President Message

On behalf of Rajamangala University of Technology Thanyaburi and RAVTE, it is my great pleasures to welcome you most cordially in the 5th International Conference on Innovative Education and Technology (ICIET 2020).

I would like to express my appreciation to our distinguished keynote speakers for giving us special lectures, updating us about the latest trends on technology, innovation and educational change today to provide us broader range of advance skills that something we can teach to our students. For them to be able to learn more effectively and equip them with skills when they enter the workforce.

Furthermore, Technology integration truly is an international partnership. In the knowledge economy and information society, teachers and students need to be able to search for, analyze and manage huge amount of information; they also must be able to use that information to solve complex problems and create new knowledge and cultural products. Therefore, the application of information communication technology on innovative education to manage information and solve problem is an important set of skills. Also, various applications of information technology can support the pedagogical changes that are needed to implement new curricular visions.

Subsequently, this colloquium marks another important step in enhancing updated current development trends in the world on how technology dominates every aspect of education and innovation in the digital economy including online learning management and social networking community. Digital economy has a direct impact on our educational systems. This poses a serious challenge to educators around the globe to develop the state-of-the-art learning innovations.

I strongly admit that “Learning innovation is the most powerful tool for every level of education in the digital age”

Finally, I would like to take this opportunity to express my sincere appreciation to all the distinguished keynote speakers, distinguished guests and participants for their valuable contributions that make this conference successful. May I also express my sincere thanks to the Faculty of Technical Education and Universitas Pendidikan Indonesia (UPI) for hosting this event.

My warmest welcome and regards to all.

Asst.Prof.Dr.Sommai Pivsa-art
President, Rajamangala University of Technology Thanyaburi
President, RAVTE
السلام عليكم ورحمه الله وبركاته

and Sincere Greetings to All,

It is my pleasure to welcome all of you to the 5th International Conference on Innovative Education and Technology (5th ICIET 2020). I would also like to congratulate the Faculty of Technical, Rajamangala University of Technology Thanyaburi, Pathum Thani, Thailand for the great efforts in planning and organizing this conference.

ICET is one of the platforms to build a global network, improve collaboration and initiate sharing of ideas in research with the aim to improve the quality of education, mainly on Innovative Education and Technology (ICET) and other related issues in education.

Malaysia has embarked on various initiatives to propel the country towards its goal of becoming a high income nation and developed economy by 2020. The cornerstone of this aspiration is the availability of highly skilled human capital. In this context, ICET plays a pivotal role in providing skilled workforce to fit the demand for the country’s economic transformation.

The Tenth Malaysia Plan (RMK-10) for the period from 2011 to 2015 showed a significant change in the system of education and technical and Vocational Training in Malaysia. The goal is to provide creative, innovative and skilled human capital in the 21st century towards the economic prospects of the plan and the strategic direction of the country. Pool of ideas and strategies on the basis of achievement and improvement in foreign countries such as Korea and Germany as well as the results of research that have been done by scholars in the country will be able to propel Malaysia to continue to stride forward to compete in the global market. Hence, this conference, provides an opportunity for students and participant in particular to discover their creative and innovative talents in the world of research and sharing of knowledge in order to contribute to the development of academic, social and economic situations. This is also a platform for the university in the country to find creative solutions for improvement in technical and vocational education and training in Malaysia. The results presented in the conference should be used as a reference for continuous improvement in TVET. That is to say, this should not be a mere paper presentation.

Therefore, this conference is an opportunity for academicians from local and international institutes of higher education, postgraduate and undergraduate students from various disciplines in ICET to present, share, exchange opinion and discuss research ideas to promote Innovative Education and Technology. As co-organiser, this conference is one of the significant contributions of Rajamangala University of Technology Thanyaburi, Thailand in ensuring that the national agenda to become a high income country will be a success.

I sincerely hope that this conference will achieve its objectives in providing a platform for researchers in ICET to share research findings, knowledge and latest development in ICET. Thank you.

Prof. Datuk Ir. Dr. Wahid bin Omar
FOREWORD OF THE RECTOR OF UNIVERSITAS PENDIDIKAN INDONESIA

First and foremost, let us praise to Allah, the almighty and the most merciful God, for His love and affection so we can be together present in this occasion, the 5th International Conference on Innovative Education and Technology (ICIET) 2020.

As the Rector of Universitas Pendidikan Indonesia (Indonesia University of Education), I would like to welcome all invited speakers, distinguished guests and presenters as well as honorable all participants of the International Conference on Innovative Education and Technology (ICIET) 2020.

Universitas Pendidikan Indonesia (UPI) with its vision to be a leading and outstanding university in education, is committed to encourage all the members to create academic atmosphere and develop academic activities to realize the vision as well as the mission of UPI through integrating knowledge and skill across various fields and activities, either individually or collaboratively.

In this occasion, I would like to congratulate all of you and let you know that I get a great honour to extend to all of you a very warm welcome to the joint conference with RMUTT Thailand, UPI Indonesia, UTM Malaysia and National Pingtung University of China.

Since 2017 UPI has formed a partnership with this conference. I would like to thank RMUTT for choosing UPI to be the co-host of the conference.

UPI is a member of the Regional Association for Vocational Teacher Education in Asia (RAVTE), so this collaboration cemented the university's role in the development of TVET. It is an opportune time for all of us to renew contacts and discuss problems of mutual interest in the field of Technical and Vocational Education and Training, Innovation and Engineering Education, Social Sciences and Humanities, General and Applied Sciences, Educational Pedagogy and Methodology with fellows across the globe.

I am pleased that as a part of the joint conference series, this conference has successfully brought together actors of the global TVET sector for exchange of knowledge and examples of good practice of collaboration in TVET at all levels. We all are proud that having done so and this conference has been a role model for other conferences.

Finally, I would like to express our heartfelt thanks to the Scientific and Organizing Committee for enabling this to take place and to everybody who comes to this conference. To all the participants, please enjoy the valuable occasion. I wish we will have a very productive and successful conference.

Thank you.

Rector of UPI,
Prof. Dr. M. Solehuddin M.Pd., M.A
Message from President of National Pingtung University, Taiwan

On behalf of National Pingtung University, I sincerely congratulate all the participants on successfully contributing expertise in different fields in International Conference on Innovative Education and Technology 2020 (ICIET 2020). Especially, I would like to thank the host university who makes a lot of efforts to organize this excellent event to let outstanding scholars from many places joining together under pandemic condition. I hope this conference makes every participant an unforgettable time. I strongly believe that our closed collaboration make the conference prosperous and may the result extend to your university, faculty members and students.

Once again, I wish our friendship through this event last forever. Congratulation to everyone and welcome to NPTU, Taiwan.

Professor Dr. Mike Y. K. Guu
President of National Pingtung University
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Original Article

Dry Anaerobic Digestion from Sweet Corn Waste in Chiang Mai Province of Thailand

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Abstract

This research aims to study the biogas production from sweet corn waste (i.e. corn cobs, corn husks, and corn seeds) using a pilot-scale complete stirred tank reactor. The reactor was operated as dry anaerobic digestion in an ambient temperature. The mixing and recirculating intervals were set to be non-mixing, and mixing for 10 minutes every 3, 6 and 12 h. The initial total solid (TS) of the feedstock was 25%, and hydraulic retention time was 30 days. The results showed that, at the mixing and recirculation every 3 h, the highest removal efficiencies of COD, TS and VS were 83.33%, 61.58% and 62.77%, respectively. The specific methane yield was 0.771 liters CH₄/g VS added. The ⁵th degree polynomial regression prediction equation could effectively match with the experimental data with R² of 0.998. The unit price of LPG produced from the anaerobic dry fermentation of the sweet corn wastes was 0.61 USD/kg LPG.

Keywords: Biogas, Dry Anaerobic Digestion, Sweet Corn Waste, Mixing and Recirculation Rate, LPG Cost Per Unit
An Analysis of Student Tech Competencies at a Japanese University

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Abstract - Technology is an integrated facet of modern life, and an intuitive experience for many modern learners (Oblinger & Oblinger, 2005). However, the degree to which this applies in education contexts is debateable. This presentation reports on the preliminary findings of the first stage of a multi-phase study examining tech competencies of Japanese university students. The project as a whole will examine how students, during their four years at Asia University (ASIA), advance through the process of developing and proving competence. The initial phase of the study utilizes a self-assessment tech competency tool with students across multiple levels and departments at ASIA to determine proficiency with digital tools (Margaryan, Littlejohn, & Vojt, 2011). The collated data will inform the design of the next phase of the study; the creation of competency developing modules to address the most salient technological competency weaknesses emerging from the data. The initial phase asks four fundamental questions, from which correlations can be extrapolated:

1. What technologies are students using in their personal lives?
2. What technologies are students using for learning?
3. What technologies do students consider important for learning?
4. What degree of competency do students perceive they have in using various forms of technology?

Keywords - Digital Literacy, CALL, Technology and Education
Effect of Multimedia Lesson with Blended Learning for Grade 4 Students

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Abstract—The purposes of this research were; 1) created the blended learning lesson plan for Grade 4 students, 2) finding out the efficiency of the multimedia lesson, 3) compare the pretest and posttest of learning achievement result with blended learning and 4) finding out the effective index of the student's learning. The samples did were 30 students in Innovation Demonstration School of Rajamangala University of Technology Thanyaburi (RMUTT), Pathum Thani, Thailand who studying in the subject of social study religion and culture in the second term of the 2019 academic year by using the simple random sampling with cast lots method. The instruments used in this research are the Blended learning lesson, learning outcome test. This research is the quasi-experiment research using the pretest-posttest one group design. The data analyses were E1/E2, mean, standard deviation and t-test dependent.

The result of research showed that; 1) the efficiency of the multimedia lesson by the 80/80 standards had 83.95/85.57, 2) the learning achievement of students by using the blended learning lesson posttest higher than pretest had significantly 0.05 levels and 3) the effective index of this student's learning had 0.59 or 59 percent.

Keywords—Blended learning, Multimedia lesson
The Recognition of Hotel Staffs in Pursuit of the Imposed ASEAN Common Competency Standards for Tourism Professionals (ACCSTP)

Arunroj Pwongsuwan
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Abstract—The study on the recognition of hotel staff in pursuit of the imposed ASEAN Common Competency Standards for Tourism Professionals (ACCSTP) in 2015 aimed to broaden the perspective on the supporting of labor mobility in travel-related services, especially in hotel and service industries whose priority lay within the free labor market competition amongst the ASEAN members. The observation was done in 2015 for one year. This also included setting an approach to the development of tourism service labor which relatively increased as a result of the growth of the regional tourism market. The study was conducted for the purpose of 1.) studying the planning on human resources management in hotel business and service labor in Chiang Mai following the imposing of the ASEAN Common Competency Standards for Tourism Professionals (ACCSTP) in 2015. 2.) developing the preparations for hotel business and service labor in Chiang Mai following the imposing of the ASEAN Common Competency Standards for Tourism Professionals (ACCSTP) in 2015.

The study adopted a research and development model using questionnaires asking staff in hotel business about the performance standards in other departments including front office, housekeeping, food and beverage, kitchen. The questions were also given to students from universities to score as in scale. The samples included 181 hotels staff.

The findings suggested that hotel business had recognized the Mutual Recognition Agreement on professional qualifications. Executives were positions involved in planning for human resources management in Chiang Mai hotel and service industries at the highest level (Mean = 4.67, SD = 66.28). The recognition of planning human resources management in Chiang Mai hotel and service industries following the imposing of the ASEAN Common Competency Standards for Tourism Professionals (ACCSTP), was rated moderate (Mean = 2.81, SD = 44.17). The recognition of ASEAN Common Competency Standards for Tourism Professionals was rated excellent (Mean = 4.66, SD = 59.08).

Keywords—ASEAN Common Competency Standards for Tourism Professionals (ACCSTP), Hotel Staffs, Labor Mobility
Alleviation of Cheating in English Academic Writing Exams Using a Developed Tracking Application

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Abstract—Examinations play an important role in the teaching/learning processes to measure students’ learning outcomes. Today, to comply with the social distancing policy, it has become a big concern for organizing the test online when the students are asked to take a test and submit an answer online. Occasionally, it is likely that students may conduct cheating during the online tests, particularly when no proctor is executed. Submission of exam answers through electronic files may create opportunity for the students to help one another or obtain the answers from the Internet. Therefore, the detection and prevention are needed to monitor the testing process to ensure that the examinations really measure the students’ competence. Educational credentials must show actual students’ knowledge to retain their academic value to society. This work proposed a method to develop an application that can assist instructors in detecting the students’ misconduct when taking academic writing tests. To achieve this, the time spent on writing each part and the content of an essay can be tracked. This method can also be used to fulfill other methods using devices such as webcams and microphones. The information the students typed was kept during exam. Each student was requested to submit not only the answer file, but also the encrypted file recording how the students wrote the answer. Finally, the answer file and the encrypted file were checked by the instructors and then the score was given based on the answer file or both of them.

Keywords—academic writing; cheating; examination; tracking exam answering
Living Between Two Worlds: A Systematic Review of Twice Exceptional Learners

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Abstract

Twice exceptional learners are an extremely unique and rare population. They are students who possess both extraordinary ability in one or more areas and show disability in one or more areas simultaneously. Despite their high potential, twice exceptional students have difficulties in areas such as socio-emotional development (as seen in students with autistic spectrum disorder or ASD), adaptive behaviors (as seen in students with attention deficit hyperactivity disorder or ADHD) and learning skills (as seen in students with specific learning disability or SLD). As such, they are caught in the middle of the world of “giftedness” and the world of “disability”; yet numerous studies have found that twice exceptional students neither felt belong in the former nor the latter world. Using systematic reviews as research methodology, this study aimed to identify emerging themes from empirical studies on gifted students with specific learning disabilities (SLD). Upon reviewing empirical research published in databases (i.e., SCOPUS, PsycINFO, ERIC JSTOR and Web of Science) from 2010 to 2019, thirty-seven studies were found to meet the selection criteria. Themes, such as alternative identification instruments and procedures, effective teaching strategies, life experiences and challenges faced by the students and their parents and psycho-social support from teachers, parents and counsellors, have been identified. Implications for practice and emerging trends in twice exceptionality were discussed.

Keywords – twice exceptional learners; twice exceptionality; gifted students; learning disabilities

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Interactive Reading to L2 Reading Ability

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Abstract—

The present study extends this line of research by implementing the use of an interactive reading process in the 21st reading classroom. A set of questions based on Kolker’s (1979) affective, cognitive, and linguistic behaviors of reading interactive factors were displayed on padlet. Pubhtml5 was employed to give the samples of the narrative, expository, and argumentative essays to L2 learners. The findings reveal that the greater the degree of pre-test and post-test is, the more learners’ reading ability becomes significant. Paradoxically, L2 students have been challenged to comprehend English passages with translation, at odds with the process of raising and replying questions to comprehend the passage. The findings shed light on how L2 learners, interacting with teachers through padlet, can comprehend English passages. It may conclude that the process of interactive reading could afford L2 learners’ reading ability.

Keywords—interactive reading; padlet; reading ability; raising and replying questions
Thai University Students’ Perceptions towards the Abrupt Transition to ‘Forced’ Online Learning in the COVID-19 Situation

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Abstract— After the novel COVID-19 begun its global assaults, universities in Thailand have suddenly shifted their face-to-face classrooms into forced 100% online learning. Moving the normal classes with physical attendance to the cloud classes can be challenging for students. However, students’ perceptions towards online learning as a sudden shift have been overlooked. To fill this void in the literature, this study explores the Thai university students’ perceptions towards the sudden change to online learning. This study espoused a mixed-methods approach to achieve research questions. After 7 weeks of online learning, a questionnaire was distributed to 310 Thai university students by snowball sampling, and the follow-up interview was randomly conducted with 15 students who granted consent to take part in the interview session to gain insights on the particular issues. Findings revealed that the majority of students preferred face-to-face classrooms to online learning and most of them are not willing to learn online in the future. However, most of the students believed that their instructors were willing to provide them with some assistance and useful feedback during the period of “forced” online learning. The findings provide important implications for instructors and teachers when it comes to online learning and teaching in a similar context.

Keywords— online learning; students’ perceptions; COVID-19; Thai university students
Community Accounting: Model of Providing Academic Services of Accounting Program to Develop Instructional Packages Workshop for Ban Wan Community, Nam Kham Sub-district, Mueang District, Sisaket Province

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Abstract—The research of Community Accounting: Model of Providing Academic Services of Accounting Program to Develop Instructional Packages Workshop for Ban Wan Community, Nam Kham Sub-district, Mueang District, Sisaket Province aimed to 1) study model and process of providing academic services to community on accounting aspect and 2) study the participants' satisfaction in accounting workshop. The population were members of the religious and cultural tourism villages living in Ban Wan Community, Nam Kham Sub-district, Mueang District, Sisaket Province. The findings revealed that the instructional packages of community accounting conforming to the needs of the Ban Wan Community were obtained for the Accounting Program. They were created from understanding and learning of the community and were practical and easily understandable as needed. The model and process of providing academic services on community accounting conforming to the needs of the Ban Wan Community consisted of 2 models: 1) Model 1: The integration of knowledge gained from academic services with related courses and 2) Model 2: The integration of related courses with knowledge of academic services to train students how to be able to transfer knowledge of accounting by themselves.

Keywords—Community Accounting; Academic Services; Accounting; Model
The English Development Project for Monks and Novices by Utilizing Communicative Approach

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Abstract—English is an official language used as a working language for Association of Southeast Asian Nations or ASEAN. Since Thailand participated in ASEAN, English has been important for communication in daily life of Thais. It also involves all aspects of life including religion. Because of the importance of English, Western Department, Faculty of Liberal Arts, Rajamangala University of Technology Thanyaburi aimed to organize the English development project for monks and novices by utilizing communicative approach. There were two main objectives including 1) to establish a positive attitude towards participants and train participants comprising of monks, and novices to communicate; and 2) to improve participants’ English skills for religious tourism. The participants comprised 190 monks and novices joining the project on April 17, 2019. As for the procedures, participants were divided into five groups. Every groups studied with both Thai and foreign teachers when they were rotated from a topic to another topic: greeting, telling dates and time, making requests, describing things, and telling directions. The instrument for data collection used in this project was a questionnaire. The result was useful to the participants. The percentage of a positive attitude towards English increased to 82.35, whereas the percentage of English improvement increased to 90.20. Furthermore, the participants felt confident in speaking English, and they were able to transfer English knowledge to others.

Keywords—the English development project; Monks and Novices; Communicative Approach
Online Collaborative Learning Communities (OCLCs): Pathways to Promote Teachers’ Professional Development in Transformative Educational System

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Abstract—With the dramatic and utmost advancement in a new paradigm shift of education, there is inevitably noticed that instructional designers (IDs) prioritize their professional development to help students gain their academic achievement and pursue their professional goals. Apart from that, technology, especially online learning, appears to play an important role to facilitate learning and becomes one of the popular ways to deliver instruction at any level of education with the flexibility to access anytime anywhere. With this ultimate goal, it is to bring IDs learning together rather than isolating them. This makes OCLCs begin. The purpose of this study was to enrich OCLCs for promoting teachers’ professional development in a transformative educational system. The instruments used for this study were Self-Evaluation, Peer Evaluation, and In-depth Interviews. The results of this study found that OCLCs can help enriching IDs to pursue their professional development based on three key constructs: interactivity, social context, and technologies proposed by Tu & Corry (2002). For interactivity, IDs were found enthusiastic to express their opinions with their peers. They shared their knowledge, narrated their own experiences, and inspired each other. Next was social context. IDs learned how to manage their group. They selected one representative to act as a leader to manage the group and played respect to each other. Apart from that, they shared similar goals, interests, and experiences with others. Last but not least, technologies, they were comfortable to employ technologies to deliver knowledge, interests, and experiences for stimulating their knowledge development.

Keywords—OCLCs; Teachers’ Professional Development; Transformative Educational System
Study of Thai Cha-Nee Durian Investigation with Reflection Mode Measurement using Low-Profile Microwave Probes

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Abstract— This paper proposes an investigation of Thai Cha-Nee durian maturity with reflection mode measurement using low-profile microwave probes. The microwave probes studied in our research including rectangular-shaped, pencil-shaped and dipole-pattern were made of a FR4 laminate having specifications as follows; dielectric constant ($\varepsilon_r$) = 4.4, dissipation factor (tan $\delta$) = 0.04, substrate thickness (h) = 1.2 mm, and copper thickness (t) = 0.035 mm. Where the operation frequency was designed at 3.2 GHz, which might not be interfered by any commercial wireless bands. In particular, the measurement distance between probe and durian shell must less than 1 cm for rectangular-shaped and pencil-shaped probes, while the measurement distance of dipole pattern probe must be 2 cm, due to reactive and radiative near-fields. In our experiments, durian maturity was classified by index of reflected wave (R); index of young durian < 1, index of semi-matured durian = 1, index of matured durian > 1.24.

Keywords— durian maturity; fruit quality; microwave probes
Effects of Internal Control System on Performance of Local Governments in Sisaket province

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Abstract—The research of Effects of Internal Control System on Performance of Local Governments in Sisaket Province aimed to study was to examine effects of internal control system of local governments in Sisaket province. The internal control system was an independent variables that include of control environment, risk assessment, control activities, information and communications, monitoring. And the performance was as dependent variables that consist of operational efficiency and effectiveness, financial report reliability and compliance with applicable laws and regulations. Questionnaires were used as a tool for collecting data. The sample of this study were 40 local governments replied by the respondents were received 80 mail, respond rate 100%. The analysis of data used descriptive statistic and multiple regression. The result of the research shown five components of internal control system monitoring, control activities, information and communications, control environment and risk assessment there is a positive significant an effects of internal control system on performance of local governments in Sisaket (p<0.01)

Keywords — Internal Control; Internal and Internal Audit; Accounting; Local governments
Predicting entry-level salary
A machine learning approach

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Abstract—The problem of low wages for young people is serious in Taiwan. Real starting salaries have fallen over the past few years. Most students expect a college education to equip them with professional skills for better salaries. However, university students have started to doubt that higher education can improve their competitiveness in the job market. Using data from the 2019 survey of recent college graduates, this study developed a computational model based on Logistic regression, SVM and decision forest models to predict entry level salary. A sample of 760 recent graduates, from a university in Taiwan, participated in this study.

The results implied that the number of credits taken, profession certificates and match, job satisfaction, academic performance, English ability, gender and social network were significantly associated with the salaries at career entry. Results also indicated the predictive model show a good performance in predicting students' entry level salaries. All performance metrics were similar across methods. The logistic regression algorithm was the best algorithm (AUC 0.74). The results demonstrate effectiveness and usability of the methodology. This study contributed to provide a model to evaluate student’s characteristics and to outline recommendations in University strategy.

Keywords—Entry level salary; Machine learning; Predict model
Analysis of Errors in Paragraph Writings of Thai EFL Students

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Abstract—This study aims at investigating grammatical errors in 60 paragraphs written by 30 second-year English major students. The purpose of this study is to investigate common errors in paragraph writings produced by English major students. The five most common errors in the paragraphs were: punctuation (P), unnecessary word use (X), wrong word use (WW), capitalization (CAP) and spelling (SP). After analyzing the results of the paragraphs, the 16 grammar chapters were revealed in the analysis. It was apparent that the outcomes of the study emphasize grammatical errors from the learners in order to enhance distinct improvement in the learners’ achievements. This study utilizes grammatical errors analysis as a pedagogical tool for helping English language beginners. It can reduce the difficulties of paragraph writings. It can be applied to improve writing lessons for graduate students as well.

Keywords—analysis of errors; paragraph writings; Thai EFL learners
Exploring of Grade 10 Mathematical Problem-Solving Strategies Using Open-Ended Problem

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Abstract

This research aimed to explore students’ mathematical problem-solving strategies (Posamentier & Krulik, 1998) on exponential functions. Which uses a qualitative research methodology focusing on protocol analysis and analytic description. The participants were forty-five grade 10 students from Sarakham Pittayakom School, worked on activities that focus on solving problems using 5 open-ended problems about exponential functions. The data was analyzed which including; the protocol obtained from video and audio, the written information, and field notes of each group of students throughout the 5 activities. The results revealed that mathematical problem-solving strategies that students use to solve problems in all 5 activities were; finding a pattern, students used this strategy to find the relation of the given problems. It was also found that students used some strategies to solve the problem such as drawing a picture or writing a diagram to find the correlation of information given in the problem situation. Guessing and testing strategy to make a prediction about the solution to the problem. Working backward, students considered the solution of the problem from reversing to the cause of the problem. Logical reasoning, the student used this strategy to test their prediction and used this reasoning for the foundation in solving other problems.

Keywords— problem-solving, mathematical problem-solving strategies, open-ended problem
An Investigation the Process of Abstraction from Embodiment to Symbolism World in 11th Grade Classroom Using Open Approach

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ABSTRACT

The purpose of this research is to investigate the process of abstraction from embodiment to the symbolism world in the 11th-grade classroom using open approach. The target group was forty-four 11th grade in Sarakhampittayakhom School during 2020, the researcher had worked as an intern at the school for a year and used open approach according to Inprasitha’s idea (2011) as a teaching method. This research collected data through teaching with open approach. The data was analyzed include protocols of student’s problem solving, field notes, student worksheets. Analysis of the collected data was done employing protocol analysis and analytic description. The research methodology was divided into two sections as follows.

1. To study the elements of the abstract process based on the concept of Skemp (1971; 1987)
2. To study the steps of abstract processes based on the concept of Tall & Isoda (2007).

It was found that in the step of perception, students used some materials to help them made better understand problem situations. On the action step, students began to embody the world by working with concrete media and used it to get a solution to problems, and then made progress to a more mathematically symbolism. On the last step (refection), students conceptualized mathematics concepts employing using the various method in solving problems.

Keywords—Abstraction Process, Embodiment, Symbolism World, Open Approach
Important characteristics of Buddhist monk as the moral teacher
: A Case study in Patumthani Province, Thailand

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ABSTRACT
Thailand declared an educational innovation area as a new policy to improve achievement of the students that every province must drive all provincial educational organizations to support the new policy. The temples are the one of important factor to support educational innovation plan because there are many of the moral teacher to teach the students in each school, but they do not know about the important characteristics to support the plan. There is no research about their important characteristics as the moral teacher to point the new direction to support the Patumthani educational innovation plan. This research consisted of qualitative and quantitative data collection, aim to find out of the important characteristics of Buddhist monks as the moral teacher to support the Patumthani educational innovation plan. The data triangulation method was used for data collection. The first method is qualitative data collection, divided in to 2 steps, 1) Executive in-depth interview technique with temple administrative committee by Purposive Sampling method. 2) Participatory data collection by the researcher to ordained as the Buddhist monk for 15 days. The second method is quantitative data collection was used in step 3, the sample are 26 Buddhist monks as the moral teacher in the temple of Patumthani province by Purposive Sampling method. Content analysis and Exploratory Factor Analysis (EFA) were used for data interpreted. The research result Shawn that, Buddhist monk as the moral teacher must have 9 important characteristics consist: 1) Media Developer 2) Learning Environment Manager 3) Researcher 4) Basic Educator 5) Basic Engineer 6) Temple Manager 7) Social counselor 8) Knowledge Integrator and 9) ICT user.

Keyword: Moral Teacher, Buddhist Monk, Moral Teacher characteristics, Educational innovation, Triangulation method
Investigating Vocabulary Size and Depth of English-Major Students at a Thai University

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Abstract—The present paper investigated two dimensions of English vocabulary knowledge: vocabulary size and depth of 41 English-major students at Rajamagala University of Technology Isan, Surin Campus. The Vocabulary Level Test (VLT) Version 2 and the Depth of Vocabulary Knowledge Test (DVK) of 2000 – 3000 word level were the main instruments of the present study. Results of the test revealed that the average vocabulary knowledge of the participants were moderate, while their depth of vocabulary knowledge was in fair. Moreover, the results suggested that there was a significant moderate relationship between students’ vocabulary knowledge and depth of vocabulary knowledge ($r = .45$), predicting the connection between the two variables to some extent.

Keywords—vocabulary size; vocabulary breadth and depth; vocabulary level test
Effectiveness Evaluation of Fluorescein Sodium as Fluorescent Tracer in Shaly-Sandstone Reservoir

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Abstract— Fluorescein sodium (FluNa), one of the most widespread fluorescent tracers used in petroleum and geothermal applications, is an organic xanthene-derivative fluorochrome and available in the form of crimson powder. It absorbs light in the blue spectrum and emits light in the green-yellow spectrum. In this study, static and dynamic investigations of FluNa solution with shaly-sandstone were performed. FluNa solutions were stirred with untreated and treated shaly-sandstone powders for six hours at room conditions. This test showed that the effects of shaly-sandstone itself was significantly stronger than the effects of hydrocarbon and/or drilling fluids. At 1-ppb FluNa concentration, fluorescence detection was completely disturbed by the effect of shaly-sandstone, and this effect was diminished as FluNa concentration increased and stopped at the concentration of 100 ppm. As the concentration increased above 100 ppm, FluNa adsorption onto shaly-sandstone could be observed. Next, coreflooding system was used to perform a flow test of FluNa solution through shaly-sandstone core sample with an injection rate of 0.5 cm³/min at 26°C. Breakthrough time of 1-ppb FluNa solution was almost identical to ideal breakthrough time of any liquid flowing through the core sample, whereas breakthrough times of 100-ppb and 1-ppm FluNa solution was 10 min longer than that of 1-ppb solution due to FluNa diffusion into irreducible water of the core sample and FluNa adsorption onto shaly-sandstone. Interestingly, the presence of salts could amplify fluorescence intensity. At FluNa concentration of 500-ppt with salts, its maximum intensity was almost the same as that of 1-ppb FluNa solution without salt, meaning that 500-ppt FluNa concentration could still be detected in the presence of shaly-sandstone. Therefore, appropriate FluNa concentration used in the pilot project could be in a range of 500 ppt to 1 ppb depending to the type of made-up water.

Keywords— Fluorescein sodium; Shaly-sandstone; Clay; Salt; Coreflooding system
Factors affecting the participation of people in community resources management

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Abstract—One of important element helped leading to community development as planed was allowing chance for all sections and all people to participate in the administration of their community within the scope of their duties. This article aims at studying factors affecting the participation of people in community resources management at Chuea Phloeng sub district, Prasart district, Surin province. The data was collected through 381 sets of questionnaires. The data analysis was made to find means and standard deviation. The internal and external factors affecting the participation of people in community resources management was analyzed with Pearson's Product Moment Correlation Analysis. The analysis for the influence of the Independent Variables was made with Multiple Linear Regression. The result found that the internal factors affecting the participation of people in community resources management were the public awareness of the leader and community and the family leader supports which showed the highest rate of relationship to the factor of the society benefits and benefit management in a concrete idea. For the external factors, it found that the motivation in resource management of the community leader and the community to create the highest participation responded to the factor of expectation of people to gain benefits from the resource management.

Keywords— participation, community resource, community leader, public awareness
Generic Green Skills: What Do Employers Anticipate From Prospective Employees?

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Abstract—Employees are the most precious asset for employer. Their significant contributions toward industry’s development are undisputable. Hence, this study is accomplished to look at what do employers anticipate from the prospective employees with regard to their generic green skills. A mixed method comprising of qualitative and quantitative approaches were adopted. A total of 85 respondents of training and recruitment officers and senior supervisors, which represented staff from middle-level management, from 48 industries on the west coast of Peninsular Malaysia were involved in this study. Semi-structured open-ended interview protocol and questionnaire were used as the research instruments of the study. Qualitative data were analyzed using thematic analysis while quantitative data by utilizing SPSS software version 22. There are four core clusters which comprised of 10 generic green skills required by prospective employees to enable them to be employed in the green technology industry. To support green economic success, research on generic green skills among industry workers, be it on product manufacturing based or service oriented, should be increased and strengthened.

Keywords—Generic Green Skills; Green Technology Industry; Sustainable Development
STRATEGIC COLLABORATION FRAMEWORK BETWEEN VOCATIONAL COLLEGES AND AUTOMOTIVE INDUSTRY IN PENINSULAR MALAYSIA

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Abstract— The purpose of this study is to investigate the main construct and sub construct in formation strategic collaboration between vocational college with the automotive industry. The purpose of this study also is to identify the appropriate field in the implementation of strategic collaboration between vocational colleges and the automotive industry which ultimately becomes the best practice of strategic field in a collaboration in Malaysia. The objective of this study is to identify the main constructs and sub constructs in forming the strategic collaboration between vocational college and automotive industry. Three (3) research questions have been develop to answering the research objectives. A qualitative and quantitative research approach was used to develop insight to stakeholders’ perspectives at vocational colleges and automotive industry. Semi-structured interviews among the respondents been used in data collection. The samples of the study required a total 20 of respondents from vocational college and also 20 respondents from high technology industry and small medium industry in automotive after sales services in Malaysia. For quantitative research a total of 337 respondents involved from among academic staff from vocational college and employers of the automotive industry in Peninsular Malaysia. The findings identified the main construct and sub construct in formation the collaboration between vocational colleges and automotive industries. In addition, the results of the study also involve the best strategic collaboration areas that can be practiced in vocational colleges and the automotive industry in Malaysia.

Keywords— Strategic Collaboration; Automotive Industry; Education and Training
Optimal Location of Charging Stations and Demand Prediction of Electric Van in Phuket

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Abstract—Electric Vehicles (EV) have become an important role to making transportation systems more environmentally friendly and electric vehicles have become a focus of government in many countries. In recently policy of Thailand, Thai government had shown an attention on the electric vehicle (EV) technology and start to launch a policy to promote EV in Thailand. The Thai government try to invest in infrastructure to support electric car in the future.

In this paper, to support Thai government policy, we presented optimal locations for charging station in Phuket province based on consider the potential trip destinations of public van and we forecast the number of electric van in Phuket by using Gross Domestic Product of Thailand and also calculated the electricity demand of electric van in the future.

Keywords—Charging Station, Electric Vehicle, Electric Van, Electricity Demand Prediction, Optimized Location.
Factors influencing the cooperation of people in water management in Muang district community, Nakhon Ratchasima province

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Abstract—This article aims at studying the factors influencing the cooperation of people in water management in Muang district community, Nakhon Ratchasima province. The data collection was made by collecting 364 sets of data. The data analysis was made using mean and standard deviation. Pearson Correlation Coefficient was used for analyzing the data focusing on internal factors and external factors affecting the cooperation of people water management in the community. Stepwise Multiple Regression Analysis was used to analyze the influence of Independent Variable.

The result revealed that the factors influencing the cooperation of people in water management in Muang district community, Nakhon Ratchasima province including personal factor influencing the cooperation of people in the community in water management which were 1) people expectation to the benefit of community resources management, 2) leader’s public awareness, and 3) social organization and staff acceptance towards the community leader. The community factor influencing the cooperation of people in community water management were 1) the leader and community feeling as the owners of the resources, 2) the trust to the organization or staff who administrate the community resources, 3) the public awareness of the community, and 4) the benefit to the society and the concrete management. The organizational factors influencing the cooperation of people in community water management were 1) the development of creative organization culture in resources management for the leader and the community, 2) the development of the cooperation in community resources management, 3) the attitude towards the resources management, and 4) opportunities or chances leading to the resources conservation respectively.

Keywords—cooperation, community resources, community leader, public awareness
SOCNETY 5.0
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Abstract— The technology of the industrial revolution 4.0 has evolved more and more towards society 5.0 (S5.0). In this new era, the S5.0 has given the quality of life a more happy, motivated and visionary life. The value of society can improve the productivity of work efficiently and quickly. Experienced workforce can save time and cost on a product production that guarantees a decent income as a result of technology and innovation. The purpose of this study is to determine the satisfaction, goals and direction of S5.0. Systematic literature review has been conducted to more accurately analyses the success of S5.0. Many of the previous studies that have been carried out have similar themes and are identified from the findings. The findings show that the people in this S5.0 group have the privilege and the courage to make changes and innovations. S5.0 Leveraging technology wisely to improve the quality of life more securely in improving economics. In addition, S5.0 has succeeded in changing the way of life, with high skills, competitiveness and innovation in the technology world. This clearly demonstrates that the industry revolution 4.0 is heading into the S5.0 era with more challenging.

Keywords— IR 4.0, Society 5.0, workforce.
Development of E-Book for The Basics of Observing Sky Object

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Abstract—This electronic book (e-book) involve about the horizontal coordinate system explanation and the basic of the sky object observation. Is was developed for undergraduate students who must to learn the astronomy. The e-book was checked performance content accuracy and the appropriateness of the questions by the experts for investigating the Item-Objective Congruence Index (IOC). It was tried out with the undergraduate students in Chiang Mai Rajabhat University and Yala Rajabhat University. The result shows that the average satisfaction from students who performed this e-book is a very satisfactory level. Therefore, the e-book for the basics of observing sky object can be used as a teaching and learning media to develop an effective teaching and learning and encourage learners to participate in teaching and learning via social media.

Keywords— E-Book; horizontal system; sky object observation
Instructional Activities on Calculus for High School Level
By Using a TI Nspire CX CAS Graphing Calculator

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Abstract—The purposes of this study were 1) to study the achievement and the efficiency of instructional activities on calculus for high school level by using a TI Nspire CX CAS graphing calculator and 2) to study students’ satisfaction toward workshop learning with instructional activities on calculus for high school level. The samples of this study were 16 students of the second and third-year who were studying Bachelor of Science and Bachelor of Education (Mathematics) in semester 3/2017, Mathematics Department, Faculty of Sciences, Srinakharinwirot University. The result of the study indicated that students had educational efficiency to pass the criteria more than 60 percent of the total students with a statistical significance level of .05. The effectiveness (E1/E2) of the instructional activities on calculus for high school level by using a TI Nspire CX CAS graphing calculator equal to 87.65/78.23. The students’ satisfaction toward instructional activities on calculus for high school level by using a TI Nspire CX CAS graphing calculator was at a high level.

Keywords—Instructional Activities, Calculus, Graphing Calculator, TI Nspire CX CAS
Learning Management Based on Language Teaching for Communication Combining with Grouping Techniques to Develop Chinese Speaking Skill for Everyday Use for Secondary 4 Students

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Abstract—The objectives of this study are; 1) to compare Chinese speaking skill for everyday use for Secondary 4 students by using pre-test and post-test through conventional learning management; 2) to compare Chinese speaking skill for everyday use for Secondary 4 Students by using pre-test and post-test through language teaching for communication combining with grouping techniques learning management; 3) to compare Chinese speaking skill for everyday use for Secondary 4 students who have received learning management based on language teaching for communication combining with grouping techniques and conventional learning management.

The sample for this research included fifty secondary 4 students at Prathandongrungwitthayakarn School, Secondary Educational Service Area Office 8. The students were in the second semester of 2019 and selected by cluster random sampling. The study was undertaken in the second semester in the 2019 academic year and used a pretest – posttest nonequivalent - groups design, The tools of this study were; 1) Learning management conventional 2) Communication combining with grouping technique learning management 3) A practice Chinese communication skill test which included twenty questions. The statistical methods used to analyse the data were mean, standard deviation, t-test (dependent sample), and t-test (independent sample).

The research finding were as follows 1) Chinese speaking skill for everyday use for secondary 4 students by using pre-test and post-test through conventional learning management are significantly different according to a significantly level of 0.05 2) Chinese speaking skill for everyday use for secondary 4 students by using pre-test and post-test through language teaching for communication combining with grouping techniques learning management, which is significantly different according to a significantly level of 0.05 3) learning management based on language teaching for communication combining with grouping techniques was higher than the students who received the conventional learning management, with a significantly level of 0.05.

Keywords—Chinese speaking skill, Language teaching for communication, grouping techniques.
Abstract—This research is an experimental research. The purposes of the research were to: 1) develop learning management of STEM education combined with project base learning and engineering design process for secondary 2 (grade 8) students; 2) compare science skills of secondary 2 (grade 8) students before and after traditional learning management; 3) compare science skills of secondary 2 (grade 8) students before and after learning management according to STEM education through the combination of project base learning and engineering design process; 4) compare science skills of secondary 2 (grade 8) students after study by learning management according to STEM education through the combination of project base learning and engineering design process and traditional learning management. Research sample was 60 of secondary 2 (grade 8) students in the first semester of the academic year 2020 studying at Sakaeo School, Sakaeo province, Thailand selected by cluster random sampling. The research instruments consisted of lesson plans and science skills tests. In the experiment, a GIGO interlocking plastic bricks was employed to the learning management according to STEM education through the combination of project base learning and engineering design process to help students learn happily while studying and to be able to perform various activities effectively. The data were analyzed by mean, standard deviation, and T-test Independent and Dependent. The results revealed that 1) the development of learning management through the combination of STEM education combined with project base learning and engineering design process consisted of 6 steps (DIP² : Defined Problem (D), Related Information Search (I), Plan and Solution Design (P), Do and Development (D), Testing, Evaluation and Design Improvement (I) and Presentation (P)) 2) science skills of secondary 2 (grade 8) students after learning by traditional learning management was higher than the before learning at the statistical significance level of .05, 3) science skills of secondary 2 (grade 8) students after learning by learning management according to STEM education through the combination of project base learning and engineering design process was higher than the before learning at the statistical significance level of .05, and 4) science skills of secondary 2 (grade 8) students was higher than those who studied through the traditional learning management at the statistical significance level of .05.

Keywords—STEM education; project based learning; engineering design process; science skills.
Tae Kwon Do, Mental Health Literacy, and To Be Number One’ anti-drug project: Educational Model of Remote Area, Om Koi, Northern Thailand.

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Abstract

An estimated 1.7 million young people in Thailand use drugs, around 25% of the population who seek drug treatment services are younger. There were efforts focus on negative messaging, not focus on skill development to assess the social and physiological, substance use prevention competes with other health-related topics. Only a small number of district hospitals have child and adolescent psychologists on staff. Lacks the funding to support child and adolescent psychologists in schools. The ‘To Be Number One’ anti-drug campaign under the initiation and patronage of Princess Ubolratana Rajakanya, aims to promote the prevention of drug traffic spreading in the workplace. Om Koi district, most of Karen ethnic minority live there, one of remote area of Thailand where limit or preclude them from accessing civil services, health centers, roads, bank credit, other services and protections, or schools, leading to the lack of educational opportunities, and been the ‘special area’ of national security from opium cultivation and usage. Aparted from opiate addicts, since the 2018 fiscal year, the three main mental health disorders, Depressive disorders, Psychoses, and Alcoholic disorders which contributing leading causes of suicide, still high for Om Koi district.

Researcher as a volunteer teacher, Tae Kwon Do instructor since 2018, had been blending martial arts tenets with mental health literacy in the community of Om Koi district, Chiang Mai, Thailand, along with contributions of The ‘To Be Number One’ anti-drug project. Almost 300s Tae Kwan Do students were taught, and 3,600 members of The To Be Number One’ anti-drug project were collaborated. Observational, cross-sectional analytic study for one of activities was done as a project monitor under the provision and acceptance of ethical committee of Om Koi Hospital, Chiang Mai Provincial Health Office, Ministry of Public Health. Purposive sampling of 527 students as the members of The To Be Number One’ anti-drug project were joined the process, Knowledge–Attitude–Practice accorded to anti-drug principle tests before and after the process (pre-test and post-test) were done, project satisfactory evaluating questionnaire also done at the end. There were 195 students (37.00%) from the first level junior highschool, 172 students (32.64%) from the first level junior highschool, and 160 students (30.36%) from the first level junior highschool, female students were predominant, 311 students (63.95%). Pre-test median was 7.00 ± 2, post-test median was 10.00 ± 1, paired sample test statistics shown difference between pre-test and post-test score (t = -36.64, df = 526, p-value = 0.01), Spearman correlation was 0.68 (p-value = 0.01), 478 students (90.70%) were passed the Knowledge–Attitude–Practice accorded to anti-drug principle pre-test, and 527 students (100%) were passed the Knowledge–Attitude–Practice accorded to anti-drug principle post-test. Score of project satisfactory evaluating questionnaire median was 39.00 ± 6.00 from total 45 scores, 86.67% satisfy of the best satisfy 100%.

Martial arts instructor often interact with students on topics of intra and interpersonal concern. These interactions can be construed as informal counseling or informal helping. Combination of networks and collaborations among martial arts tenets, mental health literacy, and The ‘To Be Number One’ anti-drug project might be considering as an educational model for adolescents in remote area.

Keywords—Tae Kwon Do, martial arts, mental health literacy, To Be Number One’ anti-drug project, Educational Model, Remote Area, Om Koi, Northern Thailand.
Learning Management Through the Combination of STEAM Education and Phenomenon-Based Learning to Develop Creative Thinking of secondary 6 (Grade 12) Students

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Abstract—Learning management based on STEAM Education is the integration which combine the knowledge of Science, Technology, Engineering, Art, and Mathematics all together to the real world phenomena. This would lead to the diverse perspectives in an interdisciplinary way. In this research, The purposes were to: 1) develop learning management of STEAM education combined with phenomenon-based learning for secondary 6 (grade 12) students, 2) compare creative thinking in Physics before and after traditional learning management, 3) compare creative thinking in Physics before and after learning management through the combination of STEAM Education and Phenomenon-based learning, and 4) compare creative thinking in Physics after studying through STEAM education combined with phenomenon-based and traditional learning management. Research sample was two classes of secondary 6 (grade 12) students in the first semester of the academic year 2020 studying at Sakaeo School, Sakaeo province, Thailand selected by cluster random sampling. The total number was 70 students and was divided into 2 groups as experimental group and control group. Each group contained 35 students. The research instruments consisted of learning management plans, creative thinking tests in science which consisted of 5 questions and creative work evaluation form. Mean, percent, S.D., T-test Independent and T-test Dependent were used for data analysis. The results revealed that 1) the development of learning management through the combination of STEAM Education and Phenomenon-based learning consisted of 6 steps (3PA): Phenomenon (P), Analyze (A), Plan (P), Application (A), Presentation (P), and Adjust (A), 2) creative thinking in Physics for students studying through traditional learning management showed that the after study was higher than the before study at the statistical significance level of .05, 3) creative thinking in Physics for student studying learning management through the combination of STEAM Education and Phenomenon-based learning showed that the after study was higher than the before study at the statistical significance level of .05, and 4) creative thinking in Physics for student studying of the learning management through the combination of STEAM Education and Phenomenon-based learning showed higher than the traditional learning management at the statistical significance level of .05.

Keywords—STEAM Education; Phenomenon based learning; Creative thinking.
MFU SHOT: Photographer Supporting System for Education

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Abstract—This study aims at creating photographer supporting system application on android platform can access thought website. It can show the good spot for taking a good picture around user area, the example of picture taken around the place also the camera setting and the suitable time. The author also designs this application for education use by apply the use of application thought photography subject that teach in Mae Fah Luang University. While students use the application, the application itself also collect information of user’s behavior as the type of picture, location, time, camera setting, camera, and lens model. Then the data can be used for designing the course, improving assignment as well as collect information for the further research. (Abstract)

Keywords—photographer; application; education (key words)
Development of Sound Insulation Panel from Palm Oil Fiber

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Abstract — The purpose of this research is to develop sound insulation panel from palm oil fiber. This study will compare panels made from palm oil fiber with other acoustic panels in the market. This raw materials are by products from agricultural harvest. Hot press technique with the pressure of 400 kg/m³ was used to create the panel with the thickness of 20 mm. The temperature used in the compression is 150°C; the force used in creating the panel ranges between 25-30 kg/m², pressing for 8 minutes. Binding agent used is pMDI with 5% of the panel (by weight). Tests the standard of Strength and mechanical properties of soft boards (Library of Congress Cataloging – In – Publication Data). Sound absorption tests were carried out in a test box with sound level meters. The result of the test shows that Sound-absorbing property of the developed palm oil fiber panels with holed surface are greater than that of the traditional palm oil fiber panels and acoustic boards. It was found that different sizes of holes have an effect on sound-absorbing capacity. The developed palm oil fiber panels showed a good sound-absorbing capability in medium-to-high frequency (500 Hz – 2000 Hz). For the physical and mechanical properties, the palm oil fiber panels have the density of 400 kg/m³ complying with the standard of Strength and Mechanical Properties of Soft Boards. The noise spectrum that this sound insulation panel can effectively absorb is 500 Hz-2,000 Hz. The best sound insulation panel made from palm oil fiber is the panel with a density of 400 kg/m³ 5% (by weight) of pMDI used. This panel meets the standard of Strength and mechanical properties of soft boards (Library of Congress Cataloging – In – Publication Data).

Keywords — palm oil fiber; sound insulation; hot pressing process
Crisscrossing textbook writing tasks and core values of education students in an Outcomes-Based Education platform

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Abstract

This study aimed to determine the core values observed among education students during their textbook writing journey. This study employed concurrent triangulation mixed method design wherein quantitative data were generated from survey while qualitative data were taken from reflective questions responses of the students. Survey questionnaires and reflective questions were answered online by one-hundred thirty six Bachelor of Elementary Education students of Mindanao State University-General Santos City who were officially enrolled in Assessment in Learning during the 1st Semester of the Academic Year 2019-2020. With the commitment to OBE implementation, the four sections were divided into small groups and were tasked to demonstrate constellations of fundamental life performance roles to produce textbooks in Araling Panlipunan for elementary pupils. Observations made during tasks supervision showed that the students demonstrate Filipino core values as they work to produce the textbook. The survey findings revealed that the students during textbook writing journey always demonstrate respect, nationalism, sense of responsibility, sensitivity, solidarity, and resilience however they had tendencies to play fairly in managing their time and in utilizing resources wisely and judiciously. Similarly, the observed Filipino values reflected in survey response were supported by the students’ responses from the reflective questions. Records of observations also showed comparable convergent results. Generally, the textbook writing activity is instrumental in developing the Filipino core values such as Maka-Diyos, Makatao, Makakalikasan at Makabansa. Hence, the study recommends for the analysis of the academic outcomes of the students before and after the textbook writing activity.

Keywords: crisscrossing, textbook writing, core values, education students, Outcomes-Based Education
Process of Cross-cultural Adaptation of Cambodian Students in Rajamangala University of Technology Isan, Surin Campus

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Abstract—The present study aims to investigate process of intercultural adaptation and strategies of first-year Cambodian students in adapting themselves while staying in Rajamangala University of Technology Isan (RMUTI), Surin Campus. Participants of the study were sixteen undergraduate Cambodian students, who were studying in their first year in 10 different majors. The data were collected through a set of Cross-cultural Adaptation Questionnaire and a semi-structured interview. The questionnaire, translated into Khmer Language, asked about three dimensions of adaptation: cognitive, affective, and operational dimension, respectively. The results suggested that, of the three dimensions, the affective and operational dimensions had high impact on the cross-cultural adaptation process, while the degree of influence of cognitive dimension on participants’ adaptation process was moderate. The findings also demonstrated problems, challenges, and adaptation strategies the participants employed to overcome those problems.

Keywords—cross-cultural adaptation, Cambodian students, adaptation strategies
OCCUPATIONAL STRESSORS OF THE FACULTY MEMBERS OF ONE STATE COLLEGE IN CAMARINES SUR

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ABSTRACT

Stress is a fact of everyday life, especially in academe. Stressors are present anywhere and everywhere, it can be within the family, business, academic organization, workplace, political organization, and in any other social or economic groups and activities. Numerous stressors that are present in any environment promote unavoidable stress; thus, this study determined the stressors and the level of stress of the Camarines Sur Polytechnic Colleges faculty and formulated a plan of action that may help the faculty cope with stress. The descriptive survey method was used with a survey questionnaire as the main gathering tool for data supplemented by an unstructured interview. Purposive sampling was used in determining the respondents. The data gathered were analyzed and interpreted using percentage technique, weighted mean, and rank order to determine the percentage of the professional profile, sequence standing of data gathered, and the perceived stressors and level of stress respectively. On the professional profile along with educational attainment, the majority of the respondents were with Doctoral units. Stressors found were class size, and quantity of workload and these stressors were found to highly affect the level of stress of the CSPC faculty.

Keywords: stress coping, individual differences, stressors, education, stress management
Development of Integrated Curricula for the Master of Engineering Programs using the CDIO Framework

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Abstract—This research presents the revision of the current curriculum of the Master of Engineering program at Camarines Sur Polytechnic Colleges in the Philippines through series of consultations and focus group discussions with the faculty and students of the graduate program and industry practitioners, and the development of integrated curricula using the CDIO framework. Standards 1, 2, 3, 4 and 5 and syllabus v2.0 of the CDIO framework were used in the development of the integrated curricula. Graduate attributes were developed, and the result of the industry needs survey served as one of the bases in the integration of various skill sets in the integrated curricula for the master of engineering programs.

Keywords—CDIO framework, integrated curriculum, Master of Engineering
Reducing the Public Speaking Anxiety of ESL College Students Through Popsispeak

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Abstract—It is evident that even students had already English subjects in the primary and secondary years, some of them are afraid to use the English language in the classroom in the tertiary level. They find difficulty in expressing themselves using the said language because of several factors. This study focuses on helping the students face their fear in public speaking, which interferes their oral communication skills. The teacher-researcher introduced an intervention called Popsispeak. This study utilized a one-shot case study. A total of 28 students of Camarines Sur Polytechnic Colleges who were enrolled in the class of the teacher-researcher for the A.Y. 2017-2018 2nd semester served as the respondents of the study. T-test for Dependent Samples was used to determine the significant difference between the pre-test and post-test results of the students’ Personal Report of Public Speaking Anxiety (PRPSA) devised by McCroskey. The same statistical tool was also used in determining the level of oral communication skills of the students before and after the intervention. Pearson’s Correlation was used in determining the relationship between public speaking anxiety and oral communication skills. Also, thematic analysis was utilized in grouping the responses of the students regarding their experiences in the intervention activity. It was found out that Possippeak is an effective intervention in helping students elevate their oral communication skills and reduce their public speaking anxiety.

Keywords—Oral Communication, Public Speaking Anxiety, Popsispeak, ESL, Philippines
The Adoption of uVote Online Voting System as Voter Education Initiative during Pandemic

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Abstract—Voter education is regarded as a crucial mechanism to recuperate the lost democratic values of its people. However, in the Philippines, the integration of voter education into the secondary curriculum still remains pending. While the challenge is on, this paper suggests the use of IT through the adoption of an online voting system coined as uVote in public and private student council elections towards developing responsible electorates in the Philippines especially during a pandemic. This study combines mixed research methods to answer the objective: assess the effectiveness of uVote as voter education initiative by sensitizing secondary students' attitude, behavior, and perception. In this sense, the results showed that about 67% voter turnout rate was achieved using uVote facilitated for the first time to three school-respondents. The survey questionnaire, tested for reliability using the principle of Cronbach's alpha and distributed to 357 respondents, was categorized into four perception themes, namely: Electronic voting, Election process, uVote Experience, and Expectations from candidates. Out of the four themes, uVote experience received a positive attitude or a Likert score of 4.02, which suggests that uVote is a potential voter education tool to help students understand their role, responsibility, and rights as young voters. However, respondents were a little uncertain along the remaining themes giving a Likert score between 3.73-3.8, which could potentially be influenced by the negative factors, such as the alleged technical issues, lack of transparency and not enough knowledge. Finally, the correlation analysis result using PSPP revealed that age, gender and years of voting experience show no significant relationship on the students' attitude, behavior, and perception on the adoption of uVote, except for the theme and variable- Expectations from candidates and gender, respectively. The pair indicated a very weak relationship by a 95% probability.

Keywords—Student online electoral system, Pandemic, Voter education initiative, Electronic voting system
Assessment of Sewage Disposal System of one State College in the 5th District of Camarines Sur, Philippines: Basis for the Development of a College-wide Centralized Sewage Treatment Plant

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Abstract—Water as an indispensable natural resource should be carefully managed in a sustainable way. However, the contamination of groundwater due to improper disposal of wastewater and lack of available sludge treatment facilities is turning to be an enormous challenge. Development of Sewage Treatment Plant has a key role towards the access to clean and safe water to ensure health protection and safety of living. This descriptive study determines the sewage disposal system and practices of one State College in the 5th District of Camarines Sur, Philippines as basis for the development of a Centralized Sewage Treatment Plant to safeguard disposed sewage thereby controlling groundwater contamination. Data were gathered from nineteen (19) existing septic vaults through site inspections, documentary analysis and engineering survey. Findings show that the common types of sewage disposed are flushwater from washing and bath, urine, excreta and kitchen wastes with an estimated average monthly volume of effluent of 3,384.43 cubic meters. In general, most sewage of about 85% are disposed through natural filtration in the leaching chamber and siphoning which is considered as a good disposal practice. Design of proposed Centralized Sewage Treatment Plant ensures to accommodate volume of effluent for a population growth of the site for 10 years.

Keywords—sewage treatment plant, sewage, sewage disposal system, assessment of wastewater disposal, water resource
THE GAMIFICATION OF COVID-19 PANDEMIC
AN ACTIVE LEARNING IN DISASTER EDUCATION

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Abstract—COVID-19 likely affected our daily life for a long time. The skill to monitor pandemic is important to increasing our adaptability in this era. However several people particularly non-science learner always ignore to monitor the news related scientific contents because they claim that they are lack of any scientific knowledge’s background to process that information. Thus to persuade them to make understanding the epidemic situation to comply with the recommendation rather than merely obedient under the fear climate. Game playing can be a transdisciplinary approach to replace the fear into the understanding and compromising everyone learns together. This research purpose to develop an active learning tool for pandemic monitoring. The knowledge related pandemic, learning theory and disaster resilience were integrated into gamification techniques to outline the component of a game such as goals, rules, conflict, times, reward, feedback, levels. The results of the study is board game can be an educational tool that encourage self-efficacy to accomplish the goal of learning following understanding the growth of COVID-19 pandemic and monitoring the news to make a precise decision. It supposed to be an effective method for increasing participation and

Keywords—component; formatting; style; styling; insert (key words)
Knowledge and Competence of Barangay Health Workers (BHWs): A Basis for a Self-Learning Kit

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Abstract—Health is an indispensable element of living in the community. The barangay health workers (BHWs) are the providers of healthcare services that meet the health needs of their constituents in their community. They are the persons who inspire and motivate people to live a clean and healthy life. For these BHWs to do their jobs effectively and efficiently, core skills, applied knowledge, and a good attitude are vital for them to work well in a variety of setting. A need to evaluate their competence is necessary, thus this study. The descriptive-correlational method was used with a self-made questionnaire as the main data gathering tool. Purposive sampling through total enumeration was used to determine the participants. Data were analyzed using percentage technique, weighted mean and chi-square test for independence. Results revealed that the BHWs were moderately competent, with a very satisfactory rating on their attitude; the personal and environmental factors affect their competence. The length of service as BHW was found significant in the competence of BHWs. To be well-equipped with knowledge and skills, and to enhance their performance the BHWs are encouraged to have continuous attendance to training and seminars and use the self-learning kit.

Keywords—Nursing Education; Barangay Health Workers (BHWs); Knowledge and Competence
Community Health Needs Assessment of One Barangay of Nabua, Camarines Sur, Philippines

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Abstract— An assessment of health needs of Barangay Antipolo Old Nabua Camarines Sur which ruled out the respondent’s profile, family profile, health practices and health needs of the barangay constituents. The study employed a self-made questionnaire formulated from the review conducted on the different needs assessment questionnaires. Percentage technique was used.

Majority were female, 30-39 years old, Roman Catholic and high school graduate. They belong to a nuclear family with farming as the main source of income, giving them a combined FMI of 32,500-37,499, with an average of 4-5 members which are mainly adults who lives in a semi-concrete houses with water district pipeline as water course, with sanitary toilets and several methods of garbage disposal are employed. Perceive that diseases are caused by microorganisms/pathogens and believes that good nutrition is important in disease prevention. All of them performs handwashing, daily bath and other hygienic practices. They include rice, fruits and vegetables in their daily food intake and have regular sleep and rests.

Pains (Back/Joints); high blood pressure/hypertension; depression; asthma; Tuberculosis; kidney, heart and lung diseases; diabetes and stroke are among the health challenges they face. Majority of the respondents avail the services of the PHC Clinics/RHUs; physician’s clinics; hospitals; some prefers herbularyos/faith/natural healers; and a certain number do not seek health care. These findings served as the basis for the formulation of an extension program specifically designed for the Barangay Antipolo Old.

Keywords— Community; Health; Needs Assessment
Challenges of Implementation Digital Learning and Online Collaboration to Teach Pronunciation during the COVID-19 Pandemic in Thailand

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Abstract— An English pronunciation class for first year English major students at Ubon Ratchathani Rajabhat University, a local university in Thailand, that opened for the summer semester during April-May, 2020. It was during the spread of COVID-19 pandemic. One of the government policies to slow down and limit the spread of the virus was to close places where too many people gather. Regular classes at schools were cancelled. All the classes had to shift to online and distance learning. It was an opportunity to manage alternative learning and teaching with digital and online collaboration. Unfortunately, most teachers at the English department did not have enough time to prepare and nor adapt to the changes. Creating and planning online classes were absolute challenges. This study focuses on teachers and students challenges to adapt to learning and teaching style to conduct completely using an online classroom during a 2-month-summer class at a local university in Thailand. Most urgent plans were training and educating both teachers and students about living and working around the virus, including working and studying remotely. Choosing user-friendly learning platform was also another challenge. The information and the conclusion of this panel will help educators to prepare and choose the best way to construct a blended online learning classroom in a limited of time more effectively.

Keywords— digital learning; online collaboration; English pronunciation; blended online learning
Instructional media for using the program
Autodesk Robot Structural Analysis Professional

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Abstract—Nowadays, programs used in construction work are important in drawing and design. Several options are available. Design programs are two and three dimensional structural analysis and design programs which can analyze large and complex structures accurately and rapidly. Moreover, a design software can design various types of building structures and constructions.

A video media of software tutorial was created [1] to make teaching and learning [2] more efficient and to easily understand how to use the program for accurate calculation, analysis and design by using the Autodesk Robot Structural Analysis Professional program. [3] A steel structure warehouse with a dimension of 30x60 meters was chosen as an example in this study. Then determine the process of using the program to produce teaching materials using the Autodesk. Robot Structural Analysis Professional program. The instructional media was evaluated the effectiveness of the content by experts. The revised instructional media according to the comments of the experts was tested by 34 students via pretest and posttest.

The result was found that analysis for efficiency in production technical is in a very good level. Analysis for content performance is in a good level. Production technical satisfaction analysis is in a good level. The average score of content satisfaction analysis, test results, users, and media usage before studying was 8.176, and after studying was 14.294. The score after studying was statistically significant more than before studying at 0.05.

Keywords—video media; structural analysis; Autodesk Robot Structural Analysis Professional;
INSTRUCTIONAL MEDIA FOR CONSTRUCTION DRAWING BY AUTODESK REVIT STRUCTURE

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Abstract—The purpose of this research is to create a teaching tool using Autodesk Revit program. The production of instructional media [1] for drawing construction with the Autodesk Revit Structure consists of the study of data and usage of program procedures. The teaching material of Autodesk Revit Structure was produced in form of video media.

The instructional media was assessed by the experts. The students also evaluate the satisfaction and then bring evaluation results are evaluated by dividing the assessment into 2 types is content and technical production of the media. [2] After that, the results from the validation of the content of the teaching media was used to improve the media of Autodesk Revit Structure according to the recommendations of the experts. The instructional media was used to test with a sample of students via pretest and posttest. The test result is in a good level.

From the results of the assessment and achievement tests effective teaching of drawing materials, [3] with the Autodesk Revit Structure program can be used in teaching and learning.

Keywords—video media; construction drawings; Autodesk Revit Structure;
Abstract — This paper presents the experimental results of precast concrete columns strengthened with externally bonded carbon fiber-reinforced polymer (CFRP) and grass fiber-reinforced polymer (GFRP) laminates. The aim of the study was to investigate the efficiency of CFRP and GFRP laminates in strengthening and repairing precast columns. A total of 15 slender concrete columns were tested up to failure under eccentric load. The specimens were equally divided into five groups: non-strengthening/repairing; strengthening with CFRP; strengthening with GFRP; repairing with CFRP; repairing with GFRP. The results were compared and discussed in terms of load carrying capacity, lateral deflection, and mode of failure. It was concluded that the application of CFRP and GFRP laminates in strengthening and repairing slender concrete columns significantly improved the load carrying capacities.

Keywords — slender column; precast column; eccentric load; CFRP laminate; GFRP laminate
Electronic Products Assembly and Servicing Program Compliance to the TESDA System of TVET Accreditation and Recognition (STAR) Standards in the Bicol Region

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The main objective of this study is to evaluate the compliance of the Electronic Products Assembly and Servicing Program (EPAS) to the TESDA System of TVET Accreditation and Recognition (STAR) Standards in the Bicol Region. Descriptive-evaluative and developmental methods were used in this study. The respondents of the study were fifteen school personnel and fifteen students of Camarines Sur Institute of Fisheries and Marine Sciences, Pasacao, Camarines Sur; and San Francisco Institute of Science and Technology, Malilipot, Albay, Bicol Region, Philippine; and one STAR Program Expert, second semester, the school year 2019-2020. The instrument of this study was a survey questionnaire of the system of TVET accreditation and recognition (STAR) program based on the TESDA Circular No. 099, series of 2019. Averaging and percentage were the main statistical tool used using computer software to interpret the data. The study found out that both Schools have a similar profile in the training room area, the number of assessors, and the number of batches trained in the last three years except for the number of trainers and the number of students per batch or class size. The level of compliance on the TESDA STAR Program of School A was 395 points or 79% complied while School B earned 376 points or 75% complied. The scored of both schools is equivalent to Level I or One Star Category.

Keywords: Program Compliance, TVET Accreditation, and Recognition, Electronic Products Assembly and Servicing
Korean Education Policy and Parents Expectation: Case Study of Korean School in Thailand

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Abstract—Korean education policy had established Korean School or KS in different local cultures with the Korean curriculum base for expatriated Korean in many countries. This study tries to understand the characteristic of Korean schools in terms of schools established in Thailand and define the purpose and expectations of parents that have on the Korean School and see if those expectations are met. The study shows that not only Korean Government creates KS that uses the National Competency Standard or NCS learning module as a core curriculum to provide the same standard education as the private school in The Republic of Korea to the expatriates Korean but also help students maintain their identity as Korean despite being residing in other countries. This paper will show the characteristic of the related parties of KS which is a result from qualitative research and the expectation of parents on KS will also be discussed.

Keywords—Korean education policy; school for expatriate Korean; Korean parents’ expectation on school
Competencies and Challenges among Newly Appointed Barangay Secretaries in One Local Government Unit of Bicol Region, Philippines

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KEYWORDS: Challenges, computer operation, office management, office skills, competencies, records management, stenography

Abstract

This study assessed the office skill competencies and challenges among the newly appointed Barangay Secretaries of Local Government Unit (LGU) of Nabua in Camarines Sur, Bicol Region in the Philippines. This descriptive method of research used questionnaire and interview using the percentage method and mean as its statistical tools using the four-scale rating to interpret the gathered data. The actual respondents of the study were the 35 of the 45 Barangay Secretaries of LGU-Nabua. Findings reveal that the office skill competencies of barangay secretaries along stenography, office management, records management, and human relations were all assessed as satisfactory except for computer operation which was assessed as fair. The study further revealed that challenges were seldom encountered by the respondents along their work performance. Majority of the respondents preferred training program on records management and office management but computer operation in varied software with ease may also be given emphasis. Recommendations to enhance the office skill competencies and address the challenges encountered by barangay secretaries in their present job were also proposed in this study.