relative warp scores, and the elliptic Fourier coefficients derived from different procedure were used for morphometric and multivariate analyses such as one-way analysis of variance (ANOVA), Multivariate analysis of variance (MANOVA), Principal Component Analysis (PCA), Discriminant Analysis (DA), and Cluster Analysis (CA). Geometric morphometrics methods were the important tool in identifying shapes and patterns of morphological variations in this study. The results show a relative degree of significant variations in shapes and sizes of the right claws and carapaces of the three sampled Portunidae species collected (Portunus sp., Scylla serrata and Portunus sanguinolentus), which showed Scylla serrata right claw shape that were robust and wider compared to the other two groups with claws that were relatively slender and longer, while Portunus sanguinolentus had wider carapace compared to Scylla serrata with carapace shape relatively round and Portunus sp. somewhat ovate. Size and shape variations were more apparent between groups than within groups. Variations have biological implications correlated to regeneration, clade, feeding habits and habitats. Based on the findings stated above, it is recommended that further studies be done on the shape and the size of these three groups using geometric morphometric analysis to evaluate species phylogeny and ontogeny.
GAME AS ENRICHMENT ACTIVITIES IN THE STUDY
OF THE DIGESTIVE CIRCULATORY AND
SKELETAL SYSTEMS

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Abstract

The study aimed to design games to enhance learning of the concepts of the digestive, circulatory, and skeletal systems and to find out the effectiveness of these games in learning the concepts and in developing attitudes of college students taking Natural Science 1 in Cebu Institute of Technology in Cebu City.

A quasi-experimental research design was employed involving four classes with a total of 191 students. Two types of games were developed for each body system and were introduced after the lecture-discussion method. This was done to enhance the students’ understanding of the selected concepts on digestive, circulatory and skeletal systems and to improve the students’ attitude towards the subject.

A pre-game test and a post-game test, with 20 multiple-choice items were administered to all classes before and after the game. A 15-item opinionnaire was also given after they played all the games to determine their effect on the students’ attitude toward the subject and toward using games to learn biology concepts.

The results suggested that the use of games as enrichment activities in teaching selected concepts digestive, circulatory and skeletal systems was suitable for improving students’ performance and can have a considerable impact on attitudes towards the subject. The results of the data collected suggested that games as enrichment activities could cause an increase in enthusiasm, excitement, interest, enjoyment, and motivation. Games were generally perceived in a positive light by the students in the study. A guideline in the use of games in the classroom was formulated, based on the outcome of the study.
MOTIVATIONAL BLOCKAGES OF
THE UNIVERSITY OF SAN JOSE-RECOLETOS
OFFICE PERSONNEL AND STAFF:
BASIS FOR A PROPOSED INTERVENTION SCHEME

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Abstract

This study sought to inquire about the motivational blockages of the Office Personnel and Staff in order to come up with an intervention scheme which would be designed to enhance work effectiveness and productive performance.

Further, it is envisioned that through this study, the OPS will take proactive responsibility over their present situation and effectively cope with professional and personal stresses, thus, becoming well-motivated office personnel and staff employees of USJ-R.

The expected output of this study would be an intervention scheme designed to enhance the level of motivation of the Office Personnel and Staff (OPS). This study limited itself to the inquiry of motivational blockages among the Office Personnel and Staff (OPS) of the University of San Jose-Recoletos, in order to come up with Intervention Schemes that would emphasize the role of motivation in job satisfaction and job performance.
STRESS BENCHMARK AMONG ELECTED LOCAL GOVERNMENT OFFICIALS OF THE MUNICIPALITY OF CONSOLACION, CEBU: PROPOSED STRESS MANAGEMENT GUIDE

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Abstract

A descriptive-correlational study was conducted involving 104 randomly selected elected officials in the local government of Consolacion, Cebu to benchmark stress and to design a stress management guide. A set of validated instruments consisting of checklist, tests, and questionnaires were administered, retrieved, and tabulated. The data gathered were subjected to statistical analysis considering percentages, weighted mean, ranking, and chi-square.

The variables studied were (a) the personal profile in terms of gender, civil status, age educational attainment, and number of dependents; (b) socio-economic profile in terms of income, affiliation in organizations, scope of work, multiplicity of work, and leisure of activities; (c) the behavior patterns in terms of personality type, attitude towards stress, and stress coping mechanisms; (d) the stress patterns on the aspect of type of stress, stress awareness level, and stress levels.

The findings showed that all the respondents had aggressive type of personality. Most had positive attitude toward stress (77.89 percent), had no sensitivity to chronic-related stress (77.88 percent) and had episodic work-related stress (81.73 percent), and had low level of physical stress (71.15 percent).

The attitude toward stress is significantly related to sex, civil status, age, and educational attainment but not to the number of dependents, while gender is significantly related to episodic non-work related stress and chronic work related stress, awareness levels and physical stress. There was significant relationship among age and cognitive stress level, the socio-economic variables, and attitude toward stress. Multiplicity of work was related to chronic work and episodic work related stresses, awareness stress level and physical stress. The study revealed that the varied reactions and manners of dealing with the stress of the elected local government officials depended entirely on their personal appraisal of the situations. The researcher recommended that the local government officials should be made more aware of the nature, symptoms, and hazardous effects of stress, to appreciate the importance of leisure and stress management measures. Stress release activities in-between deep sessions should be considered to relieve stress and a stress-busting room in every session hall should be provided to diffuse stress and tension. A stress management guide should be prepared for the perusal of the local government officials to promote good health.
THE LEVEL OF SELF-CONTROL BETWEEN STUDENTS RESIDING IN- AND OFF-CAMPUS

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Abstract

This study is a descriptive correlation research undertaken to determine the relationship between the level of self-control and the demographic profile of residents staying in and off the campus of Siliman University. Moreover, the study aimed to determine the difference between the level of self-control of in-campus and off-campus dormitory or boarding house residents.

The sample consisted of 201 resident’s in-campus and 79 resident’s off-campus. The respondents took the Self-Control Schedule questionnaire to identify their level of self-control, as the main tool in gathering data. The statistical tools used were percentages, weighted mean, z-test, and chi-square.

The findings of the study revealed that the demographic profile in terms of age, gender, length of stay, and place of origin was high in the level of self-control among in-campus and off-campus residents.

Statistically, it revealed that there was no significant relationship between the level of self-control and the demographic profile in terms of age, gender, and length of stay.

However, there is a significant relationship between the level of self-control and the demographic profile in terms of the place of origin. The findings of the study also revealed that students residing in-campus or off-campus were high in level of self-control. Thus, statistically, it revealed that there was no significant difference in the levels of self-control of in-campus and off-campus student residents of Siliman University.
THE BS CERTIFICATE PROGRAM IN CHEMISTRY AT THE UNIVERSITY OF SAN CARLOS: ITS ASSESSMENT AND IMPACT ON TEACHING PERFORMANCE

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Abstract

This study aimed to assess the B.S. Certificate Program in Chemistry at the University of San Carlos through its Regional Science Teaching Center (RSTC). It also attempted to determine the ways of improving the program in terms of participants, trainers, program content, delivery scheme and program management. The proposed guidelines for the improved program were based on the results of the survey involving eight-two (82) teacher-participants of the B.S. Certificate Program in Chemistry from 1985 to 1991.

The descriptive survey method was used. Items which helped identify the program’s strengths and weaknesses of the program were included in the questionnaire administered to the teacher-participants.

To determine the extent to which the program had improved the teacher-participants’ competencies, school principals and science coordinators were asked to answer another set of questionnaire. Results showed that the program greatly helped in improving the different aspects in the teacher-participants’ Chemistry teaching.

The respective principals and science coordinators confirmed the improved level of teaching competencies of the teacher-participants. The overall results of the study indicated that the program was effective. Guidelines were proposed in order to correct the perceived weaknesses in the program.
ISOLATED LINGUISTIC MANTRA
USING VERBAL NARRATIVES

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Abstract

The researcher of this study wanted to find out the occurrence of hedges, boosters, and filler words in the individual verbal narratives by male and female participants from six English 212 (Speech) classes in Cebu Institute of Technology. The two sub-problems that the researcher wanted to determine were: (1) The words that function as a) hedges, b) boosters, and c) filler words; and (2) the frequency of the most commonly occurring a) hedges, b) boosters, and c) filler words in the verbal narratives of male and female participants.

Thirty-eight (38) students who had average grades of 4.5 and 5.0 qualified as participants. Nineteen (19) males and nineteen (19) females were asked to narrate about an American movie. An audiotape recorder was used as a tool to aid the gathering of the data.

The narratives were recorded and were then converted into transcripts from which the data were taken. The data from the participants’ narratives showed that both genders used terms that function as hedges, boosters, and filler words in their verbal narratives.

With the method used in gathering data, individual verbal narratives, it was found out that both genders employed hedges, boosters, and filler words. The data further showed the use of Cebuano words which function as hedges, boosters, and filler words by both genders.
DUE PROCESS AS A CONSTITUTIONAL MANDATE IN SELECTED PRIVATE UNIVERSITIES, CEBU CITY: BASIS FOR PURPOSED MEASURES TO IMPROVED FACULTY-ADMINISTRATION RELATIONS

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Abstract

The Constitution provides that “no person shall be deprived of life, liberty, property without due process of law”. Due process of law is a guaranty against any arbitrariness on the part of the government, whether committed by the legislature, the executive, or judiciary. Indeed, this due process clause protects all persons, natural as well as artificial. Its guarantee includes livelihood in as much as one’s job or livelihood is property, which is protected within the ambit of due process. Specifically, in the academic community where the administration, faculty and students are interacting and interdependent with each other, factions, and intrigues could not be avoided.

In view of this fact, this study tries to find out the status of due process of law as a constitutional mandate in the selected private universities in Cebu City through an in-depth analysis of the offenses committed by the faculty members in the form of serious misconduct, loss of confidence and neglect of duties. The process in the investigation of faculty members for the alleged commission and on the level of awareness on imposition of sanctions such as warning, reprimand, fine, transfer, demotion, suspension and dismissal.

Further, the study utilizes the descriptive-survey method of research utilizing the questionnaire as its main instrument of gathering data administered to the 255 faculty members of the selected universities in Cebu City, which fifty respondents come from sectarian university and 205 faculty members from the non-sectarian universities obtained through random sampling. Obtained data are tabulated using the weighted mean for the offences committed, and t-test of mean difference for the significance of perception.

The findings revealed that due process was not at all implemented as perceived by the teachers when it comes to a teacher administratively charged with serious misconduct, loss of confidence and neglect of duty. However, on the extent of implementation on the elements of due process in the investigation, the findings showed that due process was implemented. As to implementation of due process relative to penalties like warning, reprimand, fine, transfer, demotion, suspension and dismissal, due process was implemented.