

ABSTRACTS OF BEST PAPER WINNERS FROM THE 2ND IPOPHL-DLSU IP AND INNOVATION RESEARCH CONFERENCE

PANEL A: INNOVATIONS IN EDUCATION AND PEDAGOGY I

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A COMPARATIVE ANALYSIS OF STUDENTS' PERCEPTIONS ON LEARNING FABRIC DESIGN 3 (FABDES3): FACE-TO-FACE VS. ONLINE

The education in fashion and textiles is highly progressive, and has evolved throughout the years. At the core of most fashion programs is a focus on high-order thinking and learning by combining analysis and creative problem-solving skills in developing product designs, business marketing plans, and research for innovation to respond to the changing market needs. Traditional course offerings combined lessons in theory with hands-on and studio-based teaching, where textiles, sewing and construction help the students develop their skills in making the actual product they have designed. With the advent of digitization came the rise of online learning which rapidly reformed the education market globally. As a result, more flexible, innovative learning approaches and delivery methods were made. The development of Massive Open Online Courses (MOOC) in the last decade allowed students to rise above regional or financial barriers and to gain access to the best lecturers, curricula and institutions across other countries. Likewise, the teacher's activity is considerably simplified using interactive lessons because the students can manage themselves the existing video resources, becoming independent from the tutor (Ursache, Loghin, Avadanei, Ionesi, Rusu, Dan, Ciobanu, 2016). Although the teaching of textile theory adapted well with the online format, the learning of creative textile manipulations along with sewing skills posed its own specific set of challenges. The goal of this study is to see whether there is a significant difference in students' perceptions of studying the subject Fabric Design 3 (FABDES3) in the Fashion Design and Merchandising Program at De La Salle College of Saint Benilde when the method of instruction changed from face-to-face to online. While nearly all research on supporting and teaching textiles has been conducted in face-to-face settings, it is hoped that this study can contribute to understanding the full potential of teaching and learning textiles online, or possibly in a hybrid mode– a combination of face-to-face and online. This undertaking hopes to further understand future pedagogical design and research efforts in teaching fashion and textile classes, and to create learning opportunities for online, face-to-face, or both applicable to various learning styles. The findings of the study also hope to innovate old teaching methods to adapt to the needs of an industry that is moving towards digitization.

PANEL B: INNOVATIONS IN EDUCATION AND PEDAGOGY II

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ARALINK: ISANG APLIKASYON SA PAG-AARAL NG FILIPINO 7 SA PARAANG MODULAR-DISTANCE LEARNING

Ang pananaliksik na ito ay nakatuon sa pagbuo ng Aralin, isang Educational Mobile Application o EMA na magsisilbing alternatibong kagamitan sa pagtuturo ng asignaturang Filipino sa ilalim ng umiiral na modang Modular Distance Learning o MDL. Nilayon nitong: (1) makabuo ng alternatibo sa malawakang paglilimbag ng mga Self-paced Learning Materials o SLM gamit ang teknolohiyang hindi rin magiging malaki ang pangangailangan sa koneksyon sa internet; (2) mapanumbalik ang kalidad ng pagpapaliwanag ng mga guro sa kanilang mga mag-aaral upang maibsan ang kawalan ng kinakailangang interaksyon; at (3) makapagpapadaloy ng nilalaman ng pag-aaral sa mga SLM at Distance Learning Modules o DLM na hindi mataas ang kahingian para sa kagamitan o device. Iniangkla ang kwadro ng paglikha ng AraLink sa mga simulain ng User Experience Design o UXD, mobile UXD, at pananaw na KISS o “Keep It Short and Simple”. Ipinagamit ang nabuong aplikasyon sa 50 mag-aaral mula sa antas pito, 20 gurong nagtuturo ng Filipino, at 20 eksperto sa information and communications technology o ICT na may kaalaman sa pagbuo ng aplikasyon. Isinagawa ang pag-aaral sa Taguig Integrated School – Junior High School. Ang pagtaya sa AraLink ay gumamit ng sarbey-kwestyuner at serye ng mga birtwal na may tututok na pangkatangan talakayan o focus group discussion (FGD). Naitaguyod ng pag-aaral na ang AraLink ay isang EMA na device-agnostic at mababa ang internet bandwidth requirements. Mapakikinabangan ang mga katangian at nilalaman nito maging sa modang offline. Sanhi nito ay napatunayang solusyon ito sa mahinang koneksyon sa internet na nararanasan ng mga mag-aaral. Natukoy din ang mga affordance ng Aralink ay nagbubunsod ng interaksyon sa pagitan ng guro at mag-aaral na hindi naman kailangang sa aplikasyon mismo nangyayari. Ang mga nilalaman nitong modyul at video lesson ang nagbibigay ng pagkakataon sa mga mag-aaral na matuto sa pansariling pamamaraan o katuwang ang kanilang mga magulang. Lumabas din sa pagsusuri ng pag-aaral na bahagi ng mga affordance ng AraLink ang pagpapanatili lamang ng mga batayang nilalaman upang maiwasan ang kawalan ng pokus sa pagkatuto ng mag-aaral. Matapos ang analisis sa mga datos na nakuha ay nabuo ang sumusunod na mungkahing makakapagpapalawig sa nilalaman at gamit ng AraLink: (1) ang pagbuo at paggamit ng katulad na aplikasyon sa iba pang asignatura sa bawat antas, (2) paglalagay ng mga interaktibong gawain at edukasyunal na laro para sa mas mataas na bersyon, (3) pagdaragdag ng opsyonal na downloading at printing features, (4) pagkakaroon ng bersyon sa iOS, (5) pagdaragdag ng inclusive education affordances para sa mga mag-aaral na mayroong partikular na pangangailangan, at (6) pakikipagtulungan sa lokal na pamahalaan upang magamit ang aplikasyon sa iba pang mga paaralan.

PANEL C: CONTEMPORARY ISSUES IN INNOVATION AND INTELLECTUAL PROPERTY MANAGEMENT

Presenter/s: Mr. Emil John C. Cabrera, Mr. Glenn N. Baticados,
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TOWARDS A ROBUST INTELLECTUAL PROPERTY AND TECHNOLOGY COMMERCIALIZATION PLATFORM AT THE UNIVERSITY OF THE PHILIPPINES LOS BAÑOS (UPLB): THE CASE OF DOST-PCAARRD-FUNDED RESEARCH PROJECTS

An Intellectual Property (IP) audit was conducted among 212 research projects funded by the Department of Science and Technology–Philippine Council for Agriculture, Aquatic, and Natural Resources Research and Development (DOST-PCAARRD) and implemented by the University of the Philippines Los Baños (UPLB) from 2010–2015. A total of 71 (33%) have the IP component only, while 17 (8%) have both IP and technology commercialization (TC) elements. Of the 17 research projects, 12 (71%) have undergone the technology readiness level (TRL) and are included in the 19 technologies funded by DOST-PCAARRD currently being prioritized by Technology Transfer and Business Development Office (TTBDO) for IP Rights (IPRs) protection and TC. Of these technologies, six have on-going licensing agreements with the private sector, and another three are groomed for a spin-off. All nine have undergone Fairness Opinion Board (FOB) examination, while the remaining 10 are in various stages of IP protection and commercialization. A notable surge in patent application occurred in the first three quarters of 2017 when 14 applications representing 33% of the total patent applications in the last 16 years were filed in the Intellectual Property Office of the Philippines. As of 2012, with financial support from local and foreign funding, UPLB has produced more than 200 technologies ranging from agriculture and biotechnology to machinery and postharvest technology plus other allied fields. Included in the list are Sinta Papaya, BIO-N, Mykovam, Virgin Coconut Oil, and Trichoderma. Some of which have reached the international market earning substantial income for the university and its inventors and breeders principally through royalties ranging from 3–10 % of the licensee's gross sales. Additional seven technologies funded by other government funding agencies ripe for commercialization are open to manufacturers, distributors, and research service agreements.

PANEL D: INNOVATIONS IN MATERIAL SCIENCE AND GADGET DESIGN

Presenter/s: Engr. Joseph O. Golingay & Engr. Aljo Habaradas

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OCEAN WAVE ELECTRICITY GENERATOR

Fishing is one of the ways of man to gather food and a means of livelihood to support his family. Fishermen usually go to sea at night and use lights to attract the fishes, wherein the said lights are powered by batteries which could go out anytime leaving the fishermen in darkness with only the moon to shed light on them. Whenever an accident or a swell or freak storm happens during this time the fishermen will be in great peril without any means of signaling the authorities or their families on their whereabouts and location. This problem will be solved by the ocean wave electricity generator which as the name suggests is a device that will be able to generate electric power by utilizing the movement of the waves of the sea. Disclosed is an ocean wave electricity generator that utilizes the movement of the waves to produce electricity and is embodied by a dynamo attached to a shaft driven by a pair of impellers, a piston cylinder with a piston head and a piston rod attached to a floating buoy, a pair of flexible tubes that connects the check valves on top of the piston cylinder to the impeller that is driven by the air produced by the piston head as it is moved up and down by the floating buoy riding the waves. The ocean wave electricity generator will provide renewable energy for the fishermen to power their electronic equipment and gadgets when they are at sea.

PANEL E: INNOVATIONS IN EDUCATION AND PEDAGOGY III

Presenter/s: Mrs. Jenny Rose Segualan Gencianeo

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“TROMPA”: ENHANCING PHONETIC RECOGNITION OF VOWELS IN KINARAY-A THROUGH KANTA, BINALAYBAY AND ISTORYA.

The study aimed to determine the effectiveness of Public Address System in enhancing the phonetic recognition of vowels in Kinaray-a through songs, rhymes and stories at this time of pandemic. Reading is the cornerstone of instruction for all students regardless of their ability level because it sets the foundation for future progress and success virtually of other facets of life. But recently the result of the School Monitoring and Evaluation Assessment showed that the reading levels of the learners in Toog – Tiglawaw Elementary School were in the frustration level. Amidst remediation and improvements in teaching reading, the problem still exist every year. Some of the reasons reported that reading competencies are not mastered because of difficulty in recognizing letters and sounds in the Key Stage 1 of the K to 12 Curriculum (Kindergarten to Grade 3). Understanding that early and systematic instruction in phonics seems to lead to better achievement in reading than later and less systematic instruction (Adams, M. J. 2001), effectiveness of teaching phonics as early as possible in Kindergarten could be of great help. Vowel- sound recognition as part of phonemic awareness provides key knowledge and skills needed for beginning reading. However, phonics should not be the entire reading program, but should be integrated with other elements such as language activities, story time, and singing to create a balanced reading program. In a way, Mother- Tongue based Multi-lingual Education or MTB-MLE, a feature of the Enhanced Basic Education Program, mandates the use of a language that pupils are familiar with (their first language) as medium of instruction to make it easier for young pupils to grasp basic concepts. In addition, there is substantial evidence that phonemic acquisition may be acquired incidentally by reading or listening to oral stories (Elley, 1989). This incidental acquisition of phonological recognition is explained by Krashen (1989) within the context and framework of his “Input Hypothesis.” According to this hypothesis, new and unfamiliar rhythm is acquired when its significance is made clear to the learner. Chen-Hafteck (1997) adopts a similar stance and draws together developmental research in music and language to support this position. She asserts, “Music, language and reading are the ways that humans communicate and express themselves through sound. This study sought to address the lingering challenge of 18 kindergarten learners of Toog-Tiglawaw Elementary School in enhancing their vowel sound recognition through the use of sound song, rhymes and stories in Kinaray- a. This study was conducted from April 23 – July 06, 2020 at Barangay Toog, San Joaquin, Iloilo. The session is conducted every Sunday of the study period at 3:00 to 4:00 in the afternoon. The researcher utilized a validated teacher-made test with indicated scoring range which served as the pretest and posttest. As part of the materials, a compilation of teacher-made songs, rhymes, stories and activity sheets were also used during each session. The learner’s level of sound-letter readiness remarkably changed. The results showed that the 16 kindergarten learners were in the proficient level, which means that they have outstanding phonemic recognition of vowels. While 2 kindergarten learners were in the developing level, which means their phonemic recognition of vowels is in the process of developing. With the positive result of the innovation research, it is highly recommendable that Public Address System can be of great help during this time of pandemic in enhancing the phonetic recognition of vowels in Kinaray-a through songs, rhymes and stories. It also revealed that despite the pandemic, with the absence of face-to-face classes, Public Address System is one way to continue the fight in addressing the problem on reading readiness despite the pandemic.

PANEL F: INNOVATIONS IN MATERIAL SCIENCE AND GADGET DESIGN II

Presenter/s: Mr. Michael Art R. Napoles, Mr. Jephunneh Q. Saldia, Mr. Jonathan V. Genayas, Mr. Richan P. Recla, & Ms. Noreen V. Dagohoy

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OSEDRATO CASE: ORGANIZED SET OF DRAFTING TOOLS

This research will differentiate an idea of innovation and an issue concerning disorganized tools. The purpose of this study is to produce an innovative product called Organize Set of Drafting Tools Case or OSERATO Case. The case is ergonomic and can store all the important drafting tools. This study also focuses to determine its durability, comfortability, ductility, quality, features, and design for both students and teachers. A descriptive method of research was utilized employing both qualitative and quantitative approaches. There were 50 students randomly selected to participate, test, and evaluate the product from MSU-IIT and MSU-Marawi. The results show that majority of the respondents have strongly agreed that the researcher's product is published. It is clear to the respondents of the case states that the use, style, ergonomic, washable, and durable features of the case are proven effective making the product achieve its goal to lessen the stress of architectural-related individuals and providing them efficiency. The features and designs of the product in our plan are more attractive and unique, but the product that is being used in the survey as a model is made locally, and all the features and designs in our plan are not being executed properly. And somehow it becomes the reason why the evaluation of the product in terms of its features and designs has negative feedback.

PANEL G: INNOVATIONS IN AGRICULTURE AND AGRICULTURAL PRODUCTS

Presenter/s: Ms. Ericka Elaine Diputado, Ms. Shauna E. Tifora, & Ms. Anjeli L. Mecedo

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PROJECT WWW: A MULTIFUNCTIONAL WASTE-WATER WEB FOR AGROBOTICS

With the human population expecting to reach about 9 billion in 2050, water supplies will then be low, facing the current generation with a challenge to be smart with the most precious natural resource that humans have. The aim of Project WWW is to be able to build a multifunctional system that makes use of sensors, Internet-of-Things (IoT), and Artificial Intelligence (AI) to aid in monitoring and filtering wastewater to ensure a safe quality of water to be used in irrigation of agricultural land. A prototype was created using the Arduino and Raspberry Pi environment consisting of three tiers—an IoT-based real-time monitoring system with lead, pH, color, and turbidity sensors, with features that include facial and object detection; filtering wastewater with both biological and physical filters; and a systemic automated irrigation system with sensors to detect a crop's needs. Four wastewater setups were determined— domestic wastewater, lead- contaminated wastewater, samples from Banica River, and Okoy River. The prototype was tested for a total of 8 trials, with 36 hours per setup (24 hours for biological filtration, 12 hours of physical filtration). Data were then collected and analyzed, with results of a 99.95% accuracy for the lead sensor, and with 95% confidence, researchers concluded that there is a significant difference between the initial and final values of RGB, pH, turbidity, and lead content from all the water samples in all 4 setups. In the end, Project WWW is a multifunctional feasible device for monitoring, filtering, and irrigation.

PANEL H: INNOVATIONS IN PROCESSES

Presenter/s: Mr. Fernando Balatoc Pili Jr.

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EMPATHY ON THE EONGOT INDIGENOUS KNOWLEDGE AND PRACTICES: THE REALIZATION OF AN INNOVATION TRIAD

There is still a dubious perception on the preservation of cultural knowledge and practices and an imminent concept amidst the world of technological advancements despite the impulse of laws to value traditional knowledge as a source and prodigious advantage that remunerates all of mankind. In the context of the Municipality of Maria Aurora, Philippines, the limited references (of any form) endure; and, assuming for little interest in the documentation, collection, and publication. The subsequent serves as the groundwork of this qualitative research- to investigate Egongot- Indigenous Knowledge and Practices System, using MADs approach, purposive sampling technique, structured interview, consent form, and thematic coding and analysis to realize innovation. It has found evidence that stakeholders as an element of the curriculum such as the IP community, parents, the learners and the school's provisions also play significant and interrelated roles in the success of the learning environment. Besides, sources of curriculum design can be similar to a person's philosophy, the design and concept. Learners are considered as source, meaning there is a need for student-centered learning and activities, and they are expected to interact with the curriculum and its community since it was considered to possess a vital role and must include collaboration. There reflected the diversity and challenges of human life as present in ethnicity, culture and social class even in the field of education. This philosophy on inclusivity was drawn to have a culture-sensitive learning environment where the IP community can contribute to the preservation and publication of the unpublished cultural and indigenous forms of values orientation and practices, written, oral, visual, skilled or performed arts, health practices, and economy and livelihood. It has the ideas to create a school year ender activity and produce a Cultural Treasure Hall where indigenous history, practices, beliefs, customs, traditions, literature and music, handicrafts, accessories, clothing, artworks, and dances will be written in books, digital platforms and other activities like exhibits or fashion shows. The principle of education and inclusivity was highlighted in the study and innovation as it imbibes the necessity of each student and how the learners can keep the inclusive identity and legacy through an innovation triad- educational institution, Local Government Unit and Indigenous Peoples' Community.