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Business and Education Industry

CHALLENGES ENCOUNTERED BY SELECTED SENIOR HIGH SCHOOL STUDENT-ONLINE SELLERS OF GENERAL DE JESUS COLLEGE DURING THE ACADEMIC YEAR 2023-2024

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Abstract

The emergence and rising popularity of online selling among students became a defining feature of the pandemic era. This shift arose out of necessity, as limitations on physical interaction pushed students toward innovative ways of sustaining themselves financially. As the world adapted to remote education and work, students, driven by necessity and ingenuity, turned to online selling not only to cope with challenges but also to explore new opportunities in the digital marketplace. Thus, this study was conducted to determine the challenges encountered by student-online sellers at General De Jesus College. This study used a phenomenological research design to identify challenges affecting both the business activities and academic responsibilities of student-online sellers. The research was conducted during the School Year 2023–2024 at General De Jesus College in San Isidro, Nueva Ecija. A total of thirteen (13) participants were included in the study. Semi-structured interviews and audio recordings were used as research instruments. The data were analyzed using thematic analysis. The findings showed that the majority of participants were aged 17 to 18 years old, were female, and were mostly enrolled in Grade 11. The study revealed that participants encountered challenges such as poor time management and business competition. The results also showed that participants managed these challenges through coping strategies, including reducing the use of social media platforms to avoid time-management conflicts and offering discounts to customers to increase sales. In conclusion, this phenomenological study highlighted the challenges faced by student-online sellers at General De Jesus College during the Academic Year 2023–2024. The findings provide valuable insights into the unique experiences and coping strategies of student entrepreneurs and offer implications for both academic support and practical interventions to assist student-online sellers in balancing their studies and business activities.

Keywords: student-online sellers, senior high school students, online selling, academic challenges, coping strategies, phenomenological study

CHALLENGES ENCOUNTERED BY THE SELECTED CARINDERIA OWNERS IN BARANGAY POBLACION, SAN ISIDRO, NUEVA ECIJA AND THEIR STRATEGIES IN DEALING WITH INFLATION

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Abstract

The constantly changing rate of inflation often affects food business owners and inevitably leads to various difficulties. This phenomenon poses harm not only to the economy but also to citizens who are directly affected by it. Thus, this study aimed to explore the challenges encountered by carinderia owners and the strategies they employ in dealing with inflation. This study utilized a phenomenological method under a qualitative research approach. Semi-structured interviews supported by note-taking and audio recordings were used to gather data to understand the challenges faced by eleven (11) small carinderia owners in Barangay Poblacion, San Isidro, Nueva Ecija, as well as their strategies for dealing with inflation. Judgment sampling was used to select participants based on specific characteristics. The participants were required to be carinderia owners, at least eighteen (18) years old, have a minimum of five (5) months of business experience, and be located in Barangay Poblacion, San Isidro, Nueva Ecija. The participating carinderia owners encountered challenges such as rising costs of ingredients, low sales, competition among carinderias amid inflation, and compensating workers. To manage these challenges, they employed strategies including adjusting the amount or type of ingredients, modifying pricing, estimating food supply quantities, relying on loyal customers, treating customers well, maintaining food quality, securing backup capital, and adjusting employee schedule. The results revealed that regardless of how long the business has been operating, carinderia owners continue to experience challenges due to inflation, which causes significant difficulties. Despite these challenges, the owners were able to develop strategies and solutions to cope with and overcome the effects of inflation.

Keywords: inflation, carinderia owners, food business, small enterprises, business challenges, coping strategies

CHALLENGES ENCOUNTERED BY THE SELECTED COFFEE SHOP OWNERS OF GAPAN, SAN ISIDRO, AND CABIAO, NUEVA ECIJA DUE TO PRODUCT COMPETITION AND THEIR COPING STRATEGIES

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Gian Francis Fernandez, Diana Dimple Vicencio

Abstract

This study addresses the impact of product competition on coffee shop owners in Gapan, San Isidro, and Cabiao, Nueva Ecija by examining the challenges they encounter amid shifting consumer behavior and market trends. It aims to interpret how product competition affects these businesses in the long term. Additionally, the research investigates the business strategies employed by proprietors to navigate competition and sustain operations amid increasing competition from both new market entrants and existing competitors. The study employed a phenomenological research design to examine the challenges faced by coffee shop owners due to product competition. Purposive sampling was used to select seven (7) participants from Gapan, San Isidro, and Cabiao, Nueva Ecija. Semi-structured interviews supported by audio recordings were utilized for data collection. Frequency distribution was used to describe the profile of the respondents, while thematic analysis was applied to analyze the challenges encountered and the coping strategies used to manage competition. Based on the participants' responses, the challenges encountered due to product competition included lower-priced product offerings by competitors, the need for coffee flavor and quality development, inadequate customer visits, secluded shop locations, and difficulty keeping up with market trends in the coffee industry. The results indicated that product competition has a negative effect on business operations. To address these challenges, the owners employed strategies such as enhancing coffee flavors and quality, product innovation, social media marketing, location strategies, and expanding the services offered. The study revealed that coffee shop owners experience significant challenges in managing their businesses due to intense competition. Therefore, it is essential for owners to implement effective strategies to gain competitive advantage and achieve business sustainability. However, further research is recommended due to the limited number of participants, as a larger sample size may provide more comprehensive insights and sufficient data.

Keywords: product competition, coffee shop owners, business challenges, coping strategies, competitive advantage, market trends

CHALLENGES OF THE SELECTED SMALLHOLDER FARMERS IN CABIAO AND SAN ISIDRO NUEVA ECIJA WITH LIMITED ACCESS TO BUSINESS AND MANAGAMENT SKILLS

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Abstract

Despite the Philippines being widely recognized for its agricultural resources, many smallholder farmers continue to face numerous issues that hinder their productivity and livelihood. These challenges have consistently affected farmers' ability to sustain and improve their operations. Thus, this study aimed to identify the challenges encountered by smallholder farmers due to limited access to markets and management skills. This study employed a phenomenological research method using a qualitative approach. Semi-structured interviews served as the primary data collection strategy and were supported by note-taking and audio recordings. Participants were identified through purposive sampling based on specific criteria and a preliminary questionnaire. The study focused on twenty (20) selected smallholder farmers in Cabiao and San Isidro, Nueva Ecija, who relied solely on their own labor and resources to produce food or other agricultural goods. Most participants were between 41 and 60 years old, all twenty farmers were male, and the majority had been engaged in farming for 21 to 30 years. The findings revealed several challenges encountered by the participants, including issues with middlemen, negative effects of the Rice Tariffication Law, lack of managerial skills and resources, and insufficient government support. The results also showed that some farmers did not actively address these difficulties, while others coped by obtaining information from fellow farmers, attending seminars, and borrowing money. Participants further recommended that the Rice Tariffication Law be repealed, formal lending systems be established, government support be strengthened, and that the prices of agricultural inputs be reduced while grain prices are increased. The study concluded that smallholder farmers lack adequate management skills, which limits their access to markets and affects overall productivity. Developing management skills was identified as essential for improving market access and enhancing farm management efficiency. Strengthening these competencies may lead to better outcomes for smallholder farmers and improved sustainability of their farming practices.

Keywords: smallholder farmers, limited market access, management skills, rice tariffication law, middlemen, agricultural challenges

DETERMINE THE PRACTICAL TIPS: MARKETING STRATEGY OF SELECTED STREET VENDORS IN BALE SAN VICENTE, GAPAN CITY, NUEVA ECIJA, GAPAN NIGHT MARKET

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Abstract

Street vendors encounter various challenges in operating their businesses. Thus, this study aimed to explore how street vendors address these challenges and identify the marketing strategies they employ. The primary objective of the study was to determine the practical marketing strategies used by selected street vendors in the Bale San Vicente Night Market in Gapan City, Nueva Ecija. This study employed a quantitative research approach using a descriptive research design to describe and examine the marketing strategies of street vendors. A total of fifteen (15) street vendors selling street food at the San Vicente Gapan City Night Market Plaza served as the respondents of the study. Semi-structured interviews were used to gather relevant information, supported by face-to-face interviews and audio recordings to capture the perceptions of the respondents. Participants were selected based on specific criteria established by the researchers. The findings revealed that out of the fifteen respondents, twelve were female and three were male. In terms of business type, street food vending was the most common, with most vendors having one to ten years of experience. The study also identified challenges encountered by the vendors, including low income during rainy weather and the need to relocate business carts. Furthermore, the results showed that street vendors primarily used voice-based marketing as their main promotional strategy. The study identified the demographic profile of the respondents and confirmed that street food vending was the predominant business type among the participants. It also revealed varying levels of experience in managing their businesses, as well as common challenges such as reduced income during unfavorable weather conditions and cart relocation. Notably, the findings highlighted the reliance of street vendors on voice-based marketing as a practical and accessible strategy. These results demonstrated the resilience and adaptability of street vendors in overcoming challenges and promoting their businesses within their communities.

Keywords: street vendors, street food, marketing strategies, informal business, night market

DIFFICULTIES ENCOUNTERED BY THE SELECTED ONLINE SELLERS FOR HAVING NEGATIVE REVIEWS ON THEIR PRODUCT IN CABIAO AND SAN ISIDRO NUEVA ECIJA

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Abstract

Online reviews play a crucial role in influencing consumers' purchasing decisions due to their accessibility and ease of use. However, negative reviews often have a stronger impact on consumer behavior than positive feedback. This study highlighted the difficulties encountered by online sellers who receive negative reviews on their products. This study utilized a qualitative phenomenological research design to explore the experiences of online sellers who received negative feedback in Cabiao and San Isidro, Nueva Ecija. The research focused on aspects such as product types, online platforms used, and demographic profiles of sellers. Purposive sampling was employed to select thirteen online sellers as participants. Data were gathered through semi-structured interviews, face-to-face interviews, and audio recordings, from which themes were developed. The findings revealed that Facebook was the preferred platform for selling clothing products among most respondents aged 19 to 30, primarily due to its wide user base. However, negative reviews and customer complaints were found to discourage potential buyers and create challenges for sellers in meeting customer expectations. These issues often led to consumer dissatisfaction and disconfirmed expectations. The study also found that adopting creativity and innovation was an effective strategy for online sellers in addressing consumer concerns. The study demonstrated that consumer dissatisfaction and unfulfilled expectations have a direct impact on the performance of online sellers' businesses. The findings suggested that online sellers can mitigate the effects of negative reviews by implementing creative and innovative strategies, such as improving product quality and using negative feedback as motivation for business improvement.

Keywords: online reviews, online sellers, consumer dissatisfaction, negative feedback, digital commerce

I-DIGITAL MO NA'YAN: THE IMPACT OF FINTECH ADOPTION AS OBSERVED BY A SELECTED GROUP OF LOCAL RETAIL, HOME-BASED, AND ONLINE BUSINESS OWNERS IN CABIAO AND GAPAN, NUEVA ECIJA

Stephanie Claire Concepcion, Khirstein Dayao, Beatriz Lores, Olive Beatrice Palon, Jashlyn Nicole Diaz, Jaycee Renia, Aizel Marie Castro

Abstract

Financial technology, commonly known as FinTech, has significantly transformed the financial industry. FinTech innovation has rapidly expanded in recent years, particularly in the Philippines, resulting in wide-ranging effects on economic activities. This study aimed to investigate how FinTech innovation influences the adoption of financial technology services among small local business owners in Cabiao and Gapan, Nueva Ecija. The study employed a descriptive research design using qualitative methods to examine the effects of FinTech on small business owners in selected areas of Cabiao and Gapan. Non-probability purposive sampling was used to select twenty-three participants based on predetermined criteria. Data were gathered through semi-structured interviews, note-taking, and voice recordings to obtain in-depth insights into FinTech adoption among business owners, emphasizing contextual understanding and interpretation. The findings revealed that most business owners were between 41 and 50 years old, with retail businesses comprising the majority of the business category. The participants had been operating their businesses for one to five years, with FinTech adoption beginning one to three years prior, coinciding with the emergence of the pandemic. GCash was identified as the leading FinTech application used by the respondents. Practical uses such as digital remittances, electronic loading, and electronic billing demonstrated the participants' willingness to adopt these technologies. The results reflected both positive and negative impacts of FinTech adoption. Positive impacts included faster transactions, increased efficiency, convenience, expanded market reach, time savings, and additional income. Conversely, negative aspects involved transaction and system issues, concerns related to safety and data privacy, and challenges with internet connectivity, which affected the usage of FinTech applications. The results demonstrated that local business owners have increasingly adopted FinTech mobile applications to keep pace with the growing digital economy. The practical benefits offered by FinTech applications encouraged their adoption, despite the presence of both positive and negative impacts associated with their use.

Keywords: fintech, gcash, mobile applications, small business owners, adoption, impact

IMPACT OF SCHOOL-BASED FINANCIAL LITERACY ON THE SPENDING HABITS AS PERCEIVED BY SELECTED GRADE 12 ABM STUDENTS OF GENERAL DE JESUS COLLEGE DURING THE ACADEMIC YEAR 2023-2024

Steven Denmark Flores, Alvin Jorge Tolentino, Hayacinth Jean Daquiz, Jewel Anne Victorio, Caszandra Nicole Galang, Kate Ashley Empaynado, Aizel Marie Castro

Abstract

Effective money management is critical, particularly as students prepare to enter the workforce. Financial education at a young age is essential, as it helps develop long-term financial habits. Educational institutions play an important role in equipping students with necessary skills by providing financial education. Despite global efforts, the Philippines continues to have relatively low financial literacy rates. This study aimed to investigate the impact of school-based financial literacy education on spending habits as perceived by selected Grade 12 ABM students at General de Jesus College. The study utilized a descriptive research design and employed qualitative methods, specifically semi-structured interviews, to gather data from selected Grade 12 ABM students. Quota sampling was used to select participants from diverse perspectives. The semi-structured interviews explored participants' views on financial education and recent spending decisions. Systematic data collection focused on perceptions of financial literacy and its influence on spending behavior, while adherence to ethical guidelines ensured the integrity of the findings. The analysis showed that specific subjects significantly influenced students' spending habits, particularly Fundamentals of Accountancy and Business Management (FABM) and Business Finance. Positive impacts included improved budgeting and investing skills and more prudent handling of financial resources. Participants also perceived that financial literacy programs helped them improve decision-making, reduce impulsive spending behavior, strengthen saving habits, and prioritize needs over wants, leading to wiser financial choices. The findings indicate that particular subjects within the school's financial education program were effective in influencing students' spending habits. The results further suggest that school-based financial literacy programs play a significant role in shaping the spending behaviors of students at the senior high school level.

Keywords: financial literacy, students, spending habits, school-based education, financial behavior

MARKETING STRATEGIES EMPLOYED BY THE SELECTED COFFEE SHOPS IN SAN ISIDRO, CABIAO, AND GAPAN CITY, NUEVA ECIJA

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Abstract

Every business requires appropriate and effective marketing strategies to sustain its operations. Although coffee shops have been steadily growing in provincial areas of the Philippines, some still fail and close within a year of operation. In this context, this research focused on identifying the marketing strategies employed by coffee shops and examining their impact on business sustainability. Specifically, the study aimed to determine the marketing strategies used by coffee shops to sustain their operations and assess their effects on the respective businesses. The study employed a descriptive research design using a qualitative approach. A total of eleven (11) coffee shops in San Isidro, Cabiao, and Gapan City, Nueva Ecija were selected through purposive sampling. Data were collected using semi-structured interviews, supported by audio recordings and note-taking. Based on the participants' profiles, most of the coffee shops had been operating for one to two years. The findings revealed that the most commonly employed marketing strategies included: (1) offering good-quality products, (2) utilizing social media marketing, (3) conducting promotional activities, (4) maintaining affordable pricing, (5) choosing strategic locations, and (6) creating an inviting ambiance. These strategies were reported to have a positive impact on the coffee shops' operations. The results indicated that the length of time the coffee shops had been operating did not influence the marketing strategies they implemented. Moreover, the marketing strategies employed contributed positively to business performance by attracting new customers and fostering customer loyalty.

Keywords: marketing strategies, coffee shops, business impact, product quality, affordable pricing, promotion

NAVIGATING SINGLE PARENTS' JOURNEY: DIFFICULTIES ENCOUNTERED BY THE SELECTED SINGLE PARENTS BUSINESS OWNERS IN STO. CRISTO, AND SAN ROQUE, NUEVA ECIJA AND THEIR COPING STRATEGIES

Kharel Bequillo, Sophia Bianca Cueto, Juline Torres, Denise Cyrel Hernandez, Mica Ella Samin, Lian Matthew Mangulabnan, Jamez Eidrish Valerio, Mark Angelo Alquizar, Vil Daril Santos

Abstract

Single parents who own businesses face distinct challenges in balancing the demands of entrepreneurship with the responsibilities of parenthood. This study aimed to investigate the specific difficulties encountered by single-parent business owners and to determine the coping strategies they employ to overcome these challenges. This study utilized a qualitative research approach with a phenomenological design to gain an in-depth understanding of the experiences of single-parent business owners. Semi-structured interviews were conducted with selected single parents who owned their own businesses. After data collection, the responses were reviewed and analyzed to generate relevant themes. The findings revealed that most of the participants were female and primarily aged between 25 and 45 years old. The majority of respondents were engaged in food-related businesses. The study identified several challenges encountered by the participants, including time management difficulties and financial strain. Additionally, the findings showed that participants employed various coping mechanisms, particularly faith and self-belief, to manage these challenges. The results highlight the significant challenges faced by single-parent business owners, particularly in managing time and finances. Despite these difficulties, the participants relied on faith and self-belief as key coping strategies to navigate their entrepreneurial and parental responsibilities.

Keywords: single-parent entrepreneurs, time management, financial strain, faith, self-belief

STAFF MOTIVATION AND ITS IMPACT TO EMPLOYEE PRODUCTIVITY AND RETENTION AS PERCEIVED BY THE SELECTED LOCAL GROCERY STAFF IN JAEN AND CABIAO, NUEVA ECIJA

Cristel Shane Dela Cruz, Janlen Eirol Quilantang, Renz Jorge Dominic Hernandez, Samantha Nicole Espinoza, Zia Jose, Patricia Faith Alino, Aizel Marie Castro

Abstract

Motivation is a key factor that drives individuals to work. Numerous studies have examined employee motivation across broader demographics. In this study, the researchers examined the perceptions of local grocery store employees regarding staff motivation and its impact on employee productivity and retention. This qualitative study utilized a descriptive research approach to examine employee motivation in local grocery stores and its impact on productivity and retention. Purposive sampling, a non-probability sampling method, was used to select eighteen (18) local grocery store employees from three (3) stores in Jaen and Cabiao, Nueva Ecija. The participants responded to a series of semi-structured interview questions. The results revealed that most participants were male, aged between 26 and 30 years, employed as cashiers, and had worked in the company for one to five years. The identified motivators provided by the company included loans, insurance, health benefits, monetary rewards, and a positive workplace environment. Despite differences in demographic profiles, the motivations of local grocery store employees were found to be largely similar, as the company offered consistent benefits to its staff. The findings also indicated that most grocery store employees were satisfied with the motivational practices provided by their employer. The findings revealed that extrinsic rewards significantly enhanced the productivity of local grocery store staff. Employee motivation had a substantial impact on productivity, which contributed to employee retention within the company. Employees tended to remain in their organizations because they were satisfied with the types of motivation and benefits provided by their employer.

Keywords: staff motivation, employee productivity, employee retention, grocery store employees, workplace motivation

CHALLENGES OF SELECTED FARMERS IN THE SELECTED MUNICIPALITIES OF DISTRICT IV - NUEVA ECIJA IN THE FACE OF RISING AGRICULTURAL INPUT COSTS: COPING STRATEGIES

Armareign Bautista, Mara Cassandra Cainglet, Ashley Kaylee Duenas, Clarence Sta Maria, Juan Miguel Padilla, Earl Justin Sibal, Sandra Vicencio, Alexis Santiago

Abstract

The agricultural sector in the Philippines is facing significant challenges due to high production costs, rising food prices, and over-reliance on imports. According to a report by The New Humanitarian (2023), agriculture remains crucial for food production, employment, and economic growth, making the current crisis a pressing concern for farmers and policymakers alike. This phenomenological study aimed to determine the experiences of farmers in Nueva Ecija regarding the challenges they face and the coping strategies they employ in response to rising agricultural input costs. The study also identified the participants' years of farming experience, possible solutions, and recommendations. Focus group discussions were conducted with farmers from selected municipalities in District IV, Nueva Ecija, all of whom had at least ten years of farming experience. Participants responded to a set of semi-structured interview questions supported by audio recordings. Purposive and convenience sampling techniques were used to select participants, and thematic analysis was applied to analyze the collected data. The findings revealed that the majority of participants had been engaged in farming for 41 to 50 years. Farmers reported experiencing various challenges throughout their years of work, particularly the increasing prices of agricultural inputs. Despite these difficulties, farmers expressed strong reasons for continuing their livelihood. As rising input costs contributed to financial strain, farmers implemented various coping strategies to sustain their farming operations. The findings indicated that farmers are facing significant financial challenges due to the continuous increase in agricultural input costs, making it difficult to afford essential farming supplies. As a result, farmers have adopted different strategies to manage their farms and cope with these rising expenses. Overall, the study demonstrated that farmers are able to employ various coping mechanisms to navigate the challenges posed by increasing agricultural input costs.

Keywords: agriculture, input costs, farmers, financial challenges, coping strategies

EXPLORING ORANGE PEEL WASTE AS A RENEWABLE RESOURCE FOR BIOPLASTIC PRODUCTION

Ryssa Garcia, Charice Ann Garcia, Althea Ysabel Cara, Aprilyn Villeza, Khizzle Franco

Abstract

The primary objective of this study was to create bioplastic from food waste material. In this context, orange peel was selected due to its abundance and high cellulose content. The research aimed to explore the effectiveness of orange peel as a viable material for bioplastic production and to determine its suitability as an environmentally friendly and renewable alternative to conventional plasticizers. The researchers employed an experimental research design using orange peels as the primary material. The study focused on identifying the appropriate procedure and determining the optimal amount of orange peel required to produce bioplastic. The researchers conducted an experiment and, after three trials, obtained precise measurements and gained valuable insights relevant to bioplastic production. Based on the findings, the produced bioplastic was recommended due to its recyclable nature. The results indicate that utilizing orange peel as a bioplastic material is effective, as it offers a sustainable alternative to conventional plastic and contributes to environmental preservation. This bioplastic variant demonstrates eco-friendly characteristics and is derived from renewable resources, making it a more favorable option compared to traditional plastic.

Keywords: orange peel, bioplastic production, food waste utilization, renewable resources, sustainable materials

EXPLORING THE CHALLENGES IN THE EXAMINATION PROCESS OF SELECTED MALE AND FEMALE GRADE 11 STEM STUDENTS AT GENERAL DE JESUS COLLEGE: A PHENOMENOLOGICAL STUDY

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Maria Nina Garcia, Rhey Christoff Samson, Micheal Adrian Abanes

Abstract

This research paper explores the challenges faced by Grade 11 STEM students during examinations at General De Jesus College. It delves into specific challenges encountered, such as mental blocks and unexpected exam content, as well as the strategies employed by students to cope with these challenges. The study employed a qualitative phenomenological approach and gathered data through semi-structured interviews with both male and female students. The findings revealed challenges encompassing various aspects, including time management, exam content preparation, stress management, and emotional well-being. The strategies employed by students in their examination preparation process reflected a diverse range of study techniques, indicating individual preferences and learning styles, with apparent differences based on the participants' sex. Based on the findings of this study, the multifaceted challenges experienced by Grade 11 STEM students throughout the examination process were clarified. Before, during, and after examinations, these students encountered different obstacles related to time management, exam content preparation, stress management, and emotional well-being.

Keywords: examination challenges, grade 11 stem students, coping strategies, study techniques, phenomenological study

BEHIND THE DECISION: INFLUENTIAL FACTORS SHAPING STRAND SELECTIONS AMONG SELECTED GRADE 11 STUDENTS AT GENERAL DE JESUS COLLEGE

John Matthew Lazo, Ashley Donnalyn Jose, Venus Francisco, Mark Alexis De Guzman, John Kurby Joson, Eunice Palon, Christ Vyniel Galang, Aizel Marie Castro

Abstract

Choosing a senior high school strand is one of the most challenging decisions junior high school students face. This process can be stressful for young learners, as various factors influence career exploration during adolescence. Identifying and acknowledging these factors underlying career choices is essential. Thus, this study was conducted to determine the factors influencing strand selection among selected Grade 11 students at General De Jesus College. This study used a descriptive qualitative research design to identify factors influencing strand selection at General De Jesus College. The research was conducted during the School Year 2023–2024 at General De Jesus College in San Isidro, Nueva Ecija. The researchers interviewed fifteen (15) participants from different strands. Semi-structured interviews and audio recordings were used as research instruments. Data were analyzed using thematic analysis. The study found that the majority of the participants were STEM students aged 16 to 17 years old. The key findings highlighted the multifaceted nature of the decision-making process regarding strand selection. Participants' choices were influenced by several factors, including alignment with their intended college course, personal preferences, family expectations, and peer influence. The study underscores the importance of considering diverse influences when understanding students' strand selection processes. Furthermore, the findings have implications for curriculum development, career counseling, and parental involvement in educational decision-making. Overall, this research contributes to a deeper understanding of the complex dynamics surrounding strand selection among Grade 11 students and offers insights into improving educational experiences and outcomes.

Keywords: strand selection, senior high school, decision-making, influencing factors, grade 11 students

CHALLENGES AND COPING MECHANISMS OF SELECTED GRADE 11 STUDENTS OF GENERAL DE JESUS COLLEGE IN BALANCING ACADEMICS AND EXTRACURRICULAR ACTIVITIES

Grace Ador Dionisio, Lorin Faye Manlapaz, Kim Carlo Herrera, Maxene Argamoza, Piel Juliah Llorente, Iris Leonie Ignacio, Jahnaya Danlyn Nepomuceno, Alexis Santiago, Ace Buenaventura

Abstract

The objective of this research was to determine the challenges and coping mechanisms of selected Grade 11 students at General De Jesus College during the School Year 2023–2024. These students were engaged in extracurricular activities while simultaneously managing their academic responsibilities. This study utilized a phenomenological research method aligned with the objectives of the study. Semi-structured, in-depth interviews accompanied by audio recordings were conducted to obtain meaningful insights from the participants. The results showed that most participants belonged to the Science, Technology, Engineering, and Mathematics (STEM) strand at General De Jesus College. The findings identified several challenges faced by the participants, including poor time management, missed lessons or activities, arriving home late, physical issues, nervousness, and disrupted sleeping schedules. The study also revealed coping mechanisms such as creating schedules or planners, improving time management skills, family influence on motivation, skill enhancement and development, motivation, building confidence and public exposure, engaging in hobbies, personal growth, emotional regulation, and scaling activities. However, some participants were still struggling to balance extracurricular activities and academic responsibilities. The findings indicated that most participants were from the STEM strand and commonly experienced challenges related to time management while participating in extracurricular activities. Many participants identified creating a schedule or planner as an effective coping mechanism for balancing academic and extracurricular commitments. According to P. Buckley et al. (2018), 32% of participants acknowledged the time commitment and tension between extracurricular activities and academic performance, citing scheduling issues and stress. This study aimed to identify both the problems and possible solutions related to balancing students' academic and extracurricular responsibilities. One limitation of the study was the lack of a wider population, which may have limited broader insights into students engaged in extracurricular activities.

Keywords: academic balance, extracurricular activities, coping mechanisms, time management, grade 11 students, phenomenological study

CHALLENGES OF THE SELECTED GRADE 11 STUDENT-JEEPNEY COMMUTERS OF GENERAL DE JESUS COLLEGE AND ITS EFFECT ON THEIR ACADEMIC PERFORMANCE

Quezhia Zyrel Vicente, Geibrielle Anne Baldazo, Maria Angela Francisco, Princess Savina Joson, Mark Joseph Lustre, Ronald Dave Magtalas, Lucky Roe Quilantang, Jahnet Ariane Figueroa

Abstract

As stated by Pante (2016), public transportation in Philippine urban areas accounts for 80 percent of overall ridership and trips, with 40 percent served by jeepneys. According to Campisi et al. (2022), public transportation increased the likelihood of individuals being negatively affected by the pandemic in the long term, while opportunities emerged to increase the modal share of active transport. Jamil et al. (2022) reported that traffic-related challenges among student commuters can negatively affect academic performance, as the stress and time required for commuting may take a toll on students. Meanwhile, Salaver (2023) emphasized that jeepney transportation offers several benefits, with affordability being one of the most significant advantages for commuters in the Philippines. This study used qualitative research, specifically a descriptive method, to examine the challenges encountered by selected student jeepney commuters and their effects on academic performance. Data were gathered from fifteen (15) selected Grade 11 students of General De Jesus College, located on Vallarta Street, San Isidro, Nueva Ecija. Participants were selected using purposive and quota sampling techniques. Semi-structured interviews supported by audio recordings were used to collect the data. The results showed that the students who used jeepneys as their primary mode of transportation were mostly female, belonged to the Science, Technology, Engineering, and Mathematics (STEM) strand, and resided in Cabiao, Nueva Ecija. The study identified several commuting challenges, including heavy traffic, late arrival at school or class, and arriving home late after school. Furthermore, the findings revealed that these commuting challenges negatively affected the students' academic performance. Due to these difficulties, participants reported missing class discussions and activities, experiencing a lack of focus, and having increased absenteeism. The study also identified various coping strategies employed by the participants, such as practicing time management, engaging in entertainment activities, seeking help from classmates, and meditating. The findings revealed that Grade 11 student jeepney commuters experienced significant challenges, including heavy traffic, late arrival at school, returning home late after school, and high levels of fatigue and stress. These challenges often caused students to miss class discussions and activities, leading to reduced focus and recorded absences. However, the study also highlighted several coping strategies used by students, including effective time management, engaging in entertainment such as listening to music or using mobile phones, seeking support from classmates or friends, and practicing meditation.

Keywords: academic performance, commuting challenges, coping strategies, jeepney commuters, mode of transportation

DIFFICULTIES ENCOUNTERED BY THE SELECTED SENIOR HIGH SCHOOL STUDENTS OF GENERAL DE JESUS COLLEGE DUE TO ACADEMIC STRESS

Sophia Alyssa Rasdas, Fea Victorio, Elyza Manalastas, Jazzmin Claire Nino,
Ruben Bequillo, Dave Martin, Alexis Santiago

Abstract

This study aimed to understand the difficulties encountered by senior high school students at General De Jesus College as a result of academic stress. A phenomenological research approach was employed to explore the lived experiences of senior high school students at General De Jesus College who were experiencing academic stress. Semi-structured interviews were conducted with fifteen (15) students participating. The interviews were audio-recorded and analyzed through careful interpretation to gain an in-depth understanding of the participants' responses. The findings revealed that the majority of participants experienced various difficulties associated with academic stress, including lack of sleep, burnout, challenges in time management, low motivation, difficulty focusing, and anxiety. Despite these challenges, students reported using several coping mechanisms to manage academic stress, such as rest and relaxation techniques, strategies to improve focus and learning, self-motivation techniques, and effective time management and organizational skills. The study highlighted that senior high school students at General De Jesus College face significant challenges due to academic stress. However, the findings also demonstrated students' resilience, as they actively employed different coping strategies to manage stress. These results emphasized the importance of providing adequate support systems for students experiencing academic stress while also encouraging the development of effective personal coping mechanisms.

Keywords: academic stress, student difficulties, coping mechanisms, senior high school students, educational challenges

DIFFICULTIES FACED BY THE SELECTED UNEMPLOYED COLLEGE GRADUATES IN GENERAL DE JESUS COLLEGE

Rhianne Adriano, Allishter Balondo, Thovher Capala, Lebron James Dizon, Ashley Nicole Para, Roy Melvin Pengson, Maribeth Pineda, Janabelle Yumul, Aizel Marie Castro

Abstract

Unemployment among college graduates is a pressing global issue with significant implications for individuals, economies, and societies. Despite attaining higher education, many graduates experience difficulties in securing employment, resulting in underutilized skills and potential economic stagnation. Thus, this study was conducted to determine the factors contributing to the difficulties experienced by selected unemployed college graduates of General De Jesus College. This study employed a phenomenological research design to identify the factors affecting the difficulties encountered by unemployed college graduates. The research was conducted during the School Year 2023–2024 at General De Jesus College in San Isidro, Nueva Ecija. Data were collected using semi-structured interviews supported by audio recordings. Thematic analysis was applied to analyze the data. A total of ten (10) participants took part in the study. The findings revealed that most participants were female and aged between 20 and 30 years old. Participants reported experiencing financial difficulties, such as being unable to purchase basic needs and personal wants. Additionally, many expressed fear and hesitation in communicating with others due to their unemployed status. Overall, the study contributed to a deeper understanding of the barriers to employment faced by college graduates and provided insights into possible areas for intervention and support. The findings emphasized the need for targeted interventions to address the specific difficulties experienced by unemployed college graduates. These results have important implications for support services, policymakers, and educational institutions in developing programs that enhance employability and provide adequate psychosocial and career support.

Keywords: unemployment, college graduates, employment difficulties, lived experiences, phenomenological study

EFFECTS OF CHATGPT PERCEIVED BY SELECTED GRADE 10 STUDENT OF GENERAL DE JESUS COLLEGE A.Y 2023-2024

Joycel Ann Gabriela Flores, Kimberly Ann Bantug, Elgian Castillo, Ashley Dimacali, Danielle Anne Noveda, Charles Iverson Santiago, Kurt Harry Santiago, John Sean Vicencio, Alexis Santiago

Abstract

This study aimed to explore the effects of ChatGPT as perceived by selected Grade 10 students at General De Jesus College during the Academic Year 2023–2024. A descriptive research design was employed to examine students' perceptions of the tool and its influence on their academic experiences. Data were collected through semi-structured interviews supported by audio recordings. Thematic analysis was used to systematically analyze and interpret the participants' responses. The findings revealed that students used ChatGPT for various purposes, including referencing information, completing academic tasks, checking grammar, generating reviews, supporting research activities, summarizing texts, acquiring new knowledge, and solving mathematical problems. However, some participants expressed concerns regarding fairness and emphasized that while ChatGPT is helpful, it should not be relied upon as a primary learning tool. The results indicated that the use of ChatGPT had mixed effects on student behavior. Some students reported negative outcomes, such as increased laziness and dependence on the tool, while others described positive experiences, including improved study habits and enhanced learning skills. Overall, the findings suggested that although ChatGPT offers academic support, its negative effects—particularly the tendency to promote dependence and reduced effort—were perceived to outweigh its positive contributions to learning.

Keywords: chatgpt, artificial intelligence, student perception, academic behavior, positive and negative effects

EXPERIENCES OF THE SELECTED GRADE 11 STUDENTS OF GENERAL DE JESUS COLLEGE IN USING TIKTOK AND ITS EFFECT ON THEIR BEHAVIOR DURING SCHOOL YEAR 2023-2024

Trixie Teheyo, Beverly Nicole Bagan, Abbigail Fernando, Jan Andrei Fernando, Harry Gilbang, Aeron Aizen Santillan, Jahnet Ariane Figueroa

Abstract

According to Mekler (2021), TikTok is a widely used application that enables users to create and share short-form videos. Many individuals view and contribute to the vast amount of content on TikTok, spending a considerable amount of time on the platform. Aslam (2023) reported that out of the 4.48 billion regular social media users worldwide, 22.32% are TikTok users. Numerous studies have examined the effects of TikTok on academic performance and mental health. However, there remains a lack of research focusing on the lived experiences of TikTok users and the behaviors that may be influenced by using the application. Hence, this study aimed to identify the experiences of selected Grade 11 students of General De Jesus College in using TikTok and its effects on their behavior. This study employed a qualitative research design using a phenomenological approach. To collect data, the researchers selected twenty (20) Grade 11 students from General De Jesus College who actively use TikTok. The participants were chosen through quota sampling. Data were gathered using semi-structured interviews supported by audio recordings. The results showed that the majority of the participants were female TikTok users. Fourteen (14) out of twenty (20) participants were 16 years old. In terms of screen time, ten (10) participants reported spending between one (1) to five (5) hours on TikTok daily. The study revealed that TikTok provides both positive and negative experiences for student users. Positive experiences included providing entertainment and relieving stress. In contrast, negative experiences included losing track of time, encountering technical problems, and exposure to toxic TikTok culture. Furthermore, the findings indicated that TikTok influenced the behavior of the participants. Through TikTok use, participants reported becoming more confident, sociable, lazy, cooperative, creative, and respectful. The findings highlight the experiences of selected Grade 11 students of General De Jesus College while using the TikTok application, as well as the behaviors they adopted as a result of its use. TikTok is widely utilized by students today and can offer both positive and negative experiences. Therefore, this study emphasizes the importance of proper and responsible utilization of the TikTok application to manage its effects on students' behavior.

Keywords: tiktok, student behavior, social media use, grade 11 students, user experiences

FUTURISTIC AI: PERCEPTIONS OF SELECTED GRADE 12 STEM STUDENTS AT GENERAL DE JESUS COLLEGE ON USING CHATGPT FOR ACADEMICS

Sophia Louise Obal, Rigel Kent Abaigar, Ysaye Justine Lopez, Hueracio Yuri Mercado, Aaliyah Jaezelle Ganapin, Janelle Mercado

Abstract

Technology has become increasingly vital in today's society, particularly in the field of education. While it does not replace traditional learning strategies, it supports them by enhancing students' technological literacy and preparing them for the use of artificial intelligence. This study aimed to explore the opinions, beliefs, and potential issues perceived by students when using AI-powered tools such as ChatGPT in their learning processes. A phenomenological research design was employed in this study. Using a thematic approach, the perspectives of selected participants were examined. Thirty Grade 12 STEM students at General de Jesus College responded to a set of semi-structured interview questions. Data were collected through quota sampling and supported by audio recordings to ensure accuracy and avoid misinterpretation of the gathered responses. The findings revealed that many students who participated in the study used ChatGPT for academic purposes, particularly to generate ideas for essays and to understand complex topics. However, students also perceived ChatGPT as an unreliable source of information due to the lack of supporting evidence in some responses. Additionally, participants indicated that excessive reliance on ChatGPT could lead to laziness and increase the risk of plagiarism. The findings demonstrated that ChatGPT can be valuable for academic use, such as providing essay prompts, simplifying tasks, and serving as a foundation for academic writing. Despite these benefits, the study emphasized the importance of responsible AI use among students to avoid potential drawbacks, including inaccurate information and excessive dependence on artificial intelligence, which may promote academic laziness.

Keywords: chatgpt, artificial intelligence, education, student perceptions, academic use

GROWING PRESENCE OF ARTIFICIAL INTELLIGENCE: EFFECTS OF LARGE LANGUAGE MODELS ON ACADEMIC PERFORMANCES AND ETHICAL RESPONSIBILITIES IN SELECTED GJC GRADE 11 STUDENTS

Bianca Mabelle Ladaban, Angel Paez, Annah Katrina Mamburam, Vince Ezekiel Yabut, Paul Marshall Valdez, Ezekiel Manuel Amolar, Vil Daril Santos

Abstract

Artificial intelligence is becoming increasingly widespread across the globe, making various aspects of life more convenient for many individuals. One area significantly influenced by this advancement is education. Large Language Models (LLMs) are a form of artificial intelligence frequently used in various fields, particularly in education. As the number of users of these applications and websites continues to grow, ethical concerns associated with their use also increase. This study therefore sought to examine the effects of large language models on students' academic performance as well as their ethical responsibilities. This study employed qualitative research methods, specifically a descriptive research design, to explore practical issues related to the use of large language models. Data were collected through face-to-face interviews using semi-structured questions, supported by audio recordings. To determine how many students used any form of LLM for academic purposes, participants were identified by visiting classrooms and asking students to indicate their usage by raising their hands. The research showed that the age range of the participants was sixteen to seventeen years old, with sixteen identified as the average age of students using LLMs. The majority of these students identified as male. In terms of subject usage, students most commonly used LLMs in research-related and English-focused courses that required extensive essay writing, with most respondents reporting the use of ChatGPT. The findings revealed that LLMs help students understand unfamiliar terms, improve the quality of their academic work, and make school tasks easier to complete. Additionally, respondents indicated that when they act in an ethical and responsible manner, they become more conscious and aware of the unverified applications and websites they use. The study indicates that large language models can help students work more efficiently and produce higher-quality outputs by expanding their vocabulary, particularly in understanding uncommon terms. The findings also show that students who adopt an ethical and responsible approach to using LLMs become more cautious and discerning about the reliability of the websites and applications they access. This highlights the role of ethical responsibility in guiding students' effective and appropriate use of artificial intelligence in academic settings.

Keywords: large language model, education, academic performance, ethical responsibilities, artificial intelligence

INTRINSIC AND EXTRINSIC MOTIVATIONS OF SELECTED GENERAL DE JESUS COLLEGE FACULTY MEMBERS TOWARDS THEIR TEACHING PERFORMANCE

Denise Irish Manalastas, Rhaniel Abellon, Noela Andrea Constantino, Chelzy Khail Frias, Lei Arvee Joson, Angel Joy Ramirez, John Vincent Sario, Allyzah Marinelle Tadeo, Vil Daril Santos

Abstract

Building on existing literature, this study examined the intrinsic and extrinsic motivations of General de Jesus College (GJC) faculty members and their implications for teaching performance. The research aimed to contribute to a deeper understanding of motivational dynamics within General de Jesus College and to provide actionable recommendations for fostering a motivated and high-performing faculty. This study employed a qualitative approach using a descriptive research design, focusing on the characterization of phenomena and their attributes. Purposive sampling was utilized to select faculty members from General de Jesus College who met specific criteria. Data were collected through face-to-face interviews using a semi-structured format, supported by audio recordings, to explore intrinsic and extrinsic motivations influencing teaching performance. The study focused on participants who were primarily aged 51 to 60, with a notable prevalence of female faculty members. Most participants had been teaching at the high school level for 20 to 40 years. The findings indicated that female teachers were more motivated than their male counterparts. The study further revealed that intrinsic motivations included passion for teaching, prior teaching experience, and the desire to impart knowledge to students. In contrast, extrinsic motivations centered on incentives such as salary and recognition. Intrinsic motivation, driven by student satisfaction and care, played a crucial role in teaching performance. However, extrinsic factors, particularly salary increases and recognition, also significantly influenced teaching performance, with many faculty members identifying these as primary motivators. The findings demonstrate that intrinsic motivations, such as passion for teaching, have a lasting impact on students' growth and learning. Experienced educators contribute valuable knowledge, skills, and enthusiasm that enrich both the educational field and students' lives. Additionally, the act of imparting knowledge and enthusiasm was found to be highly rewarding for educators. On the other hand, extrinsic motivations, particularly salary, also influenced teaching effectiveness, as financial compensation supports educators' personal and family needs. Furthermore, recognition was shown to enhance teacher morale, motivation, and learning outcomes.

Keywords: motivation, intrinsic motivation, extrinsic motivation, teaching performance, faculty motivation

MOBILE LEARNING APPLICATIONS AND THEIR EFFECTS ON THE LEARNING ENGAGEMENT AND ACADEMIC PERFORMANCE OF THE SELECTED GRADE 11 STUDENTS OF GENERAL DE JESUS COLLEGE: A PHENOMENOLOGICAL STUDY

Kelly Margarette Posadas, Jenina Arielle Cabrera, Martene Luke Corpuz,
Ambrichirus Lacanilao, Miguela Tolentino, Dr. Ma. Cristina Ravela

Abstract

Mobile learning applications (MLAs) have significantly transformed the educational landscape by providing alternative and personalized learning opportunities. These applications positively influence students' learning engagement and motivation, which may contribute to improved academic performance. However, there remains a lack of locally conducted qualitative studies that explore the effects of mobile learning applications on secondary education students, particularly in terms of user experience. Therefore, this phenomenological study aimed to examine the effects of mobile learning applications on the learning engagement and academic performance of selected Grade 11 students of General de Jesus College in San Isidro, Nueva Ecija. This study employed a qualitative phenomenological research design using audio-recorded semi-structured interviews. A purposive sampling technique was utilized to select the participants. The collected data were analyzed and interpreted through thematic analysis. The results revealed that the proper utilization of mobile learning applications enhanced students' motivation and learning engagement, increased the frequency of study sessions, improved academic performance, and expanded students' knowledge. However, improper use led to over-reliance on the applications and negatively affected students' health. Despite encountering several challenges and negative experiences, the participants generally perceived mobile learning applications as having an overall positive effect on their educational experiences. The findings suggest that mobile learning applications can be effective tools for improving students' learning engagement and academic performance. These applications may be integrated into educational institutions and utilized by educators to support learning outcomes. However, the study emphasizes the importance of moderation to prevent potential negative effects associated with excessive use.

Keywords: mobile learning applications, learning engagement, academic performance

ON THE RIGHT TRACK: DIFFICULTIES ENCOUNTERED BY THE SELECTED NON-ABM GRADUATES FIRST YEAR ACCOUNTANCY STUDENTS OF GENERAL DE JESUS COLLEGE

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Leila Francisco, Jamie Dela Cruz, Migs Aaron Ramos, Vil Daril Santos

Abstract

Senior high school aims to equip students with the knowledge, skills, and abilities necessary to pursue successful careers in the future and to prepare them for college. However, there are observable cases in which students enroll in college courses that are unrelated to their senior high school track or strand. In this study, the researchers determined the challenges and coping mechanisms encountered by first-year accountancy students who came from non-ABM senior high school backgrounds. This study employed qualitative research, specifically a phenomenological design. Purposive and snowball sampling techniques were used to conduct face-to-face interviews at General De Jesus College to address the challenges faced by non-ABM accountancy students. Hand-raising was also utilized to identify possible participants. Semi-structured interviews with audio recordings were conducted, focusing on the students' experiences and the solutions they used to address challenges in their current course. Data interpretation and analysis followed the interviews to ensure a targeted approach to the study. The majority of the respondents were female and predominantly from the BSA 1D section, with most coming from the GAS strand. Most of the students found the accountancy course challenging because their senior high school areas of study were different and not directly related to accountancy, unlike ABM students who already possessed prior knowledge of the course. Additionally, the respondents struggled with learning their major subjects. Most of the respondents experienced self-doubt and anxiety as they pursued accountancy studies, particularly regarding their academic performance and their perceived ability to meet the program's standards. It was recommended that engaging in advanced study could help overcome these challenges. Most respondents also mentioned that being accountable for their academics, as well as being dedicated and committed to their studies, could assist them in succeeding in accountancy. The results highlight the key concerns of the study, including the difficulties encountered by first-year non-ABM BSA students. These difficulties involve a lack of academic foundation, self-doubt, perseverance, and challenges in major subjects. The study also explored coping strategies such as dedication, commitment, and studying lessons in advance. Furthermore, the findings suggest that students can pursue their desired courses regardless of their senior high school strand, provided that appropriate coping strategies and support mechanisms are applied.

Keywords: non-abm accountancy students, lack of foundation, difficulties in major subjects, self-doubt and perseverance, advanced studying, dedication and commitment

PERCEPTION OF SELECTED GRADE 11 STUDENTS AT GENERAL DE JESUS COLLEGE TOWARDS THE USE OF ARTIFICIAL INTELLIGENCE IN THE FIELD OF EDUCATION

Aicelle Mae Aurelio, Ma. Grace Calanoc, Jeudell Steele Ramos,
Jerome Ivan Domingo, Michael Angelo Pascual, Alexis Santiago

Abstract

Artificial intelligence has the potential to enable students to achieve their academic goals and streamline educational processes. It also possesses the ability to respond to various educational needs of students (Ishfaq Majid, 2022). Artificial intelligence has become prevalent on different social media platforms, where its benefits are widely promoted, particularly in assisting learners with assignments, activities, projects, and other academic tasks. This study aimed to determine the perceptions of Grade 11 students at General De Jesus College toward the use of artificial intelligence in the field of education. The study gathered the perceptions of Grade 11 students at General De Jesus College regarding the use of artificial intelligence in education using a qualitative phenomenological research approach. A total of ten participants were involved, and semi-structured interviews were conducted to obtain reliable data related to the topic. Both in-person and online interviews were carried out to gather further information regarding the participants' perceptions. The findings revealed that the majority of the participants considered artificial intelligence essential in supporting their academic work, particularly in terms of personalized and immediate learning, as well as research and analysis support. However, the results also indicated that excessive use of artificial intelligence may have harmful effects on students. The results demonstrate that artificial intelligence should be used only as a support or basis for students in their academic activities. Excessive reliance on artificial intelligence may lead to several negative effects on students' academic performance.

Keywords: artificial intelligence, students' perception, education, academic support, technology in learning

STEM AS A CHOSEN STRAND: GOOD OR BAD CHOICE? A PHENOMENOLOGICAL STUDY AMONG GRADE 11 STEM STUDENTS AT GENERAL DE JESUS COLLEGE

Clint Tristan Adriano, Andrei Bautista, Clark Magtalas, Maria Denniella Micor,
Leana Christine Yabot, Dr. Ma. Cristina Ravela

Abstract

The educational journey is a complex path marked by a series of decisions that significantly shape an individual's future. Among these decisions, the selection of an academic strand is a pivotal moment that influences students' higher education pathways and career prospects. This qualitative study aims to understand the decision-making process and lived experiences of Grade 11 STEM students, as well as to assess their perceptions of whether choosing the STEM strand is viewed favorably or unfavorably from their perspectives. The researchers employed a qualitative research methodology using a non-probability sampling technique known as quota sampling. A total of forty-five (45) Grade 11 students from General De Jesus College were selected as participants. Data were collected using a phenomenological research design through semi-structured, face-to-face interviews supported by audio recordings. The collected data were analyzed using thematic analysis to identify emerging patterns and themes. The findings revealed that students considered multiple factors when choosing the STEM strand. Career pursuits and academic goals emerged as the primary factors influencing their decision. Other external factors, such as family and peer influence, socio-economic background, and academic performance, also played significant roles. The results further indicated that most students were "pretty satisfied" with their decision to pursue STEM, although some participants reported having unfulfilled expectations. The results highlight the importance of students carefully considering their individual strengths, interests, and aspirations when selecting an academic strand. Aligning personal goals with strand selection can help maximize students' potential for success and increase satisfaction with their chosen academic path.

Keywords: stem strand, student decision-making, student satisfaction, academic choice, personal and external factors

EFFECTS OF EXCESSIVE USAGE OF SOCIAL MEDIA AS PERCEIVED BY SELECTED HUMSS STUDENTS OF GENERAL DE JESUS COLLEGE

Maica Mangilit, Maica Mangilit, Christian Mariano, Shan Saquilabon,
Pauline De Guzman, Hamfrey Cruz, Alexis Santiago

Abstract

This study investigated the subjective experiences and perceptions of selected HUMSS students regarding their excessive use of social media. By examining students' attitudes, behaviors, and beliefs toward social media, the research aimed to shed light on both the positive and negative effects of excessive social media usage. This study employed a qualitative research approach to examine the effects of excessive social media use on the academic performance, mental health, and interpersonal relationships of selected HUMSS students. Data were collected through in-depth interviews and observations and were analyzed using thematic analysis. The study aimed to provide insights into how students navigate the digital landscape in contemporary society and how exposure to social media platforms influences their cognitive, emotional, and social well-being. The findings revealed that most participants were between 16 and 18 years old and spent approximately 8 to 10 hours per day using social media. Students reported that social media use could be beneficial for school-related tasks and served as a source of stress relief by keeping them engaged and entertained. However, despite these perceived benefits, participants also indicated that excessive use negatively affected their ability to focus and concentrate on academic responsibilities. The study highlighted both the positive and negative effects of excessive social media usage as perceived by selected HUMSS students of General De Jesus College. While students acknowledged the benefits of social media for academic support and stress relief, they also recognized its negative impact on focus and productivity. The findings emphasized the need for further exploration of strategies to help students manage and reduce excessive social media use, including the development of school-based programs or community initiatives that promote responsible digital engagement.

Keywords: social media usage, humss students, academic performance, mental health, student perception, qualitative study

THE FINANCIAL PROBLEM PERCEIVED BY THE SELECTED GRADE-12 SENIOR HIGH SCHOOL STUDENTS OF GENERAL DE JESUS COLLEGE AND ITS EFFECT ON THEIR ACADEMIC PERFORMANCE

John Rafael Peralta, Cziela Nilo, Karl Marlou Billones, John Erwin De Leon,
Angela Emas, Jzya Jimenez, Brianna Yebes, Jahnet Ariane Figueroa

Abstract

Money refers to any item or method of exchange accepted as payment for goods and services, including loan repayments, and plays a crucial role in personal finance management. It is considered one of the basic necessities that supports daily living. However, due to limited opportunities and difficulties in acquiring and managing financial resources, many individuals experience financial problems that lead to stress and negatively affect various aspects of life. Understanding personal finance is therefore essential. Smith (2023) emphasized that addressing financial problems directly can reduce stress and help individuals regain control over their finances and overall well-being. In this context, the researchers conducted this study to determine the financial problems perceived by selected Grade 12 Senior High School students of General De Jesus College and examine their effects on academic performance. This study employed a qualitative research design using a phenomenological approach to gain in-depth understanding of the financial problems perceived by selected Grade 12 Senior High School students and their effects on academic performance. Participants were selected through purposive and quota sampling techniques. Data were systematically collected from ten (10) chosen participants using semi-structured interviews supported by audio recordings and note-taking. The findings revealed that the selected Grade 12 Senior High School students of General De Jesus College experienced financial problems primarily due to costly bills, inadequate budgeting, and reliance on a single source of parental support. The study further found that these financial problems had various effects on students' academic performance, including delayed submission of academic requirements and increased absenteeism. Additionally, financial difficulties led to academic stress and distractions. To cope with these challenges, participants reported strategies such as talking to friends and family, saving money, maintaining positive thinking, and seeking part-time employment. The results indicate that selected Grade 12 Senior High School students experience financial problems mainly due to high household expenses and insufficient budgeting. These financial difficulties adversely affect their academic performance. The findings highlight the importance of coping mechanisms such as seeking social support, saving, practicing positive thinking, and engaging in part-time work. Moreover, the study underscores the need to promote financial literacy among students to help them manage their finances more effectively and minimize the impact of financial stress on academic outcomes.

Keywords: academic performance, coping mechanisms, financial literacy, financial problems, household income

THE LEVEL OF ACCEPTABILITY OF BANANA LECHE FLAN

Kurt Isaac Santos, Paul Vincent Quinto

Abstract

The researchers encountered the problem of introducing a new leche flan recipe to customers. Leche flan is a delightfully sweet crème caramel flan that originated from Spain. On the other hand, banana leche flan is a healthy combination of banana and leche flan. The highlight ingredient of the dish is banana, which serves as a new ingredient added to leche flan and is recommended for the health of customers. The researchers aimed to create a special, nutritious, and affordable product. The researchers used experimental research, which is a scientific approach where one set of variables is kept constant while another set of variables is measured as the subject of the experiment. A random sampling technique was employed, wherein each sample had an equal probability of being chosen. The researchers also used the survey questionnaire method because it allowed them to easily gather the perceptions and feedback of the respondents regarding the product. Through the survey questionnaire method, the researchers were able to analyze the demand quantity of the product and its effectiveness in becoming popular among customers. The researchers found that most of the respondents very strongly agreed with the taste, price, and presentation of banana leche flan, while most respondents strongly agreed with its aroma. Based on the information gathered by the researchers, the product was found to be acceptable. Banana leche flan is healthier compared to regular leche flan because it includes a nutritious fruit, which is banana. The main focus of this research was to provide a healthier version of leche flan. The banana leche flan developed by the researchers aimed to offer a new dessert that is not only delicious but also nutritious.

Keywords: banana leche flan, product acceptability, experimental research, dessert innovation, food and beverage management

THE STRATEGIC MANAGEMENT OF SELECTED CARINDERIA BUSINESS OWNERS IN POBLACION SAN ISIDRO ON INCREASING PRICES OF RAW INGREDIENTS

Jewel Ezekiel Macatula, Dianne Beatrice Bundoc, Mark Erielle Dayos, Akisha Ayeth Flores, Beatrice Mendoza, Razzel Sable, Francine Soriaga, Vil Daril Santos

Abstract

Carinderia is a popular type of eatery in the Philippines that provides affordable and locally inspired meals. Carinderia owners are responsible for managing all aspects of their business, including planning, budgeting, staffing, and developing operational strategies. In recent years, increasing prices of raw ingredients have posed significant challenges to small food businesses. This study aimed to examine the strategic management practices of selected carinderia business owners in Poblacion, San Isidro, particularly in addressing the effects of rising raw material costs. This study employed a qualitative research approach using a phenomenological design. Purposive sampling was utilized to gather in-depth information from participants who possessed relevant experiences and knowledge related to the research topic. Data were collected through semi-structured interviews, allowing participants to share their insights regarding business strategies and challenges. The findings revealed that all carinderia owners experienced challenges in managing their businesses, particularly due to increasing prices of raw ingredients, inflation, difficulties in price adjustment, and budgeting constraints. The majority of the participants encountered significant difficulties in adjusting prices and managing expenses. Despite these challenges, their strategic management practices primarily focused on portion control and maintaining food quality to sustain customer satisfaction and business operations. The results demonstrated that carinderia owners employ various strategies to generate income and sustain their businesses despite rising prices of raw ingredients. The study highlights the importance of adaptability and strategic awareness among business owners. Moreover, being attentive to community needs and market conditions enables owners to remain prepared for challenges that may arise due to economic changes.

Keywords: carinderia, strategic management, price increase, raw ingredients, small food businesses

Engineering, Information, and Communication Technology

CHALLENGES ENCOUNTERED BY THE SELECTIVE STEM STUDENTS ON GENERAL DE JESUS COLLEGE DUE TO ACADEMIC STRESS

Carl Anthony Nucum, Danalyn Nepomuceno, Anne Margarette Vicencio, Juliana Mae Eduardo, Mark Joseph Gonzales, Czar Giljo De Guzman, Railey Josh Torres, John Matthew Sibal

Abstract

Students facing academic challenges often rely on others for support. Separation from peers due to academic stress can exacerbate these difficulties. This study explored the challenges encountered by STEM students at General De Jesus College who were experiencing academic stress. A phenomenological approach was used to investigate the lived experiences of a group of stressed Grade 11 students. The study examined the duration of their academic stress, the primary obstacles they encountered, and the support systems they relied on. Semi-structured interviews were conducted with stressed students at General De Jesus College. The majority of participants reported experiencing academic stress for one to two years after entering senior high school. They faced demanding coursework and frequent changes in academic topics, with primary support coming from friends and family members. This research highlighted the significant impact of academic stress on students. Although participants were able to overcome challenges, they expressed that their support systems could be stronger. The findings, which emphasized student resilience and reliance on friends and family, underscored the need for further research on support networks. Future studies may explore school-based programs or community initiatives designed to assist adolescents experiencing academic stress.

Keywords: academic stress, stem students, phenomenological study, support systems, senior high school

ASSESSING THE VIABILITY OF UTILIZING HIBISCUS-ROSA SINENSIS PETALS (GUMAMELA) AS AN ORGANIC ALTERNATIVE FOR INTERIOR PAINT

Kent Gagatam, Dashlyn Reign Cawas, Aldred Abillon, Khizzle Franco

Abstract

In recent years, the growing demand for sustainable solutions across various industries has led to increased interest in natural alternatives to traditional products. In response to environmental concerns, this study investigates the viability of Hibiscus rosa-sinensis, commonly known as gumamela, as an alternative to commercial interior house paint. The study employed an experimental research design, including the research locale, instruments, and procedures, with a focus on evaluating gumamela extract as an alternative to commercial indoor house paint. The purpose of the study was to contribute to sustainable practices in the construction and painting industries. The researchers assessed the durability, visual appeal, and environmental impact of gumamela-based interior paint. The procedure involved collecting and preparing gumamela petals for pigment extraction, followed by experimentation in mixing and application. Testing included evaluating appearance and durability on various surfaces to provide an eco-friendly solution for homeowners and builders. The findings revealed that gumamela-based interior paint is a low-cost and eco-friendly alternative. The results also showed faster drying time, durability, waterproof properties, smudge resistance, a matte finish, and positive performance on wood and concrete surfaces, outperforming commercial paint in these aspects. Additionally, the study found that gumamela petals serve as the primary ingredient in creating interior paint, with raw natural dyes proving superior to distilled or commercial alternatives. This study aimed to inform and inspire individuals about the potential benefits of using Hibiscus rosa-sinensis petals as an organic alternative for interior paint. The findings support the development of eco-friendly and sustainable products that may enhance community living standards.

Keywords: architecture, organic paint, sustainable materials, natural dyes, gumamela, interior paint

EXPLORING THE POSSIBLITY OF CATNIP LEAVES AND JASMINE PETALS AS NATURAL INSECTICIDES

Maria Jackielyn Fermanez, Russel Angelo Emia, Charles Edmar Gutierrez,
Jony Era Elemencio, Khizzle Franco

Abstract

The primary objective of this study was to evaluate and develop effective alternatives to artificial chemical insecticides using titanium dioxide, jasmine petals, and catnip leaves. To create safer and more environmentally friendly pest management options, this research aimed to assess the insecticidal or insect-repelling properties of these natural ingredients. The study examined their safety, mechanisms of action, effectiveness, and possible application methods to develop practical pest control solutions that pose minimal risks to human health and the environment. This study conducted an experimental investigation on the effectiveness of catnip leaves, titanium dioxide, and jasmine petals as insecticides. The process of creating the insecticide involved utilizing the natural properties of these ingredients to repel insects. Jasmine petals and catnip leaves were gathered and dried for five days. The jasmine petals were boiled for approximately fifteen minutes, while the catnip leaves were boiled for twenty minutes, after which the mixtures were strained to remove impurities and ensure a smooth liquid. Lastly, titanium dioxide was added and stirred thoroughly to blend all ingredients. This study explored the development of safer and more environmentally friendly insecticides by utilizing natural materials, including jasmine petals, titanium dioxide, and catnip leaves. The findings drew from experimental tests and existing studies on alternatives to chemical insecticides that are harmful to the environment and human health. Results from experiments testing the effectiveness of these natural insecticides on pests, such as cockroaches, were encouraging. The researchers found that insecticides derived from titanium dioxide, catnip leaves, and jasmine petals were effective in eliminating pests while posing less risk to the environment. Overall, the study indicated that natural pesticide ingredients can provide a more sustainable and environmentally friendly approach to pest control. The research focused on developing safer and eco-friendly pest management alternatives using titanium dioxide, jasmine petals, and catnip leaves. By evaluating the insecticidal properties of these natural ingredients, the study highlighted their potential as effective and environmentally friendly pest control solutions. The experimental results emphasized the feasibility of using these ingredients for sustainable pest management. Overall, the study underscored the importance of natural materials in providing safe and effective pest control methods while reducing environmental impact.

Keywords: safety, effectiveness, environmentally friendly pest control, sustainability

HEXASAFE: ADDRESSING THE LACK OF EVACUATION CENTER IN DISASTER-STRICKEN COMMUNITIES THROUGH HEXAGONAL SHELTER INNOVATION

Ashley Jannaya Leodigario, John Benedict Beltran, Jennylyn Victorio, Dr. Gina Garcia

Abstract

In the Philippines, where disasters frequently occur without warning, the availability of effective evacuation centers is essential. Traditional evacuation centers, commonly repurposed school buildings, have been found to lack adequate space, privacy, ventilation, and sanitation. This study introduces HexaSafe, an innovative architectural design that addresses these deficiencies and aims to strengthen community resilience and safety during disasters. The study focused on the feasibility and structural strength of HexaSafe in terms of shape, capacity, innovation, wind resistance, seismic resistance, and overall structural integrity. This study focused on architectural design alternatives by developing a conceptual architectural solution as an alternative to conventional evacuation centers. An experimental research design was employed to compare the capability and efficiency of a hexagonal-shaped structure with square-shaped structures using Structural Analysis and Design (STAAD) software. The researchers created the floor plan using AutoCAD software to produce an architectural design incorporating innovative features that comply with building standards. HexaSafe exhibited biomimetic and biomorphic architectural characteristics inspired by honeycomb structures. The design included preparedness for vertical expansion, a parapet roof system to enhance wind resistance, and a courtyard to increase natural lighting within the structure. The results showed that the hexagonal structure experienced lower wind impact (M = 2.07) compared to the square structure (M = 1.43). Additionally, the hexagonal design demonstrated equal load distribution and load resistance. The structure achieved equal stress (M = −0.01) and weight distribution of 80%, compared to the square structure, which recorded stress of M = 0.12 and weight distribution of 20%. The findings indicate that the HexaSafe structure can withstand wind speeds of up to 300 km/h and seismic activity with a magnitude of 8.0, in accordance with the requirements of House Bill 10472 for evacuation facilities. The study highlights the practicality and effectiveness of the HexaSafe design, as its unique shape, capacity, and innovative features provide a robust solution for disaster-prone areas. The HexaSafe design demonstrates strong potential to enhance community safety and resilience during calamities. However, additional tests, such as heating and flooding simulations, may be conducted to further assess the design's limitations.

Keywords: hexasafe, evacuation center, architectural innovation, hexagonal structure, disaster resilience

THE EFFICACY OF PINEAPPLE JUICE, VINEGAR, AND COCONUT OIL-BASED PEN INK ERASER

Rica Alliyah Bercasio, Jensrich Fernandez, Richmond Homecillada,
Kim Karen Kidwell, Khizzle Franco

Abstract

This study aimed to utilize the citric and oxalic acids found in pineapple (Ananas comosus) juice, the acidic properties of vinegar, and the cleaning properties of coconut oil to develop an alternative pen ink eraser. An experimental research method was employed in this study. A survey was conducted among ten (10) respondents using an evaluation criterion adapted from Lapina et al. (2015), where a rating of 1 represented the lowest effectiveness (ink stain not removed) and a rating of 5 represented the highest effectiveness (ink stain completely removed). The results showed that Trial 4 achieved a mean rating of 3.8, which was the highest effectiveness score among all trials. This indicated that the alternative ink eraser was able to almost remove the ink stain. In comparison, the correction tape used as a reference obtained a rating of 5, indicating complete removal of the ink stain. The findings demonstrated that the alternative ink eraser exhibits potential in removing ink stains, as supported by both experimental and survey results. Although it did not fully match the effectiveness of commercial correction tape, further refinement and additional testing may enhance its performance, offering a practical alternative for maintaining clean and neat documents.

Keywords: ink eraser, pineapple juice, vinegar, coconut oil, alternative eraser

THE POTENTIAL USE OF WASTE PLASTIC BOTTLES (POLYETHYLENE TEREPHTHALATE, PET) AND COCONUT HUSK FIBERS (COCOS NUCIFERA) AS AN ALTERNATIVE MATERIAL FOR DRAFTING TABLE PRODUCTION

Rica Ashley Dizon, Miki Goto, Marvean Dwayne Juganas, Andrew Patricio,
Yuga Reyes, Daniel Taberao, Rolina Labao

Abstract

Plastic bottles are among the leading global pollutants due to their widespread use and mass production. Locally, coconut husks have also become a source of waste as a byproduct of various Filipino products. As a result, both materials contribute significantly to environmental pollution. With this context, the study aimed to determine the effectiveness of using waste plastic bottles made of polyethylene terephthalate (PET) and coconut husk fibers (Cocos nucifera) as alternative materials in the production of a drafting table. An experimental research design was employed in this study. The materials used included waste PET bottles and fibers extracted from coconut husks. A ½ × 2 inch lumber was utilized as the frame to provide structural support for the drafting table. The process involved melting or shredding the plastic waste, extracting coconut fibers, and combining these materials before molding them into portable drafting table components. The finished product was subjected to mechanical strength, space-saving, functionality, and portability tests. The results showed that the use of waste materials and natural resources in drafting table production yielded promising outcomes in terms of sustainability and functionality. By utilizing discarded PET bottles and coconut husk fibers, the resulting drafting table was found to be durable, cost-effective, space-saving, functional, and portable. The findings indicate that waste plastic bottles and coconut husk fibers can be effectively utilized as alternative materials for drafting table production. The experimental results support the potential of these materials in creating functional and sustainable furniture, contributing to waste reduction and environmental conservation.

Keywords: plastic bottles, coconut husks, drafting table, pet, sustainable materials

USING FIBER PLASTIC EXHAUST FAN POWERED BY WIND TURBINE

James Raphael Bundoc, Wilfred Shayne Espino, Thomas James Petalber, Khizzle Franco

Abstract

Product manufacturing in factories often releases contaminated substances, particulate matter, excessive heat, and vapor into the workspace. To address these concerns, factories rely on industrial ventilation systems to dilute or remove these harmful effluents. Wind energy has long been utilized as a source of electricity and has since expanded into large-scale onshore wind energy applications. In this study, the researchers explored the feasibility and performance of a fiber plastic exhaust fan powered by a wind turbine as an alternative ventilation solution. The researchers employed an experimental research method to test the proposed system. Data were gathered through trials, errors, and direct observation. The fiber plastic exhaust fan powered by a wind turbine was compared with a traditional exhaust fan in terms of consistency, airflow, and ventilation performance. The results showed that the fiber plastic exhaust fan powered by a wind turbine is comparable to a traditional exhaust fan in terms of consistency, durability, airflow, and ventilation. However, limitations were observed, particularly regarding dependence on wind availability and the location of the wind source, which affected overall performance compared to conventional exhaust fans. The findings suggest that the fiber plastic exhaust fan powered by a wind turbine presents a viable alternative for reducing reliance on electrical power sources. This system can help minimize electricity costs while still providing adequate airflow and ventilation. However, improvements related to wind availability and system placement are necessary to enhance efficiency and reliability.

Keywords: exhaust fan, wind turbine, industrial ventilation, renewable energy, airflow, sustainable design

AMELIORATION OF PERMEABLE CEMENT BOARDS WITH WOOD FINISH FOR ENHANCING THERMAL INSULATION OF INFRASTRUCTURES

Hannah Kim Tulio, Mikaela Nicole Villaroza, Angela Jamie Yambao, Dr. Gina Garcia

Abstract

Increasing temperatures have served as one of the primary factors causing heat stress and discomfort among many individuals, particularly Filipinos. This has resulted in a pressing need for optimal thermal insulation that meets requirements such as low thermal conductivity, high resilience, environmental and human health safety, and affordability. Existing insulation materials, although durable, are composed of harmful chemicals. For this reason, a natural biomaterial, specifically wood waste, was incorporated into permeable cement boards (PCB) as an alternative. This study aimed to address heat-related issues by examining the effectiveness of PCB with incorporated wood waste (WW) in enhancing thermal insulation for infrastructures and improving indoor comfort for occupants. The study employed an experimental research design to assess the thermal conductivity and durability of permeable cement boards with wood finish. The steady-state method was utilized, along with durability tests including drop, chisel, and water absorption tests. The data were evaluated using the total mean of the recorded temperatures and the formula for water absorption. Based on the conducted tests, the wood permeable cement board (WPCB) exhibited a higher thermal conductivity value of 319.39 W/mK compared to the commercial cement board (CCB), which recorded 44.48 W/mK. In the drop test, the CCB withstood 43 drops, higher than the three drops sustained by the WPCB. However, the WPCB endured more chisel and hammer strikes, with 30 impacts compared to 13 impacts for the CCB. Furthermore, both boards demonstrated 0% water absorption. The results showed that the WPCB had a higher thermal conductivity value than the CCB. However, the WPCB was comparable to the CCB in terms of durability. The use of proper equipment for both production and testing, along with additional formulas, is recommended to achieve standard board dimensions and obtain more accurate results.

Keywords: permeable cement board, wood waste, thermal insulation, heat

ASSESSING THE EFFECTIVENESS OF EARTHQUAKE DETECTOR IN EARTHQUAKE MONITORING AS REAL-TIME ALERTS

Precious Jane Catanghal, Christian Joseph Bautista, Jerome Castro, Alliana Manapol, Khizzle Franco

Abstract

Seismologists and engineering education researchers continuously develop artificial earthquake detectors. Earthquakes have been identified as one of the primary subjects of their experiments and discoveries. From the fundamental knowledge of earthquake detection, the concept and unique design of an earthquake detector that uses an Arduino Uno as a substitute earthquake detector emerged. In this study, the researchers experimented with and tested the performance of the device by generating earthquake matchups supported by related studies and evidence. Using an experimental research design, the researchers developed an earthquake detector capable of providing real-time alerts. The effectiveness of the earthquake detector was then tested and analyzed in terms of loudness, vibration, alertness, and duration, with a minimum vibration of 33.06 Hz and a maximum vibration of 37.63 Hz to obtain more accurate results. With an average loudness of 70 dB, the earthquake detector produced vibrations lasting for two (2) minutes. The results showed that the earthquake detector was capable of generating earthquake matchups comparable to real global earthquakes. The study led to the development of an artificial earthquake detector by recognizing earthquakes as a focal point of experimentation and discovery. Through this research, the researchers explored the creation and evaluation of an earthquake detector utilizing Arduino Uno technology. By employing an experimental research methodology, a real-time alert system was engineered and assessed based on performance parameters, including loudness, vibration, alertness, and duration. The results demonstrated the detector's ability to simulate earthquake events, with vibration frequencies ranging from 33.06 Hz to 37.63 Hz, an average loudness of 70 dB, and a duration of two minutes. These findings highlight the effectiveness of the earthquake detector in simulating real global seismic events.

Keywords: engineering, earthquake detector, effectiveness

CHALLENGES FACED OF SELECTED CIVIL ENGINEERS ON PROJECT DELAYS DUE TO INCLEMENT WEATHER IN CABIAO, JAEN, SAN ANTONIO, AND SAN ISIDRO, NUEVA ECIJA

Nathalia Pineda, Ma. Gillian Joyce Atencio, Denzel Magno, Elgie Ace Espiritu,
Moises Anton Del Rosario, Jharen Niro, Aizel Marie Castro

Abstract

Civil engineering projects are essential for infrastructure development but often encounter delays due to inclement weather. This study investigated how civil engineers cope with weather-related challenges, with the aim of enhancing project resilience and operational efficiency. This study employed qualitative phenomenological research design and utilized purposive sampling to select ten civil engineers with firsthand experience of project delays caused by adverse weather conditions in District 4, Nueva Ecija. Semi-structured interviews were conducted, and audio recordings were used to gather and document the data. The study identified three primary challenges encountered by civil engineers: delays in project schedules, issues affecting the foundation of structures, and risks of injury or harm to workers. To address these challenges, civil engineers employed three key strategies to minimize the effects of adverse weather on construction projects: shifting to indoor activities, requesting time extensions, and deploying additional manpower. The findings highlighted the challenges faced by civil engineers, particularly project delays caused by adverse weather conditions. Accurate weather forecasting during foundation construction demonstrated engineers' commitment to addressing issues such as water penetration and worker safety, especially in scaffolding activities. Despite these challenges, civil engineers adapted by shifting tasks indoors and reallocating manpower, reflecting a strong commitment to project continuity. Effective management strategies, including time extensions and additional manpower, were identified as essential in overcoming delays and ensuring project success in a dynamic construction environment.

Keywords: civil engineers, project delays, inclement weather, construction challenges, phenomenological study

CHALLENGES OF SELECTED CIVIL ENGINEER IN 4TH DISTRICT, NUEVA ECIJA IN HANDLING PRICE ESCALATION IN DOING CONSTRUCTION WORKS

Meryll Bernardo, Trisha Mae Custodio, Kervin Andrei Dela Cruz, Alfrancis Javier,
John Patrick Tobias, Roenan James Crisostomo, Aizel Marie Castro

Abstract

Unpredictable market fluctuations, including rising material costs, labor shortages, and changing economic conditions, can disrupt project budgets and timelines, making price escalation a significant challenge in construction works. Price escalation refers to the difficulties encountered and strategies employed by civil engineers when dealing with increasing costs in the construction industry. Civil engineers face various challenges related to rising prices and adopt different strategies to manage these issues. This study aimed to determine the challenges encountered by civil engineers in handling price escalation in selected areas of District 4, Nueva Ecija. This study employed a phenomenological research design to examine the challenges encountered by civil engineers due to price escalation and the strategies they used to address these challenges in District 4, Nueva Ecija. A qualitative approach was utilized for data gathering, using semi-structured interviews supported by audio recordings. Participants were selected through purposive sampling and met the study's criterion of being licensed civil engineers. The selected participants expressed significant problems related to price increases, primarily involving expensive construction materials, variations in cost proposals, and financial difficulties. To address these challenges, participants implemented strategies such as contingency planning, cross-cutting measures, and informing clients about cost changes. These strategies helped reduce issues at construction sites and contributed to smoother project implementation for engineers, construction workers, and contracted businesses. The findings indicated that civil engineers faced multiple challenges due to price escalation, including variations in cost proposals, high material costs, and financial constraints. Clients often preferred lower-cost materials and were sometimes uncooperative, which could lead to project delays or cancellations. However, most engineers were able to manage these challenges by adjusting prices and waiting for proper documentation, thereby avoiding contract revisions. Although construction projects remained demanding, civil engineers demonstrated awareness of effective strategies to address price escalation.

Keywords: price escalation, civil engineers, construction works, cost challenges, phenomenological study

COCOMAT: EVALUATING THE EFFECTIVENESS OF COCONUT FIBER-BASED SOIL EROSION CONTROL MATS IN DIKES OF ENTABLADO, CABIAO, NUEVA ECIJA

John Eric Salenga, Trixie Cassandra Rivera, Phillip Andrew Ignacio, Dr. Gina Garcia

Abstract

Soil erosion is a significant environmental challenge affecting various regions worldwide. As a result, the use of natural fibers for soil erosion control has gained increased attention due to their low cost and sustainability. This study aimed to evaluate the effectiveness of coconut fiber as a soil erosion control mat in terms of sediment yield and soil loss reduction efficiency. This study employed an experimental research design to evaluate the effectiveness of soil erosion control mats made from coconut fiber in reducing sediment yield and soil loss. Two soil test plots were prepared, consisting of a control group with bare soil and a treated group covered with CocoMat. Artificial rainfall was applied at a constant rate for 30 minutes to assess sediment yield and soil loss reduction efficiency. The results revealed that soil covered with CocoMat significantly reduced sediment yield, achieving an average soil loss reduction efficiency of 83.3% compared to bare soil without CocoMat. The findings demonstrated that coconut fiber-based mats effectively reduced the impact of raindrops by acting as a protective layer between rainfall and soil surfaces while absorbing a portion of the water. This study confirmed that CocoMat is effective in controlling soil erosion on sloped areas.

Keywords: soil erosion control mat, coconut fiber, sediment yield, soil loss reduction, slope stability

ECO-CONSCIOUS BUILDING BLOCKS: THE ADVANTAGES AND DISADVANTAGES OF A SUSTAINABLE APPROACH TO MATERIAL SELECTION FOR INFRASTRUCTURES AS PERCEIVED BY SELECTED CIVIL ENGINEERS IN DISTRICT IV, NUEVA ECIJA

Louis Mesina, Byron Joshua De Guzman, George Andrey Garcia, Mike Ezikiel Relucio, Eirnasha Santos, Polyn Sta Maria, Aizel Marie Castro

Abstract

Material selection is among the top issues influencing the success of sustainable construction and long-term development. Choosing sustainable construction materials is critical in reducing environmental impact and ensuring that infrastructure remains viable for both present and future generations. Thus, this study was conducted to determine the perceptions of selected civil engineers regarding the advantages and disadvantages of using eco-friendly materials in infrastructure projects. This study employed a descriptive research design using a qualitative approach. Participants' perceptions were utilized to collect and analyze information relevant to the objectives of the study. The population consisted of civil engineers from District IV, Nueva Ecija, with ten (10) civil engineers selected as participants. Data were analyzed using descriptive and thematic coding, with themes and indicators developed to interpret the findings. The study examined civil engineers' perceptions of various eco-friendly materials, including wood, recycled metal, recycled plastics, and alternative concrete materials. The findings revealed that the primary advantages of eco-friendly materials include sustainability and reduced environmental impact. However, several disadvantages were also identified, particularly issues related to availability and cost. Due to limited public awareness, civil engineers recommended stronger promotion of eco-friendly materials by emphasizing their benefits, such as lower environmental impact and reduced construction time. Designing infrastructure that incorporates sustainable materials was also identified as an effective way to encourage adoption among professionals and the public. The findings indicated that eco-friendly materials offer significant advantages in the field of civil engineering, particularly in promoting sustainability, durability, and reduced environmental impact. However, current infrastructure practices and modernization trends continue to limit the widespread use of eco-friendly materials, with a stronger focus placed on conventional materials. Addressing these limitations through awareness, promotion, and design innovation may increase the adoption of sustainable materials in future infrastructure development.

Keywords: eco-friendly materials, sustainability, civil engineers' perception, infrastructure development, advantages and disadvantages

EFFECTIVENESS OF ABACA STEM FIBER AS AN ALTERNATIVE MATERIAL FOR FIBER CEMENT CEILING BOARD

Marvie Elizsha Galvez, Sheena Gamboa, Kyle Benedic Encarnacion,
James Brenan Ferrer, Khizzle Franco

Abstract

The construction industry has relied on conventional ceiling materials for decades. However, these materials present several issues, including susceptibility to pest infestations, leaks, and limited fire resistance. This study aimed to explore the potential of abaca stem fiber as an alternative material for fiber cement ceiling boards by examining its physical and mechanical properties. A systematic experimental approach was employed, including material evaluation, preparation, mixing, molding, and polishing processes. Product testing was conducted to assess durability, water absorption, and fire resistance of the developed ceiling boards. The final product demonstrated lightweight characteristics, with weights ranging from 2,750 g to 2,751.25 g, indicating a balance between ease of handling and structural strength. The fire resistance test showed exceptional performance, as the board resisted fire spread when exposed to a temperature of 150°F. The water absorption test revealed strong resistance to water absorption after 30 minutes of soaking. Additionally, the durability test showed that the board did not break when dropped from heights of 3.5 feet and 4 feet, demonstrating its structural integrity. The findings indicated the successful production of cost-effective, lightweight, and environmentally friendly fiber cement ceiling boards using abaca stem fiber as the primary material. The selected materials contributed significantly to the favorable results observed across multiple tests, including durability, water absorption, and fire resistance, demonstrating the potential of abaca fiber as a viable alternative to conventional ceiling materials.

Keywords: abaca fiber, fiber cement ceiling board, alternative materials, fire resistance, sustainable construction

EVALUATING THE FLEXURAL STRENGTH AND WATER ABSORPTION PROPERTIES OF PARTICLEBOARD MADE FROM CORN STALKS AND WOOD SHAVINGS WITH VARIED RESIN RATIOS

Charlie De Los Santos, Ashley Chenelle Talens, Den Andrei Ramirez,
Jonard Christian Paz, Dr. Gina Garcia

Abstract

Agricultural waste contributes significantly to environmental and public health issues, including soil and water pollution, air quality degradation, and the spread of disease. Improper disposal of agricultural by-products results in environmental contamination, economic losses, and threats to global health and food security. This study aimed to develop ceiling particleboard by utilizing agricultural waste materials—specifically corn stalks and wood shavings—bonded with polyvinyl acetate (PVAc) and cassava starch adhesives at varying resin ratios. This study employed an experimental research design to examine cause-and-effect relationships through controlled variable manipulation. The independent variable was the resin ratio of PVAc and cassava starch used in particleboard production, while the dependent variables were flexural strength and water absorption. Particleboards were produced using corn stalks and wood shavings bonded with 8%, 10%, and 12% resin contents. Flexural strength and water absorption tests were conducted to evaluate the feasibility of utilizing agricultural waste materials in ceiling particleboard applications. The results demonstrated that increasing adhesive content from 8% to 12% improved both flexural strength and water resistance of the particleboards. For PVAc-bonded boards, the Modulus of Elasticity (MoE) increased from 1,077 MPa to 1,738 MPa, while the Modulus of Rupture (MoR) increased from 7 MPa to 12 MPa. For cassava starch–bonded boards, the MoE rose from 364 MPa to 1,005 MPa, and the MoR increased from 3 MPa to 7 MPa. Water absorption rates decreased as adhesive content increased, indicating enhanced water resistance—from 25.42% to 18.69% for PVAc and from 95.45% to 40.00% for cassava starch. Evaluation against standards revealed that none of the samples met the minimum MoE requirement under JIS 5908. However, two samples met the minimum MoR requirement, and four samples satisfied the minimum water absorption requirement under IS 3087. The findings highlight the varying performance of the particleboard samples when assessed against established standards. The study emphasizes the significant influence of adhesive type and content on particleboard stability. Higher adhesive content resulted in improved flexural strength and water resistance, while superior adhesive quality contributed to better dimensional stability. These results suggest that optimizing both adhesive quality and resin content can enhance the performance and durability of agricultural waste–based particleboards.

Keywords: particleboard, corn stalks, wood shavings, polyvinyl acetate, cassava starch, flexural strength, water absorption

GREEN GUARDIANS: BANANA PEELS AND GUAVA LEAVES AS CORROSION INHIBITOR FOR LOW CARBON STEEL

Francez Anne Rodriguez, John Stiphen Faustino, Raquel Viesca, Dr. Gina Garcia

Abstract

Low carbon steel presents several challenges, one of which is its high susceptibility to corrosion compared to other types of steel. Rust is a visible indicator of this corrosive process and can potentially lead to severe structural engineering issues. The use of certain substances or chemical compounds added to corrosive environments can prevent or reduce metal corrosion; however, due to their toxicity, traditional chemical-based corrosion inhibitors are becoming less acceptable. This study aimed to investigate the use of eco-friendly or organic corrosion inhibitors derived from banana peels and guava leaves as an initiative toward adopting a more environmentally conscious approach to corrosion resistance. The study utilized a true experimental research design to determine the efficiency of organic corrosion inhibitors on low carbon steel. Ethanolic extracts of combined banana peels and guava leaves were prepared and used as the organic corrosion inhibitor. A weight loss test was conducted to measure inhibitor efficiency. The steel samples were initially weighed, then exposed to various corrosion conditions through salt spray testing, both with the organic inhibitor and with a commercially available chemical-based corrosion inhibitor. After the procedure, the steel samples were weighed again to determine weight reduction. Lower weight loss indicated greater corrosion inhibition efficiency. The results showed that the combined banana peel and guava leaf extract inhibited corrosion in low carbon steel with a 95% efficiency rate. In comparison, the commercially available corrosion inhibitor (WD-40) exhibited a 90% efficiency rate. In the weight loss test, steel samples treated with the organic extract lost only 0.1 mg of weight, while those treated with the conventional inhibitor lost 0.2 mg. The findings indicate a significant difference in the efficiency between organic corrosion inhibitors derived from banana peels and guava leaves and conventional chemical-based inhibitors. This variation is attributed to their ability to inhibit rust formation on steel. Banana peels and guava leaves provide corrosion inhibition due to the presence of compounds such as tannins and flavonoids. In contrast, commercially available corrosion inhibitors demonstrated lower efficiency. The combined extracts of banana peels and guava leaves show strong potential as effective organic corrosion inhibitors for protecting low carbon steel from corrosion.

Keywords: organic corrosion inhibitor, banana peels, guava leaves, corrosion inhibition, low carbon steel

POLYETHYLENE TEREPHTHALATE (PET), BANANA FIBER, EGGSHELL: A SUSTAINABLE ALTERNATIVE TO OUTDOOR TILE PRODUCTION

Ken Angelo Yamamoto, Adrian Tiempo, Danielle Santiago, Dr. Gina Garcia

Abstract

Solid waste pollution has significantly increased in society, encompassing concerns ranging from environmental impacts during production to the destructive consequences when waste materials are released into the environment. Commercially available tiles contain chemicals such as silicon dioxide, alumina, iron oxide, and feldspathoid, which may be harmful. This concern has prompted the exploration of waste-based alternatives such as PET bottles, banana fibers, and eggshells. This research aimed to explore the effects of these alternative materials on the mechanical force and strength properties of tiles, addressing the gap in studies on eco-friendly tile production. This study employed a true experimental research design to assess the effectiveness of manufactured tiles incorporating polyethylene terephthalate, banana fiber, and eggshell in terms of flexural strength, drop test performance, and water absorption. The mechanical properties of the tiles were evaluated to determine the effects of additives such as PET plastic, banana fibers, and eggshells. Descriptive statistics, such as percentages, were applied to analyze the data. The results showed that flexural strength significantly improved with the addition of eggshells and banana fibers. Impact resistance also increased significantly with the inclusion of PET, eggshells, and banana fibers. Additionally, the alternative tiles made from polyethylene terephthalate exhibited a lower rate of water absorption than commercial tiles due to the presence of plastic and eggshells. The alternative outdoor tiles made from PET, banana fiber, and eggshell were found to be comparable to commercially available outdoor tiles in terms of quality and price. The study suggests that incorporating more material ratios in future production may result in stronger tiles.

Keywords: outdoor tiles, eco-friendly tiles, polyethylene terephthalate, banana fiber, eggshell, sustainable construction materials

POWERING THROUGH THE STORM: ENHANCING HYDROPOWER DRAINAGE SYSTEM

Yngram Ceyn Maniquiz, John Matthew Magno, Mark Edren Tungala, Dr. Gina Garcia

Abstract

The Philippines faces an imminent energy crisis due to the depletion of Malampaya natural gas resources projected between 2024 and 2025. In response, the government plans to increase the share of renewable energy to thirty-five percent by 2030 and fifty percent by 2050. While micro-hydropower presents a promising renewable energy option because of the country's abundant water resources, the Philippines' vulnerability to frequent typhoons poses challenges to energy security and reliable system operation. This study aimed to develop and evaluate the potential for electricity generation using a hydroelectric generator attached to a canal drainage system. This study employed an experimental research design to assess the hydropower generator's ability to efficiently generate voltage. Power spray and deep wells were utilized to simulate varying flow rate scenarios. The collected data were evaluated using descriptive statistical tools, such as the weighted mean. The hydropower generator demonstrated promising performance, achieving a maximum voltage output of 12.9 volts despite initial challenges. Adjustments to the turbine type and pulley ratio highlighted the system's versatility and reliability. The generator's capacity to produce high voltage indicated its ability to utilize larger flow rates and pressures for optimal performance. Furthermore, continuous testing of alternative configurations reflected an innovative approach to improving generator output within canal drainage systems. The study revealed that the hydropower generator's output could serve as a portable emergency power source capable of operating electric fans, lights, mobile phones, and LED streetlights, which are essential during emergency evacuations such as typhoon landfalls. This system provides an alternative to conventional electrical outlets, ensuring electricity availability in remote areas or during crises. Future researchers may consider using alternators and incorporating battery storage to further enhance the performance of the hydroelectric generator.

Keywords: canal drainage system, hydropower, hydroelectric generator, renewable energy, emergency power source

RICE STRAW (ORYZA SATIVA) AS AN ALTERNATIVE CELLULOSE THERMAL INSULATING BOARD

Renrose Sapi, Kylle Lawrens Ignacio, Laurence Andrei Sunga,
Third Benedict Segovia, Khizzle Franco

Abstract

One of the continuing global concerns today is climate change, particularly global warming. Insulation boards are widely used and have become essential due to their benefits in providing safety and comfort within residential spaces. Oryza sativa, commonly known as rice straw, is an eco-friendly and natural resource that is abundant in the Philippines. Rice straw is considered a viable source of thermal insulation. Thus, this study aimed to evaluate rice straw as an insulation board to reduce heat exposure. The researchers sought to provide a comprehensive overview of the characteristics of the product and its advantages. An experimental research design was employed in this study. A systematic approach was used to determine the effectiveness of rice straw insulation boards through standardized tests, including thermal conductivity testing, fire resistance testing, durability assessment under cyclic environmental changes, and water absorption testing. These evaluations were conducted to establish the effectiveness and sustainability of rice straw as an insulating material. The researchers examined rice straw as an alternative cellulose thermal insulating board. The experimental board underwent fire resistance, durability, thermal, and water absorption tests. The results indicated that the rice straw board was effective based on the outcomes of these evaluations. The study demonstrated that rice straw can function as an alternative cellulose-based thermal insulating board. Based on the conducted fire resistance, durability, thermal, and water absorption tests, the rice straw board showed effectiveness as an insulating material, supporting its potential application in construction.

Keywords: rice straw, thermal insulation, heat reduction, sustainability, alternative materials

SNAIL SHELL AS A SUPPLEMENT IN CONCRETE CEMENT PRODUCTION FOR HOLLOW BRICKS

Joshua Espada, Aliyah Noreen Caber, Chin Francine Ison, Daniella Kim Franco

Abstract

This research investigated the integration of snail shells into hollow brick production. By incorporating snail shells, a readily available yet often disregarded waste material, into the manufacturing process, the researchers aimed to enhance both the structural integrity and environmental sustainability of the construction industry. Snail shells possess unique properties, particularly a high calcium carbonate content, which has the potential to improve the strength and durability of bricks while reducing their overall carbon footprint. Through careful experimentation and analysis, the researchers sought to determine the optimal ratio of snail shell to other materials to maximize these benefits. The study employed an experimental research design that involved conducting multiple tests, including drop tests, fire tests, and water tests. These tests were essential in evaluating the performance characteristics of the materials and assessing the suitability of snail shells as a supplement in hollow brick production. The testing results indicated that the integration of snail shells into hollow bricks was effective in enhancing durability, as demonstrated by the bricks' increased resistance to breakage. The study successfully explored the use of snail shells as a supplement in hollow brick production to improve structural integrity and promote environmental sustainability in construction. The experimental findings revealed that snail shell–infused bricks exhibited improved durability, highlighting their potential as eco-friendly building materials. This approach offers promising implications for waste management and carbon footprint reduction within construction practices.

Keywords: snail shell, hollow bricks, concrete cement, durability, eco-friendly construction materials

THE ADVANTAGES OF USING CRUMBLED MOTORCYCLE TIRES AS AN ADDITIVE IN MAKING OUTDOOR TILES

John Kerby Lacsina, Michael James Ladera, Patrick Sean Pradez, Khizzle Franco

Abstract

This study focused on the production of concrete outdoor tiles with the addition of recycled rubber derived from scrap motorcycle tires. The use of recycled rubber from scrap tires and other recyclable materials in concrete was promoted to enhance sustainability. The study aimed to determine the effects of incorporating recycled rubber from scrap tires into concrete mixtures used for outdoor tile production. The researchers conducted multiple testing methods to gather data on the advantages of using recycled rubber as an additive in concrete outdoor tiles. Tests performed included drop tests, water absorption tests, weight tests, and ramp tests to evaluate durability, water absorption rate, weight, and slip resistance of the concrete tiles containing recycled rubber additives. The results showed that the addition of recycled rubber significantly reduced the water absorption rate of the concrete tiles to less than 5%. Another identified advantage was the increased slip resistance of the concrete tiles with recycled rubber additives. The findings also indicated that increasing the proportion of recycled rubber reduced the overall weight of the concrete tiles. However, increasing the amount of recycled rubber in the mixture also contributed to a reduction in the compressive strength of the concrete. The study revealed that incorporating recycled rubber from scrap motorcycle tires as an additive in outdoor tile production has several advantages, including reduced water absorption, improved slip resistance, and lighter tile weight. However, these benefits are accompanied particularly by the reduction in compressive strength as the proportion of recycled rubber increases.

Keywords: outdoor tiles, recycled rubber, concrete, scrap tires, sustainable construction materials

THE EFFECTIVENESS OF SNAIL SHELL AS AN ADDITIVE IN PRODUCTION OF CONCRETE

Leean Kairi Lopez, Paolo Rafael Agulto, Venes Ernest Yabot

Abstract

The utilization of aquaculture waste, such as snail shells, has become an increasing concern in construction materials research. Snail shells are commonly found in water sources and are often generated as byproducts during sand sifting for masonry and concrete projects. These calcium-rich river shells are considered valuable as potential components in cement-based construction materials. In this context, the objective of the study was to develop a nano-modified concrete with improved properties using snail shell powder as an additive. Experimental studies were conducted to evaluate the effectiveness of incorporating river snail shell powder into concrete without compromising strength characteristics or causing deterioration of other properties. The study identified that the optimal cement replacement using snail shell powder was 6%. Nano-modification of concrete was achieved through the incorporation of finely powdered river snail shells. The results showed that the addition of 6% snail shell powder led to improvements in several mechanical properties of concrete. Increases of up to 12% in compressive strength, 8% in axial compressive strength, 9% in tensile strength in bending, 11% in axial tensile strength, and 8% in elastic modulus were observed. Additionally, a 7% reduction in deformation was achieved through the nano-modification process using snail shell powder. The investigation of the microstructure of concrete samples nano-modified with snail shell powder confirmed the observed relationships between cement properties and nano-modifier dosage. The findings validated the effectiveness of snail shell powder and identified the optimal dosage required to enhance concrete performance.

Keywords: snail shell powder, concrete additive, nano-modified concrete, compressive strength, sustainable construction materials

THE EFFICACY OF CHILI PEPPER(CAPSICUM) AND LEMONGRASS (CYMBOPOGON CITRATUS) AS A COMPONENT FOR HOMEMADE MOSQUITO COIL

Dennis Matthew Delrosario, Eduardo Causo, Michael Leeo Diaz, Rhitz Karl Ladaban, Khizzle Franco

Abstract

In the Philippines, mosquito-borne diseases such as dengue fever remain a major public health concern. To prevent mosquito bites, people commonly use repellents or incense, with mosquito coils being one of the most widely used options due to their affordability and accessibility. However, many commercially available mosquito coils contain chemical substances that may be harmful to human health. Recently, plant-based repellent products have gained popularity, as they are generally perceived as safer alternatives to synthetic repellents. In view of these concerns, this study aimed to explore chili pepper (Capsicum) and lemongrass (Cymbopogon citratus) as alternative plant-based components for homemade mosquito coils and to determine their efficacy as mosquito repellents. An experimental research method was employed in this study. The experimental approach involved manipulating specific variables to determine whether changes in one variable caused changes in another. This method relied on controlled conditions, random assignment, and variable manipulation to test the hypothesis regarding the effectiveness of chili pepper and lemongrass as mosquito-repellent components. The results indicated that among the three tested treatments—chili pepper, lemongrass, and a normal mosquito coil—the combination of a high concentration of lemongrass and a low concentration of chili pepper was the most effective in repelling mosquitoes. Statistical analysis showed a significant difference in repellency among the three concentrations tested. The findings demonstrate that chili pepper and lemongrass can serve as effective and safer alternatives to chemical-based mosquito repellents. The results further suggest that higher concentrations of lemongrass combined with lower concentrations of chili pepper increase mosquito repellency. The study recommends disseminating information on the use of chili pepper and lemongrass as components of homemade mosquito coils. Additionally, community-based training programs for mothers and homemakers on producing plant-based mosquito coils are encouraged.

Keywords: chili pepper, lemongrass, mosquito coil, plant-based repellent, mosquito control

USING OYSTER SHELL ASH AND SAND AS ADDITIVES TO OUTDOOR TILES

Dianne Jastine Pangilinan, Merielle Santiago, Reagan Ramos, Ian Patrick Palomo, Khizzle Franco

Abstract

The increasing accumulation of waste from seashells, particularly oyster shells, has contributed to environmental concerns. Oyster shells are often discarded improperly, leading to pollution in coastal and urban areas. In response to this issue, the researchers incorporated oyster shell ash as an additive in the production of outdoor tiles, as it has been shown to enhance the strength and durability of construction materials. This study employed an experimental research approach. Oyster shells were collected from a nearby restaurant, while the remaining materials were sourced from local hardware stores. The results revealed that outdoor tiles incorporating oyster shell ash and sand as additives performed better than conventional tiles. Testing showed that the modified tiles were more durable than standard tiles. In addition, the use of oyster shell ash and sand proved to be more affordable and environmentally friendly compared to traditional tile production. The findings demonstrate that oyster shell ash and sand are effective additives in the production of outdoor tiles. The tiles produced using these materials exhibited increased durability while remaining cost-efficient and eco-friendly. This study highlights the environmental significance of repurposing oyster shell waste and supports its potential use as a sustainable construction material.

Keywords: oyster shell ash, sand, outdoor tiles, additives, sustainable materials

UTILIZATION OF KAPOK FIBER (CEIBA PENTANDRA) AS AN ALTERNATIVE MATERIAL TO INSULATION FOAM

Mary Jossaine Dela Cruz, Heidi Dela Cruz, Jon Kirt Buenaventura,
Juan Paulp Parungao, Khizzle Franco

Abstract

With rising temperatures in the Philippines contributing to various heat-related health issues, insulation foam has become a common household necessity. However, most commercial insulation materials are synthetic and pose environmental concerns. Ceiba pentandra, commonly known as kapok fiber, is a natural resource recognized for its excellent thermal insulation properties. This study aimed to analyze the effectiveness of kapok fiber as an alternative insulation material that reduces heat and helps protect individuals from heat-related health risks. The researchers sought to provide a comprehensive understanding of the features and benefits of kapok-based insulation. An experimental research approach was employed to determine the effectiveness of kapok fiber as an alternative to commercial insulation foam. The researchers constructed a small nipa hut model where kapok-based insulation was installed. A commercial insulation foam was also used for comparison. Temperature measurements were taken to determine differences in thermal performance between the two materials. The results showed that kapok-based insulation effectively reduced heat inside the model house, contributing to lower potential health risks. A temperature difference of 1 °C to 2 °C was observed between the kapok insulation and the commercially used insulation foam. Thermal efficiency was optimized when the kapok insulation covered an area of 8.58 ft². In terms of cost-effectiveness, the kapok insulation showed only a 0.2% difference compared to commercial insulation. Additionally, the material demonstrated economic and environmental viability, as kapok plants contribute to oxygen emission and environmental sustainability. The findings confirm that kapok-based insulation foam is effective in reducing indoor heat and mitigating health risks associated with high temperatures. The kapok insulation outperformed commercial foam in thermal performance by 1 °C to 2 °C while remaining economically viable. Furthermore, the use of kapok fiber supports environmental sustainability due to its natural availability and eco-friendly properties.

Keywords: kapok fiber, thermal insulation, heat reduction, sustainable materials, alternative insulation

UTILIZING TALISAY LEAVES AS AN ALTERNATIVE MATERIAL IN MAKING CORKBOARD

Lou Andrei Montes, Jedrick Beley, Daniel Galvez

Abstract

Talisay (Terminalia catappa) trees are native to tropical regions and are known for their large, glossy leaves. These leaves are abundant and renewable, making them a potential candidate for sustainable material use. Previous studies have explored the use of Talisay leaves in various applications, such as composting, mulching, and traditional crafts. The motivation for this study stems from the need to identify eco-friendly alternatives to traditional corkboard materials. An experimental research approach was employed to explore the feasibility of utilizing Talisay leaves as an alternative material in corkboard production. Talisay leaves were sustainably collected from mature trees to minimize environmental impact. The leaves were cut into smaller pieces and processed into finer particles using appropriate equipment. These particles were then combined with a binding agent consisting of melted cornstarch to form a homogeneous mixture suitable for corkboard fabrication. The study evaluated the feasibility of using Talisay leaves as a corkboard material through physical and mechanical testing. The results showed that Talisay leaf–based corkboards exhibited properties comparable to traditional corkboards in terms of density, thickness, tensile strength, and flexibility. Water resistance tests demonstrated adequate performance, although further enhancement may be necessary for prolonged moisture exposure. The findings demonstrate the potential of Talisay leaves as a sustainable alternative material for corkboard production. With properties comparable to conventional corkboards and favorable environmental attributes, Talisay leaves present a promising option for eco-friendly material development. Further research and refinement may improve market viability and support sustainable resource management.

Keywords: talisay leaves, corkboard, sustainable materials, eco-friendly alternatives, terminalia catappa

WASTE MATERIAL FROM TETRA-PAK PACKAGES AS AN ALTERNATIVE COMPONENT FOR DRYWALL

Mhar Axzell Almazan, Stephen Raymond Cinco, John Michael Bulatao,
Aaron Jalova, Jedz Lacsamana, Christine Alexis Bal Ut

Abstract

This study explored the possibility of combining Tetra-Pak waste materials with gypsum coated with epoxy resin as an alternative drywall material. The research aimed to address environmental pollution by reducing waste generated from Tetra-Pak packages through repurposing them into construction materials. An experimental research method was employed to develop a durable drywall alternative using waste materials such as Tetra-Pak. The Tetra-Pak–based drywall was allowed to solidify in an area without direct sunlight for a total of one day. After curing, epoxy resin was applied as a coating. The researchers conducted drop tests and water absorption tests to assess the material's durability and suitability as a substitute for traditional drywall. The results demonstrated the potential of Tetra-Pak as a component for drywall production. The durability test showed that the alternative drywall broke at a height of 4 feet. The water absorption test revealed that the alternative drywall absorbed only a small amount of water across different trials. Overall, the use of Tetra-Pak waste materials in drywall production contributes positively to environmental sustainability by reducing waste generation. The findings provide valuable insight into the feasibility of creating alternative drywall using recyclable materials. This approach offers an environmentally friendly option compared to conventional drywall materials.

Keywords: drywall, tetra-pak, epoxy resin coating, durable products, environmentally friendly

WATER HYACINTH AND RICE HUSK AS SUBSTITUTES FOR MANUFACTURING PARTICLE BOARD

John Patrick Orquiza, Nico Rena, Lhou Beyonce Galicia, Dr. Gina Garcia

Abstract

The extensive use of wood in construction applications such as walls, ceilings, and other structures has resulted in excessive consumption, contributing to environmental degradation. Particle boards have emerged as viable alternatives to reduce the overuse of wood in various applications. This study aimed to explore the physical and mechanical properties of water hyacinth and rice husk, both classified as lignocellulosic waste materials, as alternative raw materials for manufacturing particleboard. An experimental research design was employed to assess the efficacy of particleboard manufactured from water hyacinth and rice husk. The evaluation focused on density, water absorption rate, thickness swelling rate, and flexural strength. Both coated and uncoated particleboards were tested using established standards, including the Japan Industrial Standards (JIS A5908) and the Indian Standard (IS 3087). The coated particleboard achieved a density of 1.61 g/cm³, a water absorption rate of 3.84%, a thickness swelling rate of 0%, a modulus of rupture of 5 MPa, and a modulus of elasticity of 659 N/mm². In comparison, the uncoated particleboard recorded a density of 1.55 g/cm³, a water absorption rate of 16.00%, a thickness swelling rate of 0.80%, a modulus of rupture of 4 MPa, and a modulus of elasticity of 652 N/mm². In conclusion, the particleboard manufactured from water hyacinth and rice husk exhibited physical properties that are nearly comparable to those of commercially available particleboard. However, the product failed to meet standard mechanical property requirements. To address these limitations, it is recommended that future studies employ a hydraulic press, increase adhesive content, and apply higher heat during the pressing process to improve mechanical performance.

Keywords: particleboard, water hyacinth, rice husk, lignocellulosic waste

ENHANCING HEALTHCARE DATA ACCESSIBILITY: A WEB-BASED LABORATORY TEST RESULT ANALYSIS SYSTEM

Marius Angeles, Yauren Yancy Perez, Jay Florenz Dominguez, Jon Kenneth Miral, Dr. Gina Garcia

Abstract

Medical laboratory test results play a crucial role in healthcare by supporting disease diagnosis, treatment, monitoring, and prevention. However, the technical and complex nature of these results can be difficult for non-medical individuals to understand, often leading to misinterpretation, emotional distress, and difficulty in making informed health decisions. As a result, patients frequently require professional assistance from physicians, which may cause inconvenience and additional financial burden. This study aimed to address these challenges by developing a web-based laboratory test result analysis system to enhance healthcare data accessibility and interpretation. This study employed an experimental research design to assess the feasibility of the proposed system. The development process involved several stages, including the installation of necessary software and programs, integration of the EasyOCR model and GPT-3 API, and system implementation using HTML, CSS, Python, and JavaScript. The system's efficacy and reliability were evaluated through multiple testing procedures, including comparative analysis between physician-provided interpretations and system-generated results, repeated trials to measure consistency, response time recording, and text box detection for assessing OCR performance. The findings showed that the system achieved a natural language processing (NLP) accuracy of 87.11% and a consistency rating of 92.85%. The average system response time was recorded at 52.06 seconds. Additionally, the optical character recognition (OCR) component demonstrated a high accuracy rate of 98.84%. The results indicated that the web-based laboratory test result analysis system performed favorably compared to findings from previous studies, demonstrating strong potential for improving healthcare data accessibility and interpretation. Although the system showed excellent overall performance, there remains room for enhancement. Future improvements may include the integration of alternative NLP and OCR models, as well as expanding the range of laboratory parameters covered by the system to further improve accuracy, efficiency, and usability in healthcare applications.

Keywords: optical character recognition, gpt-3, medical laboratory test results, web-based analysis system, healthcare data interpretation

EXPERIENCES OF THE SELECTED GRADE 11 STEM STUDENTS OF GENERAL DE JESUS COLLEGE IN USING ARTIFICIAL INTELLIGENCE AND ITS EFFECTS ON THEIR LEARNING MOTIVATION

Jhennica Antonio, Khate Angelie Dayao, Denmark Lopez, Edison Pangilinan,
Aubrey Danwill Parungao, Nivram Reyes, Jahnet Ariane Figueroa

Abstract

People continually strive to invent tools that can make daily life easier. One of the most prominent innovations in recent years is Artificial Intelligence (AI). Chassignol et al. (2018) stated that AI has increasingly penetrated the educational environment and teaching processes in schools. As technology advances, more individuals recognize its significance in the field of education. Studies have shown that Artificial Intelligence can enhance students' learning outcomes. Hung et al. (2019) further explained that learning engagement and learning outcomes influence learners' motivation to learn. However, there remains a lack of studies focusing on the effects of AI on students' learning motivation. Hence, this study aimed to determine the experiences of selected Grade 11 STEM students of General De Jesus College in using Artificial Intelligence and its effects on their learning motivation. This study employed a qualitative research method using a phenomenological approach to investigate the experiences of selected Grade 11 STEM students in using Artificial Intelligence and its effects on their learning motivation. Purposive sampling was used to select fifteen (15) participants. Data were gathered through semi-structured interviews, and the collected responses were thoroughly analyzed to identify connections between the research questions and the participants' experiences. The findings revealed that most selected Grade 11 STEM students of General De Jesus College use Artificial Intelligence, primarily ChatGPT. Students utilize AI tools for academic tasks and idea generation. The study found that students generally had positive experiences with AI, as it provided convenience, increased their knowledge, and helped them identify grammatical errors. Furthermore, the results indicated that AI had an effect on students' learning motivation. AI inspired students to learn more and motivated them to complete schoolwork. However, some students became dependent on AI. Due to excessive reliance on AI, some students exerted less effort in their studies. The results revealed the experiences of Grade 11 STEM students of General De Jesus College in using Artificial Intelligence and its effects on their learning motivation. ChatGPT emerged as the primary AI tool used by the students. AI tools in education were found to serve mainly academic purposes, such as enhancing essay writing skills and correcting grammatical errors. Some students viewed AI as a motivational tool that stimulated curiosity and promoted personal growth. However, others expressed concern that overreliance on AI may lead to dependency and reduced motivation to learn. Therefore, the proper use of Artificial Intelligence in the learning process should be considered to strengthen students' learning motivation rather than weaken it.

Keywords: artificial intelligence, learning motivation, stem students, educational technology, ai in education

EXPERIENCES OF THE SELECTED GRADE 11 STUDENTS OF GENERAL DE JESUS IN USING ARTIFICIAL INTELLIGENCE AND ITS EFFECT ON THEIR LEARNING MOTIVATION

Pauline Salvador, Von Andrei Dayao, Jemelson Erilla, Paolo Macapagal,
Janelle Dawn Tan, Laurence Duran, Jahnet Ariane Figueroa

Abstract

Artificial Intelligence (AI) is a technology that allows humans to interact with computer-based systems known as virtual assistants, which utilize algorithms to assist users in various tasks (Martínez et al., 2023). Artificial Intelligence has the potential to improve education by addressing existing challenges through innovative learning methods. Moreover, students comprise the majority of Artificial Intelligence users, accounting for 54.1% of its overall usage (Johnston et al., 2024). Previous research has shown that AI-based educational software can influence learners' academic achievement and attitudes, such as improving mathematical performance among second-grade students (Jabr, 2020). Learning motivation is a fundamental aspect of human behavior that influences how individuals allocate their time, energy, persistence, and emotional engagement in tasks (Filgona et al., 2022). Despite these findings, limited research in the local context has examined the effects of Artificial Intelligence on students' learning motivation. Hence, this study aimed to determine the experiences of selected Grade 11 students in using Artificial Intelligence and to examine its effects on their learning motivation. This study employed the IMRaD (Introduction, Methods, Results, and Discussion) format, with selected Grade 11 students of General De Jesus College as the primary respondents. Data were gathered through semi-structured interviews supported by audio recordings. The collected responses were thoroughly analyzed and interpreted to examine the students' experiences and perceptions regarding the use of Artificial Intelligence. The results showed that the majority of participants who regularly use Artificial Intelligence were students from the Science, Technology, Engineering, and Mathematics (STEM) strand. Both male and female students were found to be active users of Artificial Intelligence, with ChatGPT being the most commonly used platform. Participants reported encountering issues related to credibility, technical difficulties, and service limitations. Despite these challenges, many students found Artificial Intelligence beneficial. The findings further revealed that Artificial Intelligence inspired and motivated students and enhanced their understanding of academic content. However, several participants expressed concern that excessive reliance on Artificial Intelligence could lead to laziness. The results demonstrate that Artificial Intelligence affects the learning motivation of selected Grade 11 students of General De Jesus College. Artificial Intelligence provides both positive and negative experiences for its users. While it can enhance motivation by supporting various academic tasks, it may also contribute to decreased effort when overused. The findings emphasize the importance of responsible use of Artificial Intelligence in education. Instead of relying on it entirely, students are encouraged to use Artificial Intelligence as a tool for idea generation and further research to deepen understanding without negatively affecting their learning motivation.

Keywords: artificial intelligence, ai platforms, student experiences, learning motivation, grade 11 students, educational technology

ONESTOP GJSHOP: DIGITALIZATION OF SCHOOL MERCHANDISE PURCHASING PROCESS AT GENERAL DE JESUS COLLEGE

Francine Bea Dela Cruz, Ashley Nicole Cagungon, Dyca Francel Cardenas, Mikaela Grace Corrales, Eullene Rodessa Del Rosario, Cyrha Doinog, Renz Alfred Lapuz, Heaven Villarin, Dr. Josephine Samonte

Abstract

An online school store serves as a multifaceted asset for educational branding. A well-designed and functional web store reflects a school's commitment to efficiency and modernity. This study explored the development of OneStop GJShop, a web application that allows customers to place orders online. Using a descriptive developmental research approach, the researchers assessed the needs of 310 senior high school students. In addition, 30 frequent buyers of the traditional purchasing system evaluated OneStop GJShop in terms of its organizational, technological, and social benefits. OneStop GJShop excelled in three key areas: accurate product availability, a user-friendly design, and convenient 24/7 access. To further enhance the user experience, the researchers developed comprehensive manuals for both administrators and customers. These manuals provide step-by-step instructions to ensure a smooth and efficient experience for all users. Overall, the study concludes that OneStop GJShop offers a more convenient alternative to the traditional purchasing system. The system eliminates the need to visit multiple offices and provides diverse payment options, which ultimately leads to increased customer satisfaction.

Keywords: digitalization, school merchandise, purchasing process, web application, online school store

PREVENTION OF FIRE USING FIRE FIGHTING ROBOT FOR ENHANCED EMERGENCY RESPONSE

Mark Ivan Fontanilla, Junmar Clemente, Yrvine Cruz, Kurl Ivan Gonzales, Khizzle Franco

Abstract

The development of a fire-fighting robot is essential due to its significant benefits, particularly for firefighters actively engaged in fire suppression. The researchers aimed to equip the robot with sensors capable of detecting fire, heat, and smoke to enable rapid response and suppression. The integration of these sensors is important as it can assist individuals at risk and enhance overall fire safety and emergency response measures. This study employed an experimental research design focused on fire prevention using a fire-fighting robot. The process involved assembling the base components, including sensors, an Arduino, motor driver, water pump, and water tank. The study aimed to prevent fire incidents in locations such as houses, apartments, offices, and other areas that are often unoccupied or temporarily left unattended by their owners, demonstrating a systematic approach to experimentation. The results revealed a correlation between the size of a fire and the distance covered by its expansion. As the fire increases in size, the distance also increases due to higher temperatures, causing the heat sensor to respond more quickly. In contrast, smaller fires result in a shorter detection distance. The data showed that the flame sensor detected fire from the left direction in 0.5 seconds during testing 1 and 0.8 seconds during testing 2. In testing 3 and 4, detection times increased to 1 second and 1.15 seconds, respectively. Detection times for the center direction were found to be the same as those for the left direction. The results demonstrated that the sensors effectively detected fire within their vicinity, with three sensors placed at a maximum distance of 7 inches and operating at a temperature of 50°C. The researchers positioned the sensors in different directions at the front of the fire-fighting robot. Once the flame sensor detected the presence of fire, the water pump was automatically activated to suppress it.

Keywords: fire-fighting robot, fire prevention, emergency response, fire detection sensors, automation

PSYCHOLOGICAL FACTORS INFLUENCING RISK PERCEPTIONS AND SAFETY BEHAVIOR AS PERCEIVED BY SELECTED CONSTRUCTION WORKERS IN CABIAO, NUEVA ECIJA

Irish Torres, Katelyn Cindy Santiago, Leo Javier, Miguel Emmanuel Parungao,
Nina Joyce Parungao, Thristan Sinoben, Aizel Marie Castro

Abstract

The construction industry has experienced significant growth and advancements, with increased emphasis on improving safety and security for workers, as evidenced by various studies. Globally, construction is recognized as one of the most hazardous sectors, often resulting in fatalities, injuries, and considerable challenges for workers. This study sought to identify the psychological factors influencing risk perception and safety behavior as perceived by construction workers. The study employed a phenomenological research approach to identify psychological factors shaping the risk perception and safety behavior of construction workers. Semi-structured interviews, note-taking, and audio recordings were used to comprehensively capture participants' insights. A total of fifteen construction workers from Cabiao, Nueva Ecija were selected in accordance with qualitative research standards. The study aimed to address on-site challenges faced by these workers by exploring specific guiding questions. After collecting demographic profiles from the fifteen participants, the findings showed that most were male, within the age range of 41–50 years, had completed high school education, possessed 1–20 years of work experience, were married, and had two to five dependents. The results revealed several psychological factors influencing risk perception and safety behavior on construction sites, including lack of focus, heightened fears, pressure, and accumulated workloads. These factors contributed to issues such as loss of balance, communication breakdowns, workplace difficulties, and conflicts between family responsibilities and work demands. The results revealed that construction workers often overlook workplace hazards, highlighting the need to prioritize both physical and mental health. To improve the accuracy and depth of findings, further exploration of psychological factors affecting risk perception and safety behavior is recommended, including the use of additional and more detailed interview questions for participants.

Keywords: psychological factors, construction workers, risk perception, safety behavior, workplace safety

UTILIZING GABI LEAVES IN THE PRODUCTION OF OUTDOOR TILES

Mariane Llego, Kayne Crystel Garcia, Faith Gerianne Miranda, Rafchelle Mudlong, Khizzle Franco

Abstract

This study was conducted to develop outdoor tiles using Gabi stems and leaves and to assess their dimensions, weight, and visual characteristics. In addition, the research aimed to evaluate the strength and moisture performance of outdoor tiles produced with Gabi-based materials. An experimental research approach was employed in the production of outdoor tiles using Gabi leaves and stems. The tiles underwent several tests to evaluate durability, fire resistance, water absorption, and strength. A life cycle assessment was also conducted to analyze the environmental impact of incorporating Gabi leaves and stems into the tile production process. The results showed that outdoor tiles incorporating Gabi leaves and stems exhibited improved durability and fire resistance. These tiles demonstrated a lower impact and higher fire resistance ratings compared to normal tiles. The water absorption test also indicated enhanced water resistance in tiles with Gabi components. Additionally, the inclusion of Gabi leaves and stems resulted in a slight increase in tile weight, suggesting potential advantages in terms of durability and structural stability. The findings indicate that the utilization of Gabi leaves and stems in outdoor tile production enhances material performance, particularly in durability, fire resistance, and water resistance, while promoting environmental sustainability. The results contribute to existing studies on the use of natural materials in eco-friendly construction and provide valuable insights for the construction industry to explore sustainable building solutions using locally available resources.

Keywords: outdoor tiles, gabi leaves, gabi stems, sustainable construction materials, eco-friendly tiles

BUILDING SMALL GENERATORS FOR GENERATING ENERGY FROM WINDS

Christian Francisco, Benjamin Salcedo, Kenneth Madrid, Angeline Aguilar, Khizzle Franco

Abstract

This research study explored the potential of small wind generators as a renewable energy source by harnessing wind power. In response to increasing global energy demands, the exploration of alternative energy sources is necessary. Small wind generators offer a promising solution for generating sustainable electricity due to their affordability and accessibility. An experimental research method was employed in this study. Using an experimental approach, the researchers conducted tests to measure and analyze factors such as wind speed, motor efficiency, and power output to determine the practicality and reliability of small wind generators as a sustainable energy option. The findings indicated that small wind generators have the potential to effectively convert wind energy into electricity, demonstrating comparable or superior performance to conventional portable generators in certain scenarios, particularly in terms of efficiency, portability, and environmental impact. Factors such as wind speed, wing design, and motor efficiency significantly influenced the power output of the small wind generators. This study emphasized the potential of small wind generators as a practical alternative to conventional energy sources. By utilizing wind power, these generators provide a sustainable approach to electricity generation, offering advantages such as cost-effectiveness, environmental friendliness, and accessibility. It is recommended that further refinement and advancement of small wind generator technology be pursued to enhance efficiency and expand its application across different environments, contributing to a more sustainable energy landscape.

Keywords: renewable energy, wind energy, small wind generators, sustainable power generation, alternative energy sources

PERCEPTIONS OF THE SELECTED ELECTRICAL ENGINEERS AND ELECTRICIANS ABOUT UNDERGROUND CABLING AND ITS FEASIBILITY IN SAN ISIDRO, NUEVA ECIJA

Angel Loreen Cruz, Ashley Jirah Villegas, Merylyn Dela Cruz, Mariah Allianna Estrella, Lejan Gabriel Silva, Sean Villaflor, Jahnet Ariane Figueroa

Abstract

Underground cabling is an infrastructural installation that buries power lines beneath the surface instead of leaving the cables hanging on poles spread throughout the landscape (Goldstein, 2015). Studies have shown that underground cabling systems have long been adopted by progressive Southeast Asian countries to improve the reliability of electricity distribution, reduce interruption durations, and prevent vehicular accidents caused by exposed wires. However, there is a lack of studies focusing on the feasibility of underground cabling in rural areas. In this study, the researchers aimed to determine the perceptions of selected electrical engineers and electricians in San Isidro, Nueva Ecija regarding underground cabling and its feasibility. This study utilized qualitative research, specifically a descriptive method, to examine the perceptions of selected electrical engineers and electricians regarding underground cabling and its feasibility in San Isidro, Nueva Ecija. The participants were selected through purposive sampling and consisted of a total of ten (10) electrical engineers and electricians. Data were systematically gathered using semi-structured interviews supported by audio recordings. The results showed that electrical engineers and electricians perceived underground cabling as being installed beneath the surface, durable, costly, and suitable for urbanized areas. The study further found that underground cabling is advantageous because it reduces vehicular accidents, offers durability with less interference, is eco-friendly, and provides reliable power distribution. Additional advantages identified include reduced labor costs and improved visual appeal through beautification. On the other hand, the study revealed that underground cabling is costly, prone to flooding and property damage, and poses safety threats. It also results in worker hardship, particularly during the installation process. Lastly, the results indicated that underground cabling is not feasible in San Isidro, Nueva Ecija due to its high cost, the permits and space required, and the amount of time needed for installation. The results reveal the limited perceptions of selected electrical engineers and electricians in San Isidro, Nueva Ecija regarding underground cabling. While this modern infrastructural installation has been utilized in other countries to reduce power outages, interruptions, and vehicular accidents, the study highlights both its advantages and disadvantages. The findings further demonstrate the infeasibility of underground cabling in San Isidro, Nueva Ecija due to constraints related to budget, space, time, and the need for authorized permits to ensure successful implementation.

Keywords: underground cabling, feasibility, perception, electrical engineers and electricians, advantages and disadvantages

SUNOGALERT: HOMEOWNERS SMART UNIFIED NETWORK FOR OUTSTANDING GAS LEAKAGE AND FIRE DETECTION ALERT SYSTEM

Rosmel Santiago, Renzi Airel Salarda, Mark Reiner Santos, Dr. Gina Garcia

Abstract

Kitchen fires represent a critical and pervasive safety concern, capable of causing extensive property damage and loss of life, and account for a significant portion of overall fire incidents. While gas leakage and fire detection systems exist today, they have limitations in terms of affordability and effectiveness in alerting individuals to potential hazards. This highlights the need for an investigation into a cost-efficient, IoT-based detection and alert system with multiple sensors and real-time monitoring capable of providing timely alerts beyond the immediate locality. This study utilized MQ6, LM35, LM393, and HC-SR501 sensors for gas, flame, heat, and motion detection, along with a GSM module, LED light, and buzzer for alerts. An Arduino Uno microcontroller and a Wemos D1 were used to enable IoT capabilities and real-time monitoring of environmental conditions. When sensor thresholds were reached, SMS alerts, visual indicators, and audible alarms were activated. A motion sensor was employed to detect human presence and prevent false alarms during kitchen activities. Integration with the Arduino IoT Cloud allowed remote monitoring through an application and website, as well as customizable contact numbers for SMS alerts. Following a true experimental research design, the SUNOGalert device was assessed through simulated kitchen fire scenarios and compared with conventional systems. The results showed that SUNOGalert achieved an average response time of 1.32 seconds for light and buzzer alerts, which is 96.7% faster than existing systems, and 7.69 seconds for SMS alerts. The device demonstrated a 100% detection accuracy rate and, with a cost of Php 2,390, proved to be 23.40% more cost-efficient than conventional systems. Overall, this research successfully developed an IoT-based multisensor gas leakage and fire detection alert system capable of delivering timely alerts, accurate detection, and a usable, maintainable, and cost-efficient solution, making it a promising approach for enhancing residential safety.

Keywords: iot-based fire detection, gas leakage detection, multisensor alert system, smart home safety, real-time monitoring, arduino-based system

ACTIVATED COCONUT CARBON FOR MOTORCYCLE FILTER MECHANISM TO REDUCE CARBON EMISSIONS

Seirell James Hanaki, John Louie Salunga, Caiver John Sebastian,
Decembrey Andrei Tuazon, Dr. Gina Garcia

Abstract

Transportation is one of the major contributors to climate change, as it releases greenhouse gases into the atmosphere and contributes to global warming. One of the contributing factors to greenhouse gases is the harmful pollutants emitted by motorcycles, which are common in the Philippines. The purpose of this study is to reduce carbon emissions emitted by motorcycles, such as carbon monoxide (CO), carbon dioxide (CO_2), and hydrocarbons (HC), using a filter made from coconut activated carbon with a molecular sieve and impregnated with magnesium oxide. This study employed an experimental research design to determine the effectiveness of using coconut activated carbon in reducing carbon emissions from motorcycle exhausts. A total of three (3) motorcycles were used to evaluate the coconut activated carbon filter mechanism. Emission testing was conducted to assess the effect of the activated carbon filter mechanism installed in each motorcycle exhaust. Inferential statistics such as percentage, weighted mean, and t-test were used to analyze the results. The coconut activated carbon filter mechanism reduced harmful carbon emissions from manual motorcycles, resulting in lower levels of CO, CO_2, and HC emissions. The filter was effective in two (2) motorcycles that were five (5) years old. However, it was not effective in one (1) motorcycle that was ten (10) years old, which showed an increase in hydrocarbon (HC) emissions. In terms of success rate, manual motorcycles of a younger age were more likely to exhibit reduced emission levels when using the filter. The coconut activated carbon filter mechanism made from coconut shells was effective in reducing carbon emissions from manual motorcycles. It is suggested that the inner structure of the mechanism be improved by basing it on the actual motorcycle exhaust system to better circulate emissions through the filter and maximize its capacity to reduce emissions.

Keywords: coconut shell, activated carbon, motorcycle emissions, filter mechanism, carbon reduction

DANGERS ENCOUNTERED BY SELECTED CONSTRUCTION WORKERS IN CONSTRUCTION SITES DUE TO NEGLECT OF FOLLOWING OCCUPATIONAL HEALTH AND SAFETY STANDARDS IN SELECTED MUNICIPALITIES IN DISTRICT IV, NUEVA ECIJA

Renz Joseph Parungao, Abril Anne Eunice Graviles, Junior Punzalan, Dion Paul Rena, Angelina Keith Valerio, Nicole Marquez, Chester Fuertez, Aizel Marie Castro

Abstract

A strong safety and health culture in workplaces involves implementing policies and processes that ensure workers' well-being and prevent accidents. This proactive approach contributes to the overall health and safety of employees and society. However, due to negligence in following safety protocols at construction sites, dangers are more likely to occur, resulting in injuries and loss. This study underscored the importance of risk assessment in construction sites by determining the dangers posed by non-compliance with occupational health and safety standards and serving as a tool for promoting a culture of safety. Furthermore, by focusing on the local construction industry, where related research is limited, the study addressed a gap in local knowledge. This study employed a phenomenological research design using a qualitative research approach. The research was conducted in selected municipalities in District IV, Nueva Ecija. A total of thirty-two (32) participants were selected through the snowball sampling technique. Data were collected through face-to-face interviews using semi-structured interview guides and audio recordings. The results revealed that most participants had one to ten years of experience in the construction industry. Participants demonstrated sufficient knowledge of occupational health and safety through familiarity with basic protocols, attendance in seminars and orientations, and work experience. However, the findings also showed that several occupational health and safety protocols were neglected, including the proper use of personal protective equipment, compliance with safety officers, and avoidance of distractions. The dangers encountered due to negligence included falls, being struck by objects, foot injuries, minor hand injuries, equipment-related injuries, slipping or stumbling incidents, and electrocution. Measures taken after neglecting safety protocols included receiving assistance from supervisors, personal accountability, and, in some cases, immediate termination of employment. The findings emphasized the importance of strictly following occupational health and safety standards in construction sites to prevent accidents. Adherence to safety protocols and continuous training were identified as essential measures in mitigating risks and ensuring the well-being of construction workers, thereby contributing to the ongoing improvement of occupational health and safety practices within the construction sector.

Keywords: negligence, construction workers, construction sites, occupational health and safety, workplace dangers

EFFECTIVENESS OF ORANGE PEEL FLOOR WAX AS AN ALTERNATIVE TO COMMERCIAL FLOOR WAX

Franz Tyrone Manalastas, Jonelle Ivan Bautista, Kenji Samson, Riki Arnzhin Osabel, Khizzle Franco

Abstract

Many commercial floor waxes contain a significant amount of synthetic compounds that may pose risks to both the environment and human health. These products have been associated with skin irritation, allergic reactions, eye irritation, and potential toxicity if ingested. As concerns over chemical exposure increase, there is growing interest in natural alternatives. This study aimed to determine whether an orange peel–based floor wax could perform comparably to commercial floor wax in terms of durability, shine, ease of application, cost, and environmental impact. The research sought to utilize the natural properties of orange peel to develop an environmentally friendly cleaning product. This study employed an experimental approach to produce a floor wax derived from orange peel. The process involved extracting active compounds from orange peels by melting candle wax, adding orange peel, stirring the mixture, filtering it, incorporating kerosene, cooling the mixture, and sealing it in plastic containers. The resulting floor wax was then applied to floor surfaces, and observations were made regarding adhesion, longevity, and overall performance. Data were systematically gathered to assess the effectiveness of the orange peel–based floor wax. The findings revealed that orange peel demonstrated strong potential as an alternative floor wax. Due to its natural oil content, orange peel effectively functioned as both a polishing agent and a protective layer for flooring. The results indicated that the orange peel floor wax performed well in terms of durability and shine, suggesting that it may serve as a financially viable and environmentally friendly alternative to commercial floor wax products. The study demonstrated that orange peel can be a viable alternative to commercial floor wax. Orange peel extracts contain natural oils and citrus fragrance with antibacterial properties, making the product safer for indoor use, particularly in households with children or pets. Additionally, orange peel floor wax offers a more sustainable and eco-friendly option compared to chemical-based waxes. However, further research is recommended to evaluate the long-term durability and effectiveness of orange peel wax under real-world conditions. Overall, this study contributes to efforts to reduce chemical usage in cleaning products and highlights the importance of exploring natural solutions for environmental and public health.

Keywords: orange peel floor wax, environmentally friendly cleaning product, natural alternatives, chemical reduction, sustainable materials

EXPERIENCES OF SELECTED WORKING ENGINEERING STUDENTS FROM NEUST SUMACAB CAMPUS, CABANATUAN CITY, IN MANAGING THEIR TIME

Marinel Wagan, Hans Gabriel Bunag, Joshua Dalusong, Johncel Andrew Lapuz,
Joaquin Rafael Soriano, Princes Jasmine Largoon, Aizel Marie Castro

Abstract

Numerous studies have explored the time management of working engineering students; however, most focus primarily on the challenges and difficulties they encounter. Limited attention has been given to the coping strategies, benefits, and advantages of balancing work and academic responsibilities. Therefore, this study explored the experiences of selected working engineering students from NEUST Sumacab Campus, Cabanatuan City in managing their time. This qualitative study employed a phenomenological research design. Using purposive sampling, twelve (12) working engineering students from NEUST Sumacab Campus, Cabanatuan City were selected as participants. Data were gathered through semi-structured interviews. Voice recordings and note-taking were utilized to accurately document and analyze the participants' responses. The findings revealed that working engineering students experienced challenges in managing their time while transitioning between academic and work responsibilities. These challenges included exhaustion, fatigue, and both occupational and academic pressure. Despite these difficulties, the participants reported several advantages gained through proper time management, such as balancing school and work responsibilities, avoiding conflicting deadlines, increased productivity, maximized time efficiency, and the ability to meet financial needs.The participants employed various coping strategies, including spending free time studying, multitasking, having flexible work schedules, adapting to circumstances, prioritizing tasks, and properly allotting time between studying and working. Additionally, the participants shared tips and recommendations for other working students, emphasizing the importance of proper time management, prioritizing studies, learning to make sacrifices, and maintaining perseverance and effort. The findings indicate that working while studying presents several challenges for engineering students, particularly in managing time and maintaining physical and mental well-being. However, effective time management enables students to balance work and academic responsibilities and highlights the benefits of being a working student, such as financial support, improved productivity, and efficient use of time. Overall, time management plays a crucial role in helping working engineering students navigate both academic and professional demands successfully.

Keywords: time management, working students, engineering students, lived experiences, advantages, coping strategies

EXPERIENCES OF THE SELECTED SENIOR CITIZEN CUSTOMERS IN USING KIOSK MACHINE AT MCDONALD'S WALTERMART GAPAN

Angela Jasmine Galope, Joey Alvarez, Jianella Lei Dalusong, Carl Justin Gallardo, Jaycee Marnell Jimenez, Jeraline Madrigo, Jamir Jon Cleo Santos

Abstract

Fast food chains are a type of mass-produced food intended for commercial resale that place a significant emphasis on serving time. McDonald's is one of the well-known and continuously growing fast food chains in the world. According to Ashfaq (2023), the introduction of McDonald's self-service kiosks was considered revolutionary. In 2003, McDonald's also began testing self-service kiosk machines. A kiosk machine is a standalone device that usually has a large touchscreen, allowing users to browse menus, select items, and complete payments without approaching a cashier. However, there is a lack of studies focusing on the experiences of senior citizens in using kiosk machines in the Philippines. This study aimed to determine the experiences of selected senior citizen customers in using kiosk machines at McDonald's Waltermart, Gapan. The study used a qualitative research approach, specifically a phenomenological design, to examine the experiences of selected senior citizen customers in using kiosk machines at McDonald's Waltermart, Gapan. A total of five participants were selected using purposive sampling. Data were collected through semi-structured interviews supported by audio recordings and note-taking. The gathered data were thoroughly analyzed and interpreted to arrive at conclusive results. The study revealed that most participants were women aged 60 to 65 years old. The results showed that participants experienced difficulties in using kiosk machines due to unfamiliarity with the technology, technical issues, and long lines. Despite these challenges, the results also revealed that the kiosk machines provided positive experiences, as they offered convenience in placing orders. Furthermore, the findings indicated that to improve kiosk machine usability, larger fonts and images, clearer instructions, and assistance during use should be provided. These improvements may further help customers, especially senior citizens, in using kiosk machines more effectively. The results reveal that selected senior citizen customers at McDonald's Waltermart, Gapan encountered difficulties in using kiosk machines due to unfamiliarity, technical malfunctions, and long queues. These issues negatively affected their ease of use and overall experience. Furthermore, the findings suggest that implementing strategies such as enlarging fonts and images, providing assistance, and offering clearer instructions may help address these challenges. With these findings, the study demonstrates the importance of applying participant suggestions to enhance kiosk utilization and improve its efficiency, particularly for senior citizen users.

Keywords: mcdonald's kiosk, senior citizens, kiosk efficiency, modern technology

INNOVATIVE WATER FOR WELLNESS (IWW) SYSTEM: SOLAR-POWERED WATER PURIFICATION SYSTEM

Angel Mae Custodio, Jan Kenneth Mateo, Shawn Frederick Francisco,
Ma Eunice Heart Baldazo, Dr. Gina Garcia

Abstract

Numerous regions worldwide experience water shortages due to increasing demand and limited resources. In many areas, particularly in developing countries with limited access to electricity, obtaining clean and decontaminated water poses a significant challenge. As a result, wastewater recycling has become essential. This study aimed to develop a solar-powered water purification system capable of converting wastewater into recycled water for various beneficial uses, including agricultural and landscaping irrigation, industrial applications, toilet flushing, and groundwater replenishment. Additionally, the study examined the use of renewable energy technology, such as solar panels paired with battery storage, to ensure continuous system operation, especially in remote or rural areas without electricity and during emergencies or natural disasters. This study employed a true experimental research design to investigate the cause-and-effect relationship of the Innovative Water for Wellness (IWW) System on wastewater treatment. Wastewater samples from two different sources were collected using sterilized 300-ml containers, with one sample taken from each source. After passing through the water purification system, the treated wastewater from both sources was collected again in sterilized 300-ml containers. The water samples underwent microbiological testing to identify contaminants. Descriptive statistical tools, such as mean analysis, were used to evaluate the efficiency of the IWW system. The Innovative Water for Wellness (IWW) System successfully purified wastewater containing Total Coliform, Thermotolerant Coliform, and Heterotrophic Plate Count (HPC). Microbiological testing using the Multiple Tube Fermentation Technique and Pour Plate Method yielded average values of less than 1.1, indicating that all results were below the standard parameters. Additionally, the system produced 3 liters of purified water in 59 minutes and 32.4 seconds and demonstrated the capability to operate continuously for up to 9 hours through its dual power source configuration, utilizing both solar panels and battery storage. The Innovative Water for Wellness (IWW) System demonstrated its effectiveness in converting wastewater into recyclable water, as confirmed by laboratory testing. Its operational efficiency was further highlighted by its ability to purify 3 liters of water in under one hour. Moreover, the system's seamless transition between power sources ensured uninterrupted operation, establishing it as a reliable and practical solution for addressing water scarcity.

Keywords: recycled water, solar energy, water purification, sand and sieve filtration, boiling, uv light

NAVIGATING THE MALE-DOMINATED ENGINEERING FIELD: CHALLENGES ENCOUNTERED BY SELECTED FEMALE ENGINEERS IN DISTRICT 4 NUEVA ECIJA

Lyan Jairah Evangelista, Josen Eufrie Dela Cruz, Isabel Gwyneth Dela Cruz,
John Michael Gonzales, John Richmond Sodela, Jeremy Clarin, Aizel Marie Castillo

Abstract

Engineering is a field that has long been associated with a male-dominated culture. This environment has a significant impact on women engineers, influencing their experiences and representation within the field. This phenomenological study aimed to unveil the challenges and experiences of female engineers working in a male-dominated profession. Through this study, the researchers sought to help inspire and mentor future generations of female engineers and encourage them to pursue careers in engineering. A qualitative study was conducted to determine the challenges experienced by female engineers in their work environments and to identify the strategies they used to cope with these challenges. Semi-structured interviews were utilized to gather data from the selected participants, with the aid of audio recordings to ensure the authenticity of the information analyzed. A total of ten female engineers from District 4, Nueva Ecija were selected as participants. The participants of this study were carefully selected based on specific criteria. Data were collected after the validation of the research instrument and were analyzed carefully and thoroughly by the researchers. The participants' responses revealed that discrimination encountered by women engineers is gradually lessening over time, and that various platforms exist that benefit female engineers in their field of employment. However, the findings also indicated that women engineers continue to face discrimination related to perceptions of their inherent ability compared to male engineers, which results in the loss of job opportunities. The findings further revealed that women engineers cope with these challenges by proving their ability to excel in their work and by addressing and eliminating stereotypes associated with women engineers in their field. Gender stereotyping in male-dominated fields such as engineering remains relevant today. The study found that stereotypes negatively affect women engineers' opportunities for employment and career advancement. Managers often favor men, creating a work culture that discourages women and reinforces the stereotype that engineering is a male-oriented profession. Women engineers recommended advocating for themselves and demonstrating their skills as strategies to address these challenges.

Keywords: female engineers, gender discrimination, gender stereotyping, workplace challenges, coping strategies, engineering field

THE BENEFICIAL EFFECTS OF AVOCADO PEELS AS A MAIN INGREDIENT IN SOAP

Geo Isidro, Richmon Agravante, Janssen Guinto, Justin Alcala, Khizzle Franco

Abstract

There is a growing need for cost-effective methods of soap production while reducing food waste generated worldwide. Instead of using avocado extracts, the researchers utilized avocado peels as the main ingredient in soap formulation to create an eco-friendly alternative and help reduce food waste. An experimental research design was employed in this study. Laboratory testing was conducted to determine the bacterial count and antioxidant activity of the soap produced using avocado peels. The results showed that the soap exhibited antimicrobial activity and antioxidant properties. These findings demonstrated that the formulated soap using avocado peels was effective based on the conducted laboratory tests. Since the soap was found to be effective, the researchers recommended further improvement of the study and refinement of the soap formulation by removing unnecessary ingredients to enhance product quality.

Keywords: eco-friendly, antioxidants, antimicrobial properties, avocado peels, soap production

THE POTENTIAL OF AN ALTERNATIVE INSULATION BOARD FROM WASTE MATERIALS (COCONUT COIR, ABACA FIBERS, SAWDUST AND RECYCLED DENIM FABRIC)

Seifer Nash Canlas, James Luis Basa, James Michael Dela Cruz, Joshua Dela Rosa, Gavriel Magno, Jeanne Pierre Orbiso, Rolina Labao

Abstract

Foam insulation has been widely used worldwide due to its affordability compared to other insulation materials. However, it is not environmentally friendly, as it is made of plastic and contributes to environmental harm. This study aimed to develop a thermal insulation material that is both environmentally friendly and cost-effective by utilizing recycled waste materials. An experimental research method was employed in this study. The researchers conducted thermal performance and durability tests by installing the insulation material inside a box and continuously measuring the internal air temperature using a thermometer. For the flammability test, a blowtorch was used to determine the material's resistance to fire. Additionally, the insulation boards were submerged in water for a specified duration, allowed to drip dry, and then weighed to assess their water absorption properties. The results showed that the developed bio-insulation exhibited a mean average temperature that was 3.7 °C lower than foam insulation during the house model test. In the flammability test, the bio-insulation began to char when exposed to direct blowtorch flame but did not ignite. Even under forced burning, only charred remains were observed, and no ignition occurred. In the water absorption test, the bio-insulation absorbed water equivalent to 132.8% of its dry weight, compared to foam insulation, which absorbed water equivalent to 170% of its dry weight. The findings indicate that the developed bio-insulation has strong potential as an alternative insulation material. Unlike foam insulation, which emits toxic smoke when burned due to its plastic composition, the bio-insulation produced smoke similar to that of burning wood. However, the water absorption results suggest that the bio-insulation requires further improvement, as it absorbed more water than expected, whereas foam insulation exhibited negligible water absorption. Cost analysis revealed that the alternative insulation costs approximately PHP 36.25 per square meter, compared to commercially available insulation priced between PHP 30–40 per square meter. Overall, recycled denim fabric, coconut coir, sawdust, and abaca fibers demonstrate viability as materials for producing a biodegradable, eco-friendly, and cost-effective alternative insulation board.

Keywords: bio-insulation, environmentally friendly, cost-effective

LEMON (CITRUS LIMONUM RISSO) AND STARFRUIT (AVERRHOA CARAMBOLA) EXTRACT AS RUST REMOVER GEL

Manuel Ortiz Jr, Kenneth Rodhniel Santiago, Carl Emmanuel Real, Polo Gonzalez, Khizzle Franco

Abstract

Rust is a common form of metal corrosion that occurs when steel is exposed to oxygen and moisture. This study aimed to determine the effectiveness of lemon (Citrus limonum Risso) and starfruit (Averrhoa carambola) extracts as a rust remover gel. An experimental research method was employed to determine whether lemon and starfruit extracts inhibit corrosion in steel metals. The study involved testing different formulations to evaluate rust removal effectiveness. Statistical analysis was used to support the experimental design and validate the findings. The results revealed that higher concentrations of lemon and starfruit extracts, combined with longer exposure time on rusted metal, were more effective in rust removal compared to shorter exposure durations. Testing and observation of various concentrations showed that higher concentrations resulted in stronger rust-removing capability. Among all formulations, Formulation A exhibited the strongest concentration and was proven to be the most effective. The findings indicate that lemon and starfruit extracts show strong potential as botanical substitutes for rust removal based on the experimental results. Furthermore, enhancing and refining the components of the rust remover gel may further improve its rust-removing effectiveness.

Keywords: starfruit, lemon extract, rust remover gel, corrosion, botanical rust removal

DEVELOPMENT AND IMPLEMENTATION OF A WEB-BASED APPLICATION EXPENSE TRACKER SYSTEM

John Matthew Ladera, Kelvin Soguilon, John Gabriel Lignes, Dr. Gina Garcia

Abstract

Many individuals experience difficulty managing their budgets and monitoring expenses. One potential solution to this problem is the development of an expense tracker system. This study aimed to test the functionality, usability, and efficiency of a web-based expense tracker system known as Budget Buddy. The Software Development Life Cycle (SDLC) was utilized to conduct this study. A total of twenty (20) respondents used Budget Buddy to test its system. Percentage and weighted mean were employed as statistical tools to evaluate the collected data. The results showed that Budget Buddy was successfully tested and analyzed in terms of usability, functionality, and efficiency. Users found the system beneficial, as it reduced workload, was fully operational, and facilitated easier management of personal finances and expenses. Following the testing process and thorough analysis of the collected data, the findings indicated that Budget Buddy operated without technical issues and was convenient for users. Although the system received positive feedback, it still has room for further improvements, particularly in enhancing real-time data synchronization between the backend and frontend. It is recommended that future studies incorporate additional features such as automatic input of annual salary data, voice command functionality, and expense tracking from digital wallets.

Keywords: expense tracker, web-based application, system development, usability testing, financial management

TANONG MO, SAGOT KO: AN INFOASSISTANT FOR GENERAL DE JESUS COLLEGE ONLINE INQUIRIES

Angel Joy Bustamante, Francine Joice Amurao, Arlyn Perez, Dr. Gina Garcia

Abstract

The continuous influx of student inquiries and the limited capacity of school administrators to respond promptly present a significant administrative challenge for General De Jesus College. In recent years, chatbots have gained popularity across various sectors, including education. These systems, capable of simulating text-based conversations, are increasingly replacing human contact agents in today's technologically advanced environment. This research aimed to help students receive immediate responses to their inquiries while assisting teachers and administrators in reducing the workload associated with answering repetitive questions. The study employed the Software Development Life Cycle (SDLC) as its design methodology. The initial phase involved feature planning, which included identifying and selecting the questions to be incorporated into the chatbot. This was followed by programming, module installation, and code debugging. A total of ten (10) respondents evaluated the chatbot in terms of accuracy, response speed, and convenience. The Confusion Matrix statistical classification method was used to determine the accuracy of the system. The InfoAssistant successfully responded to all user queries, and all responses were determined to be accurate. In terms of response speed, the system consistently delivered prompt replies, achieving a 100% success rate (n = 10, 100%). Regarding user convenience, five (5) out of ten (10) respondents, or 50%, rated the chatbot's convenience as 10 on a scale of 1 to 10. Three (3) respondents, or 30%, rated it as 8, while two (2) respondents, or 20%, rated it as 9. The experimental results indicate that the chatbot functions effectively by providing relevant and accurate information based on user queries. The system serves as a reliable and efficient communication tool that facilitates interactive engagement and easy access to school-related information. However, the study recommends further enhancement of the chatbot by incorporating three (3) user protocols to ensure compliance with the Data Privacy Act and by considering the integration of a language translator developed through programming to improve accessibility.

Keywords: chatbot, school inquiries, infoassistant, online information system, frequently asked questions

EXPERIENCES OF NATURAL BAMBOO CHARCOAL USERS AS AN ODOR REMOVER IN CLOSED SPACE AREAS IN STO. CRISTO, SAN ISIDRO, NUEVA ECIJA

Sheree Ann Peneza, Nicolle Ann Joson, Klyde Manuel Tagle,
Leinard Mateo, James Yabut, Mclaren Pascual

Abstract

Bamboo charcoal is an eco-friendly and increasingly popular solution for neutralizing unpleasant odors in enclosed spaces due to its high absorption capacity and porous structure. This study aimed to explore the experiences of individuals using bamboo charcoal in their daily lives and to examine its perceived effectiveness in odor elimination. The findings seek to provide insights into optimal usage practices and contribute to improved indoor living environments. This study employed a qualitative research design using a phenomenological inquiry approach. Six (6) bamboo charcoal users from Sto. Cristo, San Isidro, Nueva Ecija who utilized bamboo charcoal as an odor remover in closed space areas participated in the study. Data were collected through semi-structured interviews supported by audio recordings. The results showed that participants primarily used bamboo charcoal because it was recommended by others and was easily accessible. Participants described bamboo charcoal as affordable, environmentally friendly, and effective in providing a fresh and pleasant atmosphere without emitting strong odors. It was viewed as a practical option for maintaining air quality, especially in enclosed spaces. However, one commonly reported drawback was the need for regular maintenance. Participants recommended replacing bamboo charcoal monthly, exposing it to sunlight once a week, and occasionally mixing it with detergent to sustain its effectiveness. The findings demonstrate that bamboo charcoal is a practical and effective odor-neutralizing solution for closed spaces, valued for its affordability, eco-friendliness, and freshening properties. Despite the maintenance requirements—such as regular replacement and sun exposure—participants considered these manageable, given the benefits. Overall, bamboo charcoal remains a favorable option for sustainable and natural odor control in enclosed environments.

Keywords: bamboo charcoal, odor remover, user experiences, closed space areas, sustainable materials

UTILIZATION OF CARROT PEEL AS STARCH-BASED BIOPLASTIC

Reyna Fe Nebrida, Yvan Maroe De Jesus, Aleeyah Francesca Reyes, Kyla Mae Pineda

Abstract

Non-renewable plastics have a negative impact on the environment, contributing to pollution and waste accumulation. Bioplastics offer a sustainable solution by utilizing renewable resources and providing improved biodegradability. These materials can be produced from vegetable waste, making them more environmentally friendly. In this study, the researchers developed bioplastics using carrot peel to promote waste reduction and sustainability. By incorporating renewable materials, bioplastics contribute to a circular economy and support the transition toward environmentally responsible alternatives to traditional plastics. This study employed an experimental research design, which is appropriate for measuring and testing causal relationships between variables. The researchers manipulated specific variables to compare carrot peel–based bioplastics with commercially available biodegradable plastics in terms of biodegradability and durability. Through controlled experimentation, the researchers observed real-life applications and evaluated the performance of the developed bioplastic. The findings revealed that the researchers encountered more challenges than initially expected in producing carrot peel–based bioplastic. Despite these challenges, the results demonstrated the potential advantages of the bioplastic formulation. The study highlighted the importance of ingredient composition, particularly the inclusion of vinegar in the cornstarch mixture, which facilitated particle breakdown and enhanced the strength of the bioplastic during solidification. The optimal formulation identified consisted of 10 mL of distilled water, 0.5 to 1.5 grams of glycerol, 1.5 grams of cornstarch, and 1 milliliter of vinegar. The findings demonstrate the effectiveness of the selected ingredients in producing a functional bioplastic. The process shows that bioplastics can be created using accessible household materials through recycling practices. Additionally, the study establishes the potential of carrot peel–based bioplastic as a viable alternative for sustainable packaging. These results contribute to the advancement of eco-friendly materials and support efforts toward environmental sustainability.

Keywords: bioplastics, carrot peel, starch-based plastic, biodegradability, durability, recycling

EFFECTS OF FARM MECHANIZATION IN FARMING AND AGRICULTURE AS EXPERIENCED BY THE FARMERS IN GAPAN CITY AND JAEN, NUEVA ECIJA

Benedict Puno, Renz Euwyne Bernardo, Lloyd Eddyson Gabriel, Laurice Anne Tuppal, Ashly Jel Seiya Ramos, Ma. Cristina Ravela

Abstract

Farmers, as key stewards of agricultural production, encounter various challenges and opportunities when adopting modern tools and machinery in their farming practices. The shift from traditional farming methods to mechanized systems represents a significant transformation that affects efficiency, productivity, and labor dynamics. Understanding the effects of farm mechanization on farmers provides insight into the complexities of this transition, particularly in both economic and social contexts. Participants were selected from Gapan City and Jaen, Nueva Ecija using purposive sampling. Data were collected through survey questionnaires accompanied by informed consent forms. Frequency counts, percentages, and thematic analysis were used to analyze and interpret the data provided by the participants. This approach ensured ethical conduct, comprehensive data gathering, and meaningful analysis. The results revealed an inverse relationship in the effects of farm mechanization between farmland owners or machine operators and seasonal or low-income farmers. While mechanization improved efficiency and productivity, its benefits were unevenly distributed among different groups of farmers. The findings showed that the income of farmland owners increased significantly due to reduced reliance on hired labor, as fewer workers were needed to operate mechanized equipment. Consequently, a smaller portion of income was allocated to labor wages. In contrast, the income and number of seasonal farmers declined due to decreased demand for manpower, resulting in job displacement. However, farmers who were able to retain their employment reported that farm mechanization reduced physical labor, minimized drudgery, and promoted better health and safety conditions. Overall, the study highlighted a growing economic polarization between wealthier farm owners and poorer laborers, while also acknowledging that farm mechanization generally aided farming efficiency and agricultural productivity.

Keywords: farm mechanization, agricultural productivity, farmers' experiences, labor displacement, rural economy

INNOVATION OF A PROTOTYPE POST-HARVEST RICE GRAIN DRYER MACHINE THROUGH THE APPLICATION OF JOULE HEATING

Cyrus Jun Mesina, Gerald Marion Quetua, Sean Marco Atayde,
Josiah Adriell Castillo, Dr. Gina Garcia

Abstract

In the Philippines, the traditional method of sun-drying rice grains often exposes them to various vulnerabilities, resulting in significant damage. Despite existing innovations in grain dryer machines, the use of unfavorable combustible heat sources remains a concern. Thus, this study aimed to develop a prototype post-harvest rice grain dryer machine utilizing Joule heating through the use of nichrome wire to enhance drying efficiency and effectiveness. A true experimental research design was employed to assess the drying capability of the developed machine compared to the traditional sun-drying method. The prototype integrated a Proportional–Integral–Derivative (PID) control system, combined with a nichrome wire heating element and an air blower, to maintain a uniform drying environment. The system operated within a temperature range of 50–60 °C to achieve the desired moisture content of 14% and below. The results of rigorous testing confirmed that the prototype consistently reached and maintained the optimal drying temperature of 60 °C, with an average energy consumption of Php 1.146 per session lasting 1 hour and 40 minutes. The computed p-value from the Analysis of Variance (single factor) exceeded 0.05, indicating uniform air distribution within the drying chamber. The machine successfully dried rice grains to the target moisture content of 14% and below across batch loads of 5 kg, 10 kg, and 15 kg. Furthermore, machine-dried rice grains demonstrated clear advantages over sun-dried grains in terms of reduced moisture content, shorter drying time, and lower production cost. The findings indicate that the developed rice grain dryer machine shows strong potential in addressing post-harvest drying challenges in the agricultural sector. Its efficient performance, reduced drying time, and lower production cost make it a viable alternative to traditional sun-drying methods, offering significant benefits for rice grain preservation and overall post-harvest processing.

Keywords: dryer machine, rice grains, joule heating, nichrome heater, post-harvest technology

Humanities and Social Sciences

BOUGAINVILLEA BRACTS AS AN ALTERNATIVE SOFT - MOIST WATERCOLOR PIGMENT

Sandra Diane Dizon, Sofia Angeli Sta Maria, Shaniah Faith Reyes, Khizzle Franco

Abstract

Watercolor painting has emerged as a fundamental medium and a starting point for aspiring artists. However, many budding artists face financial constraints that limit their exploration of this art form. High-quality watercolor paints often come with a high cost, making them inaccessible to many. The concept of utilizing pigment extracted from Bougainvillea bracts as a watercolor painting medium presents a potential breakthrough for artists seeking a more affordable alternative. This experimental study is supported by various related studies, literature, and evidence, reinforcing its validity and potential impact. An experimental research design, classified under qualitative research, was employed in this study. The experimental process consisted of three (3) main stages: the extraction of Bougainvillea pigment, the preparation of the watercolor binder mixture, and the formulation of the Bougainvillea watercolor mixture. The extracted pigment (juice) from the Bougainvillea bracts was finely filtered to remove particles, resulting in a soft-moist, smooth, clean, and mold-free product. Through a process of trial and error, Bougainvillea bracts were successfully developed as an alternative soft-moist watercolor pigment. Three trial tests were conducted to evaluate the quality of the watercolor in terms of swatching, blending, and layering, both independently and in comparison with commercially available watercolor brands. The results demonstrated that the Bougainvillea bract watercolor could be placed at a comparable level to established watercolor brands. The findings confirmed that watercolor made from Bougainvillea bracts can effectively function as a watercolor pigment. This experimental study demonstrated that Bougainvillea bracts can be used as an alternative pigment for soft-moist watercolor paint, offering aspiring artists a low-cost medium with desirable quality. Additionally, Bougainvillea watercolor pigment is derived from natural materials, making it an environmentally friendly alternative to synthetic paints available in the market.

Keywords: watercolor pigment, bougainvillea bracts, natural dyes, soft-moist watercolor, art materials, betalain

DIFFICULTIES AND COPING STRATEGY OF THE GRADE 11 WITH HIGHEST HONORS SENIOR HIGH SCHOOL STUDENTS OF GENERAL DE JESUS COLLEGE WHO EXPERIENCES SELF-EXPECTATION

Mariane Joyce Cruz, Louise Ortiz, Daniela Jane Papal, Alexa Margarette Tan Feliz,
Lei Angelo Caymo, Ezekiel Panigbatan

Abstract

This study aimed to understand the challenges faced by Grade 11 Senior High School students with highest honors and how they cope with these challenges. These students maintain high academic performance by setting high expectations for themselves; however, they also experience difficulties in meeting these expectations. The researchers sought to gain insights into how these students manage and cope with self-imposed expectations. The study utilized a phenomenological qualitative research approach. Data were collected through semi-structured, face-to-face interviews supported by audio recordings with Grade 11 students who achieved highest honors at General De Jesus College. Purposive sampling was used to select the participants. The study involved seven participants, five of whom were female, representing 71.43% of the sample. Participants described their self-expectations as involving perfectionism and goal-setting, with many emphasizing the importance of setting realistic expectations to avoid feeling overwhelmed. The difficulties they experienced included self-doubt, pressure from themselves or others, fear of failure, and disappointment associated with high self-expectations. These challenges often resulted in avoidance and procrastination behaviors, leading to stress, unease, and emotional strain. To cope with these difficulties, participants reported using self-management and time-management strategies, stating that effective organization and self-regulation helped reduce stress caused by high expectations. Grade 11 students with highest honors at General De Jesus College faced various challenges related to their self-expectations. These included self-doubt, self-sabotage, pressure from internal and external sources, and disappointment. To manage these challenges, students employed coping strategies such as setting realistic expectations, engaging in leisure activities like gaming and social media, reflecting on their identity beyond academic achievements, and using distractions to alleviate stress.

Keywords: self-expectation, academic pressure, coping strategies, mental health, high-achieving students

EXPERIENCES OF SELECTED GRADE 11 STUDENTS OF GENERAL DE JESUS COLLEGE WITH EXAM ANXIETY

Justine Lee Diaz, John Axel Victorio, Samuel Luke Interior, Krisha Angela Quetua, Alizia Kim Magaling, Lhianne Joy Panganiban, Cherry Ann Lores, Althea Castillo

Abstract

Anxiety is a feeling of uneasiness, fear, and panic that may cause symptoms such as sweating, restlessness, tension, and rapid heartbeat. It is a normal reaction to stress and often occurs when individuals face challenging situations, such as making decisions or taking examinations. Exam anxiety is commonly experienced by students before and during tests. This study aimed to determine the lived experiences of selected Grade 11 students of General De Jesus College who experience exam anxiety. A multiple-method design was utilized in this study. The research was guided by the cognitive theory, Medical Science Students' Experiences of Test Anxiety by Majid Badrian et al. (2022). A phenomenological research design was employed to explore the experiences of Grade 11 students at General De Jesus College. Selection criteria were established to identify suitable participants, and a standardized survey was first administered to determine the presence of exam anxiety. Semi-structured interview questions were then developed based on the study objectives. Qualitative methods were used, with data collected through surveys, semi-structured interviews, and audio recordings to ensure consistency, accuracy, and transparency in the research process. Many participants reported that exam anxiety was caused by overthinking, nervousness, and pressure. These factors led to experiences such as mental blocks and psychological stress during examinations. To manage their anxiety, participants employed coping mechanisms such as reviewing lessons and praying, which they believed helped reduce stress. Additionally, participants suggested that teachers could help minimize exam anxiety by providing clear review guidelines, fostering open communication, and allowing time for relaxation. The results illustrate the participants' profiles, experiences, contributing factors, and coping mechanisms related to exam anxiety. Fifty percent of the participants were 17 years old, and 60% were female. Most participants experienced physical symptoms such as trembling and sweating during exams. They also reported overthinking exam outcomes and experiencing mental blocks, which they attributed to heightened stress and the release of stress hormones such as adrenaline. Pressure, nervousness, and overthinking were identified as primary factors contributing to exam anxiety, as these reduce focus and increase fear of failure. Praying, meditation, and reviewing lessons emerged as the most common coping strategies used to manage exam anxiety.

Keywords: exam anxiety, grade 11 students, lived experiences, contributing factors, coping mechanisms

CHALLENGES OF SELECTED NEW STUDENTS OF GRADE 11 SENIOR HIGH SCHOOL AT GENERAL DE JESUS COLLEGE

Andrea Viola, Gerald De Belen, Shairra Joie Pabellon, Jewel Empaynado, Althea Mae De Mesa, Cris Jhassel Dayao, Jan Daniel Lacanilao, Alexis Santiago

Abstract

Due to the increasing number of new Grade 11 Senior High School students, this study investigated the challenges they encountered upon entering General De Jesus College. The researchers aimed to understand the participants' lived experiences by examining the challenges they faced and the coping mechanisms they employed. A qualitative method was used in this study. Using a phenomenological approach, the researchers conducted interviews with selected new students. Thirty-four participants were selected based on their willingness to participate in the study. Semi-structured interviews were conducted, and audio recorders were used to gather data from the participants. The participants expressed optimistic expectations before enrolling at General De Jesus College, anticipating increased knowledge acquisition, supportive interactions with teachers, and broader learning opportunities. Social interaction with peers emerged as a key factor in facilitating adjustment, as it provided emotional support, practical guidance, and a sense of belonging. However, many participants encountered initial classroom challenges due to feelings of disconnection and uncertainty, particularly among introverted students. Support from friends, family, and acquaintances played a significant role in helping them overcome these challenges. Participants also identified notable differences in grading systems and teaching methods between General De Jesus College and their previous schools, which required adjustment and greater self-reliance. Overall, the findings emphasized the importance of social connections, stepping beyond one's comfort zone, and fostering a supportive environment in adapting to a new educational setting. The findings highlighted the importance of being attentive to the emotional experiences of both peers and new students within the school community. Silence does not necessarily indicate the absence of challenges, particularly for students adapting to a new environment. Many new students experienced difficulties navigating unfamiliar surroundings. Therefore, a welcoming attitude from both the school and peers can encourage enrollment and significantly ease the adjustment process of new students.

Keywords: new students, grade 11, adaptation challenges, social connections, supportive environment, phenomenological study

PRODUCTION OF BANANA PSEUDO STEM AS PAPER BAG

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Abstract

The banana plant is globally recognized as one of the most versatile and beneficial plants. The paper shopping bag developed by the researchers represents an environmentally friendly alternative to single-use paper or plastic bags and is designed for multiple reuse. Typically, alternative bags are crafted from materials such as canvas, natural fibers, woven synthetic fibers, or durable plastic, which provide a sturdy and sustainable option for carrying items. This study employed a mixed-method approach that combined experimental and quantitative research methodologies. The primary aim was to assess the viability of utilizing banana pseudo stems as an alternative raw material for the production of paper bags. The researchers conducted a series of experiments consisting of three trials to improve the durability and texture of the paper bags. Through repeated testing and material adjustments, they successfully developed a product that demonstrated both durability and reusability. These results indicate potential benefits for consumers and the community by offering a more sustainable alternative to single-use bags while maintaining practicality for everyday use. This study examined the potential of banana pseudo stems as a sustainable alternative material for paper bag production. By applying experimental research methods, the researchers were able to produce paper bags with enhanced durability and texture. These eco-friendly bags present a promising response to environmental issues associated with single-use paper and plastic bags. Their strength and reusability provide meaningful benefits to both consumers and the wider community, supporting a more sustainable and environmentally conscious future.

Keywords: banana pseudo stem, paper bag production, sustainable materials, eco-friendly packaging, community development

FACTORS THAT AFFECT DELINQUENCY BEHAVIOR OF SELECTED GRADE 11 HUMSS STUDENT OF GENERAL DE JESUS COLLEGE

Brix Paulo Elipane, John Michael Javier, Art Joshua Palomo,
Emanuel Neri, Cassandra Patiag, Alexis Santiago

Abstract

The purpose of this research was to identify the factors that affect delinquent behavior among students. The study involved conducting interviews to gather data on these factors, with the aim of providing valuable insights into the experiences of students exhibiting delinquent behavior. The study employed a qualitative research approach to understand the factors affecting delinquency behavior among students. Face-to-face interviews were conducted and audio-recorded to address questions related to student delinquency. Semi-structured interview questions were used to gather detailed responses based on participants' experiences. This approach provided an overview of how various factors influence delinquent behavior among students. The study interviewed ten male participants out of seventy-six male Grade 11 HUMSS students. Four participants identified family problems as a contributing factor to delinquent behavior, three reported peer influence, and the remaining participants attributed their behavior to low academic performance. The effects of these factors on delinquent students included academic difficulties and challenges in maintaining positive relationships with family members and peers. The study aimed to understand the effects and underlying mechanisms of student delinquency. The findings indicate that delinquent behavior among students is influenced by various factors, which may lead them to engage in undesirable actions. The study suggests that delinquent students seek support from guidance counselors or therapists to address underlying issues contributing to their behavior. Additionally, participation in positive peer groups or extracurricular activities may provide a supportive environment and healthy outlets that can help reduce delinquent behavior.

Keywords: delinquent behavior, student delinquency, family dynamics, peer pressure, academic performance

COCOCAT: COCONUT COIR AND RICE HUSK AS NATURAL CAT LITTER

Liana Mica Gatbonton, Gwyneth Jemima De Guzman, Philip Federick De Peralta, Dr. Gina Garcia

Abstract

Growing concerns about the environmental impact of cat litter and the health implications for cats and cat owners have highlighted the need for reliable and affordable cat litter that can effectively manage odor and moisture. Traditional clay litter, while affordable, contains harmful crystalline silica, prompting the exploration of organic alternatives such as coconut coir and rice husk. Coconut coir is known for its moisture-absorption capability; however, it may be less effective in eliminating ammonia odors, which led to the incorporation of rice husk for improved odor control. This study aimed to explore the absorption and odor-control capabilities of coconut coir and rice husk as natural cat litter, addressing gaps in existing studies on alternative cat litter options. This study employed an experimental research design to assess the efficacy of alternative cat litter made from coconut coir and rice husk in terms of absorption capability, odor control, and texture. A total of twenty (20) respondents evaluated the alternative cat litter. Descriptive statistical tools, including percentage and weighted mean, were used to analyze the data. The alternative cat litter made from coconut coir and rice husk demonstrated a higher rate of absorption compared to commercial cat litter. However, commercial cat litter performed better in odor control. The addition of rice husk to coconut coir helped reduce odor, resulting in a faint odor rather than a strong or distinct smell. In terms of texture, the alternative litter was described as soft and sandy, comparable to commercial cat litter. The findings indicated that the alternative cat litter made from coconut coir and rice husk is comparable to commercially available cat litter in terms of quality and cost. It is recommended that future processing of rice husk be refined into a more granular texture to enhance its overall effectiveness.

Keywords: cat litter, coconut coir, rice husk, odor control, absorption efficiency

GET THREE AND PASS: THE UTILIZATION OF RICE STRAW, NAPIER GRASS, AND RECYCLED PAPER, WITH PAPERMAKING AS A REPLACEMENT FOR WOOD

Ezekiel Geronga, Eugene Clark De Leon, Iris Mirabelle Cruda

Abstract

Paper has been an essential medium throughout history and continues to be widely used due to its various applications. However, the increasing demand for paper and its production poses environmental concerns, particularly logging, as it relies on wood-based fibers, along with the growing accumulation of waste paper. To help preserve ecosystems and reduce environmental degradation, this study focused on producing handmade paper using rice straw, napier grass, and recycled paper as alternative raw materials. This study utilized an experimental research design to evaluate the qualities of non-wood paper in comparison with commercial paper. The properties examined included thickness, tensile strength, burst strength, and water absorptiveness, using comparative analysis to interpret the data obtained. The raw materials were boiled for thirty minutes and underwent soda pulping using a 3% concentration of sodium hydroxide, except for the used paper. After blending, the pulp was mixed with sodium hypochlorite. The results showed that the non-wood fiber paper produced was thicker and more water-absorptive than commercial bond paper. However, commercial paper exhibited higher tensile and burst strength indexes compared to the non-wood paper. The findings indicate that rice straw, napier grass, and used paper can be utilized in papermaking without the use of wood, although their application is limited, as the resulting paper is more suitable for art material purposes. The study recommends exploring other non-wood fibers and alternative procedures to improve the physical characteristics of handmade paper.

Keywords: rice straw, napier grass, soda pulping, handmade paper, non-wood fibers

GUANTANAY SPRAY: KANTUTAY (LANTANA CAMARA) LEAF AND GUAVA (PSIDIUM GUAJAVA) LEAF EXTRACTS AS SUBTERRANEAN TERMITE EXTERMINATING SPRAY

Nicolai Roque, Neriah Balagtas, Ellasandra Del Rosario, Dr. Gina Garcia

Abstract

Termites are destructive pests capable of damaging the foundations of homes. They are considered one of the greatest threats to homeowners due to the extensive destruction they can cause. Although chemical solutions for termite infestation are available, these chemical-based treatments pose potential risks to human health. Thus, an organic approach to termite control presents a viable alternative that may reduce harm to both human health and the environment. This study utilized Kantutay (Lantana camara) leaf extract and Guava (Psidium guajava) leaf extract as alternatives to commercially available termiticide sprays. These plants contain chemical constituents that are toxic to termites; however, existing studies were insufficient to fully determine their effectiveness as termiticide sprays. An experimental research design was employed, in which subterranean termites were subjected to treatments using the formulated sprays. The capability of the extracts when used individually and in combination was examined. The combined formulation, referred to as Guantanay Spray (Kantutay + Guava), was tested and compared with a commercially available termiticide spray. The results of the experiment showed that the combined extracts, known as Guantanay Spray, achieved the highest termite mortality rate of 96.7% under field conditions. This result was higher than the mortality rates obtained using the individual plant extracts, which showed 90% mortality for Kantutay leaf extract and 86.7% mortality for Guava leaf extract. Guantanay Spray demonstrated a higher level of efficiency compared to the commercial pesticide Leadrex. However, statistical analysis using ANOVA revealed no significant difference between Guantanay Spray and the commercial termiticide, as indicated by a P-value of 1. This result suggests that the combined organic spray performed comparably to the commercial pesticide and exhibited an additive effect. Therefore, this study successfully produced an effective termite exterminating spray that is less hazardous to humans and less harmful to the environment.

Keywords: kantutay (lantana camara) leaves, guava (psidium guajava) leaves, guantanay spray, efficacy, mortality rate

LET'S VOLT IN: A SOLAR-WIND HYBRID GENERATOR FOR COST-EFFECTIVE AND CLEAN ELECTRICITY

Kent Gagatam, John Lester Tan, Kristian Lance Villamea, Dr. Gina Garcia

Abstract

The rising cost of electricity generated from fossil fuels, along with limited power availability in rural areas of the Philippines, has driven consumers to seek more cost-effective and accessible energy sources. The country's reliance on imported non-gas fossil fuels contributes to higher electricity costs, making access to power less feasible for rural communities. Renewable energy systems, which are capable of producing pollution-free electricity, offer significant advantages in remote areas where households lack reliable power. This study focused on developing a hybrid renewable energy system that combines solar panels and wind turbines to generate affordable and environmentally friendly electricity. This study employed a true experimental research design to examine the relationships between key variables affecting system performance. Data were collected over a specified period, with time allocated to testing different system setups. The generator was evaluated based on battery charging time and the duration for which the charged battery could power various appliances before reaching its maximum discharge voltage. The results indicated that the efficiency of the renewable energy generator was strongly influenced by environmental conditions, with peak performance achieved under favorable settings. The solar–wind hybrid generator demonstrated effective battery charging capability. Once fully charged, the battery was able to power various appliances for different durations, highlighting the system's potential for sustainable energy production. The findings suggest that appropriate location and favorable weather conditions significantly enhance the efficiency of the solar–wind hybrid generator, ensuring more reliable power output and supporting the practicality of renewable energy systems. Further design enhancements are recommended to improve energy generation capacity and extend battery life.

Keywords: solar–wind hybrid generator, renewable energy system, cost-effective energy, clean electricity

THE ANTIPARASITIC EFFECT OF LEMON (CITRUS LIMON) AND SWEET POTATO (IPOMOEA BATATAS) PEELS ON CAT FLEAS (CTENOCEPHALIDES FELIS)

Liz Claire Panlilio, Kamal Jit Singh, Trisha Jean Mariano, Cleira Crizel Gonzales, Dr. Gina Garcia

Abstract

Cat ownership is widespread in the Philippines; however, it presents challenges such as flea infestations and environmental concerns. Commercially available flea treatments, although effective, often contain chemical components, prompting the need to investigate organic and eco-friendly alternatives that can efficiently eliminate fleas while minimizing environmental impact. This study aimed to assess the efficacy of sweet potato and lemon peel extracts as an alternative flea treatment, addressing a gap in existing flea control options. This study employed a true experimental research design to evaluate the efficacy of an anti-flea bar soap formulated from sweet potato and lemon peels. The assessment focused on knockdown time, mortality rate, toxicity, and odor. Ethanolic extraction was used to obtain the active components, and a rotary evaporator was utilized for solvent concentration. The brush application method was applied to a total of 63 test subjects. Descriptive statistical tools, including percentage tables, pie charts, and one-way ANOVA, were used to analyze the data. The alternative anti-flea bar soap composed of 50% lemon peel extract and 50% sweet potato peel extract demonstrated the shortest knockdown time of 15 minutes against cat fleas. The mortality rate reached 81.5% within a 30-minute exposure period. The soap also exhibited the lowest pH level among the treatment groups, with a value of 7.1. Additionally, most respondents perceived the soap as having a very mild scent, making it a gentle option for cats with sensitive olfactory senses. The soap formulation containing equal proportions of sweet potato and lemon peels produced the most favorable results, characterized by rapid knockdown time, high flea mortality rate, mild scent, and lower acidity. The findings suggest that further optimization of the formulation and investigation of its long-term effects may strengthen its potential as a sustainable solution for controlling flea infestations.

Keywords: sweet potato peels, lemon peels, antiparasitic soap, cat fleas, treatment efficacy

EXPLORING THE INFLUENCE OF TIKTOK AMONG SELECTED GRADE 10 AND 11 STUDENTS AT GENERAL DE JESUS COLLEGE: A PHENOMENOLOGICAL STUDY

Dana Ysabel Laureano, Kyle Banayo, Joshua Binuya, Ricka Laine Maniquiz,
Cailey Pagdanganan, Herminigildo Oscar Villegas

Abstract

In today's rapidly evolving digital world, technology has become a vital part of daily life. TikTok, a video-sharing social media platform, has experienced a significant increase in usage since its launch in 2016. This study aimed to determine how TikTok influences and affects selected Grade 10 and Grade 11 students of General de Jesus College across various aspects of life, as well as the participants' desire to continue using the application. A qualitative phenomenological approach was employed in this study. Data were gathered through semi-structured interviews with selected Grade 10 and Grade 11 students of General de Jesus College. The results revealed that entertainment is the primary reason students use TikTok, including the application's features such as strong algorithms and short-form videos, followed by exposure to new trends. Furthermore, TikTok was found to influence cognitive behavior, including decision-making and academic performance. The application produced both positive and negative effects on the participants' emotional responses. Additionally, the study showed that TikTok has the potential to be useful in peer interactions, both online and offline, through the use of jargon, slang, and humor that make conversations more engaging and relevant. The findings revealed that TikTok both positively and negatively influences Grade 10 and Grade 11 students across different aspects of their lives, particularly in terms of cognitive, emotional, and social behavior.

Keywords: tiktok, social media influence, grade 10 and grade 11 students, adolescent behavior, phenomenological study

MANAGING PATIENTS WITH PSYCHIATRIC DISORDERS: CHALLENGES FACED BY SELECTED PSYCHIATRISTS IN THE PHILIPPINES

Ma Isabelle Ambrocio, Angelica Nicole Bal Ut, Lyanne Marie Javate, Rhian Andrea Fernandez, Luize Mhaureen Lozada, Raiden J Evangelista, Aizel Marie Castro

Abstract

In the landscape of mental health care, psychiatrists play a vital role in managing individuals with mental illnesses. This study focused on the perspectives of psychiatrists regarding the approaches they use in managing patients experiencing psychiatric disorders. Beyond existing knowledge, this research provides insights into psychiatrists' experiences and viewpoints in managing patients during active psychological episodes. This study explored the challenges faced by Filipino psychiatrists in treating patients with psychiatric disorders. Qualitative research methods were employed to collect and analyze data from selected psychiatrists. Semi-structured interviews were conducted and supported by systematic record-keeping to ensure accurate data analysis. Snowball sampling was used to obtain a diverse group of participants. The findings revealed key themes commonly encountered in psychiatric care. Psychiatrists highlighted the complexities involved in managing patients experiencing active psychiatric episodes, including challenges related to financial constraints and patients' denial of their mental health conditions. The study also identified various strategies employed by psychiatrists, such as empathetic communication, supervised confinement, chemical restraints, and the use of physical restraints to ensure the safety of both patients and others. The results indicate that psychiatrists face diverse challenges while managing patients with psychiatric diagnoses, particularly during active episodes. These challenges are addressed through a combination of approaches, including open communication, the use of restraints, and administration of sedatives when necessary. The application of these specialized techniques is essential in ensuring patient safety and achieving effective treatment outcomes.

Keywords: psychiatric disorders, psychiatrists, mental health care, psychiatric challenges, psychiatric episodes

THE EFFECT OF GRADE CONSCIOUSNESS IN SEEKING FOR ACADEMIC VALIDATION IN GRADE 12 STEM STUDENTS' ACADEMIC PERFORMANCE AT GENERAL DE JESUS COLLEGE

Ashley Constantino, Licell Mae Garcia, John Rodel Garcia, John Ronald Caballero, Lorrraine Unsing, Jude Mathew Cuison, Rhaiven Curt Cucio

Abstract

Academic validation and grade consciousness are crucial for students, as they seek approval based on their academic performance. These factors influence students' self-esteem and decision-making and affect their overall academic performance. The aim of this study is to investigate the effect of grade consciousness on the academic performance of Grade 12 STEM students, with emphasis on their experiences and challenges as students. This study explored the reasons why students seek validation and the effects of being grade conscious. This study was conducted using qualitative research with a descriptive design. Data were collected through semi-structured, face-to-face, audio-recorded interviews, as well as survey forms administered prior to the interviews with the participants. The researchers selected Grade 12 STEM grade-conscious students at General De Jesus College as respondents. The study presented the profile of the participants, including their age range of sixteen (16) to eighteen (18) years old, with the majority being female. The study revealed both positive and negative effects of grade consciousness on students. Participants reported gaining higher grades, experiencing academic stress, lack of sleep, and mental health problems. The findings also showed how grade consciousness affects the type of validation students seek through their academic performance. In addition, the majority of participants sought validation from their parents and themselves. Lastly, the respondents' coping strategies included roaming and eating comfort food. The study showed that grade consciousness has both positive and negative impacts, such as gaining higher grades, experiencing academic stress, lack of sleep, and mental health problems. It also identified that students primarily seek validation from their parents and themselves and cope with stress by roaming and consuming comfort foods such as ice cream. Furthermore, this study aims to raise awareness of the challenges and experiences faced by grade-conscious students.

Keywords: grade consciousness, validation, academic performance

CHALLENGES OF THE SELECTED ELDEST DAUGHTERS IN SELECTED MUNICIPALITIES IN DISTRICT FOUR NUEVA ECIJA: DUE TO EXTERNAL EXPECTATIONS AND RESPONSIBILITIES

Fiona Alessandra Novelles, Rian Alexandrea Ribano, Jamellla Lei Santillan, Lian Angelli Dungao, Mark Jarel Romero, Marx Engelo Legaspi, Kris Manuel Mesina, Alexis Santiago

Abstract

The primary objective of this study was to determine the challenges encountered by selected eldest daughters in selected municipalities in District Four, Nueva Ecija due to external expectations and responsibilities. A snowball sampling method was used to select participants based on their experiences as eldest daughters. The study employed a phenomenological research design to examine their lived experiences and perceived challenges. The findings revealed that the challenges faced by eldest daughters included responsibilities, expected roles, and parentification. Among these, responsibilities were identified as the most common challenge, with 10 out of the 12 participants providing responses related to this concern. Challenges associated with expected roles and parentification followed, with eight participants each reporting difficulties related to their position within the family. The study concluded that eldest daughters experienced various challenges, including household responsibilities such as managing chores, caring for younger siblings, and, in some cases, supporting their parents. Participants also reported difficulties in balancing these responsibilities with their academic, professional, and personal goals, providing financial support, serving as role models for their siblings, and being assigned or perceiving themselves as a third parent within the family. To cope with these challenges, participants engaged in socialization, rest, and entertainment through technology as means of taking breaks and managing stress.

Keywords: eldest daughters, family roles, responsibilities, parentification, psychological challenges

COM-PAST-SION: ACCEPTABILITY AND EFFICACY OF A COMPOUND SELF-COMPASSION-BASED DIGITAL WORKBOOK AS THERAPY FOR SELF-CRITICAL RUMINATION

Andrea Irah Soria, Christian Jewel Kho, Aaron Harren Eser, Josephine Cruz, Dr. Gina Garcia

Abstract

Self-critical rumination is a subtype of self-criticism and rumination, defined as a persistent focus on self-critical thoughts. The current study sought to evaluate the acceptability and efficacy of a compound self-compassion-based digital workbook in reducing self-critical rumination. Forty-seven senior high school students from General De Jesus College who exhibited high levels of self-critical rumination completed ten intervention sessions over a three-week period using Google Classroom. Data were collected through online surveys and analyzed using the Wilcoxon signed-rank test. Acceptability was assessed using quantitative measures through the Product Feedback Scale (PFS) and qualitative feedback via open-ended questions. Efficacy was examined by comparing within-group changes in self-critical rumination using the Self-Critical Rumination Scale (SCRS) and self-compassion using the Self-Compassion Scale–Short Form (SCS-SF), along with their corresponding effect sizes. High average ratings were observed on the overall acceptability scale at post-intervention ($M = 4.32$), as well as across all subscales: agreeableness ($M = 4.51$), helpfulness ($M = 4.51$), applicability ($M = 4.38$), enjoyableness ($M = 4.29$), understanding ($M = 4.23$), easiness ($M = 4.23$), and commitment ($M = 4.09$). Post-treatment analyses revealed statistically significant differences between pre- and post-intervention assessments, with large effect sizes for reductions in self-critical rumination ($p < .001$; $r = 0.92$) and increases in self-compassion ($p < .001$; $r = 0.98$). The findings provided evidence for the acceptability and efficacy of a compound self-compassion-based digital workbook in reducing self-critical rumination among senior high school students. However, modifications to the intervention may be necessary to address challenges such as late submissions. Future studies may also examine the intervention using a randomized controlled trial design.

Keywords: self-critical rumination, self-compassion, digital workbook, compound intervention

DIFFICULTIES ENCOUNTERED BY ADOLESCENTS OF SELECTED MUNICIPALITIES IN DISTRICT IV, NUEVA ECIJA WITH A HISTORY OF CHILDHOOD TRAUMA AND THEIR ADAPTIVE COPING MECHANISMS

Shennah Antiporda, Megan Faith Castro, Justine Keith Lerias, Matt Reily Gregorio,
Chris Avieson Ocampo, Pepito Marzo III, Justin Nicole De Guzman, Aizel Marie Castro

Abstract

Childhood trauma refers to significantly distressing and harmful events that occur during a child's early years, often resulting from abuse, neglect, or exposure to violent situations. This study explored the difficulties encountered by adolescents with a history of childhood trauma and the adaptive coping mechanisms they employ. This study employed a phenomenological research design using a qualitative approach. The research was conducted in selected municipalities in District IV, Nueva Ecija. Twelve participants were identified through snowball and purposive sampling techniques. Data were collected through both face-to-face and online interviews. The findings revealed that most participants were aged 16 to 17 years, and the majority of those who reported experiencing childhood trauma were female. Participants experienced various forms of childhood trauma, including family disruption, verbal abuse, sexual harassment, physical abuse, and bullying. The results showed that the effects of childhood trauma persisted in the participants' daily lives and were associated with difficulties such as social withdrawal, low self-esteem, self-isolation, poor academic performance, behavioral issues, mental health concerns, and self-doubt. The coping mechanisms that emerged most prominently included self-isolation, self-reflection, and social interaction with others. The study concluded that peer and family relationships play a significant role in the development and impact of childhood trauma. It is recommended that individuals with a history of childhood trauma seek professional support from therapists or psychologists. Overall, this study helps adolescents with childhood trauma better understand the difficulties they may encounter and the coping mechanisms they can use to manage these challenges.

Keywords: adolescents, childhood trauma, coping mechanisms, psychological difficulties, social challenges

DIFFICULTIES ENCOUNTERED BY THE GRADE SCHOOL NEURODIVERGENT STUDENTS OF SAN ANTONIO CENTRAL SCHOOL TOWARDS THEIR LEARNING AND THEIR COPING MECHANISMS

Ma Theresa Kimjerly Labrador, John Bien Cucio, Sabriya Heart Nino, Aaliyah Macalinao, Vj Charles Sepulvida, Mica Ella Kim Velasquez, Rio Viesca, Vil Daril Santos

Abstract

Neurodiversity is a scientific concept rooted in brain research, which recognizes that individuals with learning or thinking differences have brains wired differently from their peers. Neurodivergent students often experience challenges related to learning due to these differences. For this reason, the researchers conducted the study titled Difficulties Encountered by the Grade School Neurodivergent Students of San Antonio Central School Toward Their Learning and Their Coping Mechanisms. This study employed a qualitative research method using a phenomenological research design to focus on the lived experiences of the respondents. Semi-structured interviews were conducted to allow participants to express their responses freely. Face-to-face interviews were also used to observe respondents' behaviors and body language. Audio recordings were utilized to ensure accurate documentation of responses. The results showed that all respondents experienced difficulties related to learning. Despite being on the same neurodivergent spectrum, each respondent demonstrated unique characteristics and individual differences. Attention-Deficit/Hyperactivity Disorder (ADHD) and Autism Spectrum Disorder (ASD) were identified as the most common types of neurodivergence among the respondents in the school. Most participants experienced difficulties in social interaction and communication. The findings also indicated that physical exercise played a significant role in helping children cope with their learning challenges. The findings demonstrated that difficulties in social interaction and communication were prevalent among the neurodivergent students. To cope with these challenges, physical exercise emerged as the most effective and efficient strategy for supporting their learning and overall development.

Keywords: neurodivergent students, learning difficulties, coping mechanisms, social interaction, phenomenological study

EFFECTS OF CARTOONS ON GENDER ROLE PERCEPTION DURING CHILDHOOD OF 7TH AND 8TH GRADE STUDENTS OF GENERAL DE JESUS COLLEGE: A DESCRIPTIVE-PHENOMENOLOGICAL STUDY

Kristin Nile Juliano, Liezel Ann Patiag, Darren Sebastian, Nyah Liann Castro,
Jor El Flores, John Patrick Nagales

Abstract

Cartoons have long been a popular and widely accessible form of animated entertainment for children, capturing their interest and imagination (Elsevier, 2020). However, their influence extends beyond entertainment, as they often convey representations of gender roles. These portrayals may be internalized by young viewers and shape their understanding of gender expectations. This study examined how cartoons influenced the perception of gender roles during the childhood of selected Grade 7 and Grade 8 students at General De Jesus College. This study employed a descriptive-phenomenological research design to explore the impact of cartoons on Grade 7 and Grade 8 students. Data were collected through semi-structured interviews supported by audio recordings. Thematic analysis was used to systematically identify, organize, and interpret recurring patterns, themes, and categories from the participants' responses. The findings revealed that participants' exposure to cartoons was largely influenced by family members, friends, peers, and television. Within these cartoons, female characters were commonly perceived as displaying traits such as strength, independence, weakness, and a strong emphasis on physical appearance. In contrast, male characters were often portrayed as strong, brave, dominant, and aggressive. The results also showed that cartoons had positive effects on students, including supporting language development and speech patterns, enhancing sociability, imparting life lessons, and fostering interest in the arts. However, negative effects were also identified, such as the reinforcement of gender stereotypes, promotion of unrealistic expectations, depiction of violence, and reduced social interaction. Overall, cartoons were found to influence students' perceptions of gender roles by reinforcing traditional stereotypes and shaping their attitudes and behaviors toward individuals of the same or opposite gender. The findings demonstrated that cartoons significantly influence students' development and their perceptions of gender roles. These results highlight the importance of fostering awareness among students regarding the potential impact of cartoons on their beliefs, behaviors, and social interactions as they grow and transition into adulthood.

Keywords: cartoons, gender roles, gender stereotypes, gender perception, media effects

EFFECTS OF GRADES AS DETERMINING SELF-WORTH OF THE SELECTED ACADEMIC ACHIEVERS OF STEM 11 STUDENTS OF GENERAL DE JESUS COLLEGE

Princess Fernando, Jessica Pontanes, Jessie Fernando, Ron Matthew Pablo,
Chian Carl Torno, Divine Louise Sigua, Ezekiel John Dela Cruz

Abstract

Academic achievement is often used by students as a primary basis for evaluating their self-worth. Some students believe that personal value is closely tied to excelling academically, obtaining high grades, and receiving external rewards for performance. This study examined the effects of grades on the self-worth of selected STEM 11 academic achievers and identified their coping mechanisms in order to provide insights, recommendations, and guidance for students who may be struggling academically. This study utilized a descriptive research design. Data were gathered through semi-structured interviews, face-to-face interviews, and audio recordings. To identify selected academic achievers among STEM 11 students, the researchers visited classrooms and selected participants through voluntary participation using a raise-hand method. The findings revealed that out of fifteen participants, eight were female and seven were male. In terms of academic achievement, seven participants were with honors, six were with high honors, and two were with highest honors. Participants reported that grades influenced their self-worth in several ways, including increased confidence, a stronger sense of personal value, motivation to maintain high academic performance, and pressure they placed on themselves. To cope with negative effects related to academic pressure, participants employed various coping mechanisms such as spending time with friends, maintaining a positive mindset, developing resilience, and learning to accept failures. The study showed that grades significantly influenced the self-worth of selected academic achievers. While high grades contributed to confidence, motivation, and a sense of worth, they also resulted in self-imposed pressure. The findings highlighted the importance of balanced perspectives on academic success and emphasized the need for healthy coping strategies to manage pressure and maintain psychological well-being.

Keywords: self-worth, academic achievers, grades, coping mechanisms, student motivation

FACTORS AFFECTING THE SLEEP DEPRIVATION AS PERCEIVED BY THE SELECTED GRADE 11 STEM STUDENTS AT GENERAL DE JESUS COLLEGE AND ITS EFFECT ON THEIR ACADEMIC PERFORMANCE

Ashley Mae Domingo, Nash Aguas, Kurl Louis Abergas, Antonette Galang,
Khert Cyrus Garcia, Rhianne Motio, Catarina Francheska Salvador

Abstract

Sleep deprivation is a condition in which an individual fails to obtain sufficient sleep. It is characterized by failure to achieve the optimal duration of sleep, sleep interruption, and difficulty falling asleep (Negussie et al., 2021). According to Nacino and Godfrey (2019), a student's ability to think clearly and perform well academically can be negatively affected by various factors such as dizziness, distraction, delayed alertness, and other related conditions. However, despite the considerable number of studies conducted on sleep deprivation, there remains a lack of research focusing on the effects of insufficient sleep among students. With this, the researchers aimed to examine the factors affecting sleep deprivation as perceived by selected Grade 11 STEM students of General de Jesus College and its effect on their academic performance. This study employed a qualitative research approach, specifically a descriptive research design, to identify the factors affecting sleep deprivation as perceived by selected Grade 11 STEM (Science, Technology, Engineering, and Mathematics) students at General de Jesus College located in Vallarta Street, Poblacion, San Isidro, Nueva Ecija. A total of fifteen (15) students were selected as participants through purposive sampling. Data were systematically gathered using semi-structured interviews supported by audio recordings. The findings indicated that seventeen-year-old female students with sleep deprivation in Grade 11 STEM classes typically fell within the range of five to seven hours of sleep per night. The study also revealed that students identified the following as the primary causes of their lack of sleep: use of gadgets, studying or reviewing, cramming, sleeping disorders, academic workload, and sleeping patterns. Furthermore, the results showed that sleep deprivation affected students' academic performance through inattentiveness, migraines during class, and mental block. The findings also indicated that students employed various coping strategies to lessen the negative effects of sleep deprivation on academic performance. These coping strategies included drinking milk or water, reducing screen time, practicing time management, and going to bed early. The findings illustrate how selected Grade 11 STEM students at General de Jesus College in San Isidro, Nueva Ecija perceive sleep deprivation. Sleep deprivation, characterized by difficulty falling asleep, sleep disruption, and failure to obtain the recommended amount of sleep, continues to affect individuals across all age groups. The results suggest that students may adopt several coping strategies recommended by the researchers to address sleep deprivation. These include time management, going to bed early, reducing screen time, and consuming water and milk. The study emphasizes the importance of these strategies in minimizing the negative effects of sleep deprivation on students' academic performance.

Keywords: sleep, sleep deprivation, academic performance, stem students, coping strategies

LIVED EXPERIENCES OF SELECTED PARENTS IN SELECTED MUNICIPALITIES OF NUEVA ECIJA WITH CHILDREN DIAGNOSED WITH AUTISM

Jhal Albert Berioso, Thomas James Franco, Axel Kendric Palon, Allen Gabriel Dela Pena, Sami Andre Alexandre Zeineldin, Teruaki Otsubo Jr, Aizel Marie Castro

Abstract

Managing a child with autism presents significant challenges due to its complex neurodevelopmental nature, which affects social skills, communication, and behavior. Parents of children with Autism Spectrum Condition (ASC) employ various strategies to support their children, yet they often face obstacles such as limited social support, which can increase parental stress and affect family dynamics. This study aimed to explore the lived experiences of parents whose children are diagnosed with ASC and to examine the efforts they undertake to cope with these challenges. This study utilized snowball and judgmental sampling techniques to select participants. Semi-structured interviews were conducted with ten (10) parents from selected municipalities in District IV of Nueva Ecija through both in-person and online modalities. Thematic analysis was employed to identify predominant themes while ensuring the confidentiality and anonymity of the participants. The thematic analysis revealed significant themes highlighting the profound impact of ASC on families. Mothers primarily assumed caregiving roles, while fathers provided support. Common challenges included stress, managing tantrums, exhaustion, societal judgment, and difficulties with time management. Despite these challenges, themes of acceptance, strong familial bonds, and treating the child as a typical family member emerged. Coping mechanisms such as allocating personal time and maintaining faith in God were identified, along with additional efforts made by parents to address their child's needs. This study highlights the complex challenges faced by parents managing children with ASC in District IV of Nueva Ecija. Despite the difficulties encountered, resilience, acceptance, and family unity were evident among participants. The findings emphasize the importance of greater understanding and support, including accessible interventions, respite care, and mental health services. Increasing awareness and promoting acceptance may help reduce stigma and foster more inclusive environments. Recognizing both the challenges and strengths of these families is essential in building a supportive society where individuals with autism and their families can thrive.

Keywords: autism, children, parents, autism spectrum condition, lived experiences, coping mechanisms

PSYCHE: CYBER-COUNSELING FOR MENTAL WELLNESS AND ANTI-STIGMATIZATION OF GRADE 12 STUDENTS AT GENERAL DE JESUS COLLEGE

Alliana Jovelle Marcelo, Jochelle Mae Eugenio, Razel Mae Bautista,
Benedict Paolo Yumol, Dr. Gina Garcia

Abstract

Filipinos worldwide are often known to avoid formal help-seeking and may hold negative attitudes toward mental health services. Understanding the cultural and social factors that influence mental health stigma is essential for designing effective interventions. This study investigated the efficacy of a free cyber-counseling webpage called Psyche, which users may access anonymously, in improving mental well-being and reducing stigma among Grade 12 students of General De Jesus College. The study employed a quasi-experimental research design using a pretest–posttest approach involving Grade 12 students of General De Jesus College. Purposive sampling was utilized, and a total of 21 respondents were selected based on their mental well-being scores obtained using the Warwick–Edinburgh Mental Well-Being Scale administered through Google Forms. The effectiveness of the intervention was assessed by comparing the participants' mental well-being scores before and after exposure to the Psyche webpage. Analysis of the data gathered from users of the Psyche webpage revealed a notable and statistically significant increase in participants' mental well-being scores. This finding indicates that the users' mental health benefited positively from their interaction with the webpage. The observed improvement in mental well-being highlights the potential effectiveness of Psyche as an accessible online resource for mental health support and promotion. The findings suggest that collaboration with medical establishments, such as Argao Psych, may be pursued to further strengthen the implementation of the cyber-counseling platform. Expanding the participant pool to include a broader range of respondents is also recommended to enhance the applicability of the results. As a mental health support resource, these measures could improve the usefulness and accessibility of the Psyche webpage. The study underscores the value of cyber-counseling interventions in educational settings and highlights the importance of integrating such resources into student mental health support programs. Further research is encouraged to examine the long-term effects of online interventions like Psyche across different demographic groups and institutional contexts.

Keywords: cyber-counseling, mental well-being, anti-stigmatization, student mental health, online intervention

CHALLENGES ENCOUNTERED BY THE SELECTED LGBTQIA+ PARENTS OF SELECTED BARANGAYS IN SAN ISIDRO, NUEVA ECIJA

Patricia Ann Francisco, Cris Reginald Tolentino, Ashley Lorainne Almeria, Jhosh Rhonet Diaz, Eunice Ann Capinpin, Justine Kennedy Magtuto, Alexis Santiago

Abstract

The acronym LGBT refers to Lesbian, Gay, Bisexual, and Transgender. Since the late 1980s, initialism and its widely used variations have served as a catch-all term for disadvantaged gender identities and sexual orientations. This study used a qualitative method to examine the challenges and support systems of parents of LGBTQIA+ children in San Isidro. In terms of data gathering, qualitative methods were implemented in a sequential manner through face-to-face interviews. A semi-structured interview was conducted to identify the challenges encountered and the support systems utilized by parents of LGBTQIA+ children in San Isidro. The results showed that most participants experienced discrimination. The findings also revealed that many parents coped with the challenges they encountered by seeking comfort from loved ones or by communicating with other parents who shared similar experiences. Future researchers may conduct and continue this study to further understand the challenges encountered by parents of LGBTQIA+ children. It is advisable to explore alternative theories to deepen the understanding of these challenges; however, such theories should supplement the principal theory used in this study. Future researchers may also conduct studies that address gaps identified in the present research.

Keywords: lgbtqia+, parental challenges, discrimination, support systems, qualitative study

CHALLENGES ENCOUNTERED DUE TO GRIEF AS PERCEIVED BY SELECTED SENIOR HIGH SCHOOL STUDENTS OF GENERAL DE JESUS COLLEGE

Matt Andrei Ocampo, Marc Theo Paray, Anne Kristine Hermosa, Renz Andrei Palon,
Keith Raillie Bitangcol, John Christopher Fernandez, Daniel Josh Magno,
John Emmanuel De Borja, Alexis Santiago

Abstract

Grief is a natural response to sudden death and may lead to depression, low self-esteem, and various health issues, including Prolonged Grief Disorder (PGD). Students experiencing grief may undergo changes in roles, habits, and academic performance. Investigating the effects of grief among students is therefore crucial to understanding its broader impact on their well-being and academic life. This study employed a qualitative and phenomenological approach to investigate the shared experiences and behaviors of senior high school students at General De Jesus College. Participants were selected based on specific criteria, including experiences of grief, the death of a father, religious background, and grief-related challenges. The study aimed to address gaps in previous research by comparing religious perspectives and examining the effects of the sudden death of a father in 2021. Findings revealed that the loss caused significant grief among students, leading to mental health concerns, financial difficulties, and a decline in academic performance. Participants struggled to express their emotions and often concealed their grief to protect their parents. Strengthening faith emerged as the most effective coping mechanism, while focusing on studies helped alleviate emotional pain. The study recommends increasing awareness of the effects of loss, encouraging students to consult professionals for appropriate coping strategies, urging parents to foster open communication, providing teachers with resources to help normalize grief in educational settings, and conducting further qualitative research to gain deeper insights into students' grief experiences.

Keywords: grief, mental health, family openness, coping mechanisms, traditional grief theory

LIVED EXPERIENCES OF GRADE 11 SELECTED SENIOR HIGH SCHOOL STUDENTS AT GENERAL DE JESUS COLLEGE WHO LIVED WITH BROKEN FAMILY

Emmanuel Mangulabnan, Jarry Villanueva, Rhian Denise De Guzman, Nathalie Nichole Cuevo, Christopher Cabansag, Michael Angelo Tamayo, Aizel Marie Castro

Abstract

A broken family is a situation experienced by some students, and it significantly affects their daily lives. Disruptions within the family structure can influence children's emotional development and hinder their ability to form healthy relationships with others. This study was conducted to determine the lived experiences of selected Grade 11 senior high school students at General de Jesus College who live in broken families. This study employed a phenomenological research design to explore the experiences of the selected students. The research was conducted during the School Year 2023–2024 at General de Jesus College in San Isidro, Nueva Ecija. A total of ten (10) participants took part in the study. Data were collected using semi-structured interviews supported by audio recordings. The gathered data were analyzed through thematic analysis. The results showed that the participants experienced various challenges associated with living in a broken family. These challenges included lack of focus on academic performance and insufficient parental care. The findings further revealed that most students were affected both positively and negatively. On the positive side, some participants expressed motivation to become good parents in the future. On the negative side, they experienced difficulties in maintaining academic focus. Despite these challenges, participants were able to cope through support from friends and through acceptance of their family situation. Overall, the challenges faced by students from broken families can shape their resilience and ability to overcome obstacles. The findings contribute to a deeper understanding of the complexities surrounding the experiences of students from broken families and highlight the need for appropriate support and intervention within educational settings.

Keywords: lived experiences, senior high school students, broken family

LIVED EXPERIENCES OF PARENTS OF CHILDREN WITH AUTISM SPECTRUM DISORDER: PARENTING STYLE, CHALLENGES AND COPING STRATEGIES IN CABIAO, NUEVA ECIJA

Shane Wycoco, Sophia Nicole Libunao, Francine Keith Batas, Jireh Emmanuelle Estrada, Hanna Marie Yunsal, Tristan Reyes, Joseph Laxamana, Alexis Santiago

Abstract

Parents of children with Autism Spectrum Disorder (ASD) experience various challenges as they raise their children. These challenges are often linked to the parenting styles they apply and the coping strategies they use to support their child's development. Understanding these lived experiences allows parents and individuals with ASD to have a voice in society. This study explored the lived experiences of parents of children with ASD, focusing on the factors that influence their parenting styles, challenges encountered, and coping strategies employed. This study utilized a phenomenological research design to explore the lived experiences of nine (9) selected parents of children with ASD in Cabiao, Nueva Ecija. Purposive sampling was used based on specific criteria to identify suitable participants. Data were collected through semi-structured interviews supported by audio recordings to ensure accuracy and depth of responses. The findings revealed that parents experienced various challenges while raising their children with ASD, with financial difficulties being one of the most common concerns. These challenges significantly affected parents' lives and contributed to personal growth over time. Most participants were aged 35 to 40 years old and had children aged 5 to 12 years. Parents applied different parenting styles, with the establishment of clear boundaries and disciplinary approaches helping them manage their child's behavior more effectively. Additionally, parents employed various coping strategies, including seeking professional support, which was identified as crucial in supporting their child's growth and development. The results highlight the difficulties and challenges experienced by parents of children with ASD in raising their children. Understanding these lived experiences emphasizes the need for adequate support systems and interventions to address the multifaceted needs of individuals and families affected by ASD. Providing platforms for parents to share their experiences can help strengthen awareness, advocacy, and societal support.

Keywords: autism spectrum disorder, parenting styles, challenges, coping strategies, lived experiences, parents

PARENTAL PRESSURE AND ITS EFFECT ON THE ACADEMIC PERFORMANCE AS EXPERIENCED BY SELECTED SENIOR HIGH SCHOOL STUDENTS IN GENERAL DE JESUS COLLEGE DURING THE ACADEMIC YEAR 2023-2024

Hanna Lou Aguilan, Anton Juan Borja, Michelle Angela Manuel, Althea Venice Patinga, Harold Aguilan, Adriel Esporna, Gyrell Chaz Embuscado, Aizel Marie Castro

Abstract

Parental pressure on children's academic achievement and emotional health has drawn considerable attention. While parental support and involvement in a child's education can be beneficial, excessive pressure may lead to various difficulties and concerns. Thus, this study aimed to determine the effects of parental pressure on the academic performance of selected senior high school students at General De Jesus College during the academic year 2023–2024. This qualitative study employed a phenomenological research design and used purposive sampling to carefully select the participants. Semi-structured interview questions were used as the primary data-gathering instrument. A total of 14 participants were interviewed, consisting of senior high school students aged 16 to 18 years across all academic strands. The results showed that most of the participants were female, and the majority were 16 years old. Most participants experienced parental pressure in various forms, including being compared with others, high expectations regarding academic achievement and grades, and pressure to perform better academically. As a result of parental pressure, participants experienced effects such as improved academic performance, lack of focus due to pressure, lack of sleep due to extensive review, and a strong emphasis on obtaining high grades. Despite these challenges, students employed coping mechanisms such as socializing with friends, engaging in hobbies, and maintaining a positive mindset. This study emphasizes the complex effects of parental pressure on adolescents and highlights the importance of comprehensive support networks within learning environments to promote well-being and academic achievement despite these challenges.

Keywords: parental pressure, academic performance, senior high school students, academic achievement, coping mechanisms

STRAND DISCRIMINATION: CHALLENGES ENCOUNTERED BY SELECTED GRADE 11 STUDENTS OF GENERAL DE JESUS COLLEGE ACROSS DIVERSE ACADEMIC STRANDS

Lorenz Earl Tolentino, Mitz Fatima Tobias, Eunice Lei Santiago, Chloe Ann Fajardo, Lester Kim Pascual, Neal Robert Bernardino, Jhon Gio Interia

Abstract

Existing studies have primarily focused on identifying which academic strand most frequently experiences strand discrimination. In this study, the researchers explored strand discrimination and the challenges encountered by Grade 11 students at General De Jesus College across diverse academic strands. This study employed a qualitative research approach using a phenomenological design. The researchers utilized the participants' encountered challenges to collect and analyze the necessary information to achieve the objectives of the study. A total of twelve (12) students from diverse academic strands participated in semi-structured interviews. The responses of the selected students were recorded through voice recordings for data accuracy. All selected participants reported encountering challenges related to strand discrimination across different academic strands. Students experienced discrimination due to perceived differences in future opportunities, with most discrimination stemming from differences in skills and abilities. As a result, the participants identified various coping mechanisms to address the challenges associated with strand discrimination and recommended different strategies to manage and overcome these experiences. The results demonstrate that students from every Grade 11 academic strand at General De Jesus College have experienced strand discrimination and the associated challenges. Discrimination was most commonly linked to perceived differences in skills and abilities. Consequently, many students reported coping with these challenges by disregarding negative comments about their chosen academic strand.

Keywords: academic strand, strand discrimination, student challenges, coping mechanisms, senior high school students

EXPERIENCES OF SELECTED NURSES IN NUEVA ECIJA MEDICS HOSPITAL: CHALLENGES AND REWARDS

Paul Brave De Leon, Lee Anderson Lamson, Edison Palomo, John Michael Reyes, Mikaella Joy Franco, Avril Pallarca, Alexis Santiago

Abstract

This study aimed to explore the challenges and rewards experienced by selected nurses at Nueva Ecija Medics Hospital. Filipino nurses have expressed dissatisfaction with their compensation, often feeling that their efforts are inadequately rewarded. According to Tuazon (2023), the lack of stable and financially viable employment opportunities locally has driven many Filipino nurses to seek work abroad, as entry-level salaries in the Philippines are significantly lower compared to those offered overseas. This qualitative study employed a phenomenological research approach to investigate the challenges and rewards experienced by selected nurses at Nueva Ecija Medics Hospital. The study also examined the nurses' years of experience, coping strategies, and the most common challenges they encounter in their profession. Focus group discussions were conducted with selected nurses in District IV, Nueva Ecija, who had at least three (3) years of hospital work experience. Data were gathered using semi-structured interviews and audio recordings. Thematic analysis was applied to analyze the collected data. The interviews were conducted between February and March 2024. The findings revealed that most participants had three (3) to six (6) years of professional nursing experience. One of the most significant challenges identified was low salary compensation. Despite these difficulties, participants reported relying on prayer and seeking God's guidance as a coping mechanism, which helped them perform their duties effectively and continue serving patients. Additionally, nurses identified two primary forms of appreciation expressed by patients and their families: physical appreciation, such as giving gifts or tangible items, and verbal appreciation, including compliments and expressions of gratitude. The study found that nurses experience challenges in balancing personal and professional life due to low salaries and heavy workloads, which also affect their families. To cope with these difficulties, nurses often seek spiritual guidance and rely on faith. Patients and their families express appreciation through both tangible gifts and verbal acknowledgment, which nurses perceive as rewarding aspects of their profession. Overall, nurses utilize various coping strategies to manage the challenges they face while finding fulfillment in the rewards of their work.

Keywords: nurses, lived experiences, workplace challenges, coping strategies, professional rewards

THE CHALLENGES OF SELECTED GRADE 7 STUDENTS OF GENERAL DE JESUS COLLEGE HAVING AN OVERSEAS PILIPINO WORKERS PARENTS

Dennis Casares, Jariane Soriano, Kjell Erick Ortiz, Christofer Balingit, Ezra Cassandra Lapuz, Camillie Bernardino, Azie Dela Pena, Alexis Santiago

Abstract

Many Filipinos face difficulties in securing high-paying jobs within the Philippines, prompting some to seek employment overseas to support their families. This separation often results in significant challenges for the children of Overseas Filipino Workers (OFWs). This study explored the experiences of Grade 7 students at General De Jesus College who have parents working abroad. This study employed a phenomenological research approach to understand the challenges faced by students with OFW parents. Semi-structured interviews supported by audio recordings were conducted with participants selected through purposive and convenience sampling. The interviews focused on the students' experiences of parental absence, the duration of separation, perceived solutions, and recommendations. The collected data were analyzed using thematic analysis. The findings revealed that most participants experienced feelings of loneliness for a period ranging from 10 to 13 years due to their parents' absence. While the students emphasized the importance of their parents' physical presence, they also shared coping strategies such as spending time and bonding with friends. Despite these challenges, the participants demonstrated resilience in managing their daily lives. This study highlights the significant impact of parental absence due to overseas employment on the well-being of Grade 7 students. Feelings of loneliness emerged as a prominent challenge. However, the resilience shown by the students and their ability to find support through friendships provide meaningful insights. The findings suggest the need for further exploration of support systems for children of OFWs, including possible school-based programs or community initiatives.

Keywords: loneliness, daily lives, parental absence, overseas filipino workers, student well-being

CHALLENGES EXPERIENCED BY THE SELECTED FEMALE ENGINEERS IN NUEVA ECIJA IN THEIR WORKPLACE

Bernice Mateo, Marc Noah Trinidad, Matt Christian Paul Santos, Hannah Nikka Cales, Hanz Matthew Quijano, Samantha Ortiz Luis, Queen Diana Rose De Roxas, Alexis Santiago

Abstract

This study aimed to determine the challenges experienced by selected female engineers in their workplace. Its purpose was to shed light on gender-specific challenges in the engineering field. Previous studies have identified several challenges faced by female engineers; however, the psychological and social aspects of these challenges have not been sufficiently addressed. This study utilized a qualitative approach and a phenomenological research design. A snowball sampling procedure was employed to identify additional respondents recommended by current participants. There were seven participants in the study. The research was conducted in Nueva Ecija, Philippines, and all participants were from the same location, as the study was limited to this area. Semi-structured interviews were used to gather data, with the aid of an audio recorder. These methods were chosen to facilitate the effective conduct of the study. Among the seven participants, two were aged 21 to 25 years, three were aged 26 to 30 years, one was aged 41 to 45 years, and one was aged 46 to 50 years. Most participants experienced gender discrimination in their workplace. The majority were employed in the field of civil engineering and reported that men were perceived as more needed and more trusted than women. These challenges negatively affected their self-esteem, and two participants stated that such experiences made it difficult for them to enjoy their profession. However, most participants shared that instead of focusing on the challenges they encountered, they concentrated on improving their work performance and developing their professional skills.

Keywords: female engineers, workplace challenges, gender discrimination, engineering field, qualitative study

EXPLORING THE EFFECTS OF SOCIAL MEDIA ON GENDER IDENTITY AWARENESS AMONG SELECTED GRADE 10 STUDENTS AT GJC: A PHENOMENOLOGICAL STUDY

Princess Myethel Joson, Alyzen Loraine Paras, Ivan Matthew Ocampo,
Gregiel Talplacido, Rhianne Maylyn Hernandez

Abstract

Adolescence is a critical period during which individuals begin to explore and understand their identity, including gender identity. With the widespread use of social media, it has become a potential platform for promoting gender identity awareness. The primary objective of this study was to examine the effects of social media on gender identity awareness among adolescents. Using a qualitative approach, this study examined the effects of social media usage on perceptions of gender identity among selected Grade 10 students at General de Jesus College. A descriptive type of research design was utilized in this study. The data gathered focused on identifying how social media influenced the development of gender identity awareness among the respondents. The results showed that social media had various effects on gender identity awareness. Positive effects included fostering inclusivity and acceptance, enhancing understanding and empathy, and promoting social awareness. However, the study also identified negative effects, such as discrimination and harassment on social media platforms, disagreement and discrimination regarding gender identity among family and friends, and challenges in persevering while determining one's gender identity. Despite the negative effects experienced by the respondents, they employed coping strategies such as ignoring negative behaviors, being true to themselves, and seeking support systems. These coping techniques revealed a positive impact on the respondents, contributing to their gender identity development and increased awareness while navigating challenges encountered on social media platforms.

Keywords: gender identity, gender identity awareness, adolescents, social media influence, qualitative study

THE OVERALL INFLUENCE OF THE BARBIE EFFECT ON SELECTED FEMALE SENIOR HIGH SCHOOL STEM STUDENTS OF GENERAL DE JESUS COLLEGE

Faith Aliah Hollero, Arabella Ergie Alipio, Shayne Magno, Erwyn Javeriel Mateo,
Hans Erickson Santos, Mark Anthony Sulit, Dr. Ma. Cristina Ravela

Abstract

The Barbie Effect refers to the influence of Barbie on young girls' perceptions of gender roles, stereotypes, and body image. Over the years, Barbie has evolved from a fashion-focused doll into a more empowering and feminist figure. Despite efforts to portray Barbie as a positive and diverse role model, controversies surrounding unrealistic body standards continue to overshadow her intended purpose. Critics argue that these portrayals may negatively affect body image and self-esteem. Thus, this study aimed to explore the overall influence of Barbie on female students in the Science, Technology, Engineering, and Mathematics (STEM) strand at General De Jesus College, examining both positive and negative effects. This study employed a qualitative phenomenological research approach. Semi-structured interviews were used as the primary data-gathering instrument, and thematic analysis was applied to interpret and analyze the collected responses. The findings revealed that participants, aged 16 to 17 and predominantly enrolled in Grade 11, demonstrated varied perceptions of Barbie. Female STEM students viewed Barbie as a fashion icon, role model, and relatable figure in certain aspects of their personal experiences. Barbie dolls, movies, and related media were also found to influence fashion trends, promote positive mindsets and behaviors, and shape consumer buying habits. Overall, Barbie was found to have a generally positive influence on female STEM students at General De Jesus College. The study emphasizes the importance of recognizing both the positive and negative impacts of influential role models. Broadening the understanding of Barbie as a cultural symbol may help explain how toys and media representations shape women's perceptions, aspirations, and identity formation.

Keywords: barbie effect, influence, role model, stem students, gender representation

Natural Science and Mathematics, Curriculum, and Instructions

ANTIBACTERIAL ACTIVITY TESTING OF CALABASH (CRESCENTIA CUJETE) EXTRACT FORMULATED AS BAR SOAP AGAINST PSEUDOMONAS AERUGINOSA

Justine Claire Santos, Hannah Sophia Bacani, Maria Alexa De Luna

Abstract

Bacterial infections are considered a major health concern in countries worldwide, including the Philippines. Researchers have investigated the antibacterial activity of herbal plants for the production of antibacterial soaps; however, relatively few studies have focused on the potential of Calabash (Crescentia cujete) extract as an antibacterial agent. Hence, this study was conducted to utilize Crescentia cujete extract in the formulation of an antibacterial bar soap and to evaluate its antibacterial activity against a specific pathogen. An experimental research design was utilized, as it was the most appropriate method for accurately gathering data. Standard microbiological techniques, including the agar diffusion assay, were employed to evaluate the potential antibacterial effects of the herbal soap. Gram-negative bacteria were exposed to the soap at different concentrations, specifically 75% and 100%. Mueller-Hinton agar was used to test the antibacterial activity of the Calabash (Crescentia cujete) bar soap against the bacterial pathogen Pseudomonas aeruginosa. Furthermore, the effectiveness of the Calabash (Crescentia cujete) antibacterial soap was compared with a commercially available antibiotic (Ofloxacin) against Pseudomonas aeruginosa. The results showed that the herbal antibacterial soap produced a limited zone of inhibition against the tested pathogen, suggesting partial inhibition of bacterial growth. Further investigation revealed that the soap did not exhibit antibacterial activity. Meanwhile, the results showed that the commercially available antibiotic (Ofloxacin) was more effective in inhibiting the growth of Pseudomonas aeruginosa than the Crescentia cujete antibacterial bar soap. It is suggested that additional studies be conducted to evaluate the quality of the ingredients used in the soap formulation.

Keywords: antibacterial, bar soap, calabash (crescentia cujete), efficacy, pseudomonas aeruginosa

EFFECTIVENESS OF LANZONES-PEEL AS A NATURAL INCENSE MOSQUITO REPELLANT

Kenneth John Gamboa, John Paul Galang, Laurence Jaynier Miranda, Glaiza Dayag

Abstract

The primary objective of this study was to develop a mosquito repellent product that is accessible, eco-friendly, affordable, effective, and convenient for public use. The researchers aimed to create a product suitable for all individuals, including those with heightened sensitivity to smell, without causing discomfort or inconvenience. An experimental method was employed in this study. The lanzones-peel incense was tested by placing and lighting it in an area known to be infested with mosquitoes to observe its repellent effectiveness. The results showed that the lanzones-peel incense had the ability to eliminate mosquitoes effectively in the testing area. While many consumers prefer high-priced mosquito repellent products available in the market, this study demonstrated that the lanzones-peel incense is a highly effective alternative that is significantly more affordable. The findings indicated that the product can serve as a practical and economical option for mosquito control.

Keywords: mosquito repellent, natural incense, lanzones peel, eco-friendly product, alternative solution

SUHA (CITRUS MAXIMA) LEAVES AS AN ALTERNATIVE MOSQUITO-KILLING SPRAY

Abijah Joy Borja, Amanda Joyce Alcantara, Joaquin Miguel Amolar, Dr. Gina Garcia

Abstract

Mosquito-borne illnesses such as dengue, filariasis, Zika virus, malaria, and West Nile virus are well-recognized global health concerns. Synthetic insecticides have long been used as a control measure; however, they have been shown to pose risks to both environmental and human health. As an alternative, plant-based insecticides have been promoted because of their effectiveness in controlling insects while reducing the adverse effects associated with synthetic chemicals. Despite numerous studies utilizing different plants, no research has been identified that uses suha or pomelo (Citrus maxima) leaves as a plant-based insecticide, even though they are known to contain phytoconstituents with potential insecticidal properties. Thus, this study aimed to develop an alternative plant-based adult mosquito-killing spray derived from Citrus maxima leaf extracts. This study employed a true experimental research design to determine the efficacy of the plant-based mosquito-killing spray at different concentrations as the independent variable, measured by the number of adult mosquitoes that died after exposure as the dependent variable. A total of 100 adult mosquitoes were used in the experiment. Ethanolic extraction was conducted to obtain the Citrus maxima leaf extract. Mortality was observed for one hour in the control group using tap water, a commercially available insecticide, and test solutions with concentrations of 50% and 100% (pure extract). Statistical tools such as weighted mean, percentage, and analysis of variance (ANOVA) were used to evaluate the gathered data. The alternative plant-based mosquito-killing spray utilizing pure Citrus maxima leaf extract exhibited higher efficacy compared to the commercially available insecticide. The pure extract demonstrated a higher mosquito mortality rate and a faster knockdown time. The alternative plant-based mosquito-killing spray derived from Citrus maxima leaves exhibited mosquitocidal activity against adult mosquitoes and was found to be comparable to commercially available insecticides. The study suggests that future research may explore the effectiveness of this extract on other insect species to broaden its potential applications.

Keywords: citrus maxima, mosquito-killing spray, plant-based insecticide, mosquitocidal activity, biological pest control

THE EFFECTIVENESS OF SPENT COFFEE GROUNDS (COFFEA ARABICA SEED POWDER) AND CHICKEN EGG SHELLS AS AN ALTERNATIVE FERTILIZER FOR SILING LABUYO (CAPSICUM FRUTESCENS)

Amarlyn De Leon, Mark Timothy Lozano, Rance Alfonso, Sheena Galvez,
Kaila Kristinne Ortiz Luis, Jessica Lyn Villalobos

Abstract

Agriculture is a primary source of livelihood for many Filipino families in the Philippines. Fertilizers, whether organic or inorganic, provide essential chemical elements required for plant growth. However, due to the increasing cost of inorganic fertilizers, farmers have increasingly relied on organic alternatives to sustain agricultural production. This study aimed to investigate the viability of using spent coffee grounds (SCG) and chicken eggshells (CES) as substitute fertilizers for the siling labuyo plant and as alternatives to inorganic fertilizers. The study also sought to reduce waste materials, such as SCG and CES, that contribute to landfill accumulation and environmental degradation, while providing benefits to farmers and the community. An experimental research design was employed in this study. The materials used included spent coffee grounds collected from local cafés, chicken eggshells obtained from karinderyas, cafés serving egg-based products, and the researchers' households, as well as soil, siling labuyo seedlings, and ten (10) planting pots. The SCG and CES mixtures were applied to the pots at varying concentrations. The experiment was conducted over three (3) trials. Six (6) weeks after planting, the number of leaves and the height of the plant stems were measured and recorded. Small visible leaves were included in the count. The results showed that the mixture containing 0.06 grams of SCG and CES produced the most favorable outcomes across all conducted tests. Based on the results, the application of spent coffee grounds and chicken eggshells demonstrated strong potential as an alternative fertilizer for siling labuyo plants. The fertilizer was found to be manageable due to its affordability and had a positive effect on plant growth, suggesting its suitability as a sustainable and eco-friendly option for agricultural use.

Keywords: alternative fertilizer, spent coffee grounds, chicken eggshells, siling labuyo, organic farming

EFFECTIVENESS OF PORTABLE TUMBLER WITH FILTRATION AND HEATING SYSTEM

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Ashley Laurenz Clemente, Khizzle Franco

Abstract

Water filtration is the process of removing or reducing particulate matter and contaminants from water to make it safe and suitable for consumption. Boiling was utilized in this study to ensure water safety, as most bacteria cannot survive for more than a few minutes at temperatures above 70°C (160°F). This study aimed to develop a portable tumbler with filtration and heating capabilities to provide safe and drinkable water for campers, adventurers, hikers, and individuals without access to clean water. Multiple procedures were employed to clean and filter the water. These included ultraviolets (UV) lighting, boiling, and filtration using fabric and beads. Boiling the water for 15 minutes was sufficient to eliminate most microorganisms, while UV light was used to kill remaining germs. Additionally, debris was removed through bead and cloth filtration, and Aquatabs were used to destroy bacteria and prevent waterborne diseases such as cholera, typhoid, and dysentery. The method involved a multi-stage process designed to filter and purify the water effectively. At temperatures ranging from 36°C to 39°C, the portable tumbler successfully boiled and warmed water within 25 to 50 minutes without causing damage to the container. Although boiling alone was insufficient to eliminate all bacteria, the integration of UV light effectively addressed remaining contaminants. Beads and filter cloth efficiently removed debris, while Aquatabs provided an additional layer of safety for water purification. The findings provided evidence of the effectiveness of the portable tumbler with filtration and heating system. The results demonstrated that the device is accessible, practical, and cost-effective for individuals seeking clean and filtered drinking water. Overall, the study concluded that the portable tumbler is a viable solution for maintaining safe hydration and promoting good health in situations where access to clean water is limited.

Keywords: water filtration, portable tumbler, clean drinking water, heating system, water purification

CYNODON DACTYLON (BERMUDA GRASS) AS AN ALTERNATIVE MATERIAL FOR BIO-CHARCOAL

Aivy Joyce Santos, Nade Angela Melosantos, Justine Paul Santiago,
Gavynn Andrine Manuel, Khizzle Franco

Abstract

As communities worldwide experience changing ecosystems, intensified weather events, and rising temperatures, climate change has become an urgent global concern. The disruption of greenhouse gas balance in the atmosphere caused by deforestation further exacerbates climate change. Trees play a vital role in mitigating the greenhouse effect by sequestering carbon dioxide. The utilization of bio-charcoal derived from Bermuda grass offers a potential solution to these environmental challenges, as the grass is abundant and widely available. This study aimed to contribute to scientific knowledge by developing a sustainable alternative to traditional charcoal and supporting environmental preservation efforts. This study employed an experimental research method to determine the cause-and-effect relationships of the proposed hypotheses, ensuring the validity and reliability of the results. The methodology covered procedures for heating, molding, cooling, and assessing the efficacy of bio-charcoal as a sustainable alternative. The experimental approach was selected because it aligned with the specific requirements of the phenomenon under investigation and ensured that the processes conducted produced valid and reliable outcomes. The findings revealed that during a 90-minute observation period, mixture 1—composed of 300 g of Bermuda grass, one-third cup of flour, 157.7 g of fine sawdust, and 118.3 ml of water—exhibited a burning lifespan of 1 hour and 2 minutes under continuous fanning. Although this did not exceed the burning duration of traditional charcoal, it demonstrated greater durability. The results further showed that mixture 1 and mixture 4 were the most durable among all bio-charcoal mixtures and traditional charcoal. Notably, neither mixture 1 nor mixture 4 contained shredded sawdust, indicating that mixtures without shredded sawdust were more durable. Additionally, the bio-charcoal produced a smoky, slightly charred aroma and imparted a savory flavor to prepared food. These findings suggest that bio-charcoal not only provides environmental benefits by addressing deforestation and carbon emissions but also enhances the culinary experience. The study provided a comprehensive comparison of the properties and benefits of bio-charcoal and traditional charcoal. Results indicated that increasing the amount of flour binder in bio-charcoal mixtures led to faster depletion. Although bio-charcoal had a shorter burning lifespan than traditional charcoal, it did not negatively affect the aroma or flavor of grilled food. Furthermore, bio-charcoal demonstrated greater environmental advantages, including waste reduction when produced from Bermuda grass. Overall, the findings provided evidence that bio-charcoal derived from Bermuda grass can serve as a viable alternative to traditional charcoal, offering benefits for both environmental sustainability and consumer use.

Keywords: cynodon dactylon, bermuda grass, bio-charcoal, deforestation, climate change, biomass, carbon sequestration, carbon emissions

EXPERIENCES OF THE SELECTED FARMERS IN SAN ANTONIO, NUEVA ECIJA IN USING SYNTHETIC FERTILIZERS

Rhain Claui Guevarra, Johaira De Jesus, Elliah Mae Fernandez, Mariah Daniella Macatula, Precious Ella Manalo, Romina Reyes, Aizel Marie Castro

Abstract

Given the increasing demand for higher food production and agricultural development, the growing reliance on synthetic fertilizers has raised concerns regarding their effectiveness and environmental consequences. While synthetic fertilizers are widely used to enhance crop yield, questions remain about their long-term impact on soil quality and sustainability. This study aimed to investigate the experiences of selected farmers in using synthetic fertilizers, focusing on their perceived benefits, challenges, and overall impact on farming practices. This study employed a qualitative research approach to describe the experiences of selected farmers in using synthetic fertilizers. A total of ten (10) farmers from San Antonio, Nueva Ecija participated in the study. Data were gathered through semi-structured interviews supported by audio recordings. Participants were identified using snowball sampling, also known as chain-referral sampling. The findings revealed that although synthetic fertilizers provide advantages such as improved crop growth and increased yield, farmers raised concerns regarding soil compaction, which occurs when soil becomes hardened and weakened over time. To address this issue, farmers recommended regular soil testing. Additionally, excessive application of synthetic fertilizers was reported to potentially cause soil acidity, negatively affecting the growth and overall health of rice crops. High fertilizer cost was also identified as a significant challenge. Farmers noted that proper water management and attentive crop care could help mitigate these effects. Moreover, participants emphasized the importance of selecting appropriate fertilizer types and applying synthetic fertilizers in correct quantities. In summary, the study indicates that farmers can maximize the benefits of synthetic fertilizers in agricultural productivity by following recommended guidelines and proper application practices. Adequate knowledge and awareness of fertilizer use are essential in preventing potential soil degradation and other adverse effects associated with excessive or improper use of synthetic fertilizers.

Keywords: agriculture, farmers, synthetic fertilizers, soil quality, crop yield, fertilizer management

EXPERIENCES OF THE SELECTED RICE FRAMER IN CABIAO, NUEVA ECIJA IN USING SOLAR WATER PUMP AS AN ALTERNATIVE TO BASIN IRRIGATION

Katrisse Domingo, Raverson Azer Gonzales, Jhonas Miguel Alejo, Jelaine Cruz, Calvin Falconitin, Cody Christian Manguerra, Erika Ymillw Santiago Santiago, Jahnet Ariane Figueroa

Abstract

About 1 billion people work in the agricultural sector. Approximately 28% of the population was employed in agriculture in 2018, down from 44% in 1991. Many people in low-to-middle-income countries rely on farming as their primary source of income (Roser, 2023). In the Philippines, agriculture is a major sector of the economy. However, despite being the primary occupation, it still entails several challenges. According to Al-Weshali (2015), government policies on diesel subsidies are linked to the large-scale pumping of water for cash crops. Hence, this study focused on the experiences of rice farmers using solar water pumps as an alternative to basin irrigation systems. This study used a qualitative approach, specifically a phenomenological research design, to examine the experiences of selected rice farmers in selected barangays in Cabiao, Nueva Ecija who use solar water pumps as an alternative to basin irrigation. The researchers gathered data from ten selected rice farmers who had experience using solar water pumps as an alternative to basin irrigation systems. Participants were selected through purposive sampling and snowball sampling. Data were collected using semi-structured interviews supported by audio recordings. The gathered data were thoroughly analyzed and interpreted. The results showed that rice farmers in Cabiao, Nueva Ecija use solar water pumps because they are cost-effective, water-sustainable, and eco-friendly. The study also revealed that rice farmers had experienced using solar water pumps for several years, making them durable and reliable. In addition, solar water pumps were found to be more handy and accessible compared to basin irrigation systems. The results further indicated that the use of solar water pumps leads to higher profits for farmers compared to basin irrigation. Lastly, the findings showed that solar water pumps and basin irrigation systems differ significantly, as solar water pumps are non-polluting due to their reliance on solar energy, unlike basin irrigation systems that use diesel. The study also revealed that fewer mechanical problems were encountered when using solar water pumps compared to basin irrigation systems. The results reveal the experiences of selected rice farmers in Cabiao, Nueva Ecija in using solar water pumps as an alternative to basin irrigation. Rice farmers in the area use solar water pumps due to their cost-effectiveness, water sustainability, and eco-friendliness. Additionally, solar water pumps provide enduring water delivery to crops and contribute to increased farmer profits. The study also emphasizes that solar water pumps are easy to use and do not require constant monitoring compared to basin irrigation systems. The results showed that both solar water pumps and basin irrigation systems are accessible and deployable. Moreover, solar water pumps increase farmers' profits by ensuring continuous water flow. With these findings, the study demonstrates that solar water pumps are one of the viable alternatives farmers can use in agricultural practices.

Keywords: basin irrigation, farming, rice farmers, solar water pump

LIVED EXPERIENCES OF THE SELECTED FARMERS OF HYDROPONIC LETTUCE IN SAN ISIDRO NUEVA ECIJA

Alex Mangulabnan, Tiffany Ann Sanchez, Jenny Lopez, Neil Jared Joson,
Cherwina De Villa, Melody Dayao

Abstract

Hydroponic lettuce is a popular choice among farmers due to its feasible growth process and space-saving nature. This method utilizes nutrient-rich water solutions, allowing plants to absorb nutrients more efficiently than soil-based farming, while also reducing pests and diseases. In this study, the researchers investigated the reasons farmers prefer hydroponic methods over traditional farming using evidence-based and theoretically supported data. The study employed a descriptive research design to explore and describe the lived experiences of selected hydroponic lettuce farmers in San Isidro, Nueva Ecija. Qualitative data collection techniques were used, with semi-structured interviews and audio recordings serving as the primary data-gathering instruments. The findings revealed that hydroponic farming is a convenient and healthy method for lettuce cultivation, even in limited spaces. Farmers found hydroponic lettuce farming easier to manage; however, they encountered challenges related to high temperatures. Despite these difficulties, farmers applied various strategies to address heat-related issues, such as installing double nets and using electric fans inside the greenhouse. Hydroponic farmers perceived lettuce cultivation as simpler due to minimal land requirements and preferred the method for its ease of management. Heat-related challenges were mitigated through techniques such as the use of double nets and electric fans. Overall, the farmers agreed that hydroponics is a favorable option for lettuce cultivation, offering convenient monitoring of crop growth and temperature regulation at relatively low costs.

Keywords: hydroponics, lettuce, farmers, sustainable agriculture, controlled environment farming

THE EFFECTIVENESS OF PAPAYA PEEL BRIQUETTE AS AN ALTERNATIVE FOR TRADITIONAL CHARCOAL

Princess Flores, Nhitz Kyle Ladaban, Hanna Javier, Ryza Ponce, Khizzle Franco

Abstract

Climate change is partly driven by environmental practices such as the use of liquefied petroleum gas (LPG) and the production of charcoal, which contribute to deforestation and air pollution. In response, the researchers conducted a study focused on developing an environmentally friendly alternative to traditional charcoal by utilizing agricultural waste, specifically papaya peels. This approach aimed to support waste management efforts while reducing deforestation. An experimental research method was employed in this study. The research aimed to evaluate the effectiveness of papaya peel briquettes as an alternative to traditional charcoal for household energy use. The assessment focused on heating efficiency, burning time, and environmental impact. The experimental design allowed for a systematic evaluation of the performance of papaya peel briquettes and their potential as a renewable energy source. The study examined the performance of papaya peel briquettes in comparison with traditional charcoal. Experimental results indicated that papaya peel briquettes demonstrated effective heating performance and emitted fewer harmful substances into the air. These findings suggest that papaya peel briquettes may serve as a viable and eco-friendly alternative energy source. The use of papaya peel briquettes as an alternative charcoal source shows promising potential in addressing both environmental and economic concerns. Their efficient combustion and reduced emissions make them a sustainable option for household energy use. With further research and development, papaya peel briquettes could contribute to cleaner energy practices and help reduce the environmental impact associated with traditional charcoal production.

Keywords: papaya peel briquettes, alternative charcoal, renewable energy, waste management, environmental sustainability

THE EFFICACY OF MARIGOLD EXTRACT AGAINST NEMATODES: AN EXPLORATORY STUDY FOR A NATURAL LARVICIDE

Mikhailah Viktoria Olpindo, Aizel Jhan Bernardo, Christine Joy Fernandez,
Amira Nicole Villasan, Kurt Emmanuel De Guzman, Khizzle Franco

Abstract

Growing concern over the adverse effects of chemical pesticides on environmental and human health has intensified the search for sustainable alternatives. This study investigated the efficacy of marigold flowers (Tagetes spp.) as a natural larvicide against worm larvae. Marigolds are widely recognized for their pest-repellent properties and contain bioactive compounds with potential larvicidal effects. The objective of this study was to assess the larvicidal activity of marigold extracts against worm larvae and explore their potential role in eco-friendly pest management. Through experimental evaluation and analysis, this research aimed to contribute to sustainable agriculture and environmental preservation by offering a botanical solution for controlling harmful worm populations while maintaining ecological balance. This study focused on formulating a marigold-based larvicide by extracting active compounds from marigold flowers. The flowers were boiled in water, and the extract was incorporated with carbofuran to produce a spray solution. The larvicide was systematically applied to worm populations to evaluate its effectiveness. Worm mortality was carefully monitored over time, and comprehensive data were collected throughout the experimental period. The gathered data were used to assess larvicidal efficacy and to support future research and pest management strategies involving marigold-based larvicides. The results demonstrated that marigold extract exhibited significant larvicidal activity, effectively reducing and eradicating worm populations. The findings indicate that marigold extract has strong potential as a natural alternative to chemical larvicides. These outcomes highlight the feasibility of using marigold-based formulations as an environmentally friendly option for worm control. The findings of this study confirm the potential of marigold flowers as a natural larvicide against worm larvae. Experimental results showed that marigold extracts possess bioactive compounds capable of disrupting larval development and reducing worm populations. This suggests that marigold extract may serve as a sustainable and eco-friendly alternative to conventional chemical larvicides. However, further investigation is recommended to better understand the specific mechanisms of action of marigold extracts on worm larvae. Overall, this research contributes to the growing body of knowledge on botanical pest control and supports the exploration of natural solutions for sustainable agriculture and environmental health. Additional field trials are recommended to validate its practical application in real-world settings.

Keywords: marigold extract, larvicide, worm larvae, botanical pest control, eco-friendly pest management

TRANSFORMING SNAKE PLANT (DRACAENA TRIFASCIATA) FIBER INTO ECO-FRIENDLY FIBER PLATES AS AN ALTERNATIVE

Lady Alexis Carillo, Erika Shane Amores, Ken Delos Reyes, Lerris Bautista,
Ron Lester Garcia, Lindsay Patiag, Rolina Labao

Abstract

This study investigates the use of Dracaena trifasciata, commonly known as snake plant, as an alternative fiber source for paper plate production, offering a long-term solution to the environmental concerns associated with conventional paper plates. Traditional paper plates are typically manufactured from wood pulp, which consumes large amounts of natural resources and contributes to deforestation. In contrast, the rapid growth and durability of snake plants make them a more environmentally friendly source of fiber. Utilizing snake plant fibers for plate production may significantly reduce dependence on wood-based materials, thereby minimizing deforestation and lowering carbon emissions. Fiber plates produced from snake plant fibers present a strong and sustainable alternative to conventional paper plates. The study employed an experimental research design. Materials used included snake plants collected from household backyards, cornstarch and gawgaw obtained from a wet market, and beeswax purchased from an online shop. These materials served as the primary components in the production process. The method of production was considered sustainable due to the nature of the materials used and the reduced production time. The study aimed to evaluate the efficiency of snake plant fibers as an alternative material to conventional paper plates. The fiber plates underwent various tests, including durability and strength testing, water resistance testing, and heat tolerance testing. The results showed that plates made from snake plant fibers were comparable in strength and durability to conventional paper plates. Experimental findings demonstrated that the quality and functional performance of the fiber plates were similar to those of traditional paper plates. The durability, strength, water resistance, and heat tolerance of the snake plant fiber plates indicate their suitability as an alternative material for paper plate production. Snake plant fiber plates were found to be an effective alternative to traditional paper plates. In addition to providing environmental benefits, these fiber plates exhibit the natural strength and durability of snake plant fibers, making them comparable in quality to conventional paper plates. The findings support the potential of snake plant fibers as a sustainable material for disposable tableware.

Keywords: snake plant, dracaena trifasciata, fiber plates, eco-friendly materials, sustainable alternatives

LIVED EXPERIENCES OF THE SELECTED RESIDENTS IN BELGRADE, SERBIA IN LIQUID 3 AS AN AIR PURIFIER TO REDUCE AIR POLLUTION

Amare Gabrielle Valerio, Aaliyah Anne Aguilar, Sebastian Gilbert Antenor, Renzo Ian Atacador, Janella Nicole Bundoc, Kim Drei Javier, Ayessa Magno, Jahnet Ariane Figueroa

Abstract

Liquid 3 is an urban photo-bioreactor that utilizes microalgae to efficiently remove carbon dioxide (CO_2) and produce oxygen (O_2) and biomass. It functions similarly to a tree by converting CO_2 into oxygen and also serves additional purposes such as a bench, a phone-charging station, and a solar-powered unit at night (Bojic, 2021). Many countries are currently facing the problem of tree loss, often due to limited space available for tree planting. This challenge led scientists in Serbia to develop Liquid 3. However, there is a lack of studies focusing on the experiences of residents living in Serbia regarding the use of Liquid 3. Hence, this study aimed to explore the lived experiences of selected residents in Belgrade, Serbia in using Liquid 3 as an alternative air purifier to reduce air pollution. This study employed a qualitative research approach, specifically a phenomenological research design, to determine the lived experiences of selected residents in Belgrade, Serbia. Participants were selected using non-probability sampling techniques, including snowball sampling and purposive sampling. Data were collected through online semi-structured interviews supported by audio recordings. The gathered data were thoroughly analyzed and interpreted. The findings revealed that selected residents in Belgrade, Serbia had physically encountered Liquid 3 and reported experiencing a refreshing sensation due to its air-purifying effects. The study further found that Liquid 3 is beneficial in reducing and mitigating air pollution and improving air quality. Additionally, participants suggested that Liquid 3 could be improved by increasing its quantity, placing it in areas without trees, enhancing its design and appearance, incorporating more renewable energy sources, and reducing its cost. The results demonstrate that Liquid 3 can serve as an alternative air purifier to reduce air pollution. This innovative technology introduced in Belgrade, Serbia contributes to air purification and pollution mitigation. To maximize its benefits, Liquid 3 may be further developed by increasing its availability, improving cost efficiency, and enhancing its effectiveness in terms of location placement, design, and energy utilization.

Keywords: air pollution, air purifier, liquid 3, lived experiences, microalgae

PORTABLE WATER PUMP FILTER AS PURIFYING DEVICE FOR RIVER WATER CONTAMINANTS

Matt Andrei Panahon, Jabez Prince Maniego, Ralwyn Cholo Sta Maria,
Hans Aaron Enrile, Khizzle Franco

Abstract

In the Philippines, approximately three million people are at risk due to the use of unsafe water sources. In addition, around seven million people do not have access to improved sanitation and sanitation services (Filipenco, 2023). Water filtration is one method used to address the shortage of potable water. In this study, the researchers developed a portable water filter using different filtering media powered by a water pump connected to a motorcycle battery as its energy source. An experimental research design was employed in conducting this study. The experiment involved filtering river water to produce water that is safe and suitable for drinking. Water testing strips were used to assess the quality of the filtered water and to determine the effectiveness of the portable water pump filter in removing contaminants from river water collected at Minalungao National Park. The results demonstrated the effectiveness of the portable water pump filter in removing impurities from river water. The results of filtered water samples 1 and 2 indicated that the water was safe for drinking based on the drinking water parameters observed by the researchers. The filtered water showed a total alkalinity of 120 mg/L, a pH level of 7.6, hardness ranging from 100–150 mg/L, and cyanuric acid levels of 30–50 mg/L. Additionally, nitrate levels were recorded at 10 mg/L, nitrite at 1 mg/L, while the remaining parameters showed values of 0 mg/L. Bacterial testing of filtered water samples 1 and 2 revealed the absence of microorganisms, indicating that the water met the requirements for drinkable water. In contrast, results from water test strips applied to contaminated river water and water filtered using traditional filters indicated that the water was unsafe for human consumption. Furthermore, observations showed that the portable water pump filter's battery power source was sufficient to sustain the filtration process, with the battery voltage remaining constant at 12 volts throughout the experiment. The results showed that the portable water pump filter was effective in filtering contaminants from river water. The filtered water was found to be safe for human consumption, as harmful bacteria and unwanted substances were removed during the filtration process. Additionally, the portable water pump filter proved to be more effective than traditional filters available in the market in providing a sustainable source of drinking water. The motorcycle battery power source was also found to be sufficient in supporting the filtration process.

Keywords: water filtration, portable water pump filter, river water purification, drinking water safety, environmental engineering

SIPPING SAFETY: EXPLORING WATER FILTER STRAW

Russel Nepomuceno, Ivan Elipane, Stephanie Bautista, Clarence Plucena

Abstract

Approximately 2.2 billion people worldwide do not have access to clean drinking water. This study aimed to assist communities in need while promoting the concept of recycling materials through the development of a water filter straw. This study utilized an experimental research design, as multiple experiments were conducted, including laboratory testing and material-based experiments to assess the effectiveness of the water filter straw. Based on laboratory results, the water filter straw effectively filtered out dirt and debris, while the activated carbon component filtered bacteria from contaminated water. Although the water filter straw successfully performed its intended function, the researchers identified the need to further improve the model by developing a more convenient and smaller design. This includes reimagining the original water filter straw to enhance usability and portability.

Keywords: water filter straw, clean drinking water, experimental research, activated carbon, water purification

THE EFFICACY OF CARICA PAPAYA STEM LEAVES AS AN ALTERNATIVE MATERIAL FOR PAPER

Sheena Mae Viernes, Alliyah Estrelhyza Geronimo, Christian Santos,
Margaret Subong, Khizzle Franco

Abstract

Paper production has become one of the major issues faced by the industry. The rate of deforestation continues to increase due to the manufacturing of commercial paper sheets, which also contributes to pollution. To address this issue, the researchers aimed to develop non-wood paper using Carica papaya stem leaves in order to reduce dependence on conventional paper production materials. This study employed a quantitative method with an experimental research design. The paper production process involved several procedures. Papaya stems were collected, cut, and soaked in a basin, after which they were rinsed and boiled with water and sodium hydroxide. The boiled Carica papaya stems were then ground to achieve a pulpy consistency, and the pulp was bleached using chlorine. The mixture was placed in a basin, mixed with water, and evenly distributed using a deckle on a flat surface lined with cotton fabric. A sponge was used to absorb excess water, and the sheet was set aside in an open area to dry until the paper was formed. The results indicated that the physical properties of paper produced from papaya stem leaves differed from those of commercial paper. The papaya-based paper exhibited a distinct texture due to differences in fold lines. During folding tests, paper made from papaya stem leaves broke more easily compared to traditional paper. Overall, papaya stem paper demonstrated lower tear endurance but showed comparable performance to commercial paper in terms of fire resistance and water absorption. The findings demonstrate that Carica papaya stems have the potential to be used as a raw material for paper production. Utilizing papaya stem leaves as an alternative material may contribute to reducing reliance on wood-based paper and support more sustainable paper manufacturing practices.

Keywords: papaya stem leaves, alternative paper material, non-wood paper, sustainable paper production

SURFACING THE POTENTIAL OF MORINGA SEEDS AND RICE HUSKS AS A WATER FILTER

Robert Alexander Dela Cruz, James Santiago, Khizzle Franco

Abstract

This quantitative research aimed to develop an accessible water filtration system using moringa seeds and rice husks for the general population. The study explored how these natural materials can be utilized in water purification and assessed the safety of the filtered water for consumption. Data were collected using pH level testing, total dissolved solids (TDS), and electrical conductivity (EC) testers to determine whether the filtered water met acceptable safety conditions. Multiple river water tests were conducted to evaluate the effectiveness of the filtration process. The findings revealed that combining moringa seeds with rice husks reduced contamination levels and improved overall water quality. The effectiveness of the filtration process depended on the quantity of moringa seeds and rice husks used, as well as a specific layering method designed to maximize efficiency. However, despite the improvement in water quality and reduction of pollutants, the process did not guarantee completely safe drinking water. In conclusion, the water purification process using moringa seeds and rice husks demonstrated promising results by improving water quality and reducing contamination. Nevertheless, the method was not sufficient to ensure absolute safety for drinking water. Further research and refinement are necessary to establish these natural materials as reliable alternatives for water purification.

Keywords: moringa seeds, rice husks, water filtration, natural water filter, environmental health

THE EFFICACY OF BASIL, PAPAYA, AND NEEM LEAVES EXTRACT AS ORGANIC INSECTICIDE

Charles Joseph Sicat, Christler De Leon, Joshua Palomo, Yoj Andrei Garcia, Khizzle Franco

Abstract

Organic insecticides are generally less toxic compared to broad-spectrum conventional pesticides, which may adversely affect non-target organisms such as birds, insects, and mammals. Organic insecticides typically target specific pests and closely related species, are effective even in small quantities, and decompose rapidly, thereby reducing environmental pollution and exposure risks. Several herbal plants have been identified as potential organic insecticides for pest control. Basil is known for its bioinsecticidal effect on Aedes aegypti, as its leaves contain active compounds such as flavonoids, saponins, tannins, and essential oils that are toxic to mosquitoes. Papaya contains the active substance papain, which functions as a stomach poison that reduces the activity of aphids. Neem has insecticidal properties effective against sap-sucking and leaf-chewing insects, with azadirachtin acting as a growth regulator and feeding and oviposition deterrent. This study aimed to develop a homemade alternative organic insecticide using basil, papaya, and neem leaves. An experimental research design with a quantitative approach was employed to test the efficacy of basil, papaya, and neem leaf extracts as an alternative to commercially available insecticides. The design allowed for hypothesis development and the manipulation of measurable and controllable variables. Through experimental procedures, the researchers assessed the effectiveness of the combined leaf extracts in controlling insect populations by observing changes in insect activity and mortality over time. The results showed that the organic insecticide formulations containing basil, papaya, and neem leaf extracts exhibited varying durations of effectiveness at different concentrations. Trial 1, composed of 40% basil extract, 30% papaya extract, 30% neem extract, and 14 grams of Furadan, demonstrated the fastest time of effectiveness compared to the other formulated samples. Although the commercially available insecticide exhibited a faster time of effectiveness than the alternative insecticide, both the commercial and organic formulations were effective in controlling and killing insects. The findings demonstrated that basil, papaya, and neem leaf extracts possess the ability to control and kill insects. Both the commercially available insecticide and several concentrations of the alternative organic insecticide were effective; however, significant differences were observed in terms of the time required to achieve effectiveness. These results support the potential use of plant-based extracts as organic alternatives to conventional insecticides.

Keywords: basil, papaya, neem, organic insecticide, plant-based pest control

THE EFFICACY OF GUMAMELA (HIBISCUS ROSA-SINENSIS L.) EXTRACT AS A MAIN INGREDIENT IN PRODUCING HIGHLIGHTER INK

Dean Andrea Velasco, Juliana Clarrise Pardilla, James Andrew Punzalan,
Rian Psalm Acosta, Khizzle Franco

Abstract

Ink is widely used across the world, adding color to paper for writing, highlighting, and artistic purposes. Marker and highlighter inks commonly contain chemical components that may pose risks to human health. Synthetic inks often include metals and other substances that are non-edible and harmful to the environment. In response to these concerns, this study focused on developing a plant-based alternative ink using gumamela (Hibiscus rosa-sinensis L.) extract to help reduce pollution associated with conventional ink production. An experimental research design was employed in this study. The researchers developed an alternative highlighter ink using three different formulations derived from gumamela extract. The experimental approach allowed for modification and refinement of the formulations based on the outcomes of the experimentation. All formulations were tested for usability, although further enhancement was required to improve performance. Formulations 1 and 2 produced identical results in terms of appearance, odor, texture, and drying time, despite differences in boiling procedures and formulation methods. In contrast, Formulation 3 demonstrated a similar texture but differed in drying time and color intensity due to variations in processing techniques. Among the three, Formulation 1 was selected as the final product because it exhibited superior consistency and a more vibrant color. The experiment examined ink formulations composed of gumamela flowers, vinegar, and salt, yielding promising outcomes. The three formulations displayed variations in color, odor, texture, boiling process, and drying time. Extensive testing highlighted their potential as substitute inks for highlighter pens. The results underscore the viability of gumamela flowers as a natural ink source, given their ability to produce consistent color and maintain a uniform texture suitable for highlighting purposes.

Keywords: gumamela, hibiscus rosa-sinensis, highlighter ink, plant-based ink, eco-friendly materials

THE EFFICACY OF LEMONGRASS (CYMBOPOGON CITRATUS) AND PEPPERMINT (MENTHA PIPERITA) OIL AS A NATURAL GERMAN COCKROACH KILLER

Sebastian Leslie Kyle, Jayel Kristel De Leon, Camille Joy Esguerra, Lian Gale Flaminiano, Stephanie Ann Salvatierra, Kenjie Mina, Rolina Labao

Abstract

Cockroaches pose significant health risks in the Philippines due to their ability to survive extreme environmental conditions and their resistance to various control measures. The German cockroach, in particular, is highly dependent on human habitation and is commonly found in households. While commercial chemical cockroach repellents are widely used, they may cause respiratory problems and damage to the central nervous system, especially in vulnerable populations such as developing fetuses. Because of these concerns, this study aimed to develop a natural cockroach killer spray using lemongrass (Cymbopogon citratus) extract and peppermint (Mentha × piperita) oil as a safer alternative to chemical pesticides for both human health and environmental protection. An experimental research design was employed in Barangay Apo Esquivel, San Antonio, Nueva Ecija, Philippines. The study focused on the use of lemongrass and peppermint oil as natural cockroach killers. Lemongrass was washed, cut, and boiled in hot water for 30 minutes to obtain the extract. Three different spray formulations were prepared, namely 50% water, 25% lemongrass extract, and 25% peppermint oil; 50% water, 37.5% lemongrass extract, and 12.5% peppermint oil; and 50% water, 12.5% lemongrass extract, and 37.5% peppermint oil. These formulations were tested to determine their effectiveness against German cockroaches. The results showed that the combined use of lemongrass extract and peppermint oil was effective in killing cockroaches naturally and consistently. The concentration of lemongrass significantly influenced the effectiveness of the spray, as mixtures with higher lemongrass content killed cockroaches faster. The addition of peppermint oil enhanced both the aroma and overall efficacy of the spray. Although commercially available cockroach killers acted more rapidly, the natural spray made from lemongrass and peppermint oil was found to be safer and more environmentally friendly. The findings demonstrated that the combination of lemongrass and peppermint oil is effective in eliminating German cockroaches. Among the tested formulations, the mixture containing 50% water, 37.5% lemongrass extract, and 12.5% peppermint oil yielded the most successful results. The study concludes that sprays with higher lemongrass content have a greater potential for cockroach control, supporting the use of plant-based alternatives as safer and eco-friendly pest management solutions.

Keywords: cockroach, lemongrass, peppermint oil, natural insecticide, german cockroach

THE USE OF BASIL AND SAGE LEAVES AS ANT SPRAY REPELLENT

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Heisam Leo Riano, Khizzle Franco

Abstract

Ant pest control is essential for household maintenance due to the potential damage ants may cause and the health risks they pose. Certain plants, such as basil and sage, possess natural ant-repelling properties that can help prevent infestations while avoiding the harmful effects associated with conventional chemical insecticides. Incidents such as fire ant stings further emphasize the need for effective and safer ant control measures. This study explored the use of basil and sage leaves as natural ant spray repellents. The study employed a controlled experimental research design focusing on the use of basil and sage leaves as ant repellents. The procedure involved washing, crushing, and soaking the leaves in water for two to three days to extract their repellent properties. The resulting solution was used as an eco-friendly ant spray. The experiment aimed to determine the effectiveness of the repellent against red ants, following a systematic approach to experimentation and data collection. The findings showed that basil and sage leaves were effective natural ant repellents, with consistent observations involving 10–15 red ants per test. The effectiveness of the repellents varied depending on the presence of baking soda, with formulations containing baking soda demonstrating a longer duration of effectiveness. The volume of repellent solution produced also varied, with basil leaves yielding greater effectiveness. The addition of baking soda contributed to improved maintainability of the repellent. The results indicated that while commercial ant sprays may produce immediate effects, organic ant repellents made from basil and sage leaves provide a safer and more environmentally friendly alternative. However, further research is needed to optimize their effectiveness and better understand their mechanisms of action. The study found that 10–15 red ants were required to evaluate the repellent action of basil and sage leaves within a controlled container. The organic ant spray repellent demonstrated effectiveness within a duration of 15–25 minutes. Although the organic spray showed promising results, further improvements and repeated trials are necessary to achieve performance comparable to commercial products. Overall, organic ant spray repellents were found to be more affordable and safer than chemical-based alternatives.

Keywords: basil leaves, sage leaves, ant repellent, organic spray, environmental health

EFFECTS OF SLEEP DEPRIVATION ON GRADE 12 STEM ACADEMIC ACHIEVERS AT GENERAL DE JESUS COLLEGE

Pauline Torres, Maria Anabelle Rhian Santos, Ma Ysabella Manalastas,
Yanzie Villarico, Geoffrey Yumang, Gerlynn Mae Urian

Abstract

Sleep deprivation is a significant issue faced by Grade 12 STEM academic achievers at General De Jesus College. Inadequate sleep among students directly affects academic performance, examination outcomes, and overall grades. This study aimed to address a research gap concerning sleep deprivation among high-achieving Grade 12 STEM students and to examine its effects on their academic and personal lives. Additionally, the study analyzed the coping strategies employed by these students to manage sleep deprivation. This study utilized a descriptive research design. A qualitative approach was employed to gather data through semi-structured, face-to-face interviews supported by audio recordings. Participants were selected using purposive sampling, with eleven (11) Grade 12 STEM academic achievers included in the study. Survey questionnaires were also distributed to support data collection. The findings revealed that the participants experienced significant effects of sleep deprivation. Among the eleven participants, most were eighteen (18) years old and reported experiencing sleep deprivation due to academic workload. Both male and female students were affected. The results indicated that Grade 12 STEM academic achievers typically obtained only six (6) hours of sleep per night, with students receiving high honors being the most affected. Participants reported negative consequences such as lack of sleep, difficulty focusing, staying up late at night, and increased sensitivity during class. The majority of participants identified time management as the most effective coping strategy for managing sleep deprivation. The study showed that many academic achievers experienced predominantly negative effects of sleep deprivation, including headaches, slow cognitive processing, irritability, and mood changes. Time management emerged as the primary coping mechanism used by students to mitigate these effects. The findings emphasized the importance of raising awareness about the adverse consequences of sleep deprivation and encouraging healthier sleep practices among academic achievers.

Keywords: sleep deprivation, stem academic achievers, academic performance, coping strategies, time management

BUZZ OFF! EFFICACY OF FLY-REPELLENT CANDLE WITH TEA TREE AND LEMONGRASS ESSENTIAL OILS

Richelle Anne Lajara, Pia Joy Ferry, Mariel Anne Santos, Abegail Bicos, Dr. Gina Garcia

Abstract

The global spread of houseflies poses significant health concerns, as they can acquire, harbor, and transmit viruses, as well as multidrug-resistant bacteria that contribute to antibiotic resistance. Houseflies have also developed resistance to chemicals commonly used in existing pesticides. The main objective of this study was to determine the efficacy of lemongrass (Cymbopogon citratus) and tea tree (Ehretia microphylla) leaf essential oil candles against houseflies (Musca domestica) in terms of repellent efficacy and burning time. The researchers employed an experimental research method following procedures that included the collection of materials, extraction of essential oils, collection of sample pests, candle preparation, candle evaluation, and testing. A total of eighty (80) houseflies were used to test the efficacy of the fly-repellent candles. Each candle was placed in a cage containing twenty (20) houseflies for twenty (20) minutes and was closely observed by the researchers. The results revealed that the tea tree essential oil-infused candle was the most effective, with a repellency rate of 90%. The lemongrass essential oil-infused candle exhibited a repellency rate of 75%, while the tea tree and lemongrass essential oil-infused candle showed an 80% repellency rate. In terms of burning time, the lemongrass essential oil-infused candle burned the longest, with a total burning time of fifty-two (52) hours. The combined tea tree and lemongrass essential oil-infused candle burned for forty-eight (48) hours, while the tea tree essential oil-infused candle burned for forty-five (45) hours. The tea tree and lemongrass essential oil-infused candle demonstrated potential as a housefly repellent by repelling sixteen (16) out of twenty (20) houseflies, resulting in a repellency rate of 80%. It is recommended that future researchers replicate the study using alternative testing methods to further evaluate the product's range and toxicity.

Keywords: fly-repellent candle, essential oils, tea tree oil, lemongrass oil, houseflies, repellent efficacy

CHALLENGES ENCOUNTERED BY SELECTED MOTHERS WHO HAVE UNDERGONE CESAREAN SECTION IN SAN ISIDRO AND GAPAN CITY, NUEVA ECIJA

Mikaylla Mariz Agapito, Keysanjie Reyes, Lanz Arkin Dela Cruz, Jilian Mariz Galang, Masaki Junichi Bundalian, Aizel Marie Castro

Abstract

Cesarean sections (C-sections) continue to rise in modern obstetric care, as they offer a surgical alternative for delivering babies when vaginal birth may complicate pregnancy (Krans, 2018). This increase in C-section rates can be attributed to various factors, including improved access to medical services and changing maternal preferences. However, despite their widespread use, C-sections present women with a unique set of challenges that can significantly affect their physical and psychological well-being. Therefore, this study was conducted to examine the experiences of selected mothers who have undergone cesarean section in selected areas of District IV, Nueva Ecija. Purposive sampling was used to obtain the necessary responses for the study. The participants were limited to twenty (20) mothers who had undergone cesarean section in San Isidro and Gapan City, Nueva Ecija within the past twenty (20) years and were between the ages of twenty (20) and sixty (60) years old. The study utilized semi-structured interviews, voice recordings, and note-taking as data-gathering methods. The results showed that some of the reasons why mothers underwent cesarean section included absence of uterine contraction leading to prolonged pregnancy, cephalopelvic disproportion, preeclampsia, and incorrect fetal positioning. Some mothers reported feeling scared or worried about the effects of the procedure, while others did not experience such feelings. After the surgery, some participants experienced forgetfulness due to anesthesia, back pain, and pain at the incision site, particularly during cold weather. Some mothers also reported limited mobility, as well as colds, chills, and vomiting caused by anesthesia. Most participants recovered over time, either independently or with the support of their family and friends. This study examined the challenges faced by mothers who underwent cesarean section, including physical and emotional complications, pain management, recovery, and mother–child bonding. The findings indicated that mothers experienced various challenges following the procedure. An examination of their coping mechanisms revealed that most participants gradually adjusted to the surgery over time.

Keywords: cesarean section, postnatal challenges, maternal experiences, coping mechanisms, recovery after surgery, qualitative study

DIFFICULTIES OF SELECTED PATIENTS WITH CHRONIC KIDNEY FAILURE UNDERGOING HEMODIALYSIS AT LIBRENG DIALYSIS CENTER AT GAPAN, NUEVA ECIJA

Chynna Pelayo, Jemimah Relucio, Xyrill Dayne Valerio, Aj Katrisze Cortez,
Rafael Garcia, Aldred Euri Ciriaco, Aizel Marie Castro

Abstract

Patients undergoing hemodialysis treatment often experience various difficulties due to the nature of their condition. Thus, this study aimed to understand the difficulties encountered by selected patients with chronic kidney failure undergoing hemodialysis treatment at the Libreng Dialysis Center in Gapan, Nueva Ecija. This study used a phenomenological research design to identify the difficulties of selected patients with chronic kidney failure undergoing hemodialysis at libreng dialysis center at Gapan, Nueva Ecija. There were 15 participants present in this study. The instruments that the researchers used were semi-structured interviews and audio recordings. The data were analyzed by applying thematic analysis. The findings revealed that the majority of participants were female and aged between 50 and 60 years old. The study identified several difficulties experienced by patients following their diagnosis of chronic kidney failure, including financial problems, physical and mental health challenges, unemployment, and transportation-related concerns. The results also showed that participants employed various coping strategies to manage their condition, such as strengthening their faith in God, practicing self-motivation and acceptance, and relying on social support from family members and relatives. The findings indicated that patients experienced financial difficulties due to additional medical expenses, despite receiving treatment at a free dialysis center. The results also showed that many patients continued to struggle with post-dialysis symptoms, such as dizziness and fatigue, even after prolonged treatment, suggesting limited physiological adaptation. Understanding the challenges faced by patients with chronic kidney failure undergoing hemodialysis can help improve patient care, enhance support from healthcare facilities and families, and empower patients to better manage their condition for an improved quality of life. Overall, this research contributes to a deeper understanding of the difficulties associated with chronic kidney failure and provides valuable insights for patients, families, and healthcare workers.

Keywords: hemodialysis treatment, chronic kidney disease, patient difficulties, coping strategies, qualitative study

EFFICACY OF JACKFRUIT (ARTOCARPUS HETEROPHYLLUS) LEAVES EXTRACT AS AN INSECTICIDE FOR LARVAE IN EGGPLANT

Alcarpio Mhiya Isabela, Paula Katrina Decreto, Rain Adrian Dasalla, Dustin Algas, Khizzle Franco

Abstract

Chemical insecticides pose numerous negative effects on the environment and human health. Farmers, in particular, are at high risk of exposure to these chemicals, which may adversely affect their well-being. Due to these concerns, researchers have increasingly explored natural alternatives to synthetic insecticides, such as jackfruit (Artocarpus heterophyllus) leaves. Jackfruit leaves contain natural compounds that are effective against larvae in eggplant while minimizing the harmful effects associated with chemical insecticides. This study aimed to evaluate the efficacy of jackfruit leaf extract as an alternative insecticide for larvae in eggplant. The study employed a true-experimental research design to establish cause-and-effect relationships between variables. An alternative insecticide was developed using jackfruit leaf extract. Fresh jackfruit leaves were collected and processed into extracts using ethanolic solvents. The extraction process involved drying and grinding the leaves into a fine powder, heating them with solvents, and filtering the solution to obtain a clear extract. The insecticidal properties of the extract were then tested on larvae affecting eggplant. Statistical techniques were used to analyze the data and validate the effectiveness of the jackfruit leaf extract. Ethical and safety guidelines were followed throughout the experimentation, with each procedure carefully documented to ensure scientific rigor and reliability. The findings demonstrated that jackfruit leaf extract was effective as an insecticide for larvae in eggplant. Multiple experimental trials were conducted using varying solution measurements, each resulting in different larval mortality times. Despite these variations, all trials yielded successful outcomes, with the study reporting a 100% success rate in terminating larvae across the conducted experiments. Due to public health concerns associated with the use of chemical insecticides and their effects on humans, animals, and the environment, this study explored an eco-friendly organic insecticide derived from jackfruit leaf extract. The results indicated that jackfruit leaf extract effectively eliminated larvae that damage eggplant crops while significantly reducing potential harm to humans, animals, and the surrounding environment. These findings support the use of jackfruit leaf extract as a sustainable and environmentally friendly alternative to chemical insecticides.

Keywords: jackfruit leaf extract, organic insecticide, larvae control, eggplant pests, eco-friendly agriculture, experimental study

THE ACARICIDAL EFFICACY OF DILUTED ORIGANUM VULGARE (OREGANO) LEAVES OIL AS DOG SHAMPOO AGAINST RHIPICEPHALUS SANGUINEUS (BROWN DOG TICK)

Lavina Mesa, Reign Justine Lagman, Jairah Marigel Manalastas,
Ma Dulce Manalastas, Dr. Gina Garcia

Abstract

Tick infestation is a prevalent parasitic problem affecting dogs. In the Philippines, the most common ectoparasite of dogs is the brown dog tick (Rhipicephalus sanguineus), primarily due to its adaptation to the tropical lineage of both domestic and wild dogs. As a result, tick infestation has become a major concern for pet owners because of the harm ticks can cause. Chemical acaricides were initially used to control tick populations; however, ticks can adapt over time, leading to acaricide resistance in both ticks and their offspring. The current approach focuses on developing natural alternatives to chemical acaricides to prevent resistance. This study aimed to determine whether oregano-based dog tick shampoo can serve as an alternative to commercially available dog shampoos. An experimental research approach was employed in this study. A total of 150 brown dog ticks were collected and subjected to five treatment groups using shampoos with different concentrations of oregano oil (0.00%, 2.08%, 2.76%, and 3.42%) and a commercially available shampoo (Fipronil Furfect Shampoo). The efficacy of each shampoo was tested in three replicates by exposing the ticks in petri dishes for 10 minutes. Mortality rate was recorded, and knockdown time was determined based on the time required for all ticks to cease exhibiting life-related symptoms. The results showed that Formula 4, containing 3.42% oregano oil, produced the highest mortality rate at 47% compared to the other treatments. There was no statistically significant difference in the mean knockdown time among all treatments, with a significance value of 0.214. Additionally, Formula 4 demonstrated the highest mortality rate when compared to the commercially available shampoo. However, no significant difference in mean knockdown time was observed between the oregano-based shampoos and the commercial shampoo, with a reported significance value of 0.119. Overall, the findings indicate that oregano-based dog tick shampoo has the potential to serve as an alternative to commercially available dog tick shampoos.

Keywords: oregano, brown dog tick, acaricide, dog shampoo, tick control

HARNESSING EGGSHELLS FOR SUSTAINABLE BIOPLASTIC FABRICATION

Sammuel Geronimo, Jayson Santos, Anjelo Pinto

Abstract

The growing global demand for plastic products has created an urgent need for the development of sustainable and eco-friendly alternatives. One promising approach is the utilization of natural waste materials, such as eggshells, for bioplastic production. Eggshells are an abundant byproduct of the food industry and are primarily composed of calcium carbonate, which can be leveraged as a valuable feedstock for bioplastic fabrication. This study investigated the feasibility of converting eggshells into a biodegradable bioplastic material. This study summarized research findings related to eggshell-based bioplastics, including their mechanical properties, thermal stability, biodegradability, and overall contribution to sustainable material development. The outlined methods described the process of converting eggshells into bioplastic, providing a framework for further experimentation and refinement based on specific application requirements and environmental considerations. The results showed that eggshell-based bioplastics exhibit promising mechanical properties comparable to conventional plastics. Thermal analysis revealed adequate stability under typical usage conditions. Additionally, biodegradability assessments highlighted the environmental benefits of eggshell-based bioplastics, offering a viable solution to plastic pollution. The findings contribute to ongoing efforts in sustainable material development and waste valorization by emphasizing the potential of eggshell waste as a valuable resource for bioplastic production. This study presents a sustainable approach to the valorization of eggshell waste while contributing to the development of eco-friendly alternatives to traditional plastics. The findings highlight the potential of harnessing eggshells as a renewable resource for the fabrication of sustainable bioplastic materials.

Keywords: bioplastic, eggshell waste, biodegradable materials, sustainable fabrication, waste valorization

FACTORS AFFECTING THE MATHEMATICS ANXIETY EXPERIENCED BY THE SELECTED GRADE 7 STUDENTS OF GENERAL DE JESUS COLLEGE DURING THE SCHOOL YEAR 2023-2024

Raizen Juan, Shanley Fame Alejandria, Shekinah Alejo, Jae Riverr Mangilit,
Clarisse Marqueses, Sean Roanne Mina, Jahnet Ariane Figueroa

Abstract

Mathematics, also known as Math, is often regarded as a pure science. According to Daker et al. (2023), students who consistently underperform in mathematics are often those who struggle to understand mathematical concepts at a faster pace. Students who experience math anxiety tend to have heightened levels of anxiety when engaging with mathematical tasks. Math anxiety is defined as tension and apprehension that interfere with mathematical performance and the ability to solve mathematical problems in various everyday and academic situations (Khasawaneh, 2021). While many studies have explored the relationship between math anxiety and academic performance, there remains a substantial lack of knowledge regarding how various moderating variables interact with math anxiety to influence educational outcomes. Hence, this study was conducted to examine the factors affecting the mathematics anxiety experienced by selected Grade 7 students of General de Jesus College during the School Year 2023–2024. This study utilized a qualitative research approach, specifically the descriptive method, to gather information on the mathematics anxiety experienced by selected Grade 7 students at General de Jesus College, San Isidro, Nueva Ecija. Ten (10) participants were selected using purposive sampling and quota sampling. To determine the anxiety levels of the students, the researchers employed an adapted survey questionnaire titled Mathematics Self-Efficacy and Anxiety Questionnaire by May Diana K. (2009), as cited by Berou Mark (2016). Additionally, semi-structured interviews supported by audio recordings were conducted to gather further data. The study showed that most participants were female and belonged to Sections Violet and Blue. The majority of female participants who experienced math anxiety came from Section Violet. The results indicated that the factors influencing the mathematics anxiety of the selected Grade 7 junior high school students of General de Jesus College included negative perceptions toward mathematics, teacher-related factors, and family-related factors. Lastly, the coping strategies employed by the participants to reduce math anxiety included relaxation, listening to music, drinking water, and praying. The study identified several factors that affect students' mathematics anxiety, primarily negative perceptions toward the mathematics subject. These factors include teacher-related and parent-related influences, as well as students' negative views of mathematics. Furthermore, the study discovered that listening to music during study sessions can have a positive effect on students' emotional states by promoting relaxation and pleasant feelings, which may enhance composure, problem-solving skills, and clear thinking. With these findings, the study demonstrates that helping students feel more at ease with mathematics and addressing the factors that contribute to math anxiety can support better learning outcomes in the subject.

Keywords: mathematics, mathematics anxiety, student anxiety, coping strategies, academic performance

CHALLENGES FACED BY SELECTED MEDICAL STUDENTS DURING CLINICAL TRAINING IN SELECTED MUNICIPALITIES IN NUEVA ECIJA

James Payawal, Arvie Nayre, John Edric Sigua, Kian Angelo Pangilinan,
Gabriel Guiller Sebastian, Henryx Ondivilla, Aizel Marie Castro

Abstract

Medical education offers diverse opportunities, including clinical practice, research, teaching, and healthcare management. The global increase in interest in the medical field, driven by the growing demand for healthcare professionals, has also introduced challenges, particularly during practical clinical training in the later years of medical school. Thus, this study was conducted to investigate the challenges faced by selected medical students during clinical training. This study employed a multifaceted research design using qualitative and phenomenological approaches. The researchers conducted focused interviews with a selected group of medical students in Nueva Ecija. Ten participants from the region were chosen and engaged in semi-structured interviews, during which they responded to a series of probing questions. Audio recordings were used to capture and analyze the data provided by the participants. The participants were predominantly female, aged twenty-two, and in their fourth year of medical school. There was an equal distribution of participants who were in current relationships. A common challenge reported by most participants was the fear of making mistakes, along with difficulties in communicating with patients. However, participants indicated that effective social support, engagement in relaxation activities, and participation in recreational pursuits helped them overcome these challenges. Additionally, they recommended improving clinical support by increasing the availability of clinical resources and materials. Understanding the challenges encountered in medical education, particularly during clinical training, can help medical institutions enhance the quality of medical education. The findings highlighted the need to strengthen clinical support for medical students. Adequate clinical support is essential in facilitating a more comprehensive and effective learning experience, as it helps students navigate the complexities inherent in medical practice and education.

Keywords: medical students, clinical training, clinical challenges, coping strategies, clinical resources, medical education

THE EFFECTIVENESS OF BLUE TERNATE (ASIAN PIGEONWINGS) AND SAMBONG LEAVES AS HEALING WOUND SPRAY IN TREATING MINOR WOUNDS

Rhinoa Ashley Palon, Shailo Mabelle Villamea, Kim Cyrish Palaming,
Keith Hector Magno, Khizzle Franco

Abstract

A beneficial and gentle approach to promoting wound healing is the use of non-chemical treatments while ensuring proper care during wound cleaning. Medicinal herbs such as blue ternate and sambong leaves are commonly used because of their ability to stimulate blood circulation, fight infection, reduce inflammation, and accelerate the wound-healing process. The findings of this study may serve as an alternative to expensive commercial antibacterial and wound-healing agents. Additionally, the cost-effectiveness of using locally grown herbs and plants for wound treatment is recognized. An experimental research approach was employed in this study. The research aimed to evaluate the effectiveness of blue ternate and sambong leaves as a healing wound spray in treating minor wounds. The study focused on assessing the healing process, efficacy, and antibacterial properties of the formulated wound spray. Through controlled experimentation, the study determined the potential of blue ternate and sambong leaves as healing and antibacterial agents. The study investigated the use of a natural and organic healing wound spray as an alternative to commercially available wound sprays and antibacterial products. Experimental results showed that the application of blue ternate and sambong leaves as a healing wound spray effectively treated and dried minor open wounds. These findings demonstrate the effectiveness of the organic wound spray in promoting wound healing. The use of blue ternate and sambong leaves as a healing wound spray showed promising potential as a natural wound-healing and antibacterial agent. Its effectiveness in preventing infection, reducing inflammation, relieving pain, and promoting wound healing suggests that it can function as a natural cleanser and wound spray. With further research and product development, blue ternate and sambong wound spray may play a significant role in advancing organic antibacterial and wound-healing treatments.

Keywords: blue ternate, sambong leaves, wound healing, antibacterial spray, herbal medicine

THE EFFECTIVENESS OF CORIANDER (CORIANDRUM SATIVUM) EXTRACT GEL TREATMENT FOR OPEN WOUND HEALING

Garcia John Albert, Mark Stephen Nucum, Vincent Marc Metchado, Khizzle Franco

Abstract

Previous studies have shown that the medicinal properties of coriander (Coriandrum sativum) may contribute to effective wound-healing treatments when used in extract form. Although commonly known as a culinary herb, coriander possesses anti-inflammatory, antimicrobial, and antifungal properties that are beneficial to health. Traditional wound care practices, which often rely on basic materials such as water, soap, or alcohol, may hinder the healing process. As a result, researchers suggest shifting toward more biocompatible and eco-friendly wound care alternatives. This study aimed to examine the effectiveness of coriander (Coriandrum sativum) extract as a wound-healing gel for open wounds in terms of wound closure rate, number of days required for healing, tissue growth, and scab formation. This study employed an experimental research design using a quantitative approach to assess the effectiveness of coriander extract as a wound-healing gel. The methodology included experimental design implementation, sample selection, preparation of the extract, application process, data collection, and statistical analysis. The results showed that coriander extract significantly accelerated wound healing compared to the other treatment groups. Most wounds treated with coriander extract healed within 7–8 days and exhibited minimal scarring. Notable improvements in wound closure and tissue growth were observed as early as day 4, highlighting the extract's potential in promoting faster healing and reducing scar formation. The findings of this study suggest that coriander extract gel is effective in enhancing the wound-healing process.

Keywords: coriander, coriandrum sativum, open wounds, wound-healing gel, plant-based treatment

UNDERSTANDING SEX INFLUENCE: PERSPECTIVE OF SELECTED INDIVIDUALS WITH THE DIFFERENCES OF CARE PROVIDED BY MALE AND FEMALE NURSES IN SAN ISIDRO, AND JAEN, NUEVA ECIJA

Kloyd Chlouie Magtalas, Mark Allen Ramirez, John Zel Payabyab, Ashlene Earl Cabungcal, Princess Jen Pascual, Chloe Lloraine Pataleta, Aizel Marie Castro

Abstract

The nursing profession has experienced a growing presence of male nurses since the 1970s, which has brought increased attention to potential differences in how care is delivered by nurses of different sexes. These differences may influence patient comfort, confidence, and overall healthcare experience. This study aimed to identify and understand the differences in care provided by male and female nurses based on the experiences and perceptions of selected individuals. This study employed a phenomenological research approach to explore the perceptions of thirty-six (36) selected individuals regarding differences in care provided by male and female nurses. Data were collected through semi-structured interviews supported by audio recordings and note-taking. Participants were purposively selected from San Isidro and Jaen, Nueva Ecija, to ensure relevant experiences and insights aligned with the study objectives. The findings revealed that the dominant demographic of participants belonged to the age groups of 26–35 and 36–45 years old, with the majority identifying as female. Most participants expressed a preference for female nurses. Results indicated that many participants perceived female nurses as creating a gentle and friendly environment that enhanced patient comfort and confidence during medical examinations. Conversely, some participants reported feeling more at ease in a firm and professional environment when attended by male nurses. Distinct differences in care were perceived, including male nurses being viewed as stronger in problem-solving but less skilled in clinical care, while female nurses were perceived as more proficient in clinical care yet more prone to panic, which could influence patient anxiety. Participants emphasized the importance of patience, kindness, and effective communication, and recommended self-care, continuous training, and the use of humor to foster a positive healthcare environment. The results indicate that both male and female nurses possess unique strengths and limitations in providing patient care. These differences are significant as they may affect patient well-being, satisfaction, and the overall quality of healthcare experiences. Addressing these variations through updated nurse training programs and strengthened hospital policies may help improve care delivery and patient outcomes.

Keywords: nurses, male nurses, female nurses, differences in care, patient experiences, sex influence

BUKO-BUKO MAASIM KA BA? COCONUT (COCOS NUCIFERA) OIL AND LEMON (CITRUS LIMON) OIL AS AN ALTERNATIVE MOSQUITO REPELLENT

Gabriel John Kevin, Hazel Angela Alabado, Jay Vee Tinio, Mark Aaron Emas, Dr. Gina Garcia

Abstract

Mosquito-borne illnesses such as dengue are causing havoc among the public, and the use of mosquito repellents and the reduction of mosquito populations are among the best ways to prevent this virus. However, many commercially sold mosquito repellent products and chemical-based pesticides contain various chemicals that may have negative side effects on the public and the environment. This problem urged the researchers to find a natural, plant-based alternative mosquito repellent derived from Coconut (Cocos nucifera) oil and Lemon (Citrus limon) oil in the form of scented candles, which are more affordable and safer than commercially sold mosquito repellents. This study utilized a true experimental research design. Three hundred sixty (360) mosquitoes were divided into eighteen (18) groups of twenty (20) mosquitoes through random selection. Hydrodistillation and traditional boiling methods were used to obtain Lemon (Citrus limon) oil and Coconut (Cocos nucifera) oil. The number of mosquitoes repelled was observed for ten (10) minutes across different test samples, which included the negative control, positive control, and test group. Analysis of Variance (One-Way ANOVA) was used as the statistical treatment to compare scented candles made from Coconut (Cocos nucifera) oil and Lemon (Citrus limon) oil, Set D (100% soy wax), commercially sold scented candle repellents, and ordinary candles. Set B (60% essential oils), Set C (50% essential oils), and commercially sold scented candles showed the highest efficacy in repelling mosquitoes. In contrast, in terms of repellency time, Set C (50% essential oils) exhibited the fastest repellency rate across the three variations of net cages. Scented candles made from Coconut (Cocos nucifera) oil and Lemon (Citrus limon) oil were generally more affordable than commercially sold scented candles. After data interpretation, it was revealed that Set C (50% essential oils) exhibited the highest repellency rate and the fastest repellency time compared to Set A (40% essential oils), Set B (60% essential oils), Set D (100% soy wax), commercially scented candles, and ordinary candles across the three consecutive variations of net cages. It was also revealed that scented candles made from Coconut (Cocos nucifera) oil and Lemon (Citrus limon) oil are more affordable than commercially available scented candles. Lastly, the significant difference among Coconut (Cocos nucifera) oil and Lemon (Citrus limon) oil candles, Set D (100% soy wax), commercially scented candles, and ordinary candles indicated that Set C (50% essential oils) was the most effective among those tested.

Keywords: coconut oil, lemon oil, mosquito, repellent

LIVED EXPERIENCES OF SELECTED DIABETIC INDIVIDUALS AT STO.CRISTO SAN ISIDRO, NUEVA ECIJA IN DRINKING OKRA WATER

Keisha Liana Juatchon, Kim Ashlee Garcia, Kyla Maximo, Angelica Clarizze Manalo, Kyla Marie Dela Cruz, Ken Aljon Tobias

Abstract

Diabetes is a serious condition in which blood glucose levels are too high or when the body cannot produce insulin. Okra water contains many vitamins and minerals that may help diabetic individuals lower their blood sugar levels. The researchers aim to present a possible alternative medicine that is low-cost and can be planted. This study focuses on the lived experiences of selected diabetic individuals who drink okra water as an alternative medicine. The researchers used phenomenology as a qualitative research approach. The participants were diabetic individuals from Sto. Cristo, Nueva Ecija. Semi-structured interviews, audio recordings, and face-to-face interviews were utilized in this study. Lastly, the researchers used the snowball sampling technique to locate the participants. The majority of the participants ranged from 50 to 60 years old, comprising 50% of the sample. Most of the participants had Type 1 diabetes. The study also identified the reasons why diabetic individuals drink okra water, such as its low cost and recommendations from others. Furthermore, the experiences reported included lowered blood sugar levels, normalized digestion, and an unpleasant taste. Lastly, the participants provided recommendations for diabetic individuals, including the regular consumption of okra water. The selected diabetic individuals started drinking okra water because it is low-cost and was recommended by others. The findings also indicated that drinking okra water is effective, particularly in lowering and maintaining blood sugar levels. Additionally, some participants reported experiencing improved digestion when drinking okra water, although it has an unpleasant taste. Lastly, regular consumption of okra water was recommended.

Keywords: okra water, diabetes management, alternative medicine, lived experiences, phenomenological study

DEVELOPING A POMEGRANATE-INFUSED SUNSCREEN FORMULA FOR ENHANCED SKIN DEFENSE

Marianne Santiago, Carl Joshua Sicat, Hannah Danielle Mejia, Iann Carlo Salvador

Abstract

Researchers have developed an effective sunscreen utilizing pomegranate extract, with the objective of formulating a sunscreen capable of providing enhanced protection compared to conventional sunscreens. This study conducted essential testing to demonstrate the efficacy of the proposed formulation. Various theories and studies related to the properties of pomegranate were carefully examined to support the development of the sunscreen. An experimental research method was employed to identify ingredients with beneficial properties for developing a pomegranate-infused sunscreen formula aimed at enhancing skin defense. Based on testing conducted on different skin types, the pomegranate-infused sunscreen demonstrated resistance to sweat, dust, and smoke. Furthermore, it provided protection against direct sunlight, indicating that the formulation is effective and safe for use on various skin types. The findings indicated that pomegranate extract (Punica granatum) has strong potential as a natural sunscreen ingredient. Through a series of tests, investigations, and analyses, pomegranate extract was shown to possess skin-protective properties that help preserve skin health. These properties are attributed to its natural components, including anti-inflammatory and antioxidant compounds, as well as vitamins and minerals that may help prevent sunburn. However, further research is necessary to fully understand the underlying mechanisms of action of pomegranate extract on the skin. Overall, this study contributes to the growing body of knowledge on protecting the skin from ultraviolet (UV) radiation and recommends additional research and field testing to validate the effectiveness of pomegranate extract as a natural sunscreen in practical applications.

Keywords: pomegranate extract, sunscreen formulation, skin protection, natural sunscreen, ultraviolet protection

EFFECTIVENESS OF KAMIAS (AVERRHOA BILIMBI) FRUIT AND LEAVES EXTRACT AS A NATURAL ITCH OINTMENT FOR MOSQUITO BITES

Kiel Julliene Bunagan, Alexandra Jeff Carrillo, Aliyah Faith De Chavez,
Janine Ann Lamson, Khizzle Franco

Abstract

The Philippines, being a tropical and biodiverse country, is home to a high population of mosquitoes. Mosquito bites often cause irritation and discomfort, prompting the need for effective and accessible itch treatments. Kamias (Averrhoa bilimbi), a tropical fruit native to Southeast Asia, possesses bioactive compounds such as antioxidants and anti-inflammatory substances that may help relieve mosquito bite irritation. This study aimed to develop an organic itch ointment derived solely from Kamias fruit and leaf extracts as a cost-effective alternative to commercial products. The study capitalized on the accessibility and affordability of Kamias, which can be easily obtained through backyard cultivation, addressing both convenience and economic concerns. An experimental research design was employed to determine the effectiveness of the Kamias fruit and leaf extract as a natural itch ointment for mosquito bites. The findings revealed variations in the physical properties and effectiveness of the itch ointments prepared using Kamias fruit and leaf extracts. The treatments differed in color, consistency, and odor. Treatment 4, which contained shea butter, had no noticeable scent, unlike Treatments 1, 2, and 3, which emitted a grassy aroma due to the presence of olive oil. The ointments provided varying degrees of itch relief, with relief times ranging from 13 minutes to 2 hours after application. Reapplication frequencies also differed, with Treatments 1 to 3 requiring three applications, while Treatment 4 required only two. Although Treatment 1 was effective, Treatment 4 resulted in less greasiness despite having the same Kamias content. Treatments 2 and 3 demonstrated lower effectiveness due to uneven solidification and reduced Kamias leaf extract content, respectively. The findings demonstrated that Kamias fruit and leaves contain a high concentration of bioactive compounds capable of relieving mosquito bite irritation. The formulation combining beeswax and shea butter with Kamias extract effectively reduced irritation and was rapidly absorbed into the skin. Among the treatments evaluated, the ointment containing beeswax, shea butter, and Kamias extract showed the most favorable results due to accurate ingredient proportions and optimal firmness, resulting in immediate itch relief upon application. Additionally, the inclusion of shea butter contributed to a well-balanced formulation by minimizing oiliness and eliminating undesirable odors.

Keywords: kamias (averrhoa bilimbi), natural itch ointment, mosquito bites, bioactive compounds, experimental study

EFFICACY OF BASIL LEAVES (OCIMUM BASILICUM) AND ORANGE PEEL EXTRACT AS AN ABRASION WOUND HEALING OINTMENT

Chloe Pascual, Beatriz Tiro, Reinhard Tinio, Mark Chandler Sta Maria, Khizzle Franco

Abstract

This study aimed to assess the effectiveness of basil leaves (Ocimum basilicum) and orange peel extracts in reducing the effects of abrasion wounds. These natural remedies were investigated for their potential to alleviate discomfort and promote wound healing. By examining the healing properties of basil leaves and orange peel, the researchers sought to provide insights into alternative treatments for abrasion wounds that may offer cost-effective and accessible options for wound care. An experimental research approach was employed to investigate the therapeutic effects of an ointment formulated from basil leaves and orange peel extracts on abrasion wounds among the subjects. The findings revealed that the healing rate of wounds treated with the formulated ointment was comparable to that of commercially available wound-healing ointments, with wounds generally healing within one week of application. No reports of side effects or allergic reactions were observed among the participants who used the ointment. However, challenges were encountered during the formulation process, particularly in determining the optimal proportions of the extracts during the initial trials. The study demonstrated the potential of basil leaves and orange peel extracts as effective components in treating abrasion wounds. The experimental results showed that the ointment provided healing outcomes comparable to commercial products while remaining safe for use, as no adverse reactions were reported. These findings highlighted the potential of basil leaves and orange peel extracts as affordable and accessible alternatives for wound care. Further studies may be conducted to refine the formulation process and improve consistency in production.

Keywords: basil leaves extract, orange peel extract, abrasion wounds, wound healing ointment, natural remedies, experimental study

EFFICACY OF CILANTRO LEAVES AND ORANGE PEEL EXTRACT COMBINATION AS AN ALTERNATIVE OINTMENT FOR MILD ITCHINESS ON DRY SKIN

Shara Jane Francisco, Nicka Angela Garcia, Elynor Dexlene Yabut, Jazmin Eula Rose Eduardo

Abstract

Researchers have increasingly explored the use of herbs and fruits as alternative treatments for skin conditions, including mild itchiness. Cilantro leaves (coriander) are known for their anti-inflammatory, antidepressant, and antiepileptic properties and may be beneficial for mild skin conditions such as dermatitis. Orange peel, commonly recognized for its skin-brightening properties, has also been used in cosmetic and dermatological applications. This study aimed to examine the efficacy of a combined cilantro leaves and orange peel extract ointment as an alternative treatment for mild itchiness on dry skin and to provide information on affordable, home-based remedies for itching. This study employed an experimental research design to test the efficacy of an alternative ointment infused with cilantro leaves and orange peel extracts for treating mild itchiness on dry skin. The design allowed for the manipulation of measurable and controllable variables to assess treatment outcomes. Experimental and developmental research strategies were utilized to evaluate the effects of the alternative ointment and compare it with commercially available products. The findings revealed that the alternative ointment made from cilantro leaves and orange peel extract demonstrated faster itch relief compared to commercial ointments. The duration of effectiveness varied among treatments. While the alternative ointment was absorbed more quickly and remained on the skin for a shorter period, the commercial ointment stayed longer on the skin surface. Despite this difference, the alternative ointment was found to be more effective in providing immediate relief from mild itchiness. The study demonstrated that the combination of cilantro leaves and orange peel extracts can effectively reduce mild skin itchiness, likely due to their antioxidant and anti-inflammatory properties. While both white petroleum-based products and the alternative ointment were effective in treating mild itchiness, the alternative ointment was found to be more affordable and provided faster relief. Although all treatments were beneficial, significant differences were observed in the time required to alleviate itchiness, supporting the potential of the alternative ointment as a cost-effective and efficient option for mild skin irritation.

Keywords: cilantro leaves, orange peel extract, alternative ointment, mild itchiness, dry skin, experimental study

EFFICACY OF OREGANO (ORIGANUM VULGARE) AND TAWA-TAWA (EUPHORBIA HIRTA) STEM EXTRACTS AS LARVICIDE AND MOSQUITO KILLER

Gabriel Hannah Marisse, Hanna Mae Dela Rosa, Katherine Lapuz, Dr. Gina Garcia

Abstract

Herbal plants such as oregano (Origanum vulgare) and tawa-tawa (Euphorbia hirta) are widely recognized in the Philippines for their medicinal properties. While previous studies have highlighted their bioactive compounds and therapeutic benefits for common illnesses, their combined efficacy as larvicides and mosquito killers remains underexplored. This study addressed this gap by investigating the larvicidal and adult mosquito-killing effects of combined oregano and tawa-tawa stem extracts. A true experimental research design was employed to analyze variations in mortality rates and knockdown times of mosquito larvae and adult mosquitoes exposed to different extract formulations: 60% tawa-tawa and 40% oregano, 40% tawa-tawa and 60% oregano, and 70% oregano and 30% tawa-tawa. Negative (water) and positive (commercial mosquito killer) controls were included for comparative analysis. Plant extracts were obtained through maceration, and phytochemical screening was conducted using Mayer's test to determine the presence of bioactive compounds. Phytochemical screening revealed the presence of alkaloids in both tawa-tawa and oregano stem extracts, indicating potential bioactivity. One-way ANOVA results for mosquito larvae showed a significant difference ($F = 6.2 > Fcrit = 3.48$, $p < 0.05$) between the plant extract formulations and the commercial product, leading to the rejection of the null hypothesis. In contrast, results for adult mosquitoes showed no significant difference ($F = 3.46 < Fcrit = 3.48$, $p = 0.05$), indicating insufficient evidence to reject the null hypothesis. Among the tested formulations, the combination containing 70% oregano and 30% tawa-tawa demonstrated the highest efficacy. The findings demonstrated that all three combinations of oregano and tawa-tawa stem extracts exhibited strong larvicidal activity and showed potential as mosquito-killing agents. The effectiveness of the extracts against both larvae and adult mosquitoes was comparable to that of commercially available products. These results highlighted the promising potential of oregano and tawa-tawa stem extracts as natural and environmentally friendly alternatives for mosquito and pest control.

Keywords: larvicide, mosquito control, oregano (origanum vulgare), tawa-tawa (euphorbia hirta), adult mosquitoes, plant-based insecticide

ENHANCING MOSQUITO REPELLENCY: INVESTIGATING THE EFFICACY OF BAY LEAVES (LAURA NOBILIS) AND ORANGE PEEL OIL (CITRUS SINENSIS) IN INCENSE STICKS

Kirstel Joelliana Guevarra, Evrine Dela Cruz, Kian Yoanna Munsayac, Julianne Reyes, Dr. Gina Garcia

Abstract

Mosquitoes are among the deadliest insects worldwide due to their role in transmitting mosquito-borne viral and parasitic diseases such as dengue, malaria, filariasis, chikungunya, and Japanese encephalitis, which continue to cause significant morbidity and mortality globally. While synthetic mosquito repellents are widely used, many contain chemical substances such as N,N-diethyl-m-toluamide (DEET), picaridin, allethrins, permethrin, and other compounds that may produce adverse side effects. This study aimed to evaluate and compare the efficacy of organic mosquito-repellent incense sticks made from bay leaves and orange peel oil with commercially available mosquito repellents and ordinary incense sticks. This study employed a true experimental research design. A total of seventy-five (75) mosquitoes were divided into three (3) groups of twenty-five (25) each through random selection. Methanolic extracts of bay leaves (Laurus nobilis) and oil extracted from orange peel (Citrus sinensis) were used in the formulation of organic incense sticks. The net cage method was applied to test efficacy across three groups: negative control, positive control (commercial mosquito-repellent incense), and the experimental group. Effectiveness was assessed based on repellency rate, duration of repellent activity, and mortality rate. The combined extract of bay leaves and orange peel oil demonstrated a 100% repellency rate and a 60% mosquito mortality rate. In comparison, the positive control (commercial mosquito-repellent incense sticks, Mr. Dolphin Mosquito Killer) also achieved a 100% repellency rate but resulted in a lower mortality rate of 32%. Additionally, the organic incense exhibited a faster onset of repellent activity, beginning at 3 minutes and 31 seconds, whereas the commercially available product initiated repellency at 5 minutes and 6 seconds. The findings revealed a significant difference in efficacy between the organic incense made from bay leaves and orange peel oil and commercially available mosquito-repellent products. Although both achieved equal repellency rates, the organic formulation demonstrated a higher mosquito mortality rate and faster repellent action. These results indicate that the combined extracts of bay leaves and orange peel oil possess strong repellent and insecticidal properties, highlighting their potential as an effective, natural, and safer alternative to synthetic mosquito repellents.

Keywords: mosquito repellency, bay leaves (laurus nobilis), orange peel oil (citrus sinensis), incense sticks, natural insecticide, organic mosquito repellent

EVALUATING THE EFFICACY OF ROSEMARY AND CHOCOLATE MINT EXTRACT IN PAIN RELIEVING STICK FOR MENSTRUAL CRAMPS

Kaye Caralde, Jomhelle Ayzabelle Calica, Ianah Mae Balagtas, Khizzle Franco

Abstract

This quantitative study aimed to identify a potential solution for women experiencing severe menstrual pain. The primary objective of the study was to evaluate the effectiveness of a pain-relieving stick formulated with rosemary and chocolate mint extracts in alleviating menstrual cramps. An experimental research design was employed in this study. The effectiveness of the pain-relieving stick was evaluated using a t-test to determine significant differences in pain relief among the participants. The findings indicated that menstrual cramp discomfort can be effectively relieved through the use of a pain-relieving stick formulated with rosemary and chocolate mint extracts. The results showed that the product caused no adverse effects when applied to the skin. In terms of cost, the pain-relieving stick using rosemary and chocolate mint extract was found to be more affordable compared to over-the-counter pain-relief products. Additionally, the majority of participants in the experimental group preferred using the pain-relieving stick over taking medication or using hot compresses as a remedy for menstrual discomfort. The study demonstrated that the combination of rosemary and chocolate mint extracts, which produces a cooling and soothing effect, effectively reduced menstrual pain and cramps. The menthol-based pain-relieving stick showed no negative skin reactions and was particularly effective in managing menstrual cramps. The cooling menthol effect played a key role in pain reduction and was found to be more effective than traditional remedies such as hot compresses.

Keywords: pain-relieving stick, rosemary extract, chocolate mint extract, menstrual cramps, alternative pain management

EXPERIENCES OF SELECTED DIABETIC PERSON USING MALUNGGAY AS ALTERNATIVE MEDICINE AT PINANGGAAN JAEN, NUEVA ECIJA, AND ALUA SAN ISIDRO NUEVA ECIJA

Vincent Paul Tinio, Venice Lorraine Juachon, Hailene Aubrey Domingo,
Harry Faith Domingo, Lance Edwin Gonzales, Jhohanz Khazmeer Lopez

Abstract

This study focused on the experiences of diabetic individuals using malunggay as an alternative medicine for diabetes management. Malunggay, also known as Moringa oleifera, has gained attention due to its potential health benefits, particularly for individuals with diabetes. Diabetes is a chronic condition that requires continuous management, and some individuals turn to herbal alternatives as part of their treatment approach. This study explored the lived experiences of diabetic persons to examine the perceived effects and efficacy of malunggay as an alternative medicine. This study employed a qualitative research design using a phenomenological approach. Semi-structured, face-to-face interviews were conducted to gather data from individuals diagnosed with diabetes who used malunggay as an alternative medicine. Purposive sampling was utilized to select participants, and all respondents were recruited from the identified locales. Data analysis revealed that all participants had Type 2 diabetes, with the majority being male and within the age range of 44 to 55 years. Malunggay emerged as a practical and affordable option for diabetes management, particularly for individuals with easy access to the plant. Its low cost played a significant role in its continued use, especially among participants balancing health needs with financial responsibilities. According to participants, malunggay consumption was associated with noticeable reductions in blood sugar and cholesterol levels, as well as other positive health effects. However, despite these perceived benefits, many participants continued to rely on conventional medications to maintain their overall health. The findings showed that most participants were middle-aged males diagnosed with Type 2 diabetes who used malunggay as part of their diabetes management. Malunggay was perceived as an affordable and accessible alternative, contributing to its use among individuals managing both financial and health concerns. Participants reported positive effects, including lowered blood sugar levels and improved health conditions. Nevertheless, most participants still depended on conventional medical treatments for long-term diabetes management. This study highlights the experiences of diabetic individuals using malunggay as an alternative medicine and underscores the continued importance of conventional treatment alongside herbal remedies.

Keywords: alternative medicine, malunggay, moringa oleifera, diabetes, type 2 diabetes, herbal treatment, lived experiences

EXPERIENCES OF SELECTED EMERGENCY NURSES ON HANDLING CRITICAL PATIENTS UPON ARRIVAL IN THE EMERGENCY DEPARTMENT AT CABIAO GENERAL HOSPITAL, MEDICS HOSPITAL, DR. GLORIA D. LACSON HOSPITAL IN NUEVA ECIJA

Michaella Tiangco, Kristin Apolonio, Jalaine Mae Algas, Samantha Nicole Mateo, Lorvin Karl Palon, Dennile Santiago, Aizel Marie Castro

Abstract

The emergency department is considered one of the busiest and most demanding work environments among medical specialties. Nurses assigned to this area experience higher levels of stress due to the urgency and complexity of patient care. Therefore, this study was conducted to gain insight into the experiences of selected emergency nurses in managing critical patients upon arrival in the emergency department, including the effects of these experiences and the coping mechanisms they employ. A phenomenological research approach was utilized to explore the lived experiences of selected emergency nurses from Cabiao General Hospital, Medics Hospital, and Dr. Gloria D. Lacson Hospital. Purposive (judgmental) sampling was employed to select ten participants. Data were collected through semi-structured interviews and audio recordings using mobile phones. The majority of participants reported experiencing both positive and negative aspects of their work environment. Positive experiences included patient recuperation and enjoyment within the workplace, while negative experiences involved the constant influx of patients, difficulty interacting with patients' families, and understaffing. These challenges often led to occupational stress, emotional numbness, work fatigue, and difficulties in maintaining work-life balance. Despite these challenges, participants also expressed optimism and resilience, drawing comfort from patients' recovery and relying on support systems to cope with the emotional, mental, and professional demands of their role. The findings indicate that emergency nurses do not allow daily stressors and challenges to interfere with their professional responsibilities. They continue to prioritize patient care while navigating significant workplace demands. Moreover, emergency nurses demonstrate adaptability and resilience by utilizing their cognitive and emotional capacities to manage stressful situations effectively. Their ability to cope with these challenges reflects a strong commitment to their role in providing critical care.

Keywords: emergency nurses, emergency department, critical patients, coping mechanisms, lived experiences, occupational stress

LARVA, LALABAN KA BA? UTILIZATION OF SODIUM BICARBONATE WITH PIPER NIGRUM AS AN ALTERNATIVE TO COMMERCIAL LARVICIDE

Liam Nathaniel Villarosa, Juanito Aquino, Mark Jairo Mendoza,
Ceane Marc Sta Maria, Dr. Gina Garcia

Abstract

Between January and June 2023, there were 72,333 reported dengue cases nationwide, with 249 recorded deaths. In response, the Department of Health implemented the "4S Program," which includes strategies to raise awareness and prevent disease transmission, such as searching for and destroying mosquito breeding grounds. Larvicides, which are used to control mosquito populations, have seen reduced use due to high costs, concerns about toxicity and environmental impact, and the potential for resistance with prolonged use. This study aimed to develop an alternative larvicide that is more affordable and effective than commercial larvicides by utilizing black pepper (Piper nigrum) and baking soda (sodium bicarbonate). The researchers formulated an alternative larvicide using black pepper (Piper nigrum) and baking soda (sodium bicarbonate). The black pepper was sun-dried, ground, soaked in ethanol, and subjected to rotary evaporation. Mosquito larvae were randomly collected and grouped into seven (7) containers, each containing 750 ml of tap water and 15 larvae. The formulation consisted of 5 g of baking soda dissolved in 10 ml of distilled water and combined with 0.1–0.5 ml of black pepper ethanolic extract. Two groups served as control groups. The results showed that Group E, containing a 50% concentration of black pepper (Piper nigrum) ethanolic extract combined with 10 ml of baking soda (sodium bicarbonate) solution, exhibited a 100% mortality rate within 6 hours. This was followed by Group D with a 40% concentration, which showed a 93.33% mortality rate within 6 hours and achieved complete larval elimination in 6 hours and 30 minutes. Group C, with a 30% concentration, demonstrated an 86.67% mortality rate within 6 hours and reached complete elimination in 6 hours and 50 minutes. Group B, with a 20% concentration, resulted in an 80% mortality rate within 6 hours and complete elimination in 7 hours and 35 minutes. Group A, with a 10% concentration of black pepper ethanolic extract combined with 10 ml of baking soda solution, showed a 40% mortality rate within 6 hours and required 10 hours and 35 minutes to fully eliminate the larvae. The positive control group using Lavectan exhibited a knockdown time of 24 hours with a 0% mortality rate within 6 hours, while the negative control group required 48 hours and also showed a 0% mortality rate within the same timeframe. The findings suggest that the 50% concentration of black pepper (Piper nigrum) ethanolic extract combined with 10 ml of sodium bicarbonate solution can be effectively used as a larvicide against mosquito larvae. This concentration demonstrated efficacy comparable to that of commercial larvicides. However, lower concentrations of 40%, 30%, 20%, and 10% showed significant differences in efficacy in terms of mortality rate and knockdown time.

Keywords: alternative larvicide, piper nigrum, sodium bicarbonate

LARVICIDAL POTENTIAL OF AMPALAYA (MOMORDICA CHARANTIA) STEM EXTRACT AGAINST MOSQUITO LARVAE

Rasheed Guerrero, Forsche Beth Manacop, Irish Faye Pangilinan, Dr. Gina Garcia

Abstract

Mosquitoes, with approximately 3,700 identified species, are vectors of diseases such as malaria, dengue, and Zika, which cause severe illnesses, particularly in tropical and subtropical regions. Dengue fever remains a persistent public health concern in the Philippines. Synthetic insecticides are commonly used to control mosquito populations; however, their excessive use has been associated with health risks, the development of mosquito resistance, and environmental damage. Consequently, there is a strong need to develop alternative insecticides and vector-control strategies to address pesticide resistance. One potential option is Ampalaya (Momordica charantia), a tropical vine known to contain biologically active compounds. Thus, this study aimed to develop a community-beneficial organic larvicide derived from Ampalaya stem extract. The efficacy of Ampalaya (Momordica charantia) stem extract against mosquito larvae was evaluated using a true experimental research design. The stems were air-dried in a shaded area for five days, powdered, soaked in ethanol for three days, filtered, and extracted using a rotary evaporator. Three concentrations of the ethanolic stem extract—50%, 75%, and 100%—were prepared. ABATE 1 SG was used as the positive control, while tap water served as the negative control. Each concentration was tested on ten early fourth-instar mosquito larvae, with three replicates per treatment. Larvicidal efficacy was assessed based on knockdown time and mortality rate. Analysis of Variance (ANOVA) was employed to determine significant differences among the concentrations. The results showed that the 100% ethanolic extract of Ampalaya stem exhibited strong larvicidal activity, with a mortality rate of 96.7% within one hour and 100% mortality at both the two- and three-hour observation periods. As the concentration decreased, larvicidal efficacy also declined. The 75% concentration resulted in an 80% mortality rate within one hour, 96.7% after two hours, and 100% after three hours. The 50% concentration produced a 33.3% mortality rate after one hour, increased to 90% after two hours, and reached 100% after three hours. The positive control achieved an 86.6% mortality rate within one hour and 100% mortality at the two- and three-hour intervals, while the negative control exhibited no larval mortality throughout the experiment. The findings suggest that the 100% ethanolic extract of Ampalaya (Momordica charantia) stem can be effectively used as a larvicide against mosquito larvae. Its efficacy was comparable to that of the commercial larvicide. However, the 75% and 50% concentrations demonstrated significantly lower effectiveness when compared to the commercial control.

Keywords: ampalaya stem, momordica charantia, larvicide, larvicidal potential, mosquito larvae

OEN?A: ORGANIC ERASER, NO STAIN ALLOWED, A KAMIAS STAIN REMOVER PORTABLE PEN

Juliana Alexandrea Reyes, Carlo Luis Pelayo, Desiree Nicole Vargas,
Dhalian Joyce Clarissa, Dr. Gina Garcia

Abstract

Stains are one of the major problems faced by many individuals, as they ruin the appearance of clothes, furniture, or surfaces. Traditional stain removal methods, which are frequently used, may be harmful to one's health. The use of commercially available stain removers also presents disadvantages such as skin irritation, strong scent, and high cost. This study aimed to create a safer stain remover solution using kamias extract (Averrhoa bilimbi) as an alternative stain remover. This experimental study examined the stain removal effectiveness of kamias extracts (Averrhoa bilimbi) on cotton and clothman fabrics. Stained fabrics were soaked for five minutes before applying the kamias or control solutions, which included water and a commercial stain remover, using the AATCC 130 method. A t-test was utilized to determine the difference between the kamias stain remover pen and the commercially available stain remover pen. The alternative stain remover pen made from kamias (Averrhoa bilimbi) showed a higher rate of stain removal on fabric compared to the commercially harmful stain remover pen. The 100% solution with salt emerged as the most effective treatment for removing stains from cotton fabric, while the 75% solution with salt demonstrated the highest effectiveness for removing stains from clothman fabric. Each kamias (Averrhoa bilimbi) solution showed the ability to remove stains from different types of fabric and produced a pleasant scent. In contrast, the commercially available stain remover pen was most effective only in removing ballpen ink stains. The control groups were proven ineffective for removing other stains on different fabric types. These results demonstrate that the kamias (Averrhoa bilimbi) stain remover pen is more effective than commercially available stain remover pens and offers an organic alternative with a pleasant scent. The results of this study show that the 75% kamias extract with salt exhibited remarkable performance in stain removal, outperforming the other solutions, including the commercial stain remover. These findings suggest that the kamias stain remover pen provides a more advantageous option for stain removal by delivering enhanced performance without the use of harsh chemicals.

Keywords: kamias (averrhoa bilimbi), stain remover pen, organic stain remover, fabric stain removal, experimental study

THE EFFECTIVENESS OF COMBINED CANANGA ODORATA (YLANG-YLANG), CITRUS LIMON (LEMON), AND JASMINUM SAMBAC (SAMPAGUITA) AS AN AROMATHERAPEUTIC SLEEP-PROMOTING SPRAY

Rex Chandrei Pamiloza, John Edmar Ignacio, Kristine Angeline Torres, Dr. Gina Garcia

Abstract

Sleep difficulties remain a prevalent health concern globally and in the Philippines, leading to a continuous rise in the use of sleep medications. Consequently, the adverse side effects associated with sleep aids require attention. Aroma inhalation therapy, as a natural and cost-effective complementary approach to managing sleep difficulties, is considered one of the fastest and most efficient methods of delivering therapeutic effects. This study explored the effectiveness of an aromatherapeutic sleep-promoting spray derived from a combination of Cananga odorata (ylang-ylang), Citrus limon (lemon), and Jasminum sambac (sampaguita), formulated using a 3:5:2 ratio corresponding to top note, middle note, and base note. A quasi-experimental pretest–posttest research design was employed. Nine (9) Grade 12 STEM students aged 17–19 years with Pittsburgh Sleep Quality Index (PSQI) pretest scores of ≥5 across three sections at General De Jesus College participated in the study. The participants practiced proper sleep hygiene and inhaled the aromatherapy spray before sleep for two weeks. Data were collected using a modified PSQI questionnaire and follow-up questions administered before and after the intervention. Statistical analysis was conducted using a paired-samples t-test to compare pretest and posttest results. The findings showed that sleep latency was significantly shorter after the intervention ($p = 0.007$). Sleep duration significantly increased ($p = 0.002$), and sleep efficiency was significantly higher in the posttest ($p = 0.034$). Sleep disturbance ($p = 0.004$) and daytime dysfunction ($p = 0.00002$) were significantly reduced following the intervention. A significant improvement in overall sleep quality was observed ($p = 0.001$). However, no significant difference was found in subjective sleep quality ($p = 0.09$). Qualitative responses indicated that most participants reported positive experiences, including relaxation, faster sleep onset, and the absence of adverse side effects. The results demonstrate the beneficial effects of the aromatherapeutic spray as an adjunct intervention for students experiencing sleep difficulties. The study suggests that future research involving larger sample sizes and longer intervention periods may provide more conclusive evidence regarding its effectiveness.

Keywords: aromatherapy spray, sleep quality, sleep difficulties, pittsburgh sleep quality index, stem students

THE EFFICACY OF BANANA LATUNDAN STEM FIBERS AS AN ECO BAG WITH BEESWAX COATING

Marianne Deauna, Ma Princess Pauline Clemente, Jay R Cardosa,
Illeana Francisco, Aldrich Magno, Kylie Quiestas

Abstract

Plastic pollution has become an increasingly serious problem in the country, posing significant threats to natural resources and environmental sustainability. In response, the researchers aimed to contribute to waste reduction by developing an eco-friendly product made from plant fibers. Banana latundan stem fibers were selected due to their suitability for producing environmentally friendly bags that minimize harm to nature. This study aimed to replace plastic bags with eco-friendly alternatives by developing bags made from banana stem fibers coated with beeswax. The study evaluated the durability, strength, water resistance, and environmental impact of the developed eco bags. An experimental research approach was employed in this study. The materials used included banana stem fiber, beeswax, sodium hydroxide, and color epoxy resin liquid. The process involved cutting, blending, and boiling the banana stem fibers for one and a half hours. The produced eco bags underwent a series of tests to assess durability, water resistance, and performance under various conditions, including exposure to stress, liquids, and sunlight. The results showed that the banana stem fiber eco bags coated with beeswax were durable, water-resistant, and environmentally friendly. However, the findings also indicated that the bags should be protected from excessive weight and prolonged exposure to sunlight to maintain optimal performance. The study demonstrated the feasibility of using banana stem fibers as a material for eco-friendly bag production. The developed eco bags provide a biodegradable alternative to plastic bags, offering durability and water resistance. Nevertheless, proper handling is required, particularly protection from heavy loads and prolonged sunlight exposure. Overall, the study supports the promotion of eco-friendly alternatives as a means to reduce plastic pollution.

Keywords: banana stem fiber, beeswax coating, eco bag, plastic pollution, sustainable alternative

THE EFFICACY OF BASIL (OCIMUM BASILICUM) AND RAMBUTAN (NEPHELIUM LAPPACEUM L.) LEAF AS A MOSQUITO COIL

Sean Andrei Sta Cruz, Randell Galang, Joshua Rei Lacsina, Vince Dhenniel Ramirez, Dr. Gina Garcia

Abstract

Diseases such as malaria, dengue fever, yellow fever, and Zika virus infection are transmitted through the bites of infected mosquitoes and remain prevalent in tropical and subtropical regions. Dengue fever, in particular, continues to be a persistent public health concern in the Philippines. Commercially available mosquito coils often contain chemical components that may be harmful to human health. For this reason, this study aimed to develop a mosquito coil that is safe and free from harmful chemicals. Plant-based mosquito coils are considered safer alternatives, as they do not contain toxic substances. Basil (Ocimum basilicum) and rambutan (Nephelium lappaceum L.) leaves contain chemical compounds such as flavonoids, tannins, saponins, and essential oils that have potential mosquitocidal properties. This study analyzed the effectiveness of mosquito coils prepared from basil (Ocimum basilicum) and rambutan (Nephelium lappaceum L.) leaf extracts in comparison with a commercially available mosquito coil (Baygon) and a formulated mosquito coil without extract. The experimental design consisted of three treatment groups: plant-based mosquito coil, commercially available mosquito coil, and formulated mosquito coil without extract. For each trial, two cages containing ten mosquitoes each were used, and mosquito behavior was observed for ten minutes. Mosquito mortality and repellency were recorded during the trials. Frequency counts, percentages, and analysis of variance (ANOVA) were employed to determine whether significant differences existed among the efficacies of the three mosquito coil types. The combined basil and rambutan leaf extract mosquito coil demonstrated a mosquito mortality rate of 60%, which was higher than that of the commercially available mosquito coil at 30%. The formulated mosquito coil without extract resulted in no mosquito mortality. In terms of knockdown time, the plant-based mosquito coil outperformed both the commercially available and non-extract coils, killing mosquitoes within six minutes. Additionally, both the plant-based and commercially available mosquito coils achieved 100% repellency, while the non-extract coil showed only 60% repellency. However, the commercially available mosquito coil exhibited faster initial repellency compared to the plant-based and non-extract coils. The findings indicate a significant difference in the efficacy of basil (Ocimum basilicum) and rambutan (Nephelium lappaceum L.) leaf extract mosquito coils compared to commercially available mosquito coils. The plant-based mosquito coil demonstrated both repellency and mosquitocidal effects, attributed to the bioactive compounds present in the plant extracts. While commercially available mosquito coils provided faster repellency, the plant-based coil exhibited longer-lasting effectiveness in repelling and killing mosquitoes.

Keywords: basil (ocimum basilicum), rambutan leaves (nephelium lappaceum l.), mosquito coil, mosquito repellency, plant-based insecticide

THE EFFICACY OF PANDAN LEAVES EXTRACT (PANDANUS AMARYLLIFOLIUS) AND CAMPHOR OIL AS AN ALTERNATIVE OINTMENT FOR MUSCLE PAIN

Lhouize Fhranze Ahrielle Dela Cruz, Aisish Genieve Balingit, Majayza Balondo, Khizzle Franco

Abstract

This study aimed to determine the effectiveness of pandan (Pandanus amaryllifolius) leaves extract combined with camphor oil in reducing muscle pain. The research explored this formulation as an alternative solution for individuals experiencing muscle discomfort. An experimental research method was employed in this study. The researchers formulated an ointment using pandan leaves extract and camphor oil and evaluated its effectiveness in relieving muscle pain. Data were collected through observation of participants under controlled conditions to assess changes in muscle discomfort after application of the ointment. The results revealed that the pandan leaves extract and camphor oil ointment was effective in relieving muscle pain. All participants, representing 100% of the subjects, reported a reduction in muscle pain after using the ointment. The combined properties of pandan leaves and camphor oil contributed to the alleviation of muscle discomfort. The findings demonstrate the efficacy of pandan leaves extract and camphor oil ointment in alleviating muscle aches. The observed reduction in muscle pain among all participants highlights the potential of these natural components as alternative remedies for managing muscle discomfort.

Keywords: pandan leaves, camphor oil, muscle pain, herbal ointment, alternative therapy

UTILIZATION OF KAMIAS (AVERRHOA BILIMBI) FRUIT AND ALOE VERA (ALOE BARBADENSIS MILLER) LEAVES EXTRACT AGAINST BROWN DOG TICKS (RHIPICEPHALUS SANGUINEUS)

Althea Cassandra Pangilinan, Andreana Lyka Salvador, Reivy Alfanta, Dr. Gina Garcia

Abstract

Ticks pose a significant threat to both human and animal health, highlighting the need for sustainable and environmentally friendly alternatives to conventional synthetic acaricides. This study investigated the efficacy of Kamias (Averrhoa bilimbi) fruit and Aloe Vera (Aloe barbadensis Miller) leaf extracts, collectively referred to as AloeKamia, against Brown Dog Ticks (Rhipicephalus sanguineus). The study aimed to address gaps in existing research, particularly regarding the synergistic effects of these plant extracts and the limited literature on the effectiveness of Aloe Vera against brown dog ticks. This study employed a true experimental research design. Kamias fruit underwent water extraction, while Aloe Vera leaves were subjected to ethanolic extraction to obtain the plant extracts. A total of ninety (90) Brown Dog Ticks were collected from dogs and maintained under natural experimental conditions. Four concentrations of the AloeKamia extract were prepared: 25%, 50%, 75%, and 100%, achieved by varying the extract-to-water ratio. A commercial anti-tick spray containing fipronil and a negative control using pure water were included for comparison. Each concentration was applied to ticks placed in petri dishes, and mortality rates were observed and recorded throughout the experimental period. The experimental trials demonstrated concentration-dependent efficacy of the AloeKamia extracts, achieving a 100% mortality rate across all tested concentrations. Higher extract concentrations resulted in faster tick mortality, with ticks dying within 33 minutes. In comparison, the commercialized anti-tick spray showed statistically significant differences (F-value = 15.9964, P = 0.0161), yielding a lower mortality rate of 73.33% and a longer average time of 100 minutes to eliminate ticks. The findings highlight the strong potential of AloeKamia as a natural alternative for tick control. The plant-based extracts effectively reduced tick populations and demonstrated rapid acaricidal action. Overall, the study indicates that AloeKamia is a highly effective and fast-acting solution for controlling Brown Dog Ticks, surpassing the efficacy of the commercialized anti-tick spray.

Keywords: kamias (averrhoa bilimbi), aloe vera (aloe barbadensis miller), brown dog ticks (rhipicephalus sanguineus), acaricides, tick control

WALANG MATIBAY NA IPIS SA MABAGSIK NA PISIK: MORINGA OLEIFERA, CAPSICUM FRUTESCENS AND AVERRHOA BILIMBI EXTRACTS AS ORGANIC COCKROACH INSECTICIDE

Andrea Mae Balagtas, Ashley Nhicole Nadayao, Larrah Mae Reyes, Dr. Gina Garcia

Abstract

Cockroaches in the home environment pose serious health hazards, not only due to the allergens they produce that may trigger asthma, but also because they can carry disease-causing microorganisms. In addition, conventional chemical-based insecticides used to eliminate cockroaches may cause further health risks, including dermatological, gastrointestinal, neurological, carcinogenic, respiratory, reproductive, and endocrine effects. This study aimed to develop a safer alternative to chemical cockroach insecticides by utilizing natural extracts from Malunggay leaves (Moringa oleifera), Kamias fruit (Averrhoa bilimbi), and Chili fruit (Capsicum frutescens) to manage the increasing cockroach population. This study employed a true experimental research design. A total of thirty (30) cockroaches were randomly assigned into six (6) groups, each consisting of five (5) cockroaches. Ethanolic extracts of Malunggay leaves (Moringa oleifera), Chili fruit (Capsicum frutescens), and Kamias fruit (Averrhoa bilimbi) were prepared and applied using the spray method. The experimental setup included a negative control, a positive control using a commercially available insecticide (Baygon), and treatment groups using the plant-based extracts. The efficacy of the treatments was evaluated based on percentage mortality and knockdown time. The combined extracts of Chili fruit (Capsicum frutescens), Kamias fruit (Averrhoa bilimbi), and Malunggay leaves (Moringa oleifera) resulted in 100% mortality of all test subjects. In contrast, the positive control using the commercially available insecticide showed an 80% mortality rate. In terms of knockdown time, the mixture of the three plant extracts eliminated cockroaches within one minute, which was faster than the commercial insecticide. The findings indicate a significant difference between the efficacy of the plant-based extracts and the commercially available insecticide. The extracts varied in their insecticidal potential, with Capsicum frutescens providing rapid and potent cockroach control due to its strong insecticidal properties, while Averrhoa bilimbi and Moringa oleifera contributed moderate effectiveness. Overall, the combined plant extracts demonstrated higher efficacy than the commercial insecticide. Each extract possesses unique insecticidal properties, supporting their potential use as effective organic alternatives for cockroach control.

Keywords: malunggay leaf, moringa oleifera, kamias fruit, averrhoa bilimbi, chili fruit, capsicum frutescens, cockroach insecticide

YERBA BUENA AS TOPICAL MUSCLE PAIN RELIEF PATCH

Arly Mae Peret, Precious Anne Magbitang, Andrea Joyce Postadan,
Jannah Azira Tablante, Khizzle Franco

Abstract

A pain relief patch is a topical medication used to alleviate both acute and chronic pain. This study investigated the potential of Yerba Buena as an alternative topical patch for muscle pain relief. Yerba Buena is one of the ten medicinal plants recommended by the Philippine Department of Health (DOH) for the treatment of aches and pains. The purpose of this study was to enhance the effectiveness of a Yerba Buena–based muscle pain relief patch and to increase awareness of producing plant-based topical pain relief products. An experimental research method was employed in this study, which involved the formulation and creation of the muscle pain relief patch in the science laboratory of General de Jesus College. A questionnaire was administered to participants who tested the patch to gather feedback on its effectiveness. A t-test was used as the statistical tool to determine the mean effectiveness based on the collected responses. The findings revealed that the Yerba Buena topical muscle pain relief patch exhibited varying durations of effectiveness among respondents. Reported relief durations included 40 minutes, 50 minutes, 2 hours, 45 minutes, 3 hours, 1 hour, 5 hours, and 4 hours. In comparison, the commercially available muscle pain relief patch was reported to be most effective for 1 hour and 30 minutes. The study concluded that the Yerba Buena–based topical patch was effective in relieving muscle pain for a short duration. However, further improvement and additional trials are needed for the product to achieve effectiveness comparable to commercial patches. The varying duration of pain relief may be influenced by differences in formulation, processing, and the quantity of ingredients used in the patch.

Keywords: yerba buena, muscle pain, topical patch, pain relief

EFFICACY OF LAVENDER OIL, PANDAN LEAVES (PANDANUS AMARYLLIFOLIUS) AND YERBA BUENA (CLINOPODIUM DOUGLASII) IN ANTISTRESS PATCHES

Stephanie Tecson, Stephanie Tecson, Beatriz Mina, Luisa Abegail Valmonte,
Angel Shaine Serano, Khizzle Franco

Abstract

Mental health research has increasingly explored evidence-based innovations that incorporate natural ingredients into stress-management interventions. Lavender oil, pandan leaves, and yerba buena have been widely recognized for their calming and therapeutic properties. Although the use of these natural components in anti-stress patches is theoretically supported, variations in effectiveness may occur depending on individual stress responses. This study examined the efficacy of lavender oil, pandan leaves, and yerba buena when used in anti-stress patches and explored how these natural remedies help individuals cope with stress. This study investigated the use of lavender oil, pandan leaves, and yerba buena in the development of eco-friendly, natural anti-stress patches. The preparation process involved cleaning and cutting the leaves, boiling them, straining the extracts, and allowing them to cool. Lavender oil was then added to the mixture due to its known calming properties. The combined extracts were applied to fabric materials to create wearable anti-stress patches. This method aimed to promote sustainable and natural approaches to stress management. The findings demonstrated that anti-stress patches made from pandan leaves, lavender oil, and yerba buena were effective in reducing stress when used alongside aromatherapy. Participants experienced lowered stress levels, reduced heart rates, and improved mood after using the patches. The results highlighted the potential effectiveness of these natural compounds as tools for stress reduction. The study showed that lavender oil, pandan leaves, and yerba buena have strong potential as effective components of anti-stress patches. These natural ingredients offer a convenient and accessible approach to stress management. However, further research is recommended to better understand their long-term effects, optimal formulations, and ensure their safe and effective use in stress-related interventions.

Keywords: anti-stress patches, lavender oil, pandan leaves, yerba buena, stress management, natural remedies

EMOTIONAL DESENSITIZATION AND ITS GENERAL IMPACT ON SELECTED EMERGENCY PHYSICIANS AND NURSES AT DR. PAULINO J. GARCIA MEMORIAL RESEARCH AND MEDICAL CENTER, CABANATUAN CITY

Kian Russe Isidro l, Zhan Lattrell Ocampo, Sean Patrick De Leon, Lei Anne Pangilinan, Rix Baron Tinio, Caithleen Jaye Crisostomo, Aizel Marie Castro

Abstract

International organizations such as the World Health Organization (WHO) and the International Council of Nurses (ICN) have highlighted mental health concerns among healthcare workers, including stress, anxiety, depression, burnout, and moral distress, particularly in emergency settings. These conditions may contribute to emotional numbing or detachment from patient suffering, which are central features of emotional desensitization. Emergency physicians and nurses are frequently exposed to violence, trauma, and high-pressure environments. Prior to the COVID-19 pandemic, healthcare professionals were already four times more likely than other workers to experience workplace violence, with nearly half of these incidents occurring in emergency departments. Factors such as chronic understaffing, limited access to social and mental health services, substance abuse, and overcrowded emergency rooms further intensify stress and emotional strain (Duong & Vogel, 2022). Emergency departments are also characterized by unpredictable patient presentations and heightened safety concerns, contributing to a complex and demanding work environment (A, 2022). Additionally, healthcare workers have reported daily exposure to verbal and physical abuse, including assaults involving bodily fluids, weapons, and threats with needles (Shabazz, 2021). This study examined emotional desensitization and its general impact on selected emergency physicians and nurses. This study utilized a descriptive research design with a phenomenological approach. Preliminary questionnaires were distributed to identify participants who met the inclusion criteria. Data were collected from ten (10) emergency physicians and nurses using semi-structured interviews supported by audio recordings. Participants were selected through purposive sampling. The participants were primarily female emergency physicians and nurses aged 31 to 37, with professional experience ranging from 3 to 17 years. The findings indicated that emotional desensitization developed mainly due to stressful work environments and the influence of colleagues. Desensitization was also associated with family-related concerns, as participants reported comparing family members' illnesses to severe clinical cases, which sometimes led to emotional distancing and strained personal relationships. To maintain efficiency in high-pressure settings, participants reported reducing emotional engagement with patients and relying on emotional resilience to manage trauma and focus on clinical tasks. Coping strategies included seeking companionship, emotional support, and establishing clear boundaries between professional and personal life to prevent burnout and promote work-life balance. The findings suggested that emotional desensitization among emergency physicians and nurses arises from prolonged exposure to stress, trauma, and workplace pressures. While desensitization may enhance task efficiency and emotional resilience, it can also result in reduced empathy toward patients and compassion fatigue affecting family relationships. To cope with these challenges, healthcare professionals emphasized the importance of social support and maintaining boundaries between work and personal life. The study underscored the need for institutional interventions that promote work-life balance, stress reduction, and mental health support to mitigate the negative effects of emotional desensitization on healthcare workers' productivity and psychological well-being.

Keywords: emotional desensitization, emergency department, physicians, nurses, mental health, work-life balance

EXPLORING THE SOURCES AND IMPACT OF ACADEMIC STRESS AMONG SELECTED SENIOR HIGH SCHOOL STUDENTS OF GENERAL DE JESUS COLLEGE

Alaine Yana Sedano, Francesca Villaflor, Aeron Nash Villanueva,
Nash Lucas, Kenneth Ivan Balutan, Celric Arwin Dela Cruz

Abstract

Adolescents and young people are particularly vulnerable to problems associated with academic stress, as transitions occur at both individual and social levels. Therefore, it is imperative to understand the sources and impact of academic stress in order to design appropriate and effective intervention strategies (Reddy, Menon, and Thattil, 2018). In this context, the study sought to determine the causes of academic stress and examine how it affects senior high school students. The study employed a phenomenological research method to determine the experiences of senior high school students with academic stress. Five Grade 11 participants and four Grade 12 participants, for a total of nine participants, took part in the study using a descriptive research approach. Data were collected through semi-structured interviews supported by audio recordings. The gathered data were analyzed using thematic analysis. The study revealed that most senior high school students experience academic stress primarily due to pressure from their families and other people. The results also showed that academic stress can have positive effects, such as increased motivation. However, it was also revealed that academic stress affects students' academic performance, resulting in both decreased and increased grades, with some students experiencing both outcomes. The mental health of the participants was likewise affected, with the majority reporting mental instability due to academic stress. Overall, academic stress had both positive and negative impacts on students, although the findings indicated that most senior high school students were affected negatively. In conclusion, this research provides valuable insights into the impact of academic stress among senior high school students. The findings highlight that academic stress is a serious concern due to the negative effects experienced by students. The study found that academic stress, primarily driven by familial and societal pressure, significantly affects students' mental health and academic performance in both positive and negative ways. The implications of this study may be used to promote awareness among students and teachers regarding the importance of addressing academic stress to support students' well-being and academic performance.

Keywords: academic stress, senior high school students, mental health, academic performance, stress impact

THE IMPACT OF MOBILE GAMING ON SELECTED STUDENTS OF GENERAL DE JESUS COLLEGE

John Noel Relucio, Serenity Hope Bondoc, John Emmanuel Pabustan,
Vhee Jhay De Luna, Enricko David Oli, Alyson Kim Benez

Abstract

This study explored the impact of mobile gaming on selected students of General De Jesus College. It aimed to understand how mobile gaming habits influence students' emotional well-being and physical condition. A qualitative research approach was employed through face-to-face interviews supported by audio recordings. Semi-structured interview questions were used to gather in-depth data from ten (10) participants, focusing on time spent playing mobile games, mood changes, and physical comfort experienced during or after gameplay. The results revealed varying durations of mobile gaming among participants. Three participants reported playing for 1–2 hours daily, four participants played for 3–5 hours, and three participants spent 6–8 hours or more playing mobile games each day. Participants who engaged in mobile gaming beyond 1–2 hours reported negative effects, including increased stress, anger, and physical discomfort such as headaches, neck pain, back pain, and eye strain. The findings highlight the potential negative effects of prolonged mobile gaming on students' emotional and physical well-being. A clear relationship was observed between extended gaming time and the experience of negative mood changes and physical discomfort. These results suggest the need for further research and the possible implementation of educational programs that promote responsible and balanced mobile gaming habits among students.

Keywords: mobile gaming, mobile games, student well-being, mood changes, physical discomfort

THE EFFECTIVITY OF CHICKEN FEATHERS AS AN ORGANIC FERTILIZER FOR RADISH (RAPHANUS SATIVUS)

Eisha Camille Delos Reyes, Cheska Mae Delos Santos, Cheska Camille Franco,
Aliya Fate Razon, Khizzle Franco

Abstract

In agricultural research, evidence-based innovations are often developed with promising potential. However, when implemented, these innovations may yield varying levels of effectiveness. In the program under study, the researchers observed differing outcomes in the application of an organic fertilizer composed of rice husk and chicken feathers, despite its strong theoretical foundation. This study aimed to investigate the factors contributing to the varying effectiveness of chicken feathers as an organic fertilizer for radish (Raphanus sativus). This study employed an experimental research design. Experimental research involves comparative analysis by examining two or more variables under different conditions to determine cause-and-effect relationships. The scientific method was applied to assess the efficacy of chicken feathers as an organic fertilizer. The experimental design allowed the researchers to evaluate the effects of chicken feathers and related organic components on plant growth variables. The findings revealed that chicken feathers served as a more effective fertilizer than commercially available alternatives due to their organic composition and nutrient content. When treated with keratin hydrolysate, chicken feathers significantly enhanced the growth of radish plants in terms of height, number of leaves, leaf weight, and overall nutritional content. The study further indicated that the combined use of sawdust, rice husk, and chicken feathers resulted in taller stems and roots, wider leaves, and greater overall plant growth compared to the use of commercial fertilizer or no fertilizer. The results demonstrated that the application of chicken feathers in combination with sawdust and rice husks was beneficial for radish plant growth. This organic fertilizer mixture not only promoted healthier plants but also contributed to longer stems, increased branching, and greater leaf development. Although the plants treated with the organic mixture were shorter than those in the negative control group, the treatment still exhibited favorable performance. Overall, the findings suggest that chicken feathers may serve as a viable alternative to traditional fertilizers and contribute to the development of eco-friendly and sustainable agricultural products that can enhance community livelihoods.

Keywords: chicken feathers, organic fertilizer, radish (raphanus sativus), sustainable agriculture, plant growth

CHALLENGES EXPERIENCED BY THE SELECTED NURSES AT MEDICS GENERAL HOSPITAL, ALUA, SAN ISIDRO, NUEVA ECIJA

Mary Claire Andaya, Janah Miel Cablao, Niel Andrade Franco, Angeline Nicole Pelayo, Gabriel Roque, Samantha Samin, Jade Samonte

Abstract

The challenges nurses commonly face include staffing shortages, heavy workloads, emotional stress, communication barriers, technological complexities, and instances of workplace violence, all of which may lead to medical errors and compromised patient safety (Norwich, 2023). As stated by Moll et al. (2022), recent studies have shown that an increasing number of nurses have considered switching careers or leaving the profession due to high levels of anxiety, burnout, and exhaustion. Therefore, this research aimed to gain a deeper understanding of the challenges experienced by selected nurses at Medics General Hospital, Alua, San Isidro, Nueva Ecija. This study used a qualitative research method with a phenomenological approach. Purposive sampling was employed, involving a total of ten (10) nurses from Medics General Hospital, Alua, San Isidro, Nueva Ecija, all of whom had at least one year of professional experience. Data were gathered through semi-structured interviews with the aid of audio recordings. The participants consisted of five male and five female nurses, most of whom were between 30 and 40 years old and had three to four years of work experience. The participants frequently experienced challenges such as nurse shortages due to migration, low salaries, long working hours leading to stress and burnout, and a lack of equipment in primary hospitals. Some participants also reported conflicts with patients' family members. These challenges resulted in financial concerns, work-related stress, and exhaustion from prolonged working hours, causing feelings of anxiety and decreased motivation. Coping strategies included practicing patience with patients, demonstrating resilience in facing challenges, and prioritizing rest to maintain overall well-being. This study presented the challenges experienced by selected nurses at Medics General Hospital, Alua, San Isidro, Nueva Ecija. The primary challenges identified were nurse shortages, insufficient salary, inadequate equipment, extended work shifts that led to stress, and conflicts with patients' relatives. Coping strategies included resting adequately, exercising patience, and maintaining strong willpower. Furthermore, the findings emphasized the difficulty nurses face in performing and sustaining their professional roles and highlighted the critical importance of adequate resources and institutional support.

Keywords: nursing challenges, burnout, exhaustion, nurse shortage, workload, nursing experience

THE RESILIENCE OF THE SELECTED ELDERLY SUFFERING FROM CHRONIC DISEASE LIVING IN SELECTED MUNICIPALITIES IN DISTRICT IV (NUEVA ECIJA)

Samantha Nicole Maristela, Erica Leinz Dela Cruz, Joem Pantaleon, Kim Shaira Bandasak, Alexandra Mendoza, Jeshua Louise Castaneda, Aizel Marie Castro

Abstract

Chronic diseases are among the primary causes of death worldwide, particularly among the elderly population. Factors such as resilience, acceptance, and social connection can significantly improve quality of life and may reduce mortality rates by up to 6%. In this study, the researchers aimed to determine the ways in which elderly individuals suffering from chronic diseases cope with their condition and demonstrate resilience in their daily lives. This study utilized a phenomenological research design to identify the resilience of elderly individuals suffering from chronic diseases who are living in selected municipalities in District IV, Nueva Ecija. A total of fifteen (15) participants were included in the study. Data were gathered through semi-structured interviews supported by audio recordings. The collected data were analyzed using thematic analysis. The findings revealed that the majority of the participants were female, aged between 71 and 75 years old, with diabetes identified as the most common chronic illness. Most participants had been living with their condition for 0 to 10 years. The study also found that participants experienced several changes after being diagnosed with a chronic disease, including physical changes, healthier lifestyle choices, enhanced spirituality, and improved family relationships. Furthermore, the results showed that participants demonstrated resilience through acceptance of life with a chronic illness, financial capability, active participation in physical activities, understanding of their condition, effectiveness of prescribed medications, strong social support, and access to government-issued benefits for senior citizens. The findings indicate that senior citizens are able to demonstrate resilience despite living with chronic diseases. The study suggests that maintaining acceptance and understanding of one's chronic condition plays a significant role in enhancing resilience. Overall, this research may help elderly individuals better understand how resilience influences their ability to cope with chronic illness and improve their quality of life.

Keywords: chronic disease, elderly, resilience, coping mechanisms, acceptance, quality of life

LANSIUM DOMESTICUM (LANZONES) PEEL AND CYMBOPOGON CITRATUS (LEMONGRASS) EXTRACT AS MOSQUITO COIL

Therence Reneelyn Yambao, Iyya Isaga, Sheka Shaine Parducho, Khizzle Franco

Abstract

Mosquito-borne diseases, such as dengue, pose serious threats to global public health. Commercial mosquito coils are commonly used to repel mosquitoes; however, their chemical components may pose potential health risks. This study aimed to explore alternative mosquito coils made primarily from Lansium domesticum (lanzones) peel and Cymbopogon citratus (lemongrass) extract. The goal of the research was to reduce the harmful effects of commercial mosquito coils on human health and the environment while addressing mosquito-borne illnesses such as dengue. An experimental research design was employed in this study. Fifteen mosquitoes were placed in each of two prepared containers. The alternative mosquito coil was placed in the first container, while a commercial mosquito coil was used in the second container. After exposure to both coils, the mosquitoes were observed, and the time taken for mosquito mortality was recorded. The duration of coil burning and the scent of each coil were also monitored. The effectiveness of the alternative mosquito coil in eliminating mosquitoes was evaluated through multiple trials. The highest level of repellency for the alternative coil was observed in trial four, during which eight mosquitoes were killed within 15 minutes and 15 seconds. Similarly, the commercial mosquito coil showed its highest effectiveness in trial four, where nine mosquitoes were killed in the same duration. Despite the slight difference in effectiveness, both mosquito coils proved effective in eliminating mosquitoes. In terms of burning duration, the commercial coil burned for 8 hours, while the alternative coil burned for 6 hours and 30 minutes, resulting in a difference of 1 hour and 30 minutes. Overall, the mosquito coil made from Lansium domesticum (lanzones) peel and Cymbopogon citratus (lemongrass) extract demonstrated effectiveness comparable to that of commercial mosquito coils. This experimental study demonstrated that Lansium domesticum (lanzones) peel and Cymbopogon citratus (lemongrass) extract can be used as alternative materials for mosquito coils. The results showed that the alternative coil was effective in repelling mosquitoes at a level comparable to commercial mosquito coils. Moreover, the alternative coil provides a safer option that is free from synthetic chemicals and offers a more environmentally friendly solution for mosquito control.

Keywords: lansium domesticum, lanzones peel, cymbopogon citratus, lemongrass extract, mosquito coil

BARRIERS TO HEALTHCARE ACCESS AMONG SELECTED IMPOVERISHED INDIVIDUALS LIVING IN REMOTE AREAS OF SELECTED MUNICIPALITIES IN DISTRICT IV, NUEVA ECIJA

Krizze Lian Aspa, Allyson Amistoso, Kristian Santos, Robert Princess Vergara,
Elaray Dawn Esteban, Aizel Marie Castro

Abstract

Accessing healthcare services poses significant challenges, particularly for individuals residing in remote areas. This study investigates the barriers encountered by individuals living in remote areas when accessing healthcare services, explores their coping strategies, and suggests effective solutions for implementation. The study utilized a phenomenological research design to identify healthcare barriers faced by individuals in remote areas of selected municipalities in District IV, Nueva Ecija. A total of ten participants were involved in the study. Semi-structured interviews and audio recordings were used for data collection, and thematic analysis was employed for data analysis. The findings revealed that the majority of participants were female and belonged to the age range of 22 to 54 years old. The participants encountered barriers to healthcare access due to financial constraints, geographical distance, lack of healthcare facilities, and uneven road conditions. These barriers resulted in difficulties navigating roads, borrowing money for medications, loss of life, infrequent hospital visits, and limited electrical supply. To improve healthcare access, the study suggests providing free medical supplies, additional barangay services, employment opportunities, accessible and well-equipped healthcare centers, and road repairs. The findings highlight the need to improve healthcare services for underprivileged individuals living in remote areas. The results revealed that participants experienced multiple barriers to healthcare access due to their residence in remote locations and limited income. The study suggests that government agencies should recognize these issues and implement solutions to support individuals living in remote areas. Overall, this research helps illustrate how healthcare access barriers affect the daily lives of individuals residing in remote communities.

Keywords: healthcare access, barriers to healthcare, remote areas, impoverished individuals, public health services, phenomenological study

CHALLENGES ENCOUNTERED BY SELECTED GRADE 12 STEM HONOR STUDENTS AT GENERAL DE JESUS COLLEGE DUE TO SLEEP DEPRIVATION

Nina Ysabelle Pelayo, Ma. Denice Morelos, Brixs Harvey Reyes, Angele Nicole Magtalas, Daniela Laurice Figueroa, Juliana Rose Eugenio, Aizel Marie Castro

Abstract

Sleep deprivation is a common problem among adolescents in today's society. The primary objective of this study was to determine the challenges encountered by selected honor students due to sleep deprivation. Specifically, the study aimed to identify the participants' profiles, the challenges they experienced as a result of sleep deprivation, and the coping mechanisms they employed. The researchers utilized a qualitative research method. Semi-structured interviews were conducted for data collection, supported by audio recordings and online interviews. Purposive sampling was used to select the participants. The study focused on fifteen (15) Grade 12 STEM honor students at General De Jesus College who experienced challenges related to sleep deprivation. The majority of the participants were seventeen (17) years old, and most were female. The findings showed that most participants had high honors and reported sleeping an average of zero (0) to three (3) hours. The study revealed that challenges encountered due to sleep deprivation included impaired cognitive function, decreased academic performance, and health-related issues. The results also indicated that the participants' coping mechanisms involved time management, listening to music, taking naps, and consuming caffeine. The findings demonstrated that sleep deprivation negatively affects cognitive function, academic performance, and the overall well-being of the participants. Overall, this study may help students become more aware of and minimize the challenges caused by sleep deprivation.

Keywords: sleep deprivation, academic challenges, honor students, coping mechanisms, cognitive function, academic performance

DIFFICULTIES ENCOUNTERED BY SELECTED STEM 11 STUDENTS DURING EXAMINATION PROPER DUE TO SHORT TERM MEMORY AND THEIR COPING STRATEGIES

Sanji Mendoza, Sophia Margarette Sansano, Rhian Denise Lavado,
Arcee Angel Cruz, Charles Humprey Eugenio, Steve Nash Javier

Abstract

Short-term memory (STM) refers to the ability to temporarily store and recall information over a brief period. Difficulties in short-term memory may affect students' ability to review lessons, memorize key terms, and recall information during examinations. This study was conducted to explore how STEM 11 students experience difficulties related to short-term memory during examination preparation and how they cope with these challenges through various strategies and techniques. This study employed a qualitative research approach using a phenomenological design. Data were collected through face-to-face interviews supported by audio recordings. A raise-hand method was also used to identify participants who experienced difficulties related to short-term memory. A total of twenty (20) participants were interviewed in this study. In terms of participant profiles, eleven out of twenty participants were female, while nine were male. The results revealed various difficulties encountered during examination preparation, particularly related to studying and memory retention. Common coping strategies reported by the participants included engaging in group study sessions and consuming comfort foods to help manage stress and improve focus. The findings showed that short-term memory difficulties among the selected students led to challenges such as reviewing and familiarizing themselves with terminologies, memorizing main ideas, being distracted by noise, experiencing mental blocks before and during examinations, and difficulty recalling lessons. These difficulties highlighted the importance of identifying effective coping strategies to help students manage memory-related challenges during examinations.

Keywords: short-term memory, examination difficulties, coping strategies, stem students, phenomenological study

EFFECTIVENESS OF USING MAKAHIYA LEAVES AS AN ADDITIVE TO LADYBIRD BEETLE INSECTICIDE

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Abstract

This study focused on determining the effectiveness of using Makahiya (Mimosa pudica) leaves as an additive to a ladybird beetle insecticide. The study was conducted using a total of one hundred six (106) ladybird beetles to test the insecticide's effectiveness in eradicating insects that negatively affect crops. This study utilized an experimental research design under a quantitative approach to determine the negative impact of ladybird beetles on crops and assess the effectiveness of Makahiya leaves as an insecticidal additive. The research applied experimental procedures involving ladybird beetles and Makahiya plants to develop and test an effective insecticide formulation. The findings indicated the successful formulation of a biodegradable insecticide. The study consisted of five trials using varying measurements of liquid components. The formulation included cypermethrin, emulsifiers, clothianidin, azadirachtin, and Makahiya leaves. Results showed that the combination of Makahiya leaves with these materials demonstrated strong potential in reducing the population of harmful insects. Statistical analysis revealed that the use of Makahiya leaves as the primary additive in the insecticide was effective, with the study achieving a reported success rate of 100%. The results demonstrated that the Makahiya-based insecticide was effective in eradicating ladybird beetles. The insecticide exhibited short-term effects on insects but was found to be more efficient and cost-effective compared to other agricultural products. Overall, the findings supported the potential of Makahiya leaves as a viable additive in insecticide formulations.

Keywords: makahiya, insecticide, pest control, biodegradable chemicals, agricultural pests

MAYANA LEAVES (COLEUS BLUMEI BENTH) AND ALUGBATI (MALABAR SPINACH) EXTRACT AS AN ALTERNATIVE HIGHLIGHTER INK

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Abstract

The experiment utilizing Mayana leaves and Alugbati extract to create an alternative highlighter ink yielded results supported by strong evidence. The researchers systematically tested various ingredient ratios to optimize product quality, leading to a successful outcome. The researchers employed an experimental research design using ingredients such as Mayana and Alugbati extracts, salt, and sugar. The study focused on determining the precise proportions of each component necessary to produce an effective alternative highlighter ink. A series of experimental trials were conducted to evaluate the effectiveness of the formulated ink. The researchers achieved optimal measurements and gained valuable insights into producing an alternative highlighter. The findings highlighted the cost-effectiveness of the ink and demonstrated its potential educational value. The developed highlighter ink was found to be effective, producing a stronger hue, emitting a milder odor, and allowing easy removal from the skin. Despite its affordability, the ink demonstrated notable efficacy and practicality for users.

Keywords: mayana leaves, alugbati extract, alternative highlighter ink, natural ink, cost-effective materials

PERCEIVING COLOR EFFECTS ON THE LEARNING ENHANCEMENT OF SELECTED SENIOR HIGH SCHOOL STEM STUDENTS OF GENERAL DE JESUS COLLEGE

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Gabriel Dizon, Rhenz Orquiza, Jacob Mariano

Abstract

Colors affect a person's daily life and have a significant impact on how individuals perceive and use information. Color psychology is the study of how colors influence human behavior. Students are often observed using colored pens or highlighters when studying and taking notes. This study aimed to present the use of color among Senior High School Grade 11 STEM students of General De Jesus College and examine the relationship between the use of colors and their academic learning. The study utilized a descriptive research design to observe and describe the perceived effects of color on learning enhancement. The participants included Grade 11 STEM students. Qualitative data collection techniques were employed, and the data-gathering instruments used were semi-structured interviews supported by audio recordings. Many participants perceived that colors had an effect on their learning enhancement, resulting in a preference for bright colors, improved memorization, and better visualization of topics. The participants shared their experiences regarding the use of colors in their studies and how it affected their learning and academic performance. Overall, colors were perceived to have a significant effect on learning enhancement and study outcomes. The results demonstrate that colors have a significant effect on how the brain perceives information. The researchers concluded that the use of colors can support academic performance and learning enhancement, particularly in improving memorization of topics, visualization of keywords, and understanding of lessons.

Keywords: color psychology, learning enhancement, senior high school stem students, memorization, visualization

SUSTAINABLE BIODEGRADABLE MULTI-PURPOSE: UTILIZING SUGARCANE BAGASSE AS A RENEWABLE MATERIAL FOR ECO-FRIENDLY

Karylle Flaminiano, Arvin Satoya, Rene Gonzales, Christian Sigua, Khizzle Franco

Abstract

The increasing demand for eco-friendly and biodegradable materials has encouraged research into alternative sources for sustainable packaging. This study aimed to explore the utilization of sugarcane bagasse as an environmentally sustainable and versatile material for multi-purpose applications. Specifically, the study investigated the feasibility of transforming sugarcane bagasse into resilient packaging materials while considering its economic and ecological benefits. Through systematic experimentation and analysis, the research sought to provide insights into the effectiveness of sugarcane bagasse-based materials for various packaging needs. The study employed experimental research methods to evaluate the suitability of sugarcane bagasse for packaging applications. Sugarcane bagasse underwent processing techniques such as chemical treatment using sodium hydroxide and blending with starch to enhance structural integrity. The researchers analyzed the effects of these processing methods on the quality and durability of the resulting packaging materials. Cost analysis was also conducted to assess the financial implications of transitioning to sugarcane bagasse-based packaging. The findings revealed that sugarcane bagasse-based packaging exhibited strong resistance to mechanical stress and water infiltration, indicating its potential as a sustainable alternative to conventional packaging materials. Experimental results showed that specific processing techniques significantly enhanced the structural integrity and overall quality of the material. In addition, cost analysis demonstrated that sugarcane bagasse-based packaging had competitive production costs compared to traditional alternatives, highlighting its long-term cost-effectiveness. This study highlights the potential of sugarcane bagasse as an eco-friendly and biodegradable material for various applications. The results support the viability of sugarcane bagasse-based materials as sustainable alternatives to conventional packaging, offering both economic and environmental advantages. With appropriate processing techniques and further research and development, sugarcane bagasse-based materials may achieve broader adoption. Such advancements can help reduce environmental impact and promote sustainability within the packaging industry.

Keywords: sugarcane bagasse, eco-friendly packaging, biodegradable materials, sustainable packaging, renewable resources

THE EFFICACY OF SCENTED MOTH BALLS CONTAINING PANDANUS AMARYLLIFOLIUS AND BLUMEA BALSAMIFERA TO DETER RATS

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Abstract

Researchers have increasingly explored the use of natural ingredients and reduced chemical content in moth balls to minimize toxicity and improve safety. Scented moth balls containing plant-based components such as Blumea balsamifera, Pandanus amaryllifolius, peppermint oil, and cinnamon oil have gained attention as potential alternatives to conventional camphor-based products. This study aimed to evaluate the efficacy of naturally scented moth balls in deterring rats while reducing the health risks associated with chemical repellents. A true experimental research design was employed in this study. Double boiling was used to melt paraffin wax and formulate scented moth balls infused with natural ingredients. Data were collected to establish a cause-and-effect relationship between the type of moth ball used and its effectiveness in rat deterrence. The subjects were divided into two groups to compare the performance of the experimental natural-scented moth balls with commercially available moth balls. The results indicated that the natural-scented moth balls were safer than commercially available alternatives due to their organic fragrance and absence of toxic chemicals. The scent was milder and did not cause discomfort or irritation, making it safer for human exposure. Overall, the findings showed that natural-scented moth balls provided a safer option compared to commercial moth balls. The study demonstrated that natural-scented moth balls are a safer alternative to commercially sold rat repellents. The absence of harsh chemicals and the use of organic fragrances contributed to improved safety while maintaining effectiveness in deterring rats. These findings support the potential use of plant-based moth balls as an eco-friendly and health-conscious pest control option.

Keywords: blumea balsamifera, pandanus amaryllifolius, peppermint oil, cinnamon oil, natural rat deterrent