



**The Annual Meeting of
Asia & ASEAN Center
for Educational Research
with International Research Session**

- Education under the COVID-19 pandemic -

Feb.8(MON) - Feb.14(SUN), 2021

Organized by Asia & ASEAN Center for Educational Research, Faculty of Education. Supported by Chiba University

International Research Session Feb.14(SUN), 2021



JST Global Science Campus
研究者を目指す高校生のためのプログラム

ASCENT Program



サイエンススタジオCHIBA

Live Schedule

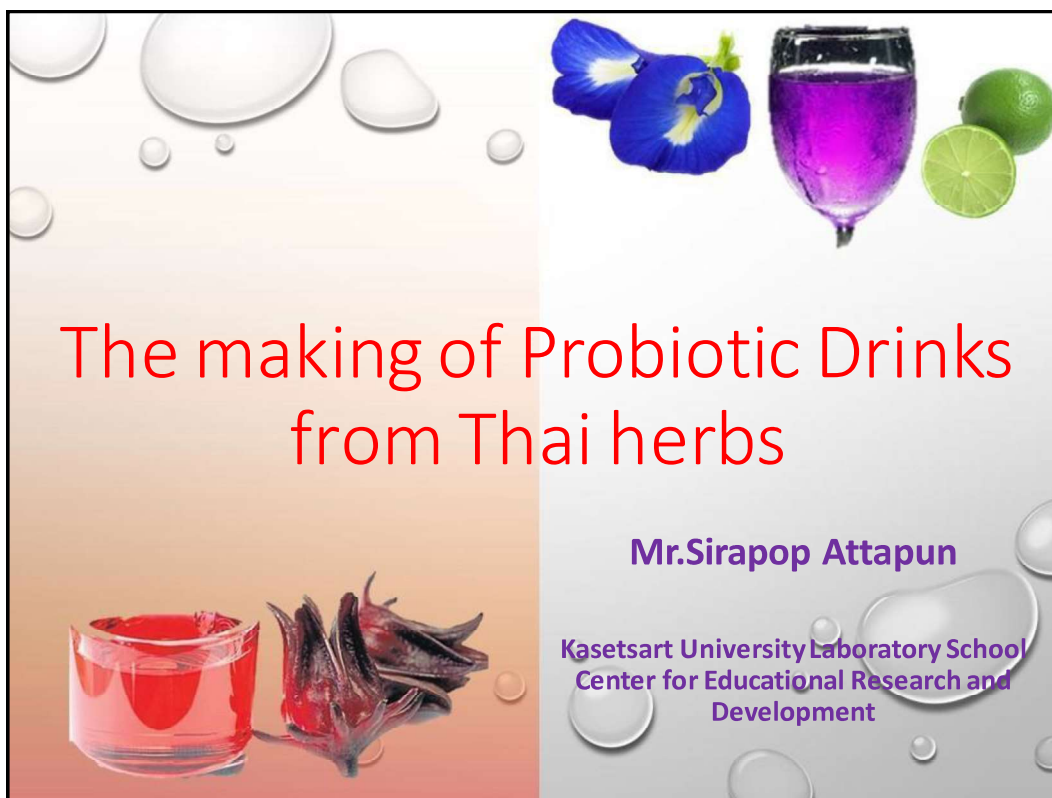
	11:00	12:00	13:00	13:30	14:00	14:30	15:00	15:30	16:00
2021/2/8		Opening							
2021/2/12			Live session 1		Live session 2		Live session 3		Live session 4
2021/2/13	Annual Meeting of the Asian and ASEAN Center for Educational Research						Live session 5		Live session 6
2021/2/14	International Research Session Group A <A1>	International Research Session Group A <A2>		International Research Session Group A <A3>	International Research Session Group A <A4>		Wrap-up		
	International Research Session Group B <B1>	International Research Session Group B <B2>		International Research Session Group B <B3>	International Research Session Group B <B4>				
	International Research Session Group C <C1>	International Research Session Group C <C2>		International Research Session Group C <C3>	International Research Session Group C <C4>				
	International Research Session Group D <D1>	International Research Session Group D <D2>		International Research Session Group D <D3>	International Research Session Group D <D4>				

<A1> 11:00

Katsuki Umeda

Associate Professor, Faculty of Education
Chiba University

- 1 IRPMA111-1
The making of Probiotic Drinks from Thai herbs
Kasetsart University Laboratory School, Center for Educational Research and Development
Sirapop ATTAPUN
- 2 IRPMA112-1
Habitat and Population Density of Kloss's Gibbon (*Hylobates klossii*) in Bojakan Resort,
Siberut Island, West Sumatra
IPB University
Vallen Sakti MAULANA
- 3 IRPMA113-1
Effects of using Science, Technology, Society and Environment Learning With a
Focus on Forest Resources with Grade-Twelve Students for Meaningful Learning in Biology
Chiang Mai University
Supaporn INTAKHIAW
- 4 IRPMA114-1
Uncover Molecular Network Between Beta Thalassemia and Retinal
Abnormality Through in Silico Study
Universitas Indonesia
Hendyco PRATAMA
- 5 IRPMA115-1
CONDITION OF SCIENCE EDUCATION IN NIERIA: A COMPARATIVE ANALYSIS OF
PUBLIC AND PRIVATE SCHOOLS IN ABUJA, NIGERIA
Chiba University
Stephen OKONKWO
- 6 IRPMA117-1
CHARACTERIZATION AND TOXICOLOGICAL EVALUATION OF LEACHATE FROM BACOLOD CITY
SANITARY LANDFILL USING TILAPIA (*Oreochromis niloticus*): A PRELIMINARY STUDY
University of San Carlos
Ryan Gabriel A. UBAS



The making of Probiotic Drinks from Thai herbs

Mr. Sirapop Attapun

Kasetsart University Laboratory School
Center for Educational Research and Development

Materials and Methods

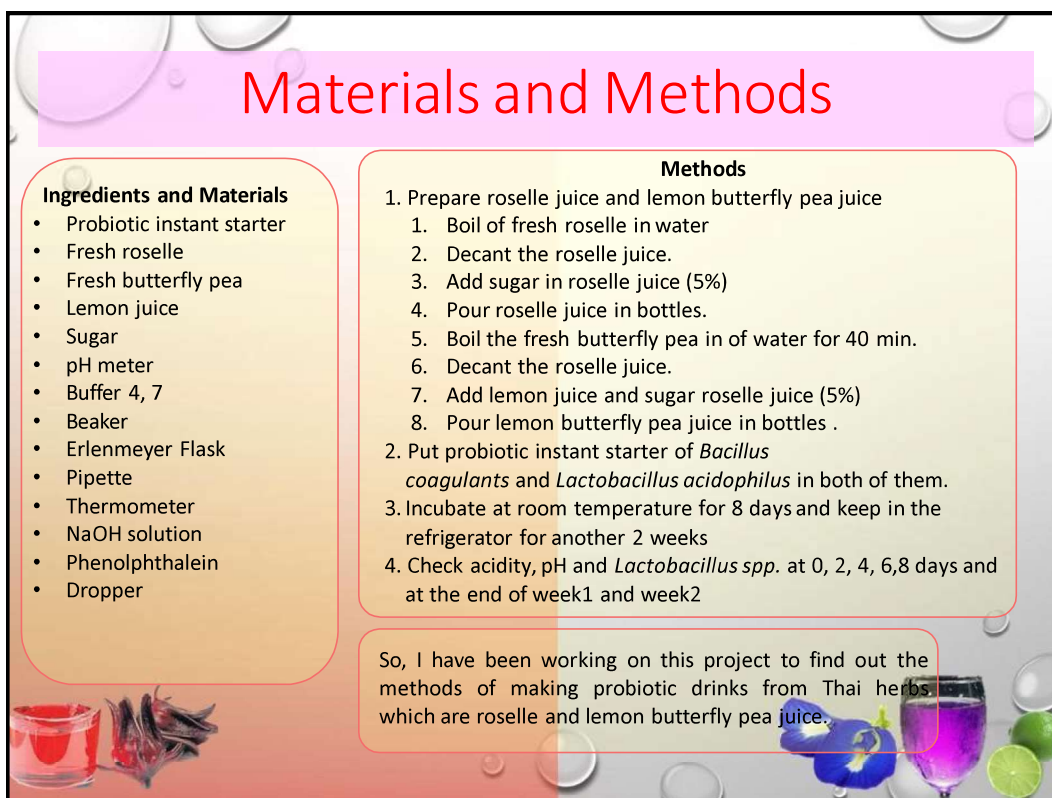
Ingredients and Materials

- Probiotic instant starter
- Fresh roselle
- Fresh butterfly pea
- Lemon juice
- Sugar
- pH meter
- Buffer 4, 7
- Beaker
- Erlenmeyer Flask
- Pipette
- Thermometer
- NaOH solution
- Phenolphthalein
- Dropper

Methods

1. Prepare roselle juice and lemon butterfly pea juice
 1. Boil of fresh roselle in water
 2. Decant the roselle juice.
 3. Add sugar in roselle juice (5%)
 4. Pour roselle juice in bottles.
 5. Boil the fresh butterfly pea in of water for 40 min.
 6. Decant the roselle juice.
 7. Add lemon juice and sugar roselle juice (5%)
 8. Pour lemon butterfly pea juice in bottles .
2. Put probiotic instant starter of *Bacillus coagulants* and *Lactobacillus acidophilus* in both of them.
3. Incubate at room temperature for 8 days and keep in the refrigerator for another 2 weeks
4. Check acidity, pH and *Lactobacillus spp.* at 0, 2, 4, 6, 8 days and at the end of week1 and week2

So, I have been working on this project to find out the methods of making probiotic drinks from Thai herbs which are roselle and lemon butterfly pea juice.

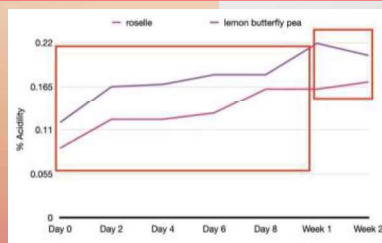


Discussion and conclusion

From the results, the acidity of both drinks increased during the incubation. This shows that the probiotic microorganism was growing during the incubation. And the result of the amount of *Lactobacillus spp.* at the end of the incubation is more than 1.0×10^6 cfu/g which complies with the specification of the Ministry of Public Health (No.356) B.E.2555 (2012).

In conclusion, we can make probiotic drinks from roselle and lemon butterfly pea from instant starter by incubating at room temperature (25-30 °C) for 8 days which possibly have shelf life in the refrigerator (4-6 °C) for a minimum of 2 weeks.

The acidity of probiotic drinks is the source of sour taste as the taste of normal roselle and lemon butterfly pea juice is also sour. The taste of probiotic drinks of roselle and lemon butterfly pea is, therefore likely to be acceptable for consumers.



ABSTRACT

VALLEN SAKTI MAULANA. Habitat and Population Density of Kloss's Gibbon (*Hylobates klossii*) in Bojakan Resort, Siberut Island, West Sumatra. Supervised by ANI MARDIASTUTI and ENTANG ISKANDAR.

Kloss's gibbon (*Hylobates klossii*) is endemic to the Mentawai Islands of the west coast of Sumatra, Indonesia. Kloss's gibbon is currently categorized as Endangered on the IUCN Red List in 2020 and Appendix I based on CITES. Conservation priorities and increased protection are urgently needed to reduce the ongoing threat in the remaining Kloss's gibbon habitat. Assessment of population and habitat quality is used as a basis in determining conservation strategies.

This study was conducted at Bojakan Resort, Siberut National Park, Siberut Island, West Sumatra. This study aims to obtain data and information on Kloss's gibbon habitat and populations in the Bojakan Resort forest area that have not existed before. The Bojakan Resort section was observed namely the Bojakan and Bekemen areas. This research used line transect sampling method. The number of observation transect used was 15 transect and each transect was repeated twice.

The average individual density in the two regions in this study was 12.8 ind/km², while for group densities 4.2 group/km². When compared with the estimated density obtained by previous researchers on Siberut Island, the values of individual and group densities in this study were higher. This was due to differences in research location, method used, location height, and forest characteristics. Population density varies based on region and forest type, so the results of analysis from an area cannot be directly used for other regions.

High population density of Kloss's gibbon, it is supported by good habitat quality in Bojakan Resort. Kloss's gibbon in Siberut National Park, must be managed in such a way both habitat and population so that its sustainability can be maintained. Based on the results of this study, the Bojakan Resort forest area is an appropriate habitat for Kloss's gibbon. Some of the factors that make Bojakan Resort forest area a suitable habitat for Kloss's gibbon are (1) having continuous canopy that supports Kloss's gibbon movement as an arboreal primate animal; and (2) adequate availability of feed trees.

Based on the results of the analysis obtained, the management of Kloss's gibbon in the Bojakan Resort forest area can be recommended for two main management activities that can ensure the sustainability of habitat and Kloss's gibbon population. The main things that can be recommended for management of Bojakan Resort forest area is forest restoration activities, increased area security, and regular monitoring of Kloss's gibbon populations. In addition, management/awareness of the community around Bojakan Resort area are needed.

Keywords: endangered species, endemic primate, habitat profile, line transect sampling



Effects of using Science, Technology, Society and Environment Learning With a Focus on Forest Resources with Grade-Twelve Students for Meaningful Learning in Biology

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Purpose

To study the effects of using science, technology, society and environment (STSE) learning in biology specifically employing the topic of Forest resources for meaningful learning among grade-twelve students.

Material and Methods

- Pre- and post-test Questionnaire of Meaningful Learning (Huang et al., 2011)
- Biology lesson plans using the STSE approach for promoting meaningful learning. The lesson topics are Forest resources (Richardson & Blades, 2001)



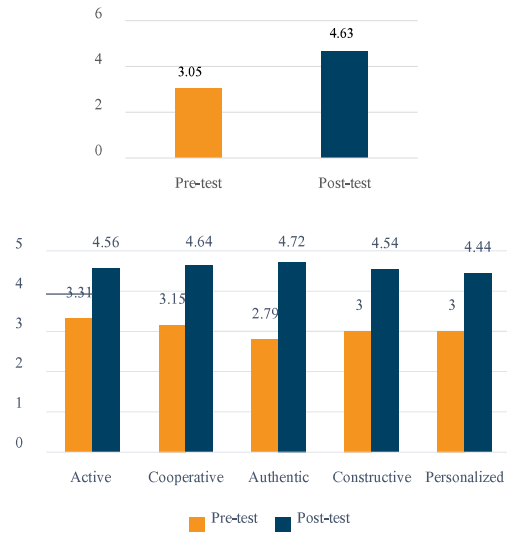
- The sample used in the study consisted of 13 grade 12 students.
- One-group pre-test/post-test design
- The data were analyzed by using mean and standard deviation

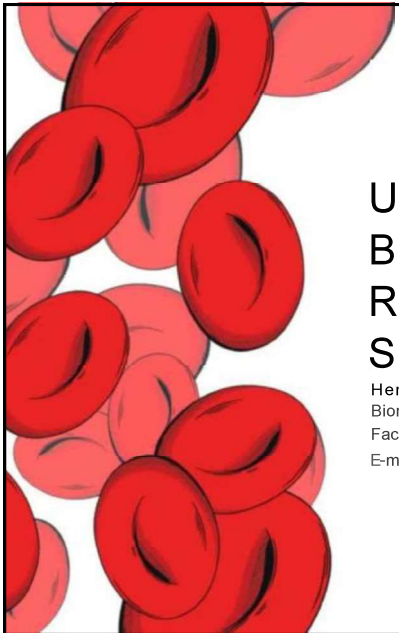
Results and Discussion

In post-test Questionnaire students indicated that they “strongly agree” with the level of all aspects of meaningful learning. The post-test Questionnaire mean score of 4.63 compared to a pre-test score of 3.05 indicating a “neutral” level of support.




Teaching and learning by STSE approach plan could promote meaningful learning among students.





Uncover Molecular Network Between Beta Thalassemia and Retinal Abnormality Through In Silico Study

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Biomedical Engineering, Department of Electrical Engineering
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Purpose:

To investigate key proteins contributing to beta-thalassemia major-retinopathy complication

Material and Method

• Literature Search

- Keywords:
 - Beta-thalassemia major
 - Retinopathy,
 - thalassemic retinopathy,
 - Iron overload-retinopathy,
 - ABCC6
 - HBB
 - Heparin (HAMP)
 - Heparin (HEPH)
 - Ceruloplasmin (CP)
 - Vascular endothelial growth factor (VEGF)
 - Aldo-keto reductase family 1 member B (AKR1B1)
 - Advanced glycosylation end-product specific receptor (AGER)

• Functional Enrichment Analysis

- Kyoto Encyclopedia of Genes and Genomes (KEGG)
- Rat Genome Database (RGD)

• Protein-Protein Interaction (PPI) Network

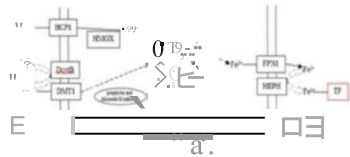
- Search Tools for the Retrieval of Interacting Genes (STRING) Database

Result and Discussion

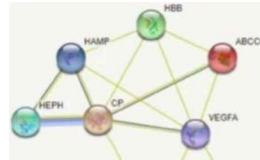
Functional Enrichment Analysis (FEA)



- From PXE pathway (above) genes involved in beta-thalassemia could be found
- From iron absorption pathway (below):
 - Observed that TF interact with HEPH and CP
 - AGER, HAMP, and HBB are involved in beta signaling pathway



Protein-protein interaction (PPI) network



- CP/HEPH compulsory for systemic iron distribution
- Iron overload will increase AGE-RAGE binding, retinal neurodegeneration, and defective phagocytosis of retinal pigment epithelium
- AGER-AKR1B1 associated with diabetic retinopathy

CONDITION OF
SCIENCE EDUCATION IN
NIGERIA:
A COMPARATIVE
ANALYSIS OF PUBLIC
AND PRIVATE SCHOOLS
IN ABUJA, NIGERIA.

Okonkwo Stephen^{1,2}, Jun
Nomura²*

- *1 Funtaj International School,
Abuja, Nigeria*
- *2 Faculty of Education, Chiba
University, Japan*

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□ PURPOSE
To examine the perception of teachers
regarding the nature of science
education learning environment in
schools in Abuja, Nigeria.

□ METHODOLOGY

This study is descriptive in nature and involved a total of 45 science teachers. 26 of them teach in private schools, while the remaining 19 are public school teachers.

Science laboratories of some schools in Abuja, Nigeria.



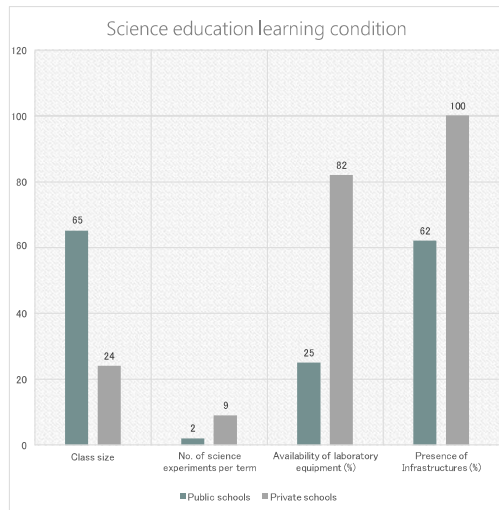
FIG 1: Private school.



FIG 2: Public school.

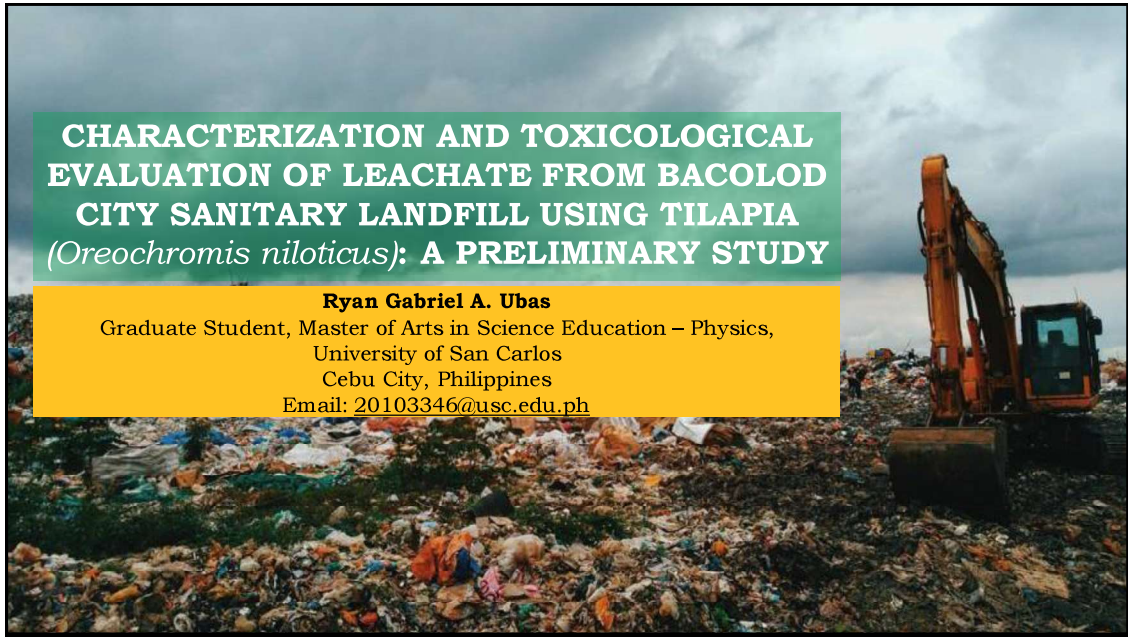


RESULTS AND DISCUSSION: The result shows the gaping disparity in the science education learning conditions of Nigerian schools.



If these science educational conditions are left as they are, the disparity of students may magnify and thereby prevent fair social development.





CHARACTERIZATION AND TOXICOLOGICAL EVALUATION OF LEACHATE FROM BACOLOD CITY SANITARY LANDFILL USING TILAPIA (*Oreochromis niloticus*): A PRELIMINARY STUDY

Ryan Gabriel A. Ubas
 Graduate Student, Master of Arts in Science Education – Physics,
 University of San Carlos
 Cebu City, Philippines
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<p>Background: The wastes from anthropogenic activities of humans produce leachate which contributes to the contamination of several bodies of water.</p>  <p>Leachate - liquid that drains from a landfill and varies widely in composition of the age of the landfill and the type of waste it contains (Aquino et al., 2013)</p>  <p>Leachate, considering its physicochemical characteristics and heavy metal contents, can cause groundwater pollution, contamination of bodies of water and can pose danger to living organisms.</p> <p>Purpose: characterize the quality of leachate from Bacolod City Solid Waste Landfill and to assess its possible effects using <i>Oreochromis niloticus</i>.</p>	<p>Materials and Methods</p> <p>Leachate Sampling</p> <p>Physicochemical Analysis</p> <ul style="list-style-type: none"> • pH meter for the pH analysis • Nessler tube for the color analysis • Millipore set-up filtering apparatus, and desiccator for the total suspended solid examination using Gravimetric Method Drying at 105°C • glass fiber filter with applied vacuum, filtration flask, deionized water, steam bath, oven dryer and desiccator for total dissolved solids analysis Gravimetric Method Drying at 180°C • sulfuric acid, potassium dichromate, ferroin indicator, Ferrous Ammonium Sulfate (FAS) for the analysis of chemical oxygen demand using Open-reflux method <p>Heavy Metal Analysis</p> <ul style="list-style-type: none"> • Flame Atomic Absorption Spectrometry (FAAS) for the heavy metal content analysis <p>Fish Collection and Acclimatization</p> <p>Toxicity Testing</p> <ul style="list-style-type: none"> • Behavioral and physiological responses • Mortality Rate
--	--

Results and Discussion

Physicochemical and Heavy Metal Analysis of Leachate vs DENR standards

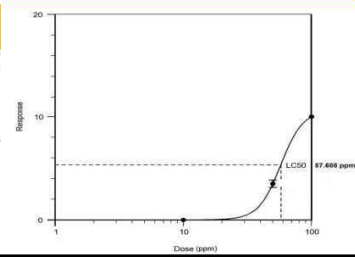
Physicochemical Parameters	Results Obtained		Heavy Metal Parameters	Results Obtained	
	Bacolod City Leachate	DENR Standards		Bacolod City Leachate	DENR Standards
pH	8.80	6.5-9.0	Copper (Cu)	0.150 mg/L	0.04 mg/L
Color	1,280 TCU	150 TCU	Zinc (Zn)	0.593 mg/L	4 mg/L
Chemical Oxygen Demand (COD)	22,994.4 mg/L	100 mg/L	Cadmium (Cd)	<0.002 mg/L	0.01 mg/L
Total Suspended Solids (TSS)	79 mg/L	100 mg/L	Lead (Pb)	0.218 mg/L	0.1 mg/L
Total Dissolved Solids (TDS)	5,589 mg/L	1,000 mg/L			

Behavioral Responses of *O. niloticus* During 96 h Exposure to Bacolod City Landfill Leachate

Behavior	Concentration			
	Control	10 ppm	50 ppm	100 ppm
Erratic Swimming	-	-	+	+
Loss of Reflex	-	-	-	+
Hyperventilation	-	-	+	+
Motionless State	-	-	-	-
Surfacing	-	-	+	+
Discoloration	-	-	-	-

(+) Present, (-) Absent

Median Lethal Concentration on the Mortality Rate of *O. niloticus* within the 96 h Acute Toxicity Bio-assay



Difference on the Mortality Rate of *O. niloticus* with 96 h of exposure

Response Variable	Treatment	Mean	Statistics
Mortality Rate	Control	0.00 _a	F-ratio 355.67**
	10 ppm	0.00 _a	p-value 0.00
	50 ppm	3.50 _b	Significance level 0.01
	100 ppm	10.00 _c	Decision to H ₀ Reject

** p < 0.01
Treatments with the same letter are not significantly different.

1. Physicochemical test of color, chemical oxygen demand (COD) and total dissolved solids (TDS) and analysis of heavy metals such as copper and lead exceeded the permissible standard limit established by DENR DAO 2016-08.
2. Significant behavioral and physiological changes on *O. niloticus* species demonstrated surfacing, erratic swimming, hyperventilation and loss of reflex.
3. The median lethal concentration of 57.688 ppm or 0.057688 mL/L is a very toxic dose of leachate in which half of the population of the *O. niloticus* fishes was extirpated.
4. The increasing concentration of leachate was associated with the increasing mortality rate and 100 ppm concentration is the most lethal concentration.

<A2> 12:00

Ahmad Bukhori

Director of International Affairs

Assistant Professor, Department of English Education

Universitas Pendidikan Indonesia

- 1 IRPMA121-1
Characterization of Volatile Compounds in Red Curry by Headspace Solid Phase Microextraction
-Gas Chromatography-Mass Spectrometry
Chulalongkorn University
Suriwipa CHUACHAINA
- 2 IRPMA122-1
Expression and Characterization of Recombin Bacteriocin Using Bioinformatics Database
King Mongkut's University of Technology Thonburi (KMUTT)
Neeranuch RUKYING
- 3 IRPMA123-1
Effects of Letter Color on Word Memorization
Shibaura Institute of Technology Kashiwa Senior High School
Nagi TOYOSHIMA
- 4 IRPMA124-1
Research on the properties of amphoteric metal by using electrochemical cells
Chiba Prefectural Chosei Senior High School
Terumasa AKIBA
- 5 IRPMA126-1
Motivating Secondary Science Learning through 3D Interactive Technology :From Theory to
Practice Using Augmented Reality
SMAN 1 Bandung (High School 1 Bandung)
Sari NARULITA (Mathematics and ICT Teacher)



Characterization of Volatile Compounds in Red Curry by Headspace Solid Phase Microextraction-Gas Chromatography-Mass Spectrometry



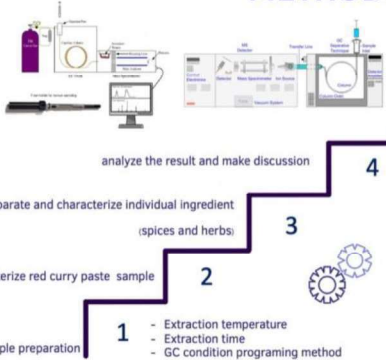

Presented by Suriwipa Chuachaina
 Department of Chemistry, Faculty of Sciences,
 Chulalongkorn University, Thailand Email: Suriwipa902@gmail.com

Purpose

- 01 To characterize chemical composition of volatile compounds in red curry paste by HS-SPME-GC-MS technique.
- 02 To identified the individual ingredients which is the composition of red curry
- 03 To find a proper condition of sample preparation in red curry paste performing by HS-SPME

There are some previous works have studied about chemical composition of VOC in food and its ingredients by different technique, **but not in red curry before.** Then, it need to be studied to clarified about it.

METHODS



- 1 Find proper conditions of sample preparation
 - Extraction temperature
 - Extraction time
 - GC condition programing method
- 2 Separate and characterize red curry paste sample
- 3 Separate and characterize individual ingredient (spices and herbs)
- 4 analyze the result and make discussion



Expression and Characterization of Recombinant Bacteriocin Using Bioinformatics Database

Presented by
Miss Neeranuch Rukying
Microbiology, Science,
King Mongkut's University of Technology Thonburi (KMUTT)

Advisor
Dr. Nujarin Jongruja



Forecasts in Thailand

- (40% of drug users) **38,481** deaths from drug resistance
- Stay in Hospital to for treatment more than **324** million days
- The antimicrobial treatment value was **2539-6084** million baht.

Current situation

- Approximately **700,000 people die** from drug-resistant infections.
- Over the next 35 years 2050 the **death toll** is expected to reach **10 million**
- Economic impact reached **3,500 billion**

Thailand's national plan targets

Thailand's national plan targets reductions in antimicrobial use in people and animals by **20%** and **30%**, respectively, by 2021.

- Synthesize from the ribosome of bacteria
- Not harmful that are not targeted at work.
- Gram-positive and Gram-negative can produce many kinds of bacteriocins
- Can be digested
- Can kill or inhibit bacterial strains closely-related or non-related to produced bacteria

Potential applications of bacteriocins in food science, pharmaceuticals, and clinical medicine

- Nisin is utilized as a practical food preservative in over 50 countries.
- The global nisin market is likely to rise at a healthy rate of 5% CAGR during the period 2019 to 2028.

Tstudy

Tproduce

Ttest

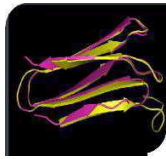


Conclusions

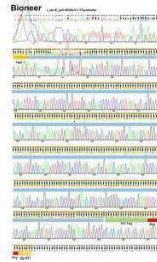
Study

Bacteriocin gene in bioinformatics database with tools and methods. Computational Biology

- ✓ 100% Sequencing
- ✓ Transform to host expression (*E. coli* B121)

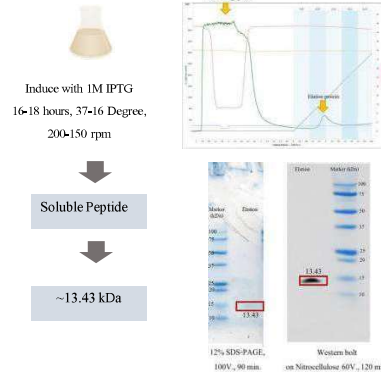


Lactococcus lactis



Produce

Recombinant Bacteriocin in host cell systems. And to isolate pure Recombinant Bacteriocin



Test

Test the efficacy of microbial inhibition in food by Recombinant Bacteriocin and stability



Fig. 4 Antimicrobial activity assay with *Lactis parafarmaceuticus* (Gram negative), A. *Acidobacterium* (Gram +), B. *Bacterium* (Gram +), C. *Control* (Gram +), D. *Whisk* cell without gene *L. coli*, E. *Supernatant* without gene *L. coli*, F. *Supernatant* for 10 h in 10 minutes, F. *Supernatant* for 10 h in 20V, medium, G. *Protein* for 10h



Effects of Letter Color on Word Memorization

Nagi TOYOSHIMA (Shibaura Institute Technology Kashiwa Senior High School)

"The most suitable color for memorization is blue."
Is this rumor true?

<Method>

Participants: 120 senior high school students

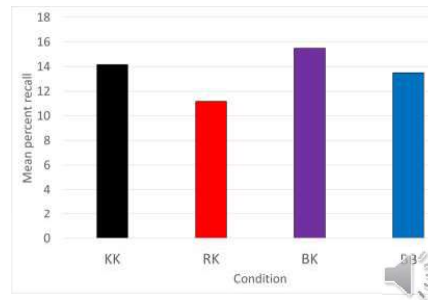
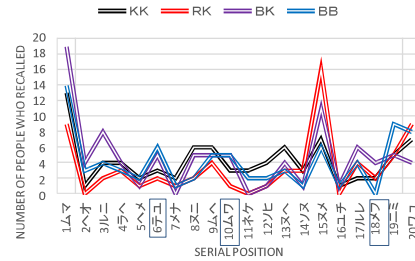
Procedure: • Sequentially presented 20 meaningless words of 2 katakana characters (1-second word presentation -> 1-second interval -> 1-second word ...)

• Asked to recall the words in any order

Conditions: **KK** (all words in black), **BB** (all in blue), **RK** (black except the 6th, 10th, and 18th words in red), **BK** (black except the 3 words in blue)

<Results>

- Clear primacy effects and recency effects
- Participants best remembered words in **blue in black condition**.
- Participants worst remembered words in **red in black condition**.
- **Red** is bad for memorization. Also, both **black** and **blue** are suitable for memorization, but they are more effective when mixed.



Research on the properties of amphoteric metals by using electrochemical cells

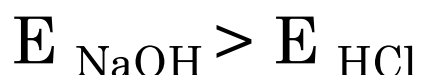
Chosei High School
AKIBA Terumasa

Research motive:

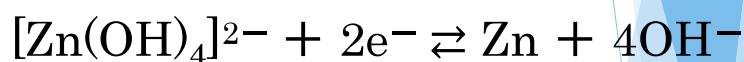
Textbook → no **basic** aqueous solution cells

Researched

Last year



Reason :




Purpose of time's experiment :

Measurement of $\underline{E^0_{[\text{Zn}(\text{OH})_4]^{2-}}}$


**Motivating Secondary Science Learning Through
3D Interactive Technology: From Theory To
Practice Using Augmented Reality**






Sari Narulita, S.Pd., M. T.
Mathematics and ICT Teacher

SMA NEGERI 1 BANDUNG
JL. IR. H. JUANDA NO. 93 BANDUNG
Website: www.sman1bdg.sch.id email : info@sman1bdg.sch.id



PURPOSE

Creative Teaching



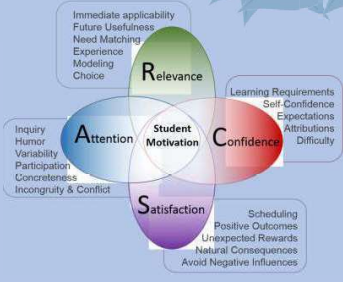
Maximize
Effectiveness

Learning
Motivation

Meaningful
Learning

Figure 1. The main elements for
effective learning (Orey,2007)

MATERIALS





**Augmented
Reality**

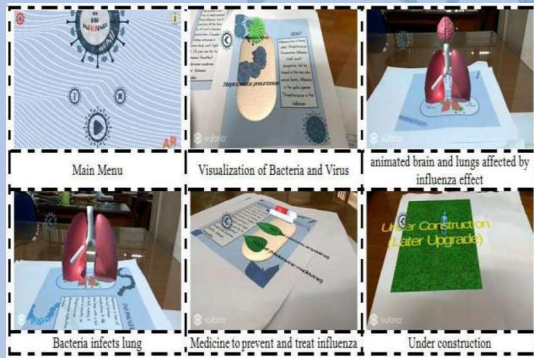
Figure 2. ARCS Method
(Keller, 1999)

METHODS

Case study approach incorporating
qualitative analysis



RESULT AND DISCUSSION



The use of augmented reality technology in The Bad Influence AR - project is expected to increase learning motivation and students' knowledge of Influenza to achieve effective learning.



<A3> 13:30

Ivonne M. Radjawane

Lecture Oceanography Research Group, Faculty of Earth Sciences and Technology
Institut Teknologi Bandung (ITB)

- 1 IRPMA131-1
Overcoming Mathematics Anxiety in Students by Using Uno Trigonometry Games (Case Study of Learning Difficulties in Trigonometry Materials)
SMA Taruna Bakti Bandung
Doni NURDIANSYAH, Asep GUNAWAN
- 2 IRPMA132-1
How do I Enhance Students' Mental Models of Chemical Equilibrium through Argumentation within Model-based Learning?
Kasetsart University
Anupong PRAISRI
- 3 IRPMA133-1
An Analysis of Lutoslawski's String Quartet and Self - composition
National Taiwan Normal University
Ting-Yun CHANG
- 4 IRPMA134-1
HIGH SCHOOL LIFE
Nawaminthrachinuthit Satriwitthaya Putthamonthon School
Thapana THONGNUAM, Yanisa MONTIENARD
- 5 IRPMA135-1
Exploring the Factors that Affect the Effective Female Leadership
Mahidol University
Xirun HE
- 6 IRPMA136-1
Temporal NDVI analysis to detect the effects of seawater intrusion on rice growth in coastal areas
IPB University
Tommy Andryan TIVIANTON

Overcoming Mathematics Anxiety in Students by Using Uno Trigonometry Games (Case Study of Learning Difficulties in Trigonometry Materials)

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Jl. L.L.R.E Martadinata No. 52 Bandung
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ABSTRACT

In general, mathematics is known as the hardest and the most hated subject in school. This is experienced by XI grade students, especially around trigonometry. They feel trigonometry is one of the hardest theory in mathematics, causing tenseness and fearfulness. The purpose of this research is to determine the influence of the trigonometric UNO cards game method to mathematics anxiety in learning trigonometry in students. This research was conducted in Taruna Bakti High School in the school year of 2019/2020. Experimental quantitative method was used as the research method and One Group Pre-test-Post-test was used as the research design. The subject of this research were 21 students that were obtained with purposive sampling technique on XI grade students. Questioner about mathematics anxiety in learning trigonometry was used as the instrument. This research used t-test as the data analysis technique.

The result of this research shows "The average of mathematics anxiety in learning trigonometry after been given the trigonometric UNO cards game method is lower than the average of mathematics anxiety in learning trigonometry before been given the trigonometric UNO cards game method". Therefore, the trigonometric UNO cards game method affects the reduction of mathematics anxiety in learning trigonometry in students.

Keywords : *Mathematics Anxiety in Trigonometry, Trigonometry UNO Cards.*

How do I Enhance Students' Mental Models of Chemical Equilibrium through Argumentation within Model-based Learning?



Sawadee Krup (Hello!)

Anupong PRAISRI, POMME



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Purpose and Methods

Purpose: To investigate the characteristics of AMBL to develop students' MMs of chemical equilibrium

Research questions:

1. What is the students' MMs of chemical equilibrium like during AMBL?
2. In what ways did AMBL enhance the MMs of chemical equilibrium of students?

Method: Research method is classroom action research which is under qualitative research paradigm.

Participants: 11th grade students (N=29) in high schools in Bangkok

Data collection and Analysis:

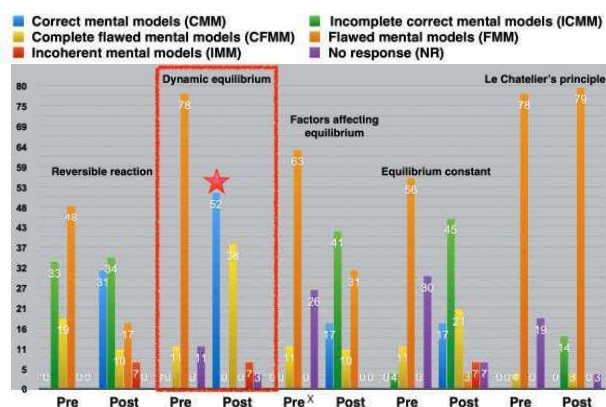
RQ1: I collected data by Pre-post questionnaire, and then I used inductive analysis to identify patterns and categories based on Chi and Roscoe (2002).

RQ2: I collected data by my reflective journals and my students' journals. Also, I used inductive analysis to identify patterns of best practice of teaching.

How do I Enhance Students' Mental Models of Chemical Equilibrium through Argumentation within Model-based Learning?



Results and Discussion



The 1st Best practice: Creating different models led to persuading in order to develop tentative model to scientific models.

The 2nd Best practice: Asking the students to explain the phenomenon by linking 3 levels of representation through modeling to develop MMs to scientific models.

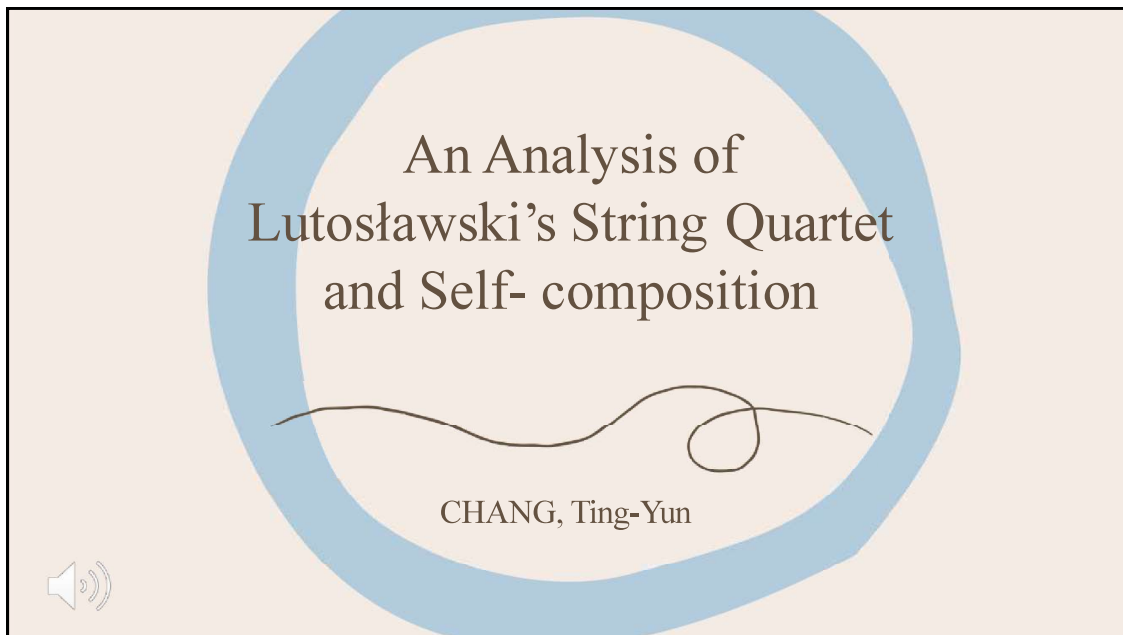


AMBL could develop students' MMs to scientific models (Khan, 2011; Barak & Hussein-Farraj, 2013; Potisen & Faikhamta, 2017; Markauskaite et al., 2020).

AMBL also could foster students to create model to explain the representation of chemical equilibrium on three levels and to generate arguments for developing their MMs to become similar to the scientific models.


How do I Enhance Students' Mental Models of Chemical Equilibrium through Argumentation within Model-based Learning?





An Analysis of Lutosławski's String Quartet and Self-composition

CHANG, Ting-Yun



An Analysis of Lutosławski's String Quartet and Self-composition

Purpose	Materials & Methods
<ul style="list-style-type: none">• Interest in the Development of Postmodern Music in 1945.• Limited aleatorism	<ul style="list-style-type: none">• Integration of collecting the relevant literature of the twentieth century music style.• Composer's background and music trends• Study relevant reference books, journals, essays, scores, interview records and audio materials.• Self-composition





Result and discussion

- 《String Quartet, 1964》
 - a. Use of signals in music.
 - b. mobile form / Chain form
 - c. Lutoslawski's musical spirit
- The Practice of Lutoslawski's Composition Technique.



NAWAMINTHRACHINUTHIT SATRIWITTHAYA PUTTHAMONTHON SCHOOL :
HIGH SCHOOL LIFE



MR. THAPANA THONGNUAM
Grade 11
Sciences - Mathematics Program

MISS YANISA MONTIENARD
Grade 11
Sciences - Mathematics Program



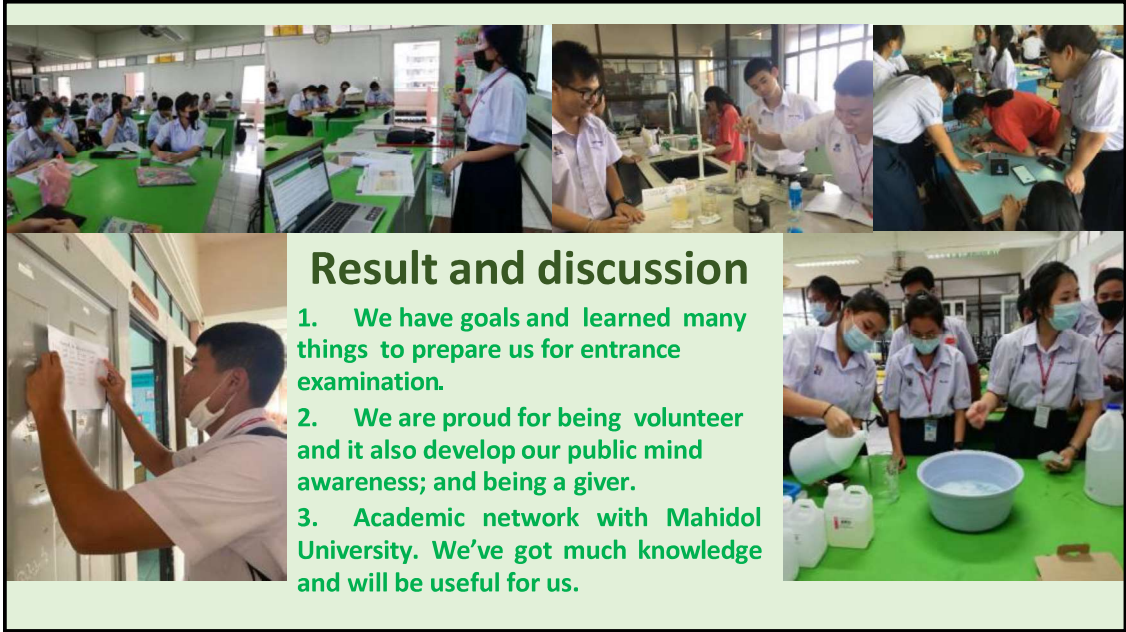
Purpose

1. To present High School Life in each day.
2. To enhance public mind in doing social activities
3. To show cooperation activities with Mahidol University

Methods

1. Studying in classroom from Monday to Friday.
2. Doing the extracurricular and public-minded activities eg. cleaning school, giving the hand gel to classrooms during COVID-19.
3. Cooperating with Mahidol University to learn new technology





Result and discussion

1. We have goals and learned many things to prepare us for entrance examination.
2. We are proud for being volunteer and it also develop our public mind awareness; and being a giver.
3. Academic network with Mahidol University. We've got much knowledge and will be useful for us.




Exploring the Factors that Affect the Effective Female Leadership

01.

Author: Christina (He Xirun)




Method and Instrument



02.

- 1**
Method
Documentary Research: By comparing the research results of five scholars
- 2**
Research purpose
to study the factors that affect effective female leadership and the real reasons that prevent women from reaching the top positions in organizations.





Research result

✓


Factors	Honda Hirono (2013)	Alice W. Early (2007)	Genesi Sim (2017)	Laura McCullough (2018)	Andreas Bore (2018)
Physiological factors: maternity leave	✓			✓	
Stereotypes of women	✓	✓	✓	✓	✓
Double pressure: family and work	✓			✓	
Leadership style				✓	
women's relatively low social status	✓	✓	✓		

Stereotypes of women and women's relatively low social status are major factors

Discussion

✓

This study attempts to classify the theories found in previous studies from different gender perspectives. Finally, this paper discusses the reasons for the lack of female representation at the top of the organization. The results have implications for further research and unequal gender work.

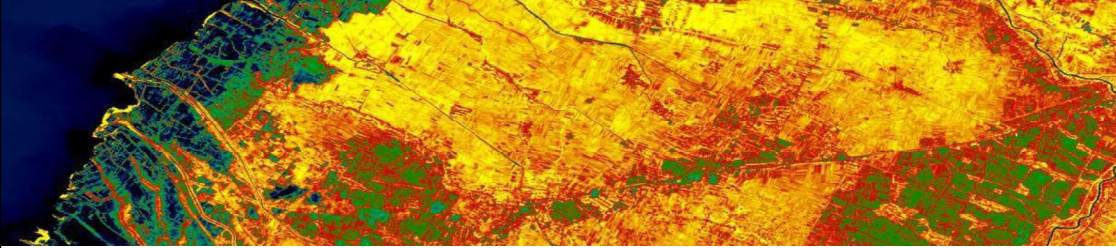


Temporal NDVI analysis to detect the effects of seawater intrusion on rice growth in coastal areas

Searching & Serving the Best

<http://ipb.ac.id>

Bogor Agricultural University (IPB)



Tommy A Tivianton^{1,2*}, Baba Barus¹, Muh Yanuar J Purwanto¹, Saiful Anwar¹, Widiatmaka¹

¹Natural Resources and Environmental Management Study Program, the IPB Graduate School, Bogor, Indonesia

²Department of Environmental Geography, Faculty of Geography, Universitas Gadjah Mada, Yogyakarta, Indonesia

Purpose, Materials and Methods

How the effects of salinization on rice growth stage in paddies

Input data

- Sentinel 2 L2A Time series 2015-2020
- Base map (Landuse: paddy field)
- NDVI Time series
- Data samples

Process

- Cropping
- NDVI algoritim
- Filtering Temporal pattern
- Classification K-Means
- Confusion matrix

Output

- Temporal pattern
- Class zonation
- Accuracy

Selection of The Training Area

Distance to the irrigation

Distance to the coastline

Land use type

Temporal NDVI patterns as indicators of rice growth stage

$$NDVI = \frac{(NIR-RED)}{(NIR+RED)}$$

NIR : near-infrared-band reflectance and *R* is red-band reflectance.

Segmentation using K-means at each stage period

Transplantation

Vegetative

Reproductive

Fallow

Model and field-measured data accuracy

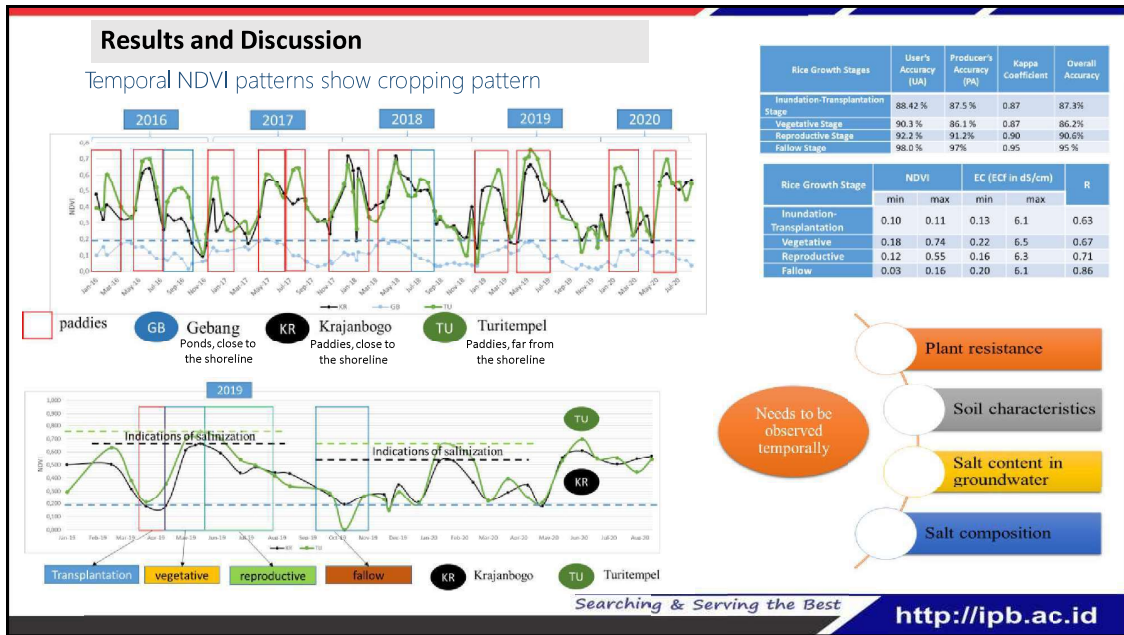
Electrical conductivity (EC)

$$ECf = (5.26 * ECa) - 0.94$$

ECa = apparent electrical conductivity
ECf = standard saturated extract

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Rojana Pornprasertsuk

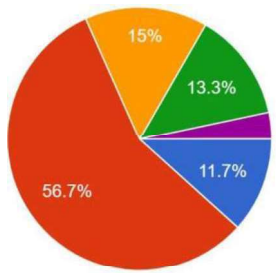
Assistant Dean, Faculty of Science
Chulalongkorn University

- 1 IRPMA141-1
GARDEN FROM SCRAPS
Kasetsart University Laboratory School, Center for Educational Research and Development
Numnueng WATTANAKASEMSAKUN
- 2 IRPMA144-1
Vegetable Electricity
SMA Taruna Bakti Bandung
Klinka Feyruz CHALISA,
- 3 IRPMA145-1
The amount of power generated when using multiple dyes in a dye sensitized solar cell
Chiba Prefectural Chosei Senior High School
Shunsuke ITO
- 4 IRPMA146-1
MnO₂ synthesis from spent Zn-C and alkaline batteries
Chulalongkorn University
Chaithawat WAIKHANI
- 5 IRPMA147-1
SPATIAL DISTRIBUTION OF SUITABILITY INLAND FISHERIES IN PEATLAND ECOSYSTEM SOUTH
KALIMANTAN,INDONESIA
IPB University
Yunandar
- 6 IRPMA148-1
Influence of Various Organic Wastes on Growth Performance and Nutrient Composition of Black
Soldier Fly Larvae (*Hermetia illucens*): A Meta-analysis
IPB University
Eko Lela FITRIANA



Purpose		Methods
<ul style="list-style-type: none">• Raise the awareness about waste production.• Convince action<ul style="list-style-type: none">◦ introducing the Garden from Scraps	Materials <ul style="list-style-type: none">• common household waste• vegetables scraps	<ul style="list-style-type: none">• Experiments & Observations• Creating & Design• Video Editing

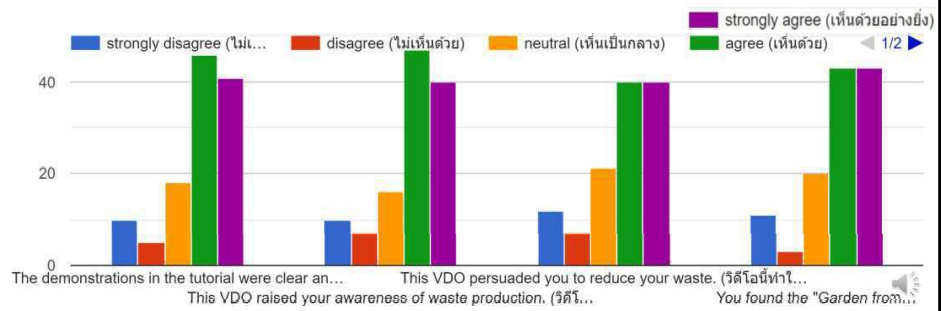
Results & Discussion



How likely are you to make your own Garden from Scraps?

- very likely (เป็นไปได้สูง)
- likely (เป็นไปได้)
- neutral (เฉยๆ)
- unlikely (ไม่น่าเป็นไปได้)
- extremely unlikely (เป็นไปได้ไม่)

Evaluation



**Vegetable Electricity : Electricity test of the Chlorophyll of Papaya Leaves
(*carica papaya L*) as a Green Power Source of Electricity using the
Microblal Fuel Cell (MFC).**

Klinka Feyruz Chalisa¹⁾, Asep Gunawan, S.Pd.,M.Si.,Gr¹⁾, Doni Nurdiansyah, S.Si¹⁾,
Taruna Bakti High School, Jln. L.L.R.E Martadinata No. 52 Bandung City
Email : chalisaav@gmail.com

ABSTRACT

Research has been made about the source of electricity produced from the chlorophyll of papaya leaves (*carica papaya L*). It has not been made much use of chlorophyll as a source of electricity, since power production is dominated by the use of fossil fuels. In the research, the technique is to extract papaya leaves by using ethanol 90%. Cut and pounded, the papaya leaf is then soaked in ethanol for one day. I, the extract of papaya leaves is used as a catode by using the volta's cell technique (microbial fuel cell) to determine the electricity generated.

From this experiment it was concluded that the extract of papaya leaves could produce electrical energy. It's proven and obtained through volta's theory of cells and redox reactions. From the experiments conducted on three subjects and two separate pairs of electrodes (Carbons and Cu - Zn), it was obtained that the extract of papaya leaves can produce between 37,1 mV - 937 mV of electric energy. The average electrical tension produced is 434,28 mV. The small matter that affected the large voltage was the mass of the papaya leaf itself, and the type of pair of electrodes that were used. For results to be more efficient, it is recommended to use Cu - Zn as an electrode.

Keywords : *papaya leaves (carica papaya L), volta's cell technique, electrical produced*

The amount of power generated when using multiple dyes in a dye-sensitized solar cell

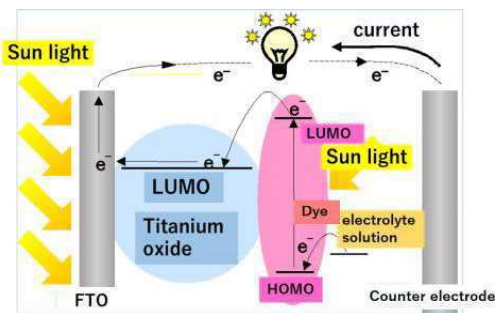
Chosei High School, 2nd year, ITO Shunsuke

Dye-sensitized solar cell

In general, a single dye is used



Use multiple dyes



Hypothesis

The amount of power generated would increase



combining dyes with different absorption wavelengths

Experimental method

① Eosin Y ② Brilliant Blue FCF

Measure the current and voltage

MnO₂ synthesis from spent Zn-C and alkaline batteries

Chaithawat Waikhani
 Advisor: Assoc. Prof. Rojana Pornprasertsuk
 Department of Material Science
 Chulalongkorn University, Thailand
 E-mail : rojana.p@chula.ac.th



Background and Purpose



Waste Spent Battery



Alkaline Battery



Zn-C Battery

Alkaline battery (K. Manowilaikul, et al.)

Cathode Powder from Spent Alkaline Battery

Leaching 0.5 M H₂SO₄ + H₂O₂ 6 ml.

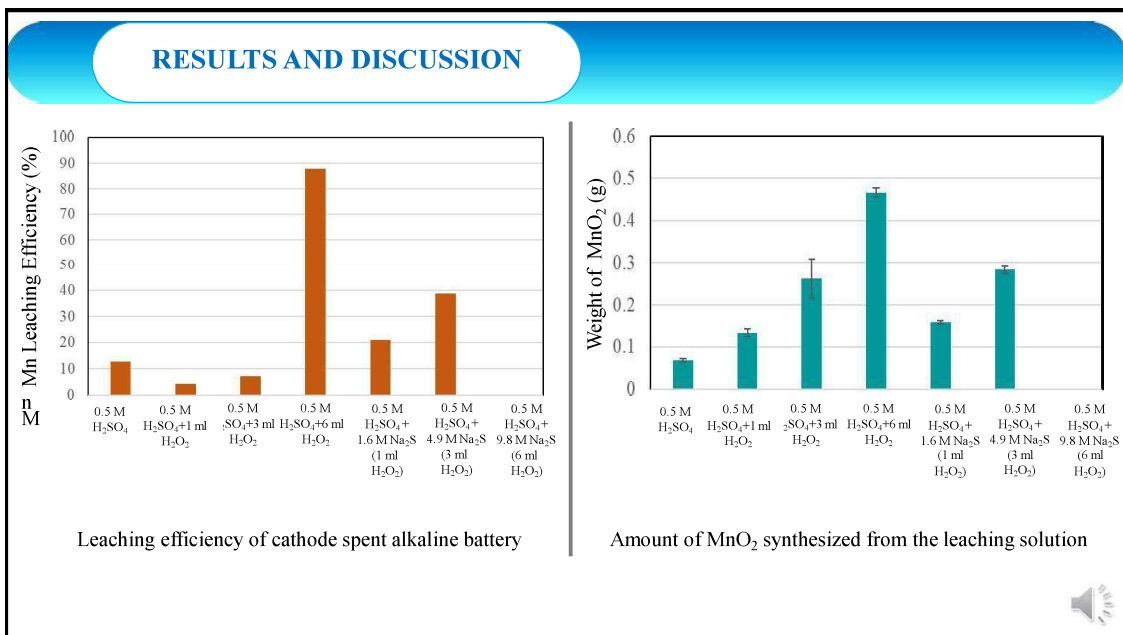
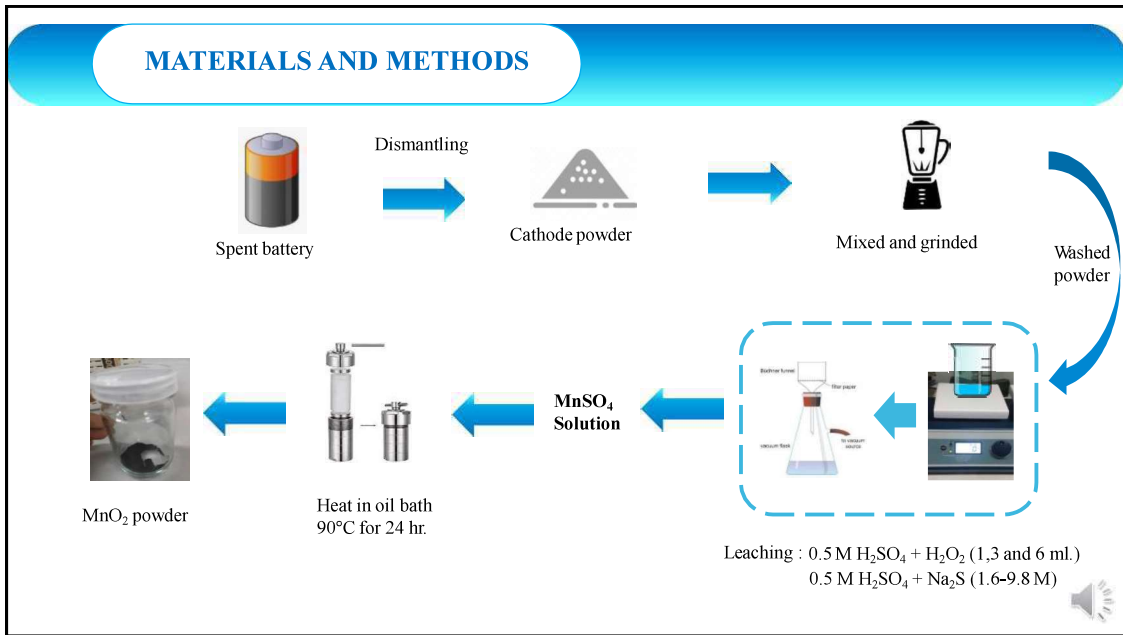
Heat in oil bath 90 °C for 24 hr.

γ-MnO₂

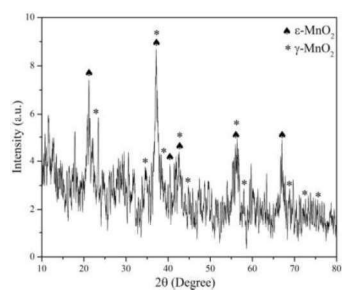
Purpose

- Optimize Mn leaching parameters for cost reduction.
- Synthesize MnO₂ from the optimized leaching solution.

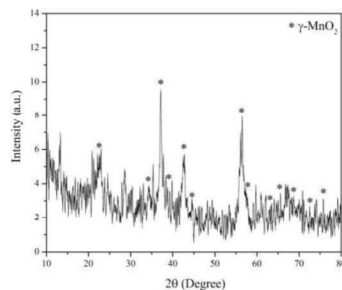




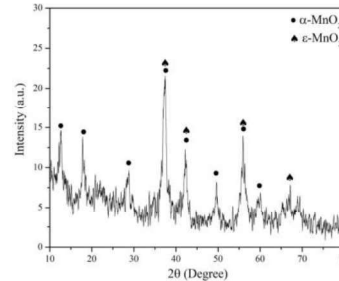
RESULTS AND DISCUSSION



No reducing agent



H₂O₂
Reducing Agent



Na₂S
Reducing Agent



Conclusion and Future Work

Conclusion

- The Mn leaching efficiency was reduced with reducing H₂O₂ concentration.
- By using Na₂S as a reducing agent, the amount of MnO₂ obtained was similar to those using H₂O₂.
- However, due to the limited Na₂S solubility, the leaching result at higher Na₂S concentration can't be obtained.
- Phase of the recycled MnO₂ was dependent on the type of reducing agent used.

Future plan

- Optimizing the Mn leaching efficiency by increasing temperature.
- Optimizing the Mn leaching parameters for the spent Zn-C battery cathode.
- Fabricate and test the performance of Zn-ion battery using the recycled MnO₂ compared commercial MnO₂.



Acknowledgement
Center of Excellence on Petrochemicals and
Materials Technology(Petromat)
Siamfrit company
Twinkle Program



ABSTRACT

**SPATIAL DISTRIBUTION OF
SUITABILITY INLAND FISHERIES IN
PEATLAND ECOSYSTEM
SOUTH KALIMANTAN, INDONESIA**



Yunandar*, Hefni Effendi, Widiatmaka, Yudi Setiawan

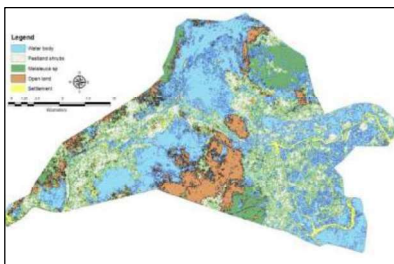
**Presented at TWINCLE PROGRAM 2021
IPB University Bogor Indonesia – Chiba University Japan**

* Study Program of Natural Resources and Environment Management, Graduate School, Bogor Agricultural University

RESEARCH PURPOSE, MATERIALS AND METHODS

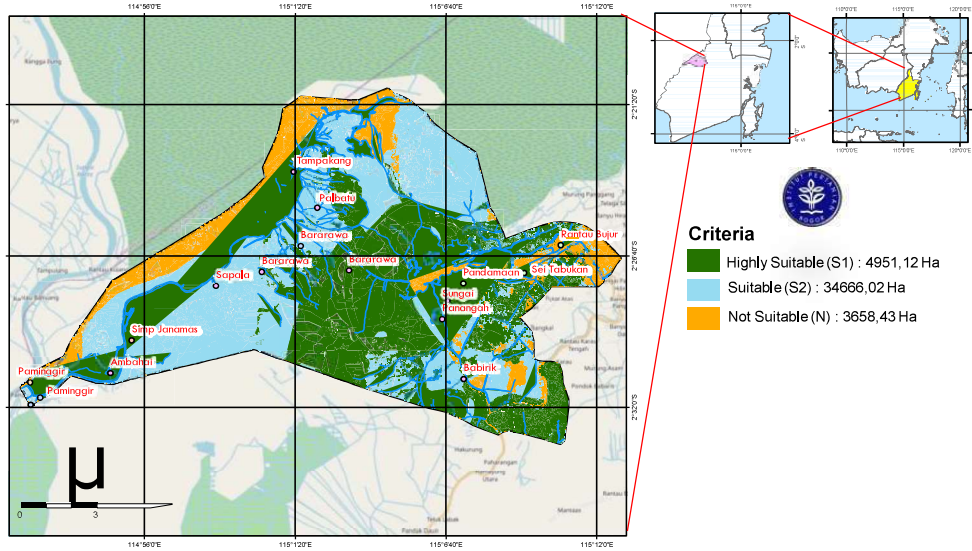


This research is aimed to analyzed suitability for aquaculture inland fisheries



- Inundation typology map based on Landsat data analysis 1996, 2004, 2013, 2015, 2018
- The method used Multi Criteria Decision Making from Analytic Hierarchy Process for weight criteria
- Determination of priority variables based on expert judgment, then used interpretation with GIS Software
- Criteria suitability S1, S2 and N were product

RESULTS AND DISCUSSION



Influence of Various Organic Wastes on Growth Performance and Nutrient Composition of Black Soldier Fly Larvae (*Hermetia illucens*): A Meta-analysis

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²Department of Nutrition and Feed Technology, Faculty of Animal Science, IPB University, Jl. Agatis Kampus IPB Dramaga, Bogor 16680, Indonesia

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Abstract. Black soldier fly (BSF) larvae (*Hermetia illucens*) is a potential protein source in animal feed. The development and nutrient composition of BSF larvae depend on its substrate. The objective of this study was to evaluate the effects of various organic wastes as substrates on growth performance and nutrient composition of BSF larvae across various studies by employing a meta-analysis method. A database was developed by integrating data from 47 studies that derived from 13 articles. The articles were derived from several electronic databases such as Science Direct and Google Scholar. Organic substrates were categorized into four groups, i.e., food waste, animal feed, faeces, and other substrates (those which could not be included into the previous three groups). These groups were statistically analyzed by using analysis of variance and continued with the Duncan multiple range test to compare among different group means. The results showed that food waste and animal feed substrates had higher percentage of waste reduction index and conversion rate as compared to those of faeces and other substrates ($P < 0.05$). Animal feed substrate had higher prepupal yield mass of BSF larvae than that of food waste substrate ($P < 0.05$). In regard to nutrient composition of the BSF larvae, both crude protein and ether extract of the insect species were not influenced by the different substrates and revealed relatively similar values. In conclusion, a more nutritious substrate leads to a faster growth and a higher mass yield of BSF larvae, but it does not alter nutrient composition of the insect.

<B1> 11:00

Dr. Eng. Ni Nyoman Pujianiki, ST. MT. M.Eng.

Head of International Office

Udayana University

- 1 IRPMB111-1
Association of cesarean delivery with anemia in infants and children in 2 large longitudinal Chinese birth cohorts
National Taiwan Normal University
Hsing-Wei CHOU
- 2 IRPMB112-1
SPATIAL-TEMPORAL CARRYING CAPACITY OF AGRICULTURE IN KULON PROGO DISTRICT SPECIAL REGION OF YOGYAKARTA
Universitas Gadjah Mada
Irwansyah SUKRI
- 3 IRPMB113-1
Customized 3D-printed Ankle Foot Orthosis: Design and Fabrication Method
Universitas Indonesia
Ziyan Muhammad AQSHA
- 4 IRPMB114-1
Spin polarization in two-dimensional tilted Dirac cone systems
King Mongkut's University of Technology Thonburi (KMUTT)
Nawapan SUKPRASERT
- 5 IRPMB115-1
Change of the coefficient of static friction of gym shoes
Chiba Prefectural Chosei Senior High School
Chihiro TAGA
- 6 IRPMB116-1
Time Scheduling
Chiba University ASCENT Program (Team 1)
Kaito HIKI, Shiho MURAKAMI, Yo CHO, Riamu TSUKUI
- 7 IRPMB117-1
The Evolution of Surface and Subsurface Temperatures in West Sumatra and South Java Seas During Indian Ocean Dipole (IDO) Events in 2010-2014
Institut Teknologi Bandung (ITB)
A.R. Khairun NISA'



Association of cesarean delivery with anemia in infants and children in 2 large longitudinal Chinese birth cohorts

(2015/03)

Authors: Hong-tian Li, Leonardo Trasande, Li-ping Zhu, Rong-wei Ye, Yu-bo Zhou, and Jian-meng Liu

- Purpose:
The prespecified hypothesis was that cesarean delivery is **associated** with increased risks of anemia in infants and children.
- Method:
IBM SPSS 20.0 was used for all analyses. A 2-sided P value < 0.05 was considered **significant**, and no adjustment for multiple comparisons was made.

- The study used statistical systems to analyze all samples in the hospital data base.
- Scholars separated several factors that might effect the results of the research.
- To summarize, **cesarean delivery is associated with increased risk of anemia in children**. Especially in countries with high rates of cesarean delivery, given the serious morbidity associated with childhood anemia.



**SPATIAL-TEMPORAL CARRYING CAPACITY OF
AGRICULTURE IN KULON PROGO DISTRICT
SPECIAL REGION OF YOGYAKARTA**

Irwansyah S. (S.Pd)
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PURPOSE

Purpose: Spatial reviewing changes in the carrying capacity of rice fields in Kulon Progo Regency.

This research can help provide insight into the impact of development in a region on agricultural carrying capacity.

The construction of transportation infrastructure will lead to changes in land use including agriculture land.

MATERIALS AND METHODS

The carrying capacity of the region in the concept of food is the ability of the region in providing and meeting the need for food from its own territory (self-sufficiency) (Muta'ali, 2012).

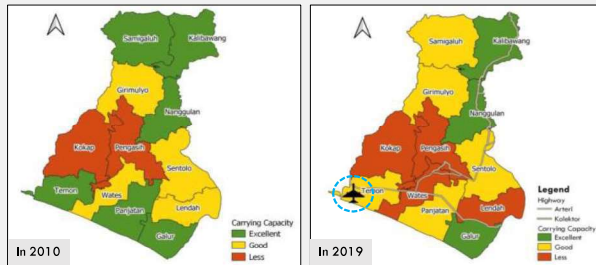
The essence of carrying capacity is the comparison between supply and demand.

Carrying Capacity of Rice Food

$$CCRF/DDPb = \frac{(Pr_t \times Ilt_p) \times t}{JP \times Std_b}$$

Spatial-temporal analysis used is the spatial pattern of changes in carrying capacity that occur from the time (before and after the construction of the airport).

RESULT AND DISCUSSION



The change Carrying Capacity of Rice Food happen from 2010 to 2019 are:

- Temon, from very good to good
- Wates, from good to less
- Panjatan, from very good to good
- Lendah, from good to less
- Samigaluh, from very good to good

The spatial pattern of changes that occurred in Kulon Progo Regency is a sub-district that becomes airport access (highway) and close to the airport will experience changes in agricultural carrying capacity.

Customized 3D-printed Ankle Foot Orthosis: Design and Fabrication Method

Ziyan Muhammad Aqsha

Biomedical Engineering, Department of Electrical Engineering
Faculty of Engineering, Universitas Indonesia, Indonesia
E-mail: ziyan.muhammad81@ui.ac.id



1

PURPOSE: To develop a 3D-printed AFO by implementing reverse-engineering the conventional method of AFO fabrication.

MATERIAL AND METHODS:

- **3D Scanning**

Three-dimensional model of the patient's ankle-foot complex is acquired through a 3D scanning method using COMB 3D Scan mobile application.

- **3D Modeling**

Modeling .STL files (3D scan results) using CAD softwares such as Meshmixer and Autodesk Inventor. Simulation done by using ANSYS on static structural study module.

- **Additive Manufacturing**

The slicing process is done with Ultimaker Cura 4.6.2 and printed on an Anycubic Predator 3D printer machine using eSun Yellow PETG as the material.

- **Fitting**

The prototype of the 3D print results was tested for the suitability of the patient's feet.



FIGURE 1 The Use of AFOs with the Child with Cerebral Palsy

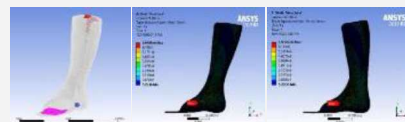


FIGURE 3 Boundary condition designation on the conventional AFO model.

FIGURE 4 stress analysis result for (a) anterior direction force and (b) posterior direction force.



FIGURE 5 topology optimized AFO model

FIGURE 6 Ready-to-print model

2

RESULTS : Additive Manufacturing

- To achieve best results that are also comparable to conventionally fabricated AFO, we consider reducing either total material usage or total printing duration.



FIGURE 7 Printed result of the first printing attempt.

TABLE 1 Parameter set in Cura for the first 3D printing attempt

Laver height	0.4 mm	Printing temperature	235°C
Nozzle line width	0.8 mm	Heating bed temperature	60°C
Wall thickness	1×0.8 mm	Flow rate	100%
Infill density	20%	Print speed	40
Infill pattern	Cubic subdivision	Travel speed	120

The total material used is 321 gr and the total duration is 10hours 48 minutes.

- The print result on second attempt is significantly strengthened than the first printing attempt.



FIGURE 8 Printed result of the second printing attempt.

TABLE 2 Parameter set in Cura for the second 3D printing attempt

Laver height	0.4 mm	Printing temperature	235°C
Nozzle line width	0.8 mm	Heating bed temperature	60°C
Wall thickness	2×0.8 mm	Flow rate	100%
Infill density	100%	Print speed	40
Infill pattern	Concentric	Travel speed	120

The total material used is 354 gr and the total duration is 11hours 18 minutes.

DISCUSSION

Previous research about 3D printed AFO is using PLA as the main material although they also recommended to use stronger 3D printing material than PLA, Nylon for example. PETG on the other hand has better overall mechanical properties than PLA.



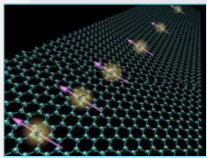
FIGURE 9 Fitting AFO model

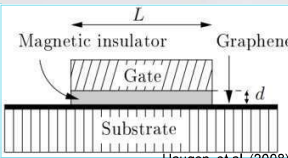


Spin polarization in two-dimensional tilted Dirac cone systems

Nawapan Sukprasert, Adviser: Asst.Prof.Dr. Watchara Liewrian
 Theoretical and Computational Physics Group (TCP), Department of Physics,
 Faculty of Science, King Mongkut's University of Technology Thonburi

SPINTRONICS





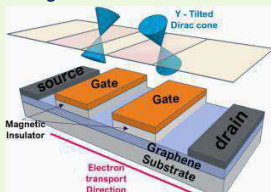
Haugen, et al. (2008).

Graphene is the best candidate to spintronics device.

We can control spin in Graphene-based device by coating with magnetic insulator and metal on graphene.

? Questions

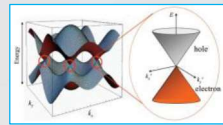
When Coating Metallic gate and magnetic insulator to device in nanoscale. It can deform graphene structure. It means Dirac cone tilted. Transport properties of electron like conductance will be changed.



PURPOSE

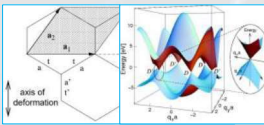
To provide evidence of mismatch tilted Dirac cones in Spintronics Device.

TILTED DIRAC CONE



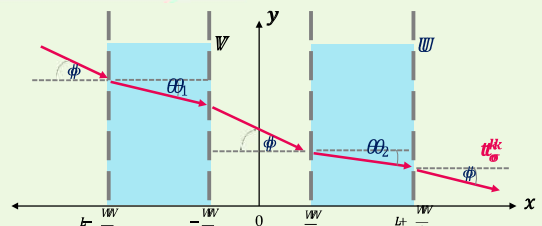
Kim, (2017)


Graphene has linear dispersion relation called Dirac cone.



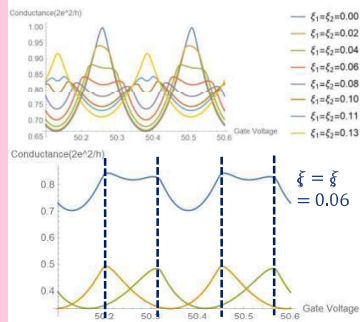
Goerbig, et al. (2008).

Dirac cone in graphene can tilted by strained it.





DISCUSSION



Y-axis tilted Dirac cone don't change frequency of conductance oscillation but change phase of conductance oscillation instead.

Y-axis tilted Dirac cone split peak of conductance oscillation.

CONCLUSION

Y-axis Tilted Dirac cone can affect conductance oscillation pattern.

Change of the coefficient of static friction of gym shoes

TAGA Chihiro,
Chosei High School



Q, Have you ever thought about the slipperiness of gym shoes?

- I thought...
the coefficient of static friction of gym shoes would increase with the amount of weight applied.

“What do you think about this?”

[method]

- ① change the amount of weight applied
- ② measured the coefficient

[result]

the result was completely different from my expectation!

If you are interested, please watch the full presentation!

Time Scheduling

Kaito Hiki, Shibaura institute of technology Kashiwa High School
Shiho Murakami, Komatsugawa High School
Yo Cho, Ichikawa High School
Riamu Tsukui, Komagome High School



This program is making for people whose lifestyle is disturbed to fix it.

Chiba University ASCENT Program

Description of the application

Motto

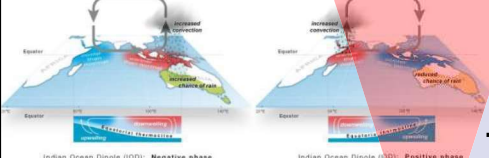
Help people to fix their messed up time schedule

Outcome

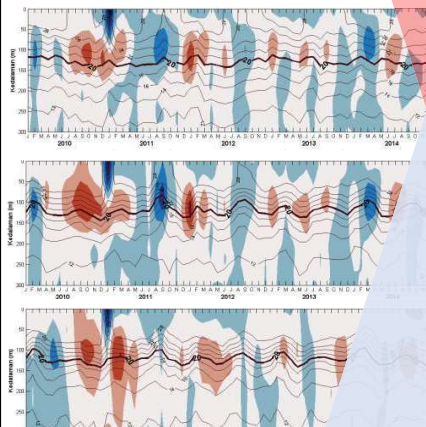
After the user input a few information about themselves, the program will display their ideal time schedule in a form of a pie graph. Some of the elements include studying (working) time, meal time, and sleeping hours.

Future goal

We hope we could advance our program and add some functions such as to keep track of the people's exercise habit, so that the users can be more healthy.



Indian Ocean Dipole (IOD): Negative phase Indian Ocean Dipole (IOD): Positive phase



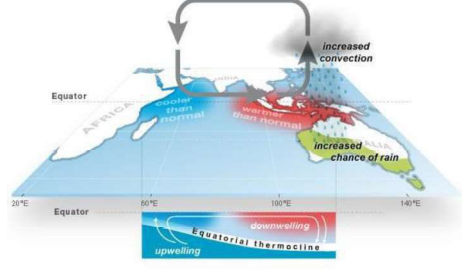


THE EVOLUTION OF SURFACE AND SUBSURFACE TEMPERATURES IN WEST SUMATRA AND SOUTH JAVA SEAS DURING INDIAN OCEAN DIPOLE (IOD) EVENTS IN 2010 – 2014


A.R. Khairun Nisa, Ivonne M. Radjawane

Earth Science, Faculty of Earth Sciences and Technology,
Institut Teknologi Bandung (ITB), Indonesia

E-mail: a.r.khairunnisa@students.itb.ac.id






Indian Ocean Dipole (IOD): Negative phase



Purpose


To study the evolution of temperature anomaly in surface and subsurface layers that occurs in the West Sumatra and South Java seas during formation mechanism of the Indian Ocean Dipole (IOD)



Materials


Sea temperature data from 0 - 300


HYBRID COORDINATE OCEAN MODEL



Methods

The data were processed and then presented using a cross-section plot and Hovmöller diagrams







Results and Discussion

Negative IOD 2010 (August-October)

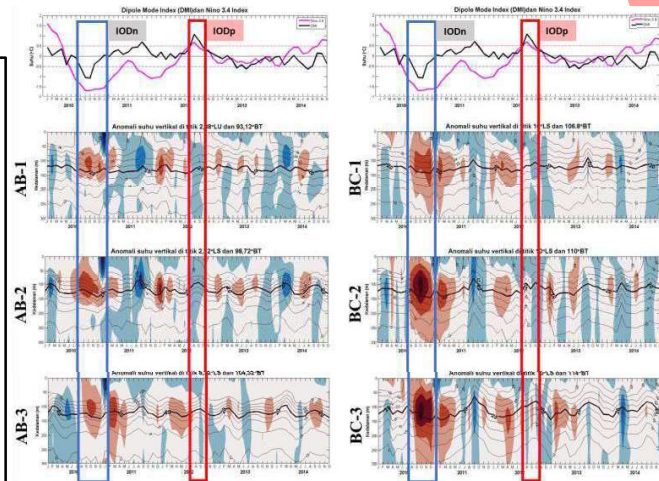
Positive temperature anomaly in the **subsurface layer started four months earlier** than the surface layer **and ended six months after the IOD event**.

Positive IOD 2012 (August-September)

Negative temperature anomaly formed in the surface layer seven months earlier. **Anomaly formed in subsurface layer coincided with the onset of the positive IOD event**.

Effect of La-Niña phase

Supports (inhibits) the formation of positive (negative) temperature anomaly in negative (positive) IOD event.



<B2> 12:00

Kimleang Khun

Lecturer, Faculty of Science

Royal University of Phnom Penh

- 1 IRPMB121-1
Analysis of Equilibrium Shapes of Clamped-end Beam Subjected to a Concentrated Load
King Mongkut's University of Technology Thonburi (KMUTT)
Mata FONGFOUNG
- 2 IRPMB122-1
The intelligent automatic robot for medicine reminding (B-GIN)
Kasetsart University Laboratory School, Center for Educational Research and Development
Nuttarat WONGMANEEROJ
- 3 IRPMB123-1
Comparison of Pan-Sharpening Algorithms for PRISMA Hyperspectral Data
Universitas Gadjah Mada
Muslih BILADI , Amanda MAISHELLA
- 4 IRPMB124-1
Construction and analysis of magnetic levitation device using Arduino UNO
Chiba University
Hina MORISHIGE
- 5 IRPMB126-1
CALENDAR FOR STUDENTS
Chiba University ASCENT Program (Team 2)
Akito KURAMOCHI, Daichi SARUTA, Ai YAMAMOTO, Ayuka KOCHI
- 6 IRPMB127-1
HEALTH CHECKAPP
Chiba University ASCENT Program (Team 5)
Takumi IIZUKA, Ryuki HANAZAWA, Karin TANABE, Kento ABE, Honami TODA
- 7 IRPMB128-1
The Development of Mathematical Creative Thinking Skill on Geometry Transformation by Using
STEM Education
King Mongkut's University of Technology Thonburi (KMUTT)
Hathaichanok SUKRONMUANG

Analysis of Equilibrium Shapes of Clamped-end Beam Subjected to a Concentrated Load

Speaker : Mata Fongfoung

Advisor: Asst.Prof. Dr. Waraporn Chatanin

Co-advisor: Asst.Prof. Dr. Parinya Sa Ngiamsunthorn

Department of Mathematics, Faculty of Science, KMUTT

1

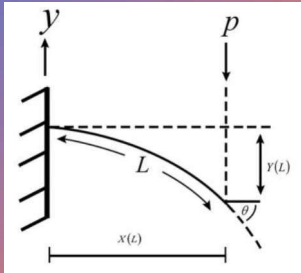
PURPOSE

This paper presents the large deflection of an inextensible cantilever beam. The beam of length L is clamped at one end. At the free end, the beam is subjected to a concentrated load in vertical direction. The equilibrium shapes of the beam is then analyzed. Euler-Langrange condition is obtained by a method in calculus of variation to establish the existence and uniqueness of minimizer of the energy functional. In addition, we provide a characterization of the equilibrium shapes for the beam attaining global energy minima.

Materials and methods

- Direct method of calculus of variations
- contraction mapping
- Banach fixed-point theorem

CONCLUSION

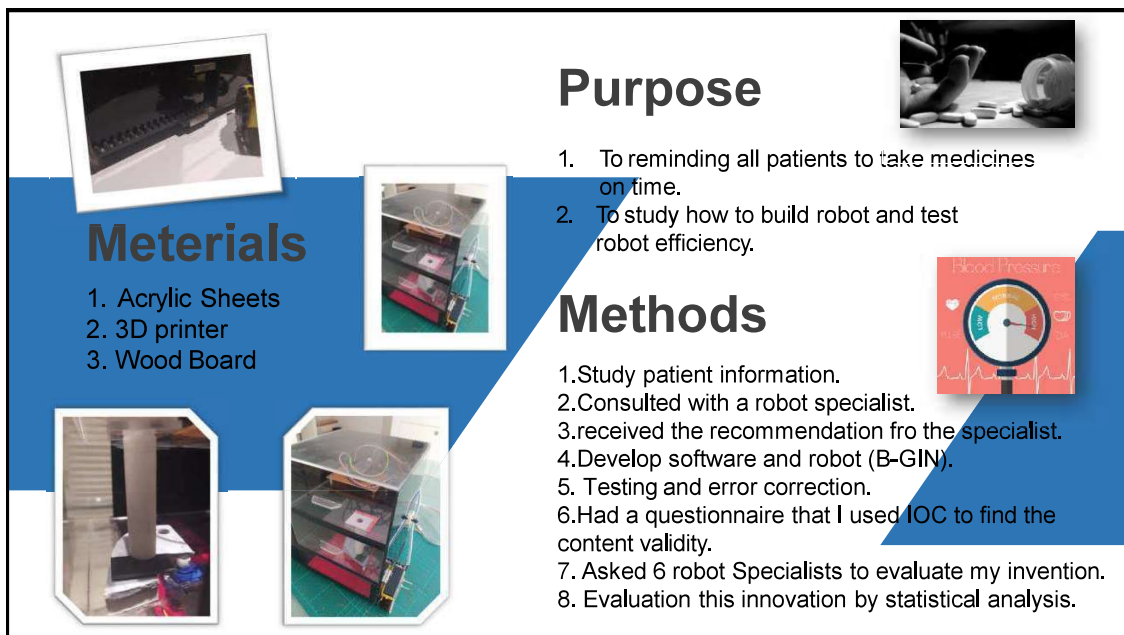


- We apply the direct method of calculus of variations to analyze stability shape of clamped-end beam subjected to a concentrated load. The existence and uniqueness of the energy minimizer was obtained based on Banach fixed point theorem. We also studied some equilibrium configurations of the beam and found that the tangent angle of the beam is increasing but does not exceed $\frac{\pi}{2}$.



The intelligent automatic robot for medicine reminding (B-GIN)

by Mr.Nuttarat Wongmaneeroj
Kasetsart University Laboratory School
Asst.Prof.Dr.Somsak Techakosin
Asst.Prof.Dr.Tawida maneewan



Materials

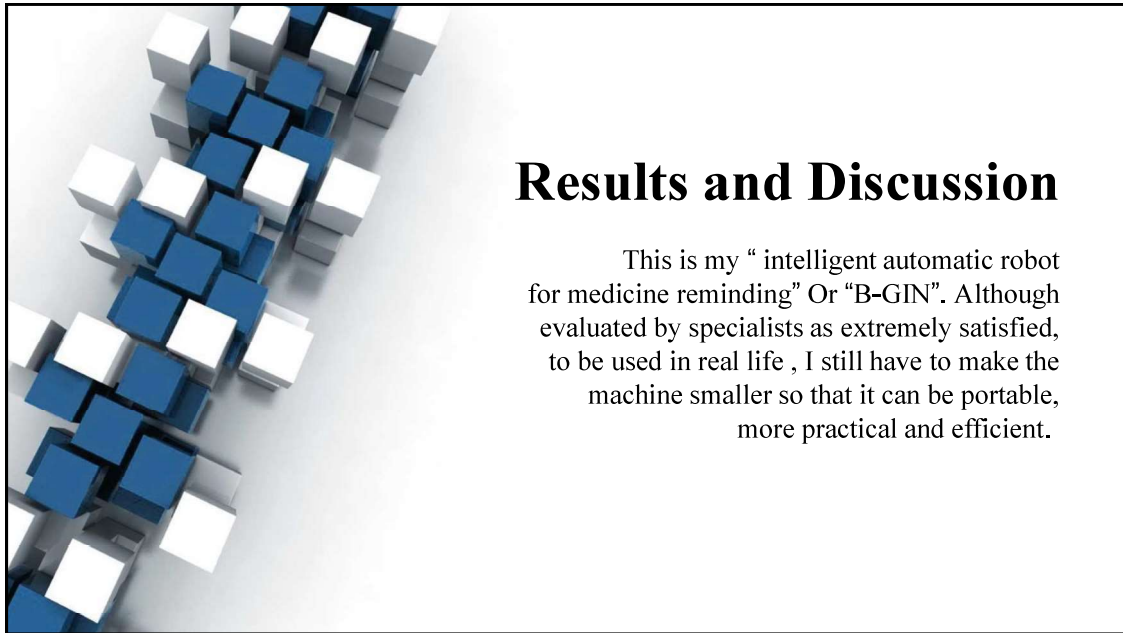
1. Acrylic Sheets
2. 3D printer
3. Wood Board

Purpose

1. To reminding all patients to take medicines on time.
2. To study how to build robot and test robot efficiency.


Methods

- 1.Study patient information.
- 2.Consulted with a robot specialist.
- 3.received the recommendation fro the specialist.
- 4.Develop software and robot (B-GIN).
5. Testing and error correction.
- 6.Had a questionnaire that I used IOC to find the content validity.
7. Asked 6 robot Specialists to evaluate my invention.
8. Evaluation this innovation by statistical analysis.



Results and Discussion

This is my “ intelligent automatic robot for medicine reminding” Or “B-GIN”. Although evaluated by specialists as extremely satisfied, to be used in real life , I still have to make the machine smaller so that it can be portable, more practical and efficient.



UNIVERSITAS
GADJAH MADA


Comparison of Pan-Sharpener Algorithms for PRISMA Hyperspectral Data

Amanda Maishella
Muslih Biladi

Geographic Information Science Department
Faculty of Geography
Universitas Gadjah Mada

ugm.ac.id

LOCALLY ROOTED, GLOBALLY RESPECTED

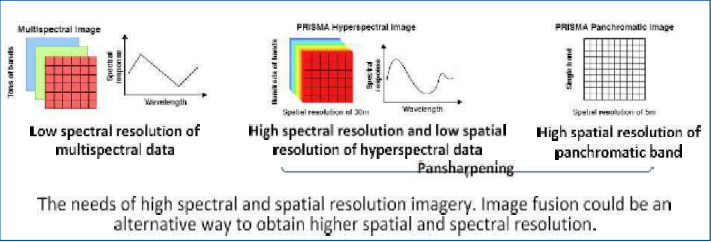


UNIVERSITAS GADJAH MADA

Research Purpose

Assessing and comparing the quality of PRISMA Hyperspectral pan-sharpened imagery

Materials and Methods



Low spectral resolution of multispectral data

High spectral resolution and low spatial resolution of hyperspectral data

High spatial resolution of panchromatic band

Pan-sharpening

The needs of high spectral and spatial resolution imagery. Image fusion could be an alternative way to obtain higher spatial and spectral resolution.

Materials:

- Laptop (Intel Core i5; 8GB DDR4; 512GB SSD; NVIDIA GeForce MX250 2GB)
- R programming language
- Quantum GIS 3.10
- ENVI Classic Version 5.2
- PRISMA hyperspectral data

Methods:

Pan-sharpening Algorithms:

- Gram-Schmidt (GS)
- Principal Component Analysis (PCA)
- Discrete Wavelet Transform (DWT)
- A trous Wavelet Transform (ATWT)

Quality Assessment:

- Root Mean Square Error
- Relative Dimensionless Global Error in Synthesis (ERGAS)

ugm.ac.id

LOCALLY ROOTED, GLOBALLY RESPECTED

Results and Discussion



UNIVERSITAS GADJAH MADA



Gram-schmidt



Discrete wavelet transform



Principal Component Analysis



A trous wavelet transform

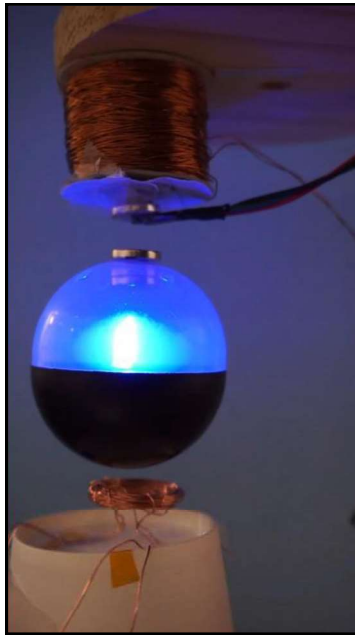


Original Image

Quality Metric	Pan-sharpening Algorithm			
	Gram-Schmidt	PCA	DWT	ATWT
RMSE (spectral)	0.1193228	0.1240232	0.06958328	0.06425161
ERGAS	2.074878	3.103426	1.47298	1.351288

A trous wavelet (ATWT) method had the minimum error value based on RMSE and ERGAS.

Generally, MRA based method produce the better spectral quality of PRISMA hyperspectral pansharpened image but with a more blurry appearance.



Construction and analysis of magnetic levitation device using Arduino UNO

Hina Morishige

Graduate Student, Graduate school of Education, Chiba University, Japan

Email: caha5857@chiba-u.jp



Background : Interesting magnetic levitation toys

Magnetic levitation toys are introduced in junior high school textbooks in Japan.



It is not possible to float a magnetic material stably using a permanent magnet.

When an electrostatic field exists in an uncharged region, it is not possible for charged particles in that region to maintain a stable equilibrium.

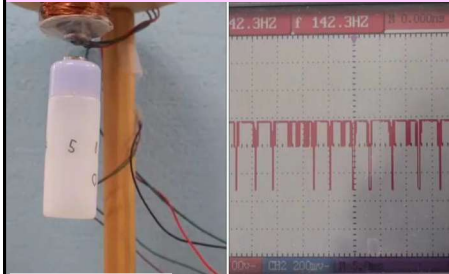
→Same for static magnetic fields

This observation makes me think about the following question:

How can magnetic levitation toys float?

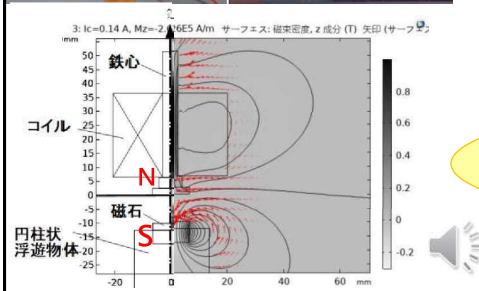
- Purpose:**
- I. To create a magnetic levitation system using electromagnets
 - II. To analyze the magnetic field during levitation.

Conclusion



It was found that in the floating position, the magnet always tries to approach the head of the electromagnet, so that the electromagnet is intermittently repelled by the current flowing through the coil.

Like a bouncing water balloon
(mizu-yo-yo)



CALENDAR FOR STUDENTS



Akito Kuramochi Kogane High School 1st year, Japan
Daichi Saruta Toho High School 1st year, Japan
Ai Yamamoto Ichikawa High School 1st year, Japan
Ayuka Kochi Ichikawa High School 1st year, Japan

Chiba University ASCENT Program

Motivation

Have you ever forgotten something you have to take
when you go somewhere??

WHAT CAN THIS CALENDAR DO




1. Shows the things that you have to take to the places you go.
2. Shows how many days from today until a given date.

If you use this calendar,
you never forget what you need to take with yourself!!

HEALTH CHECKAPP

A Programming Application for Diagnosing Diseases



National Institute of Technology Kisarazu College, **Iizuka Takumi**
Tokyo Metropolitan High School of Science and Technology, **Hanazawa Ryuki**
Ichikawa High School, **Tanabe Karin**
Kugenuma High School, **Abe Kento**
National Institute of Technology Kisarazu College, **Toda Honami**
Chiba University ASCENT Program

What is the application?


- 1 Programming application for diagnosing diseases
- 2 If you click the symptoms buttons, you can know your disease.

Background

Coronavirus has been rampant all over the world. A lot of hospitals are also at the brink of medical collapse and people are anxious of contracting the diseases.

HEALTH CHECKAPP

A Programming Application for Diagnosing Diseases



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Tokyo Metropolitan High School of Science and Technology, **Hanazawa Ryuki**
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Kugenuma High School, **Abe Kento**
National Institute of Technology Kisarazu College, **Toda Honami**
Chiba University ASCENT Program

What is the application?

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The Development of Mathematical Creative Thinking Skill on Geometry Transformation by Using STEM Education



Miss Hathaichanok Sukronmuang

Master degree of Science Education

King Mongkut's University of Technology Thonburi, Thailand

Email: hathaichanok.s@mail.kmutt.ac.th

PURPOSE:

2

- 1 To study the development of mathematics creative thinking skill of students who have organizing learned by activities based on STEM Education.
- 2 To compare mathematics creative thinking skill gain scores between the fluency thinking, flexibility thinking, originality thinking and elaboration thinking of students who have organizing learned by activities based on STEM Education.

MATERIALS AND MERHODS :

1 **Learning Plan** :learning plans based on STEM Education

Request permission

Pre-test

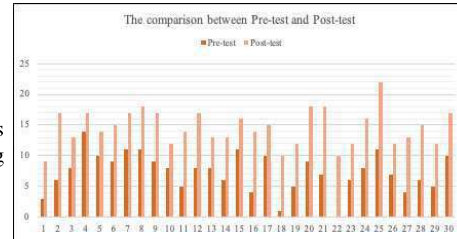
2 **Mathematics creative thinking Test** :Four questions

Experiment and Qilitative data

Post-test

RESULTS AND DISCUSSION :

1. The post-learning mathematical creative thinking skill scores of students after learning under management based on STEM education was significantly higher than their pre-learning counterpart scores at the 0.05 level of significance
2. The fluency, flexibility, originality and elaboration scores of students learning under management-based STEM Education were significantly different at the 0.05 level of significance
3. From observing the behavior of students, students expressed fluency thinking as clearly as possible which was consistent with quantitative data.



Group B (support : Sasaki, Morishige, Yamada)

<B3> 13:30

Yi-Fen Yeh

Assistant Professor College of Teacher Education
National Taiwan Normal University

- 1 IRPMB131-1
Let's make a hot pot
Chiba University ASCENT Program (Team 3)
Kana KANAI, Rui YANAGI, Kyoko SUDO, Syuta SUZUKI, Kisyun OZAKI
- 2 IRPMB132-1
Personality Clinic(Personality Diagnosis)
Chiba University ASCENT Program (Team 6)
Yuta KAWAGUCHI, Kurumi KUSAKARI, Yoshiki NODA, Sho NAKAZAWA , Manaka SAITO
- 3 IRPMB134-1
Analysis of the Effect COVID-19 Pandemic on CO Emissions in Java Using Sentinel 5P Imagery
Universitas Gadjah Mada
Johan Herdi PUTRA, Muhammad Fikri HIBATULLAH, Ahmad Harisul HAQ
- 4 IRPMB135-1
Post Buckling Analysis of a Cantilever Beam Subjected to a Compressive
King Mongkut's University of Technology Thonburi (KMUTT)
Jatuporn SAETANG
- 5 IRPMB136-1
EVALUATION OF THE REGIONAL SPATIAL PLAN IN CENTRAL LOMBOK REGENCY in 2011-2031
Universitas Gadjah Mada
Frinsen Johny HUTAGALUNG
- 6 IRPMB137-1
Influence of QBO-MJO Connection on The Turbulence Variations in the TTL Observed with
Equatorial Atmosphere Radar
Institut Teknologi Bandung (ITB)
Arlif Nabilatur ROSYIDAH

Let's make a pot



Yanagi Rui (Engei high.) Sudo Kyoko (Showa Women's University high.)

Suzuki Syuta (Ichikawa high.) Ozaki Kisyun (Ichikawa high.) Kanai Kana (Chosei high.)

Chiba University ASCENT Program

Back ground and Purpose

When I want to cook something, it's hard to think about what you can do with just the contents of the refrigerator.

Therefore, we wanted to create an app that would determine what can be made with the ingredients by recording the contents of the refrigerator.

We will create a system that if the user records the contents of the refrigerator in the app, the app displays the hot pot dishes that can be made with the ingredients.

In addition, if there is no hot pot dish that can be cooked, what is missing is displayed.

Result (Concept)

冷蔵庫にあるものを選択	作れる鍋料理
<input type="text" value="にんにく"/> <input type="text" value="長ネギ"/>	<ul style="list-style-type: none"> ▪ キムチ鍋 ▪ 豆乳鍋
<input type="text" value="にら"/> <input type="text" value="えのき"/>	
<input type="text" value="水菜"/> <input type="text" value="しめじ"/>	
<input type="text" value="白菜"/> <input type="text" value="しいたけ"/>	
<input type="text" value="玉ねぎ"/> <input type="text" value="生姜"/>	
<input type="text" value="にんじん"/> <input type="text" value="キャベツ"/>	
<input type="text" value="ブロッコリ"/> <input type="text" value="もやし"/>	
<input type="text" value="トマト"/> <input type="text" value="糸こんにゃく"/>	
<input type="text" value="卵"/> <input type="text" value="キムチ"/>	
<input type="text" value="トマト缶"/> <input type="text" value="豆腐"/>	
<input type="text" value="ウインナー"/> <input type="text" value="無調整豆乳"/>	
<input type="text" value="豚バラ肉"/> <input type="text" value="豚しゃぶ肉"/>	
<input type="text" value="牛肉(焼き焼き用)"/> <input type="text" value="生もつ"/>	
<input type="text" value="鶏もも肉"/> <input type="text" value="検索"/>	

The user checks the ingredients in the refrigerator and clicks the display of the ingredients.

When the user clicks the search button, the hot pot dishes that can be cooked are displayed.

Personality Clinic

Creators

Yuta Kawaguchi
Kurumi Kusakari
Yoshiki Noda
Sho Nakazawa
Manaka Saito



Chiba University ASCENT Program

Purpose

Sometimes it is more difficult to understand yourself than to understand others. So we thought that we need an application that can tell your personality with clear evidence.

Today, many high school students have to send self recommendations university Applications.

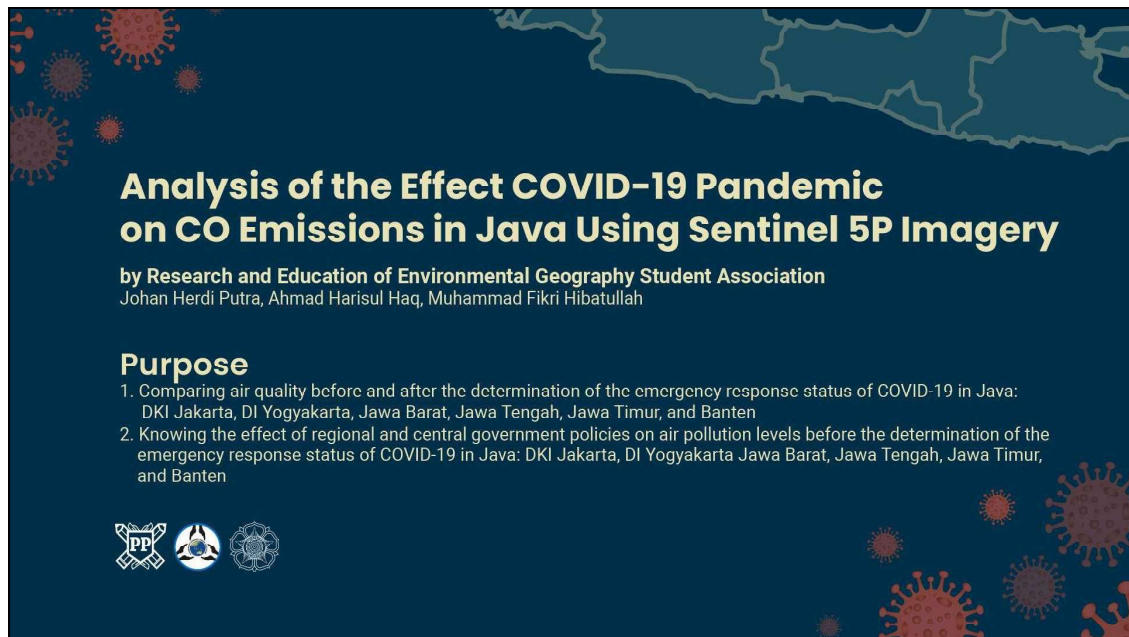
If you know your personality, wouldn't be easier to write it?

How the app works

A few simple questions can reveal your personality and its impact to your life.

Just choose the answer that describes you the best.

Teenagers, it's time to
know yourself.

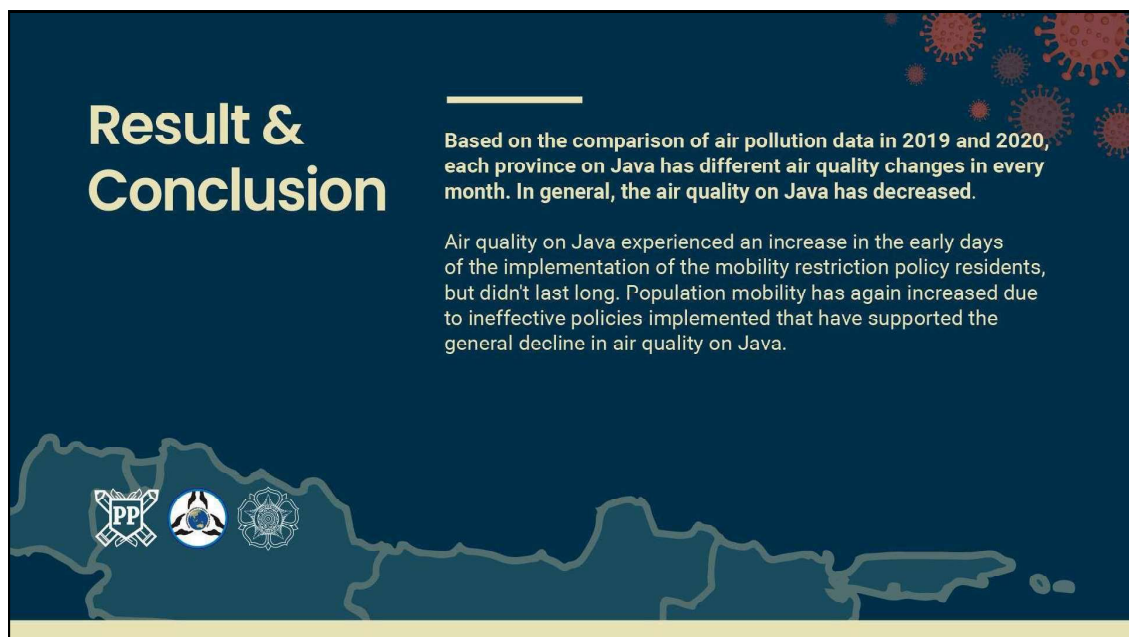



Analysis of the Effect COVID-19 Pandemic on CO Emissions in Java Using Sentinel 5P Imagery

by Research and Education of Environmental Geography Student Association
Johan Herdi Putra, Ahmad Harisul Haq, Muhammad Fikri Hibatullah

Purpose


1. Comparing air quality before and after the determination of the emergency response status of COVID-19 in Java: DKI Jakarta, DI Yogyakarta, Jawa Barat, Jawa Tengah, Jawa Timur, and Banten
2. Knowing the effect of regional and central government policies on air pollution levels before the determination of the emergency response status of COVID-19 in Java: DKI Jakarta, DI Yogyakarta Jawa Barat, Jawa Tengah, Jawa Timur, and Banten



Result & Conclusion

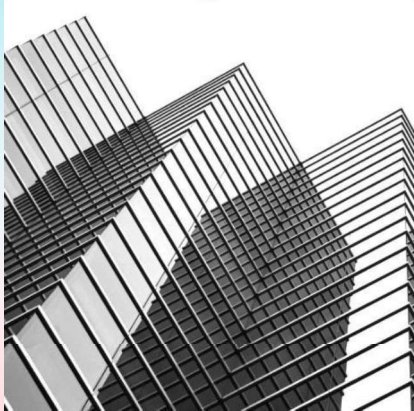
Based on the comparison of air pollution data in 2019 and 2020, each province on Java has different air quality changes in every month. In general, the air quality on Java has decreased.

Air quality on Java experienced an increase in the early days of the implementation of the mobility restriction policy residents, but didn't last long. Population mobility has again increased due to ineffective policies implemented that have supported the general decline in air quality on Java.





Post Buckling Analysis of a Cantilever Beam Subjected to a Compressive

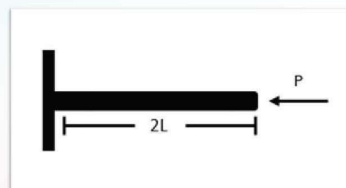


- Speaker : Jatuporn Saetang
- Advisor: Asst.Prof. Dr. Parinya Sa Ngiamsunthorn
- Co-advisor: Asst.Prof. Dr. Waraporn Chatanin
- Department of Mathematics, Faculty of Science, KMUTT

1

PURPOSE

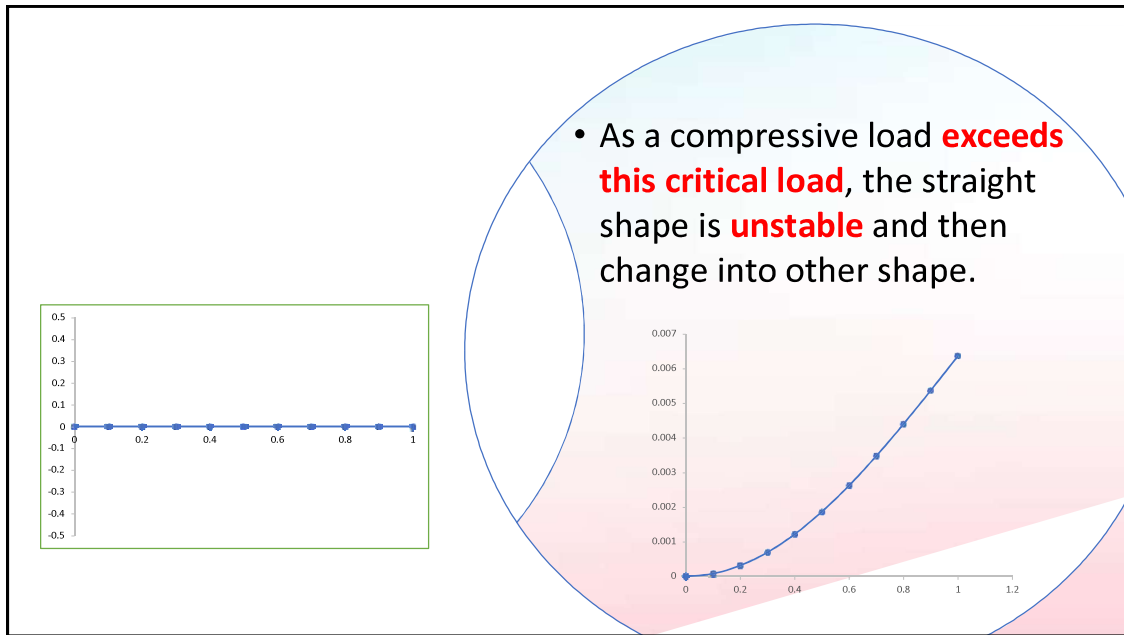
A cantilever beam with one fixed end and the other free end is considered under a compressive load on the free end. A stable shape and post buckling behavior of the cantilever beam is analyzed from the minimizer of the associated energy functional. In particular, sufficient condition for stability is determined by using calculus of variation techniques including Jacobi equation and Lagrange theorem. It is found that a straight shape is stable if the load is less than a certain critical load and it is unstable if the load is over a critical load.




Materials and methods

- The conjugate point theory
- Jacobi equation
- The Legendre's strengthened condition
- The Jacobi's strengthened condition
- Lagrange-Dirichlet theorem



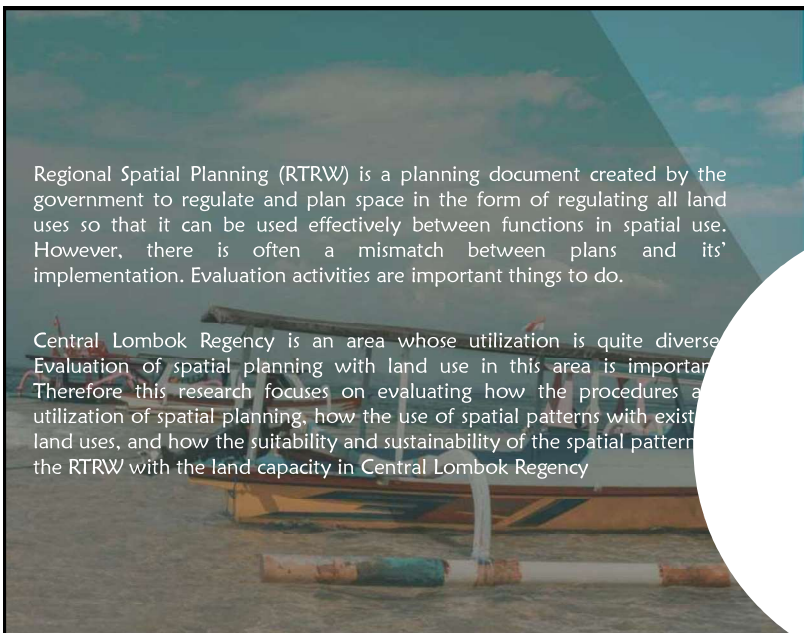




EVALUATION OF THE REGIONAL SPATIAL PLAN IN CENTRAL LOMBOK REGENCY in 2011-2031

Conducted by:
Frinsen Johny Hutagalung, Farhan Azis, Muhamad Rosyid Pamungkas
Department of Development Geography
Faculty of Geography
University of Gadjah Mada
Yogyakarta

frinsenjohny99@mail-ugm.ac.id



Regional Spatial Planning (RTRW) is a planning document created by the government to regulate and plan space in the form of regulating all land uses so that it can be used effectively between functions in spatial use. However, there is often a mismatch between plans and its' implementation. Evaluation activities are important things to do.

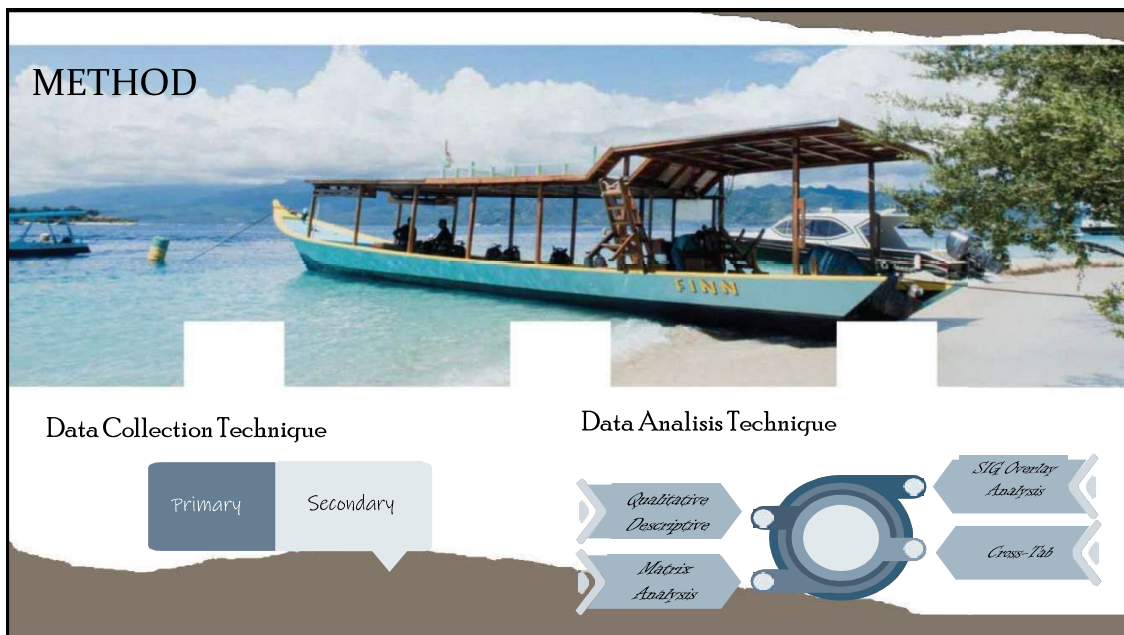
Central Lombok Regency is an area whose utilization is quite diverse. Evaluation of spatial planning with land use in this area is important. Therefore this research focuses on evaluating how the procedures and utilization of spatial planning, how the use of spatial patterns with existing land uses, and how the suitability and sustainability of the spatial patterns in the RTRW with the land capacity in Central Lombok Regency

BACKGROUND



PURPOSE

- To evaluate the procedures and utilization of regional spatial planning in Central Lombok Regency.
- To evaluate spatial patterns with existing land uses in Central Lombok Regency.
- To evaluate the spatial pattern in spatial planning document with land capabilities (land use directions) in Central Lombok Regency.



METHOD

Data Collection Technique

- Primary
- Secondary

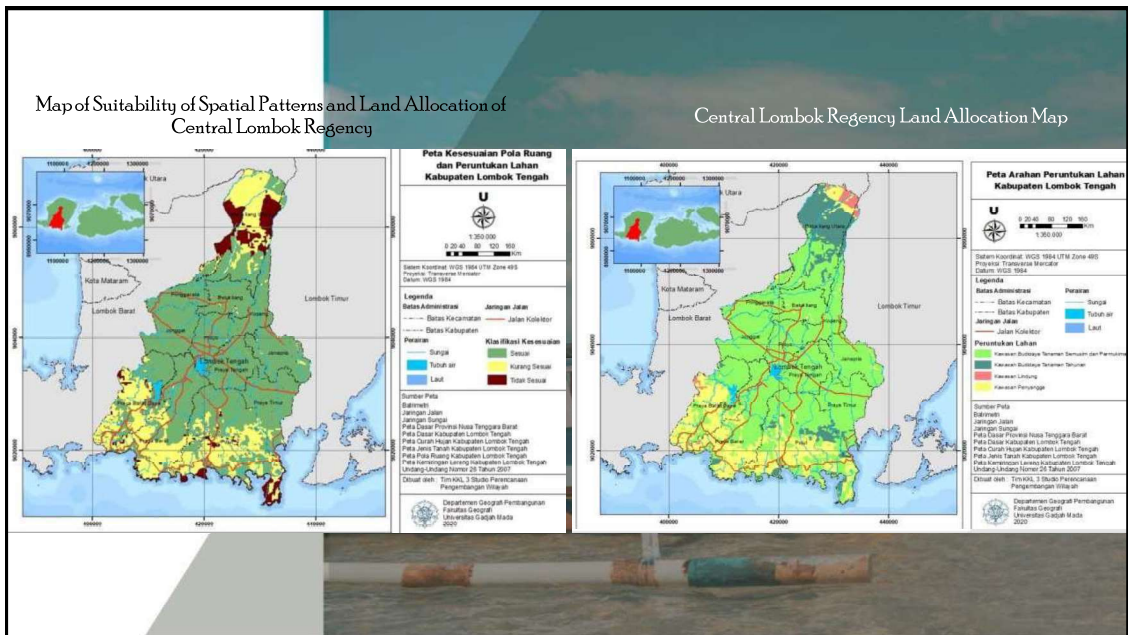
Data Analysis Technique

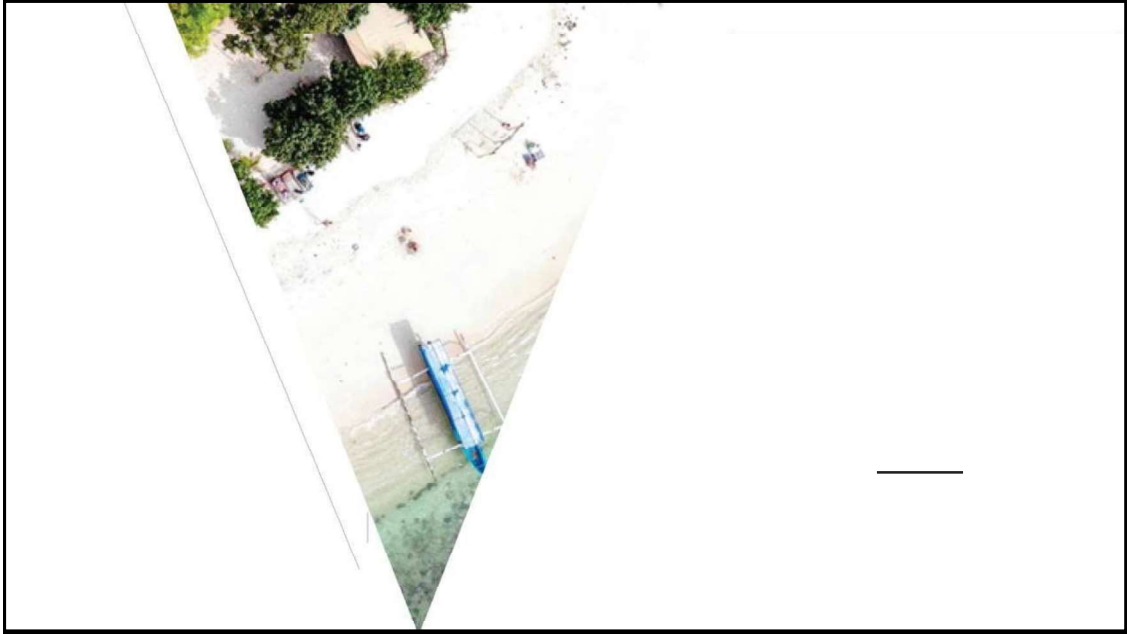
- Qualitative Descriptive
- Matrix Analysis
- SIU Overlay Analysis
- Cross-Tab

RESULTS AND DISCUSSION

Based on the results of the digitization that has been done, it is known that the total area of the results of digitizing the spatial pattern according to the spatial planning document of Central Lombok Regency is 94840.02ha. The suitability of the spatial pattern that is very in accordance with the spatial planning document of Central Lombok Regency is the Agricultural Area. The total area of the agricultural area in accordance with the RTRW of Central Lombok Regency is 54959.26ha. The total area in the spatial pattern is not in accordance with the RTRW of Central Lombok Regency, the widest area is in the tourism area spatial pattern. The total area in the spatial pattern of the tourism area which is not in accordance with the RTRW of Central Lombok Regency is known to be 6623.24 ha. The spatial pattern that is least in accordance with the RTRW of Central Lombok Regency is the spatial pattern in the form of an agricultural area, which is 5132.09ha.

From the data analysis, it shows that the the majority of land use in Central Lombok Regency is in accordance with its spatial pattern, namely an area of 94,849.02 Ha, an unsuitable area is 16,377 Ha, and an unsuitable area is 5,663.72 Ha. Based on the data, it can be seen that the area with the most suitable land area is Batukliang Utara District (15646.24 Ha), the area with the most unsuitable areas is in Pujut District (8161.22 Ha), and the area with the most land mismatches is in the District of Batukliang (988.13 Ha). The results of the area analysis using tabular data are in accordance with the results of the spatial analysis carried out. The area with the least land suitability is in Batukliang District, the least unsuitable area is in Praya Tengah District, and the area with the least land mismatch is in Praya Timur District.







Influence of QBO-MJO Connection on The Turbulence Variations in The TTL Observed with Equatorial Atmosphere Radar

Arlif Nabilatur Rosyidah¹, Nurjanna Joko Trilaksono¹, Noersomadi²

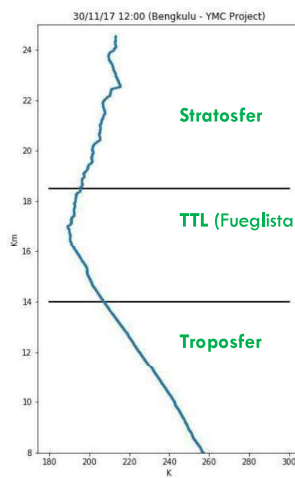
arlifnabila05@gmail.com

¹Institut Teknologi Bandung, Bandung, Indonesia,

²National Institute of Aeronautics and Space (LAPAN), Bandung, Indonesia



Troposphere can be divided in layers. Turbulence is a primary factor in the Stratosphere–Troposphere Exchange (STE) that occurred in a layer called Tropical Troposphere Layer.



Vertical profile of Temperature

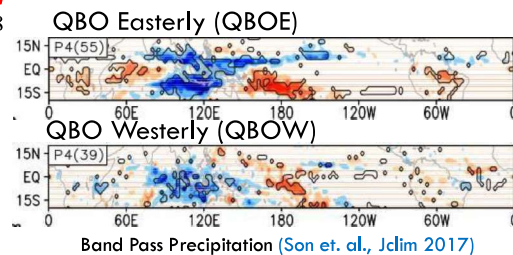
Quasi Biennial Oscillation
zonal wind oscillation (~28 months period)

TTL (Fueglistaler dkk., 2009)

Madden Julian Oscillation
Eastward moving disturbance of convective system that takes part on climate variabilities (40-50 days period)

Background

More Precipitation in QBOE



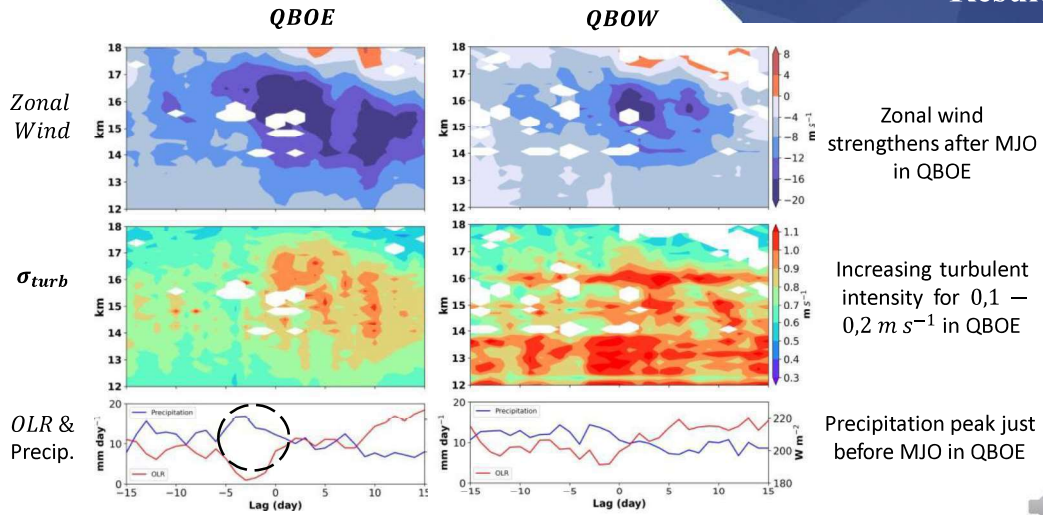
Purpose:

To provide analysis of turbulence variation within QBO-MJO connection observed with Equatorial Atmosphere Radar (EAR)



Zonal Wind, σ_{turb} and Precipitation during QBOE and QBOW

Results



Zonal wind strengthens after MJO in QBOE

Increasing turbulent intensity for 0,1 – 0,2 m s^{-1} in QBOE

Precipitation peak just before MJO in QBOE

*OLR and Precipitation are the mean value along 5°N-5°S and 97.5°-102.5° E from TRMM & ECMWF-ERA5



Group B (support : Sasaki, Morishige, Yamada)

<B4> 14:30

Dr. Dyah Rahmawati Hizbaron, S.Si, M.T, M.Sc.

Vice Dean of Research, Community Services, Cooperation and Alumni
Faculty of Geography,
Universitas Gadjah Mada

- 1 IRPMB141-1
Fortune-telling app
Chiba University ASCENT Program (Team 8)
Haruhi TAKANO, Kiyomi MITANI, Tomomasa AKAIKE, Reo SUZUKI
- 2 IRPMB142-1
Web Application Development "NANJI"
Chiba University ASCENT Program (Team 4)
Ken MATSUZAKI, Kotomi KAWAI, Yuri TANAKA, Kenta OGUMA, Asahi YAMAGOSHI
- 3 IRPMB143-1
Math game
Chiba University ASCENT Program (Team 7)
Yu OSHIKIRI, Satoshi HORIUCHI, Naoki KAJI, Narumi EZOE, Airi HORIUCHI
- 4 IRPMB144-1
BC - Exosuit Technology for Spinocerebellar Degeneration Patients based on Electroencephalogram and Machine Learning
Universitas Indonesia
Felicia Elvina CHRISTIADI
- 5 IRPMB145-1
PSEUDOMAGNETORESISTANCEIN GRAPHENE/TILT DIRAC CONEMATERIAL JUNCTION
King Mongkut's University of Technology Thonburi (KMUTT)
Phachara RAKRONG
- 6 IRPMB146-1
PC-Box PPE(Personal Protective Equipment) Cooler Box
Pradita Dirgantara High School
Felicia Tiffany HERTADA, Eilmuddin AHMAD

Fortune-telling app

Name Takano Haruhi, Kugenuma High School
Mitani Kiyomi, Matsudokokusai High School
Akaike Tomomasa, Ichikawagakuenn
Suzuki Reo, Ichikawagakuenn
Chiba UniversityASCENT Program

Back ground and Purpose of our research

We really wanted to make a test planning app, but we didn't know what we have to calculate to make a plan for the test.

Result

```
import random

import ipywidgets as widgets

def on_button_clicked(b):
    birthvalue = birthdate.value
    constella = calc_constellation(birthvalue)
    print('今日の' + constella + 'の運勢は' + fortune_result())

def calc_constellation(x):
    constellation = {1: 'やぎ座', 2: 'みずがめ座', 3: 'うお座', 4: 'おひつじ座',
                    5: 'あうし座', 6: 'ふたご座', 7: 'かに座', 8: 'しし座',
                    9: 'ととめ座', 10: 'てんひん座', 11: 'さそり座', 12: 'いて座'}
    if x.day > 22:
        if x.month == 12:
            return constellation[1]
```

If you enter the date of birth, the constellation will be automatically displayed and the fortune will be randomly selected.

International Research Session for NEXT Generation

Web Application Development “NANJI”

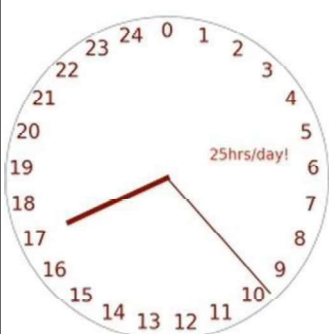
Ken Matsuzaki (Kaisei high school 11th grade), Kawai Kotomi (Yakuendai high school 2nd grade),
Yuri Tanaka (Ichikawa high school 10th grade), Kenta Oguma (Ichikawa high school 10th grade),
Asahi Yamakoshi (Kisarazu high school 1st grade), Chiba University ASENT Program, Japan

-Abstract

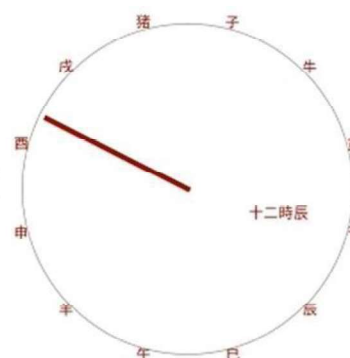
This app helps people have a relaxing “time” by literally making time pass slower, or displaying unique clocks. We used Google Colaboratory to Run Python and Flask ngrok to run it as a web application.

Result

Current actual time is 4:15,
but these two says



Current actual time is 7:45,
but these two says



-As there is a time lag between the actual time and the shown one, it would be not realistic at all to use these clocks in your daily lives. But on holidays for example, you can enjoy your time (literally)

Math game

Let's judge whether odd or even



pixta.jp - 62620265

Chiba University ASCENT Program

Satoshi Horiuchi

Naoki Kaji

Narumi Ezo

Yu Oshikiri

Airi Horiuchi

Showa Shuei high school

Kisarazu National College of Technology

Ichikawa high school

Komatsugawa High School

Komatsugawa High School

Introduction



Elementary school students find it challenging to learn math.

Purpose:

We created a simple game for elementary school students who have not yet learned math for high school, mainly for children in the lower grades, to develop a sense of numbers.

Result

The screen of the created game

Hot Soap Processor ver.3.51

奇数に触れるな！
偶数だけ打ち返せ！

Click to Start!

Player can control the white puddle with mouse, and bounce the number from falling the top of the screen. If the odd touches the puddle or the even touches the bottom of the screen, the game is over.

expectation



Since no more than two numbers will appear at the same time so far, there are improvements such as a mode in which players can process multiple numbers and determine prime numbers as well as oddity judgments.

This game will help elementary school students to improve their math skills while having fun.

BC-Exosuit

Technology for Spinocerebellar Degeneration Patients based on Electroencephalogram and Machine Learning

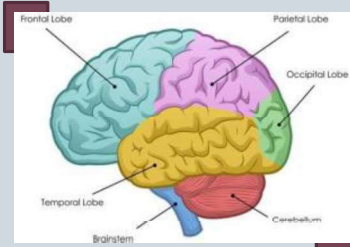


Felicia Elvina Christiadi
 Biomedical Engineering 2018
 University of Indonesia
 Email : felicia.elvina@ui.ac.id



PURPOSE

Technology that can make for people with SCD to carry out activities easier



Spinocerebellar Degeneration (SCD) or Spinocerebellar Ataxia (SCA) is a disease that attacks the cerebellum and spinal cord


MATERIALS

- Aluminium alloy
- Steel
- High-density polyethylene
- Braces and straps
- Integrated padding
- Circuit boards
- Electrolyte paste or gel
- Connecting wires
- Amplifiers
- A computer control module
- A display device

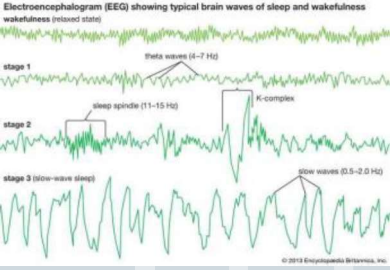


METHODS

1. The electrodes will be attached to the head
2. EEG electrodes capture brain wave signals which will be translated into a digital signal
3. The digital signal will be adjusted to the dataset on machine learning
4. When the signal has been processed, there will be an order for the exosuit to move according to the user's wishes

RESULT



(Wilson, Clare)



Electroencephalogram (EEG) showing typical brain waves of sleep and wakefulness

wakefulness (beta waves)

stage 1 (theta waves 4-7 Hz)

stage 2 (sleep spindles 11-15 Hz) K-complex

stage 3 (slow-wave sleep)

slow waves (0.5-2.0 Hz)

© 2013 Encyclopædia Britannica, Inc.

3



THANKS

4


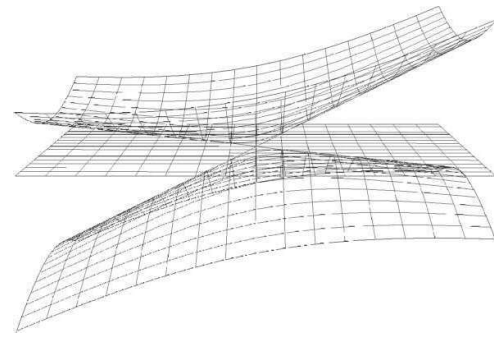

REFERENCES

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- Wilson, Clare. 2019. *A mind-controlled exoskeleton helped a man with paralysis walk again*. Retrieved from <https://www.newscientist.com/article/2218863-a-mind-controlled-exoskeleton-helped-a-man-with-paralysis-walk-again/>
- Fisch, Bruce J. 1999. *Fisch and Spelmann's EEG Primer*. Retrieved from <http://www.madehow.com/Volume-7/EEG-Machine.html#:~:text=Numerous%20raw%20materials%20are%20used,metals%2C%20plastic%2C%20and%20silicon>
- Chen et al. 2017. A wearable exoskeleton suit for motion assistance to paralysed patients. Retrieved from <https://www.sciencedirect.com/science/article/pii/S2214031X16303023>

PSEUDOMAGNETORESISTANCE IN GRAPHENE/TILT DIRAC CONE MATERIAL JUNCTION

Presented by **Phachara Rakrong**

King Mongkut's University of Technology Thonburi
Faculty of Science
Department of Physics

PURPOSE, MATERIALS AND METHODS


Purpose: To study magnetoresistance in Graphene/Tilt Dirac Cone junction. Which in this study may not use magnetic field, as the effect from Tilt Dirac Cone could induce momentum shift and confine massless electron

Quantum Transport Analyses

- Study massless electron transport in Dirac materials where magnetic field is applied (Feng Zhai and Kai Chang, 2008)
- How to confine massless electron with minimal magnetic field (Sankalpa Ghosh and Manish Sharma, 2009)
- How tilted Dirac cone affect massless electron trajectory? (Can Yesilyurt, Zhuo Bin Siu, Seng Ghee Tan, Gengchiau Liang, Shengyuan A. Yang, and Mansoor B. A. Jalil, 2017)

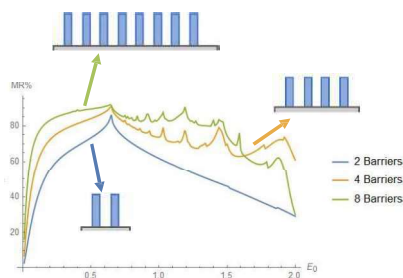
Electron transmission simulation with models

- Using computer program to calculate from mathematical equations



RESULT AND DISCUSSION

$$MR\% = \frac{G_{parallel} - G_{anti-parallel}}{G_{parallel}}$$



MR% is around 90% with pseudo-magnetic

Just like how electron momentum shifted in the present of magnetic field, this phenomena could happened with the effect of tilted Dirac cone.

In magnetic field case, vector potential is induced and cause momentum shift to electron. Which had energy dispersion in asymmetric profile.

But in tilted Dirac cone case, this cause energy dispersion become asymmetric without magnetic field and change electron trajectory.





PC-BOX PPE (PERSONAL PROTECTIVE EQUIPMENT) COOLER BOX

Felicia Tiffany Hertada, Eilmuddin Ahmad
Pradita Dirgantara High School, Boyolali, Central Java, Indonesia
Email : feliciatiffany@gmail.com, eilmuddinahmad@gmail.com




PRADITA
DIRGANTARA
HIGH SCHOOL

PURPOSE, MATERIALS, AND METHODS


Purpose:

1. Make a tool that can maintain normal ambient temperature in the PPE worn by the health worker.
2. The cooler is made to be light in weight and the overall shape of the equipment is made to be comfortable for activities.

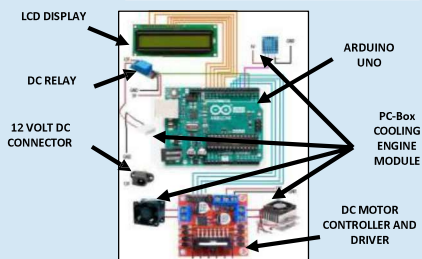


SUPPORT MATERIALS

- Hot Side Thermoelectric Cooler Heatsink
- Thermoelectric Cooler Cold Side Heatsink
- Heatsink Cooling Paste
- Tool Box
- Jumper Cables
- Aluminum Pipe
- PVC pipe
- PVC Pipe Cover
- Double Nipple PVC Pipe
- Flexible Pipe
- Pipe connector shape T
- Aluminum Foil
- Silicon glue
- Heatsink Lock
- Back Support
- Vest
- Small Board
- Personal Protective Equipment (PPE)





MAIN MATERIALS



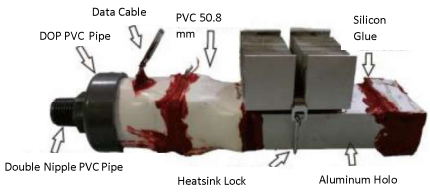
- LCD DISPLAY
- DC RELAY
- 12 VOLT DC CONNECTOR
- ARDUINO UNO
- PC-Box COOLING ENGINE MODULE
- DC MOTOR CONTROLLER AND DRIVER

PURPOSE, MATERIALS, AND METHODS



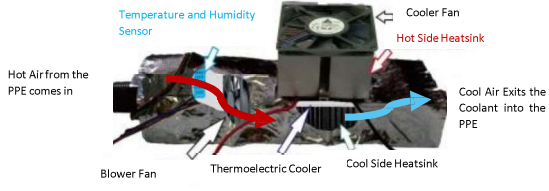


PC-Box



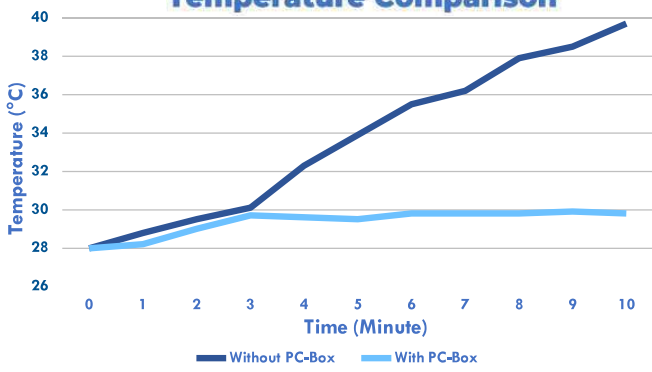
Labels: Data Cable, DOP PVC Pipe, PVC 50.8 mm, Silicon Glue, Double Nipple PVC Pipe, Heatsink Lock, Aluminum Holo

Cooling Engine







Labels: Temperature and Humidity Sensor, Hot Air from the PPE comes in, Cooler Fan, Hot Side Heatsink, Cool Air Exits the Coolant into the PPE, Blower Fan, Thermoelectric Cooler, Cool Side Heatsink

Temperature Comparison



Condition	Initial Temperature (°C)	Final Temperature (°C)	Percentage of Increase
Without PC-Box	28	39.7	41.78571429 %
With PC-Box	28	29.8	6.428571429 %

 **PRICE**
IDR 344,000
(23 USD)

RESULTS & DISCUSSION

<C1> 11:00

Agus Buno

Professor the Secretary of the Master Degree, Graduate School
IPB University

- 1 IRPMC111-1
The difference of manners ~Let's enjoy to travel abroad~
Chiba Prefectural Sakura High School
Hinano INAGAKI, Mamiko ENOMOTO, Kaede TAKIZAWA, Haruka NAGAI
- 2 IRPMC112-1
AI smart speaker
Shibaura Institute of Technology Kashiwa Senior High School
Yoichi OSADA, Yuta KOYAMA
- 3 IRPMC113-1
Insights in "Science English": Teachers' voices and students' learning
National Taiwan Normal University
Yi-Syuan SIA
- 4 IRPMC114-1
Preservation of Balinese ancient manuscripts (lontar) using vacuum-assisted resin transfer molding (VARTM)
Universitas Udayana
Putu Brahmanda SUDARSANA, I Made Putra Arya WINATA , Sonny SUHARTO
- 5 IRPMC115-1
Social Enterprise : Cultural Landscape of Hill Tribe Weaving Culture
Chiang Mai University
Thanagrit SADUB
- 6 IRPMC116-1
Shakespeare's Sonnets
Chulalongkorn University Demonstration Secondary School (CUD)
Sathitaya PREMTHADA

The difference of manners ~Let's enjoy to travel abroad~

Chiba Prefectural Sakura High School

INAGAKI Hinano, ENOMOTO Mamiko, TAKIZAWA Kaede, NAGAI Haruka

Purpose・Motive

Because of Jon's lessons, we noticed the differences between Japan and overseas manners.

→We would like to know basic manners from overseas for the travel abroad.



We can enjoy traveling abroad without any trouble!

Summary

Don't be **ignorant**.

Try to learn from differences.

Respect other cultures and manners.

Even in Japan, you may be offending the other people without knowing.

AI smart speaker

Yoichi Osada Yuta Koyama

Shibaura Kashiwa High School

AI SMART SPEAKER

Current Status

Feature



Where can this product be used effectively?



It has a lot of useful functions,
but isn't it a waste only in the current usage?
Isn't this product usable more effectively?

Medical care



Language Learning

Content and Language Integrated Learning

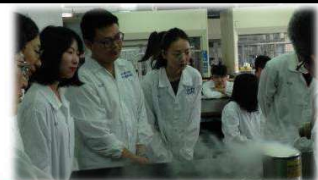
Insights in “Science English”: Teachers’ voices and students’ learning

Author: Ian Yi-Syuan Sia
National Taiwan Normal University
The English Department, TESOL Track

1

Purpose

- To investigate these teachers’ reflections on the CLIL course implementation and their students’ learning



Materials

- Four “Science English” units



Methods

- Questionnaire, semi-structured & retrospective interviews, the reflection notes (as triangulation)
- Qualitative content analysis
- Constant coding for themes



Results & Discussion

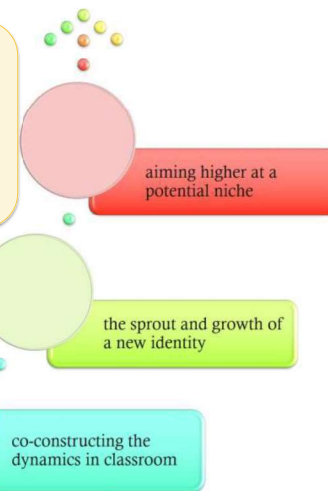
➤ Classroom teaching

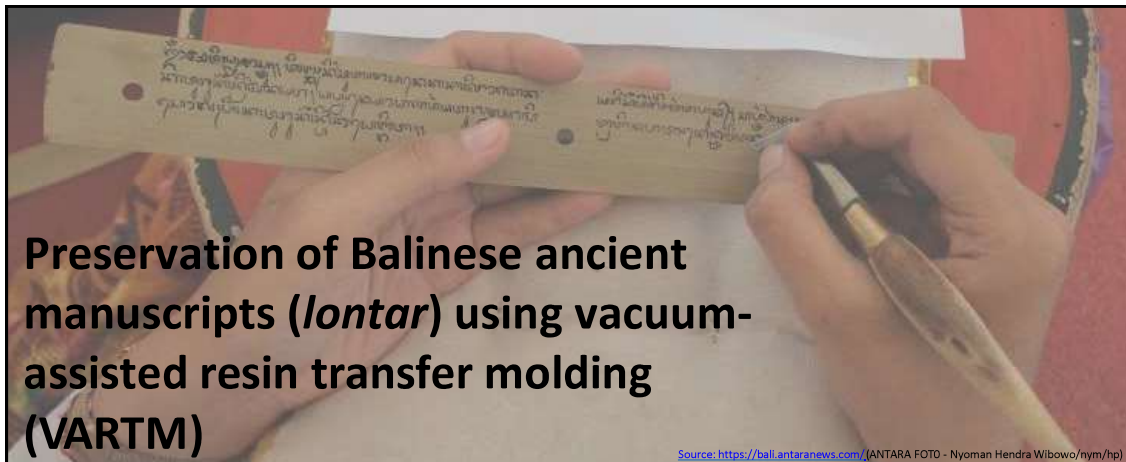
- interactive and dialogic communication
- hands-on experiments and inquiry tasks
- challenge and support; scaffolds (e.g. bilingual keywords)

➤ Teacher's professional development

- pedagogical content knowledge (PCK)
- new scope of language learning & teaching
- English as a tool for inquiry and gaining content knowledge

insights in "Science English"
unit preparation





Preservation of Balinese ancient manuscripts (*lontar*) using vacuum-assisted resin transfer molding (VARTM)

Source: <https://bali.antaranews.com/> (ANTARA FOTO - Nyoman Hendra Wibowo/nym/hp)

Putu Brahmanda Sudarsana,
I Made Putra Arya Winata, Sonny Suharto
Undergraduate Student, Department of Mechanical Engineering, Udayana University, Bali
Email: brahms82@student.unud.ac.id; aryawinata@student.unud.ac.id; sonnysuharto3@gmail.com




PURPOSE

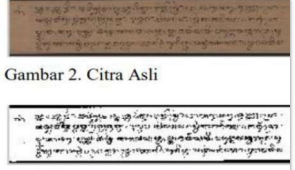
To provide an effective strategy of preserving *lontar* without degrading the tradition of *nyurat lontar* (writing on *lontar*) in Bali.

Several preservation strategies have been carried out and studied, however, the strategies are considered ineffective.

Coating with candlenut oil and some spices (Sancana, 2014)




Digitalization Manuscript Lontar (Widiantana, 2019)



MATERIALS & METHODS

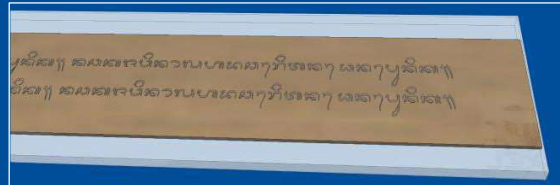
- Proposed method of preservation: Vacuum-assisted resin transfer molding (VARTM)
- Virtual prototyping and secondary data approach is used as the design and analysis method.
- Materials used for the VARTM process: **Resin and hardener**

VARTM process setup:



RESULTS AND DISCUSSION: VARTM process on layering *lontar* prevents the degradation effectively.

	Herbal Oil Coating	Lontar Digitalization	VARTM Process
Durability	Several Month	High (as long as the data is safe)	High
Strength	Low	None	High
Thickness	< 1 mm	None	< 3 mm
Flexibility	Low (due to brittle behaviour)	None	High
Process duration	± 5 minutes /lontar	Several seconds /lontar	± 1.5 hours /lontar
Cultural preservation of Nyurat Lontar	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Maintenance Requirement	High intensity	Low intensity	Low intensity
Cost	High	Medium	Medium



SPECIFICATION

Tensile Strength	55 - 60 Mpa
Flexural Strength	80 - 85 MPa
Flexural Modulus	3.37 GPa
Compressive Strength	80 MPa
Colour	<0.5 Gardner (Clear)

The previous strategy on *lontar* preservation are *lontar* layering using oil mixture (candle nut oil, sesame oil, clove oil, and citronella oil) (Sancana, 2014) and *lontar* digitalization (Kurnia and Sudarma, 2017; Sutramiani, 2015).

Social Enterprise :

Cultural Landscape of Hill Tribe Weaving Culture

Team member

Thanagrit Sadub , Jaturon Auppatham , Apisit Sangatid , Sinatip Pankaew

The fifth year students, Social Studies Major

Team advisor, Chainarong Jarupongtana

Curriculum Teaching and Learning Department

Faculty of Education Chiang mai University



Project background



The Strengths of village



Pine Forest

Local People

Fog

The Problems in the village



A decrease of using natural resources

Lack of Knowledge to promote local products Through social media and connect with target group

Project purpose

- Running the sustainable business based on the collaboration of local people
- Promoting the village and local products through the social media
- Designing the products in new type to expand the target group

Material and method

Digital Marketing Strategy

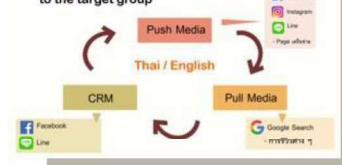


Applying and integrate the model as the tools to run project



engaging the collaboration with mentor who give useful suggestion

The way to communicate to the target group



Using social media to connect with the target group



Shakespeare's sonnets

By Sathitaya Premthada
Chulalongkorn Demonstration school

Background and Purpose

In the regular M.4 (grade 10) English classes, assigned the students to read about some of Shakespeare's famous stories for the first semester. Which lead our class to study deeper into Shakespeare's work, such as sonnets.

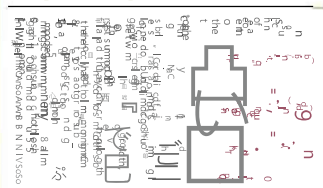
Sonnets

大演園..

Shakespeare's sonnets are written by William Shakespeare, who is an English playwrite. His 154 sonnets were written on a variety of themes, such as the passage of time, love, jealousy, beauty, infidelity and mortality. However, there are six additional sonnets that Shakespeare wrote and were included in the plays, Romeo and Juliet, Henry 5 and Love's Labour's Lost.

The pattern

Sample Shakespearean Sonnet



- 1 sentence = 10 syllables
- 7-9 words
- last word of each line matches with the last word of the same alphabetical letter.
- 1 sonnet = 14 lines

Shakespeare's sonnet

Sonnet 130

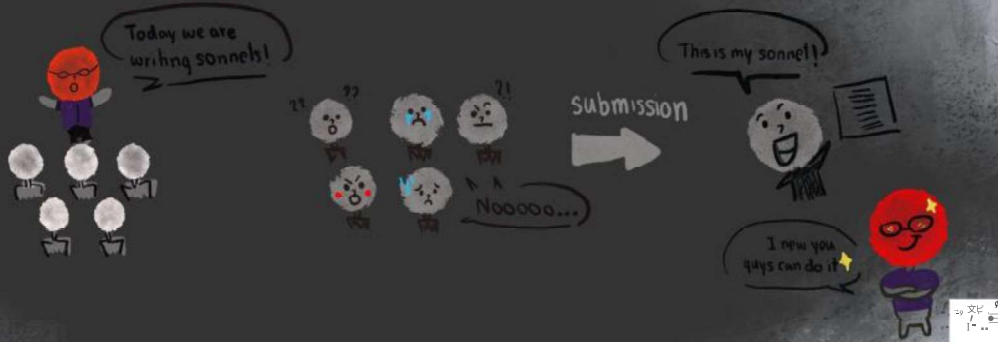
My mistress' eyes are nothing like the sun,
 Coral is far more red than her lips' red,
 If snow be white, why then her breasts are dun;
 If hairs be wires, black wires grow on her head.
 I have seen roses damasked, red and white,
 But no such roses see I in her cheeks,
 And in some perfumes is there more delight
 Than in the breath that from my mistress reeks.
 I love to hear her speak, yet well I know
 That music hath a far more pleasing sound.
 I grant I never saw a goddess go;
 My mistress, when she walks, treads on the ground.
 And yet, by heaven, I think my love as rare
 As any she belied with false compare.

My sonnet

O dim and distant past, my vengeance wreaked,
 Deceased was father, bitter cold was I,
 Leave be trust, let be love, for love was weak,
 Till sent to butcher serpent's daughter, that sly,
 O amoral beast tamed by pulchritude,
 Rid it of chaos, thee infused with zest,
 Such antinomy, Hell and High collude,
 Smitten with old foe, unfit for such test,
 Unapt to unlove, or kill, or define,
 But to let go till the time thou art mine.

Conclusion

Reality:



Writing sonnetes was an amazing and interesting experience for me, I would have never knew or figured to ever write a sonnet of my own, if I wasn't assigned or introduced to the topic. At first, I thought it would be tiring and stressful for only a 15 year old to do, but once you really get the idea of what you want to write about, and find some fancy words to put in it, then it wouldn't be that hard.

<C2> 12:00

Masahide Yamato

Professor, Faculty of Education

Chiba University

- 1 IRPMC121-1
Men's and Women's working society and life reflected in TV commercials
Shibaura Institute of Technology Kashiwa Senior High School
Mao KIMURA
- 2 IRPMC123-1
Learning with STEM Box Set During Covid-19 pandemic
Assistant Professor Dr. Faculty of Education , Chiang Mai University
Suthida CHAMRAT
- 3 IRPMC124-1
NAWAMINTHRACHINUTHIT SATRIWITTHAYA PUTTHAMONTHON SCHOOL
Physics Teacher, Nawaminthrachinuthit Satriwitthaya Phutthamonthon School
Sujitra SRIROTH
- 4 IRPMC126-1
HIGH SCHOOL STUDY PROGRAMS
CHULALONGKORN UNIVERSITY DEMONSTRATION SECONDARY SCHOOL
Sunatcha KULAPUTANA
- 5 IRPMC127-1
Smart Water Management Framework Using IoT For Supporting Urban Farming
IPB University
Yan Mitha DJAKSANA



Men's and women's working society and life reflected in TV commercials

Shibaura Institute of Technology Kashiwa Senior High School
Mao Kimura



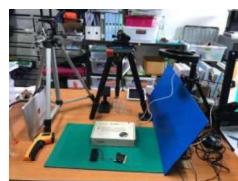
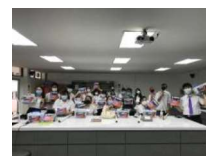
Contents

1. Background of this study
2. Research methods
3. Consideration - ① ② ③
4. Future Prospects
5. References

Learning with STEM Box Set During Covid-19 Pandemic

Abstract

Teaching and learning during Covid-19 pandemic (2020-2021..) faces obstacle, especially practice-based activity. Stem box set- the box that contain materials and equipment for 14 activities based on the concept of integrative science, technology, engineering and mathematics. Using Zoom with 1st and 2nd camera could host the online learning event that allow students to practice STEM activity. The online teaching and learning reflected some high degree of nature of science, scientific literacy, psychology of learning science and STEM literacy.





NAWAMINTHRACHINUTHIT SATRIWITTHAYA PUTTHAMONTHON SCHOOL

Miss Sujitra Sriroth
Physics teacher



Purpose

1. To provide the opportunities for students to study and research their interests.
2. To support students to apply scientific knowledge for problem solving
3. To encourage students to work as a team and make use of their time

Method

1. 1Students begin research studies in grade 11 with their mentor.
2. Students are required to work as a team and complete research within 1 year.
3. When students are in grade 12, they are required to attend an academic seminar and present their own research.



RESULTS results RESULTS results RESULTS results RESULTS results

1. Students systematically learn the process of conducting research.
2. Students practice scientific thinking and problem solving.
3. Students use their scientific knowledge in their research work.
4. Students learn to work as a team within 1 year.
5. The students make use of their time; and also benefit and support one another.



BACKGROUND AND PURPOSE

The high school life is the last educational section before college. In order to be prepared for future studies, in Thailand, senior high school students are required to choose their educational program to concentrate on different essential subjects, and focus less on unnecessary classes to their future study plans.



THAI SENIOR HIGH SCHOOL PROGRAMS

Sci-Math program

Focusses on science, Maths, and English.



Arts program

Focusses on English and Maths or Foreign language or Social studies.



POSSIBLE FUTURE STUDIES

Sci-Math program

- Medical Science
- Engineering
- Architecture
- Pharmacological science
- Agriculture
- Education

Arts program

- Economics
- Communication Arts
- Liberal Arts
- Political Science
- Law
- Education



OPINIONS AND DISCUSSIONS

- Is this really the best way to study for high school students?
- Is there any other way to develop this system?
- Are there any other choices?



Smart Water Management Framework Using IoT For Supporting Urban Farming

Yan Mitha Djaksana, Agus Buono, Sri Wahjuni, Heru Sukoco,
Department of Computer Science, Bogor Agricultural University, Indonesia
E-mail: ^{1*}yanmithadjaksana@apps.ipb.ac.id

ABSTRACT

Related to water resources is one of the problems that often occurs in certain areas that have large populations such as urban areas, today many urban residents live in urban hardships, so an alternative is needed in providing resources water that must be purchased in daily necessities, in addition to having to provide water that is used for daily activities, The smart water management on urban farming is essential for increasing crop yield and decreasing costs, while contributing to water sources sustainability. In this research, we propose a smart framework in water management, especially to support urban farming. This framework consists of seven layers called a smart water management system by utilizing IoT (Internet of Things) technology, especially sensors and machine learning algorithms in managing available water resources. many researchers have developed a similar model, but the framework model that we proposed using reuse water and filtered rainwater so that it meets the minimum quality requirements of water that can be reused in agriculture combined with the application of the proposed algorithm, multi artificial neural network (ANN) and fuzzy inference system (FIS) in determining the use of different combinations of water sources, so we hopes to make domestic water use more effective and efficient and predictable water consumption and availability

Keywords: Smart, Water, Management System, IoT, urban farming

<C3> 13:30

Hai Pham

Associate Professor Director, Research Cooperation and Development Department
University of Education
Vietnam National University, Hanoi - University of Education

- 1 IRPMC131-1
Ghibli works from the point of view of residents in certain communities
Shibaura Institute of Technology Kashiwa Senior High School
Kanna IIMURA, Akane UOZAKI
- 2 IRPMC132-1
SDGs Research about Gender
Shumei Yachiyo High School
Fumiya IKEDA, Ayaka MIYATA
- 3 IRPMC133-1
University product research for an alternative teaching material for High School Students
Pradita Dirgantara High School
Joko SUSILO
- 4 IRPMC135-1
The current Implementations of self-accreditation in universities - A case study of NTNU
National Taiwan Normal University
Yu-Hsin LIU
- 5 IRPMC136-1
Thai Greeting
Chulalongkorn University
Chayanis OPASSEREEPADUNG
- 6 IRPMC137-1
Accuracy of the selection of approaches, methods, and media to the characteristics of science topics
Universitas Pendidikan Indonesia (Indonesia University of Education)
Rusyda MUTANAFFISAH

Ghibli works from the point of view of residents in certain communities

Shibaura Kashiwa High School, Imura & Uozaki

Table of contents

1. About Ghibli works
2. What is the points of view of residents in certain communities
3. Summary “Nausicaa of the Valley of the Wind”
4. Dialogues of residents living in the Valley of the Wind
5. Life of residents living in the Valley of the Wind
6. Conclusion and consideration
7. Reference

Shumei Yachiyo High School

IKEDA Fumiya, MIYATA Ayaka

Shumei Yachiyo × Education × SDG s



SDGs card game by JTB



Shumei culture festival



Olympic&Paralympic



Special Education × SDGs Week

SUSTAINABLE DEVELOPMENT GOALS

世界を変えるための17の目標



Our school has been promoting and acting on SDGs as a goal since 2019.


We have been researching SDGs in our regular classes, school festivals, and extracurricular activities. Our group researched gender.

The reason we started this project was because gender discrimination has been a problem, and we were interested in finding the reason why discrimination hasn't disappeared.

So, first of all, we found out what is wrong with our daily life and why gender discrimination has become such a big problem.


Next, we made our own unisex skirt and gaucho pants.

And lastly, we summarized the reactions of our teachers and friends.




**CHIBA
UNIVERSITY**

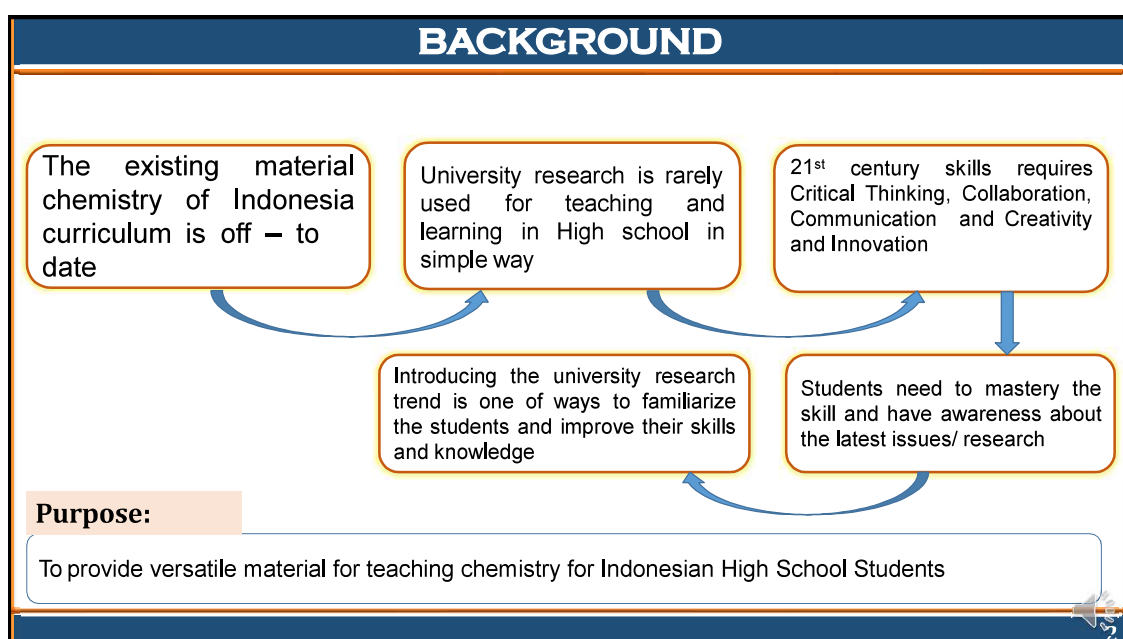
TWINCLE PROGRAM 2021



**University product research for an alternative teaching material for
High School Students**
(Study Case Synthesis Azo - imine derivatives for teaching acid - base indicator)

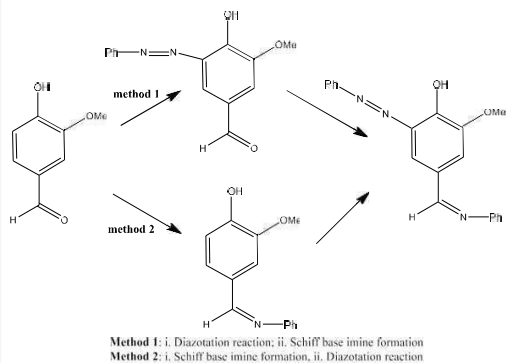
Presenter:
Joko Susilo (M.Sc.)
Chemistry teacher SMA Pradita Dirgantara, Boyolali - Indonesia
Email: bangjok89@gmail.com

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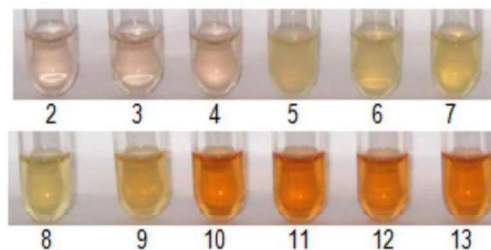


RESULT AND SHORT EXPLANATION

Synthesis Azo – imine (Purwono B., et al. 2013)



Color change of Azo – imine derivatives at various buffer solution with pH 2 – 13.(Purwono B., et al. 2013)



Color change of solution of 2-methoxy-6-(phenylazo)-4-((phenylimino)methyl)phenol at various buffer solution with pH 2 – 13.

3

DISCUSSION AND CONCLUSION

University research product

Chemical concept for High School Student

Synthesis Azo – Imine derivatives

Chemical reaction

Acid – base titration using Azo – Imine derivatives

Acid – base titration

Color stability test Azo – Imine derivatives

Chemical kinetics

CONCLUSION: University research product (study case of synthesis azo – imine for teaching acid – base indicators) can be suggested for teaching high school students that is updated

4



The current Implementations of self-accreditation in universities – A case study of NTNU

Author

Yu-Hsin, Liu

The current Implementations of self-accreditation at universities – A case study of NTNU

Purpose

1. To know the current Implementations of self-accreditation at NTNU.
2. To investigate the challenges and solutions during the process at NTNU.
3. To generalize the effects on both the academic units and the school.

Materials & Methods

• Qualitative Research



Case study(NTNU)



Documentary
Research



In-depth
interview

Results & Discussion

- Communication
- Funds
- Time arrangement
- Human resources
- Benchmarking(college)
- Follow-up



- Transparent
- More channels



- Sufficient time



- Full support

THAI GREETING

Chayanis Opassereepadung
Department of Physics
Chulalongkorn University, Thailand
Email: paulcyns@gmail.com

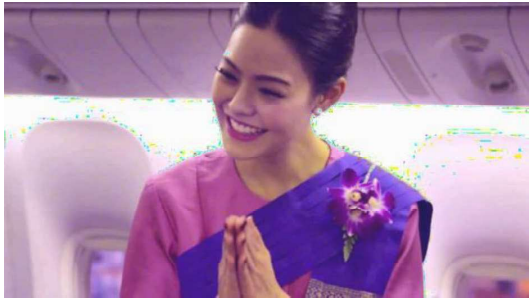

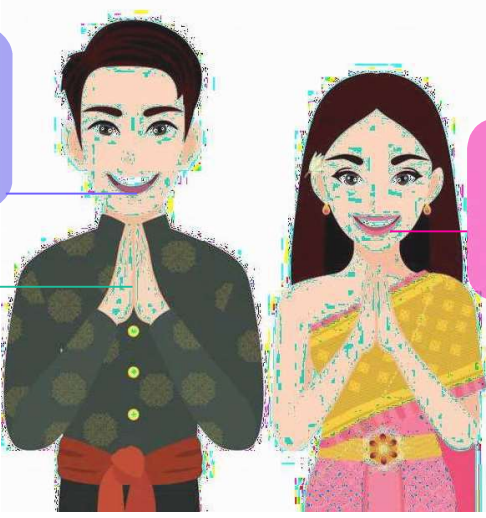



Photo from Party MV - Girls' Generation(2015)




Smile
Non-verbal expression saying, "we welcome you."

Wai ไหว้
a slight bow, with the palms pressed together in sign of respect

สวัสดีค่ะ/ครับ
(SAWAS-DEE KA/KRUB)
Hello
サワディー

Thai people greeting by titaporn www.123rf.com



SMILE


"The Land of Smiles"
A promotional sense
Generosity
Affordable cost

SAWAS-DEE

Originated from Sanskrit meaning 'blessing' or 'well-being'
First used by a professor at Chulalongkorn University
Officially used on 22 January 1943

WAI

Originated in Buddhism
Can mean "Hello," "Sorry," or "Thanks."
The higher the hands are held and the lower the bow, the more respect the giver is showing



Accuracy of the selection of approaches, methods, and media to the characteristics of science topics

Rusyda Mutanaffisah

Graduate Student in Science Education Program
Indonesia University of Education
rusydmutanaffisah@upi.edu



Purpose

To **compare** the accuracy of the selection of approaches, methods, and media by three subjects each with different career paths: **college student, final-year college student, and experienced teacher.**

Material

&

Methods

Three video recordings of learning activities conducted by three different teachers

- **Watch** each video at least three times
- **Video analysis** using software



Results and Discussion

Subject	Topic	Approach(es)	Method(s)	Medium
College student	Ecosystem	Conceptual	Lecturing	Texts and pictures
Final-year college student	Excretory organ: skin	Conceptual, Constructivism	Lecturing, discussion	Pictures
Experienced teacher	Density	Conceptual, process, historical	Lecturing, discussion, experimenting	Texts, pictures, videos, samples of solid objects

- Experienced teacher use **accurate and more varied approaches, methods, and media** than the two college students
- Only experienced teacher **maximize the closing activity** to discuss concepts



<C4> 14:30

Rita M Tagalog

Dean, School of Education

University of San Carlos

- 1 IRPMC141-1
Governance Systems of the Middle East and Future Prospect
Shibaura Institute of Technology Kashiwa Senior High School
Aoi OZEKI
- 2 IRPMC142-1
Inclusive Cities 2020 : Interdisciplinary Community Based Learning
Lecturer, Faculty of Education, Chiang Mai University
Chainarong JARUPONGPUTTANA
- 3 IRPMC143-1
CURRENT AND TENDENT LEARNING APPROACH BY UNDERGRADUATES OF UNIVERSITY OF
EDUCATION - VNU DURING THE COVID-19 PANDEMIC
Vietnam National University, Hanoi - University of Education
NGUYEN Dang Hoang, NGUYEN Thanh Cong, VU Trong Duc, VU Minh Hieu,
LUONG Van Nguyen, PHAM Quynh Trang
- 4 IRPMC144-1
A Study of Experiences and Outcomes in Summer Service Learning Program for the Honor's College
Students in NTNU
National Taiwan Normal University
Ieng-Chong LEONG
- 5 IRPMC145-1
Online science Teaching under The Covid-19 Pandemic
Kasetsart University
Suphanwadee PRASONG
- 6 IRPMC147-1
THE PROFILE OF STUDENTS' CRITICAL THINKING THROUGH SCIENCE VIRTUAL TEST ON 8TH GRADE
SECONDARY SCHOOL
Universitas Pendidikan Indonesia (Indonesia University of Education)
Riana NURISMAWATI

Governance Systems of the Middle East and Future Prospects



Shibaura Kashiwa High School

Aoi Ozeki

Abstract

Inclusive Cities 2020 : Interdisciplinary Community Based Learning

The Child and Youth Media Institute, in collaboration with a regional network of educational institutions creates the creation of a conceptual space for youth to express their needs and design a public space in active learning. Specifically, the need to contribute to a policy proposal for urban development based on the Inclusive Citizenship.


The objectives of this research to build cooperation among youth networks for urban development by using creative learning as Media Information and Digital literacy

The sample group for the research that team of high school student conducted field research in a local village under the mentorship of undergraduate students. Their study explored dimensions of education, communication, and landscape architecture for conservation and urban development through the use of digital media, including an online platform for sharing ideas and skills. As a result, new policy was proposed to the hosting community.

The findings show the following results. Students shared data, ideas and skills via an online platform. Students work together on the basis of community communication using the concept of Media Information and Digital Literacy consist of Access Analysis Create Action . This is a process that create by the community and the youth.

Keyword : Community Based Learning , Media Information and Digital literacy






CURRENT AND TENDENT LEARNING
APPROACH BY UNDERGRADUATES OF
UNIVERSITY OF EDUCATION - VNU DURING
THE COVID-19 PANDEMIC

Nguyen Dang Hoang, Luong Van Nguyen
Vu Trong Duc, Pham Quynh Trang
Vu Minh Hieu, Nguyen Thanh Cong

Vietnam National University, Hanoi
University of Education
Vietnam



Purpose, methods and materials

The COVID-19 pandemic broke out worldwide, all aspects from the economy, culture, society to education were heavily affected. To ensure the educational schedule, many countries around the world have transformed from face-to-face learning to online learning. From that context, we did the research about current and tendent learning approach by undergraduates of University of Education - VNU during the covid-19 pandemic. Purposes of this research are understanding the student's learning results during times of social separation, identifying the challenges and factors that affect the student's performance and finding out the learning tendency.

Result and Discussion

Thence, we point out some suitable solutions to improve the quality of education. To collect informations for the study, the research used online questionnaires and the method of in-depth interviews of third-year students of the University of Education - VNU. Through studying this target group, the study found out the difficulties and challenges in the online learning process of students, in addition to the new learning methods that are being used effectively. One of those methods is Blended learning, which combines direct learning and online learning. This is an innovative method that, if applied effectively, will contribute to improving the quality of education.

A Study of Experiences and Outcomes in Summer Service Learning Program for the Honor's College Students in NTNU

Author: leng-Chong Leong

(Post-graduate students of Civic Education and Leadership Department)



Abstract_leng-Chong Leong

Research purpose

- To analyze the **quality of course**, **involvement of learning** and **learning outcome** of the students participators in the service learning program.
- To analyze the relationship of different **variety of background**, **quality of course** and **engagement of learning** to explain learning outcome.

Materials and Methods

- Data collection: "The Scale of learning experience and outcome in service learning program for college students" (Li & Liu, 2016)
- Data analysis: **SPSS 23.0**
- Methods: **Survey Research**

Abstract_leng-Chong Leong

Support: the Honor's College students participate in "Holistic educational camp" in 2017 and 2018, total in 36.

Background

- 'Grade
- 'Major

Quality of course

- 'Preparation
- 'Service
- 'Reflection
- 'Celebration
- 'Assessment

Involvement of course

- 'Knowing and Understanding
- 'Skills and action
- 'Caring

Learning Outcome

- 'Perspective transform
- 'Interpersonal interaction
- 'Knowledge transfer
- 'College recognize
- 'Problem solving
- 'Critical thinking
- 'Social responsibility

Discussion and Conclusion

Domain	Data	Reasoning
Quality of course	M = 4.06 (Assessment)	Assess in the process: before, during and after the project for improvement.
Involvement of course	M = 4.29 (Caring)	Students know why they take part in this SL program and think that is meaningful for them.
Learning Outcome	M = 4.28 (Social responsibility)	Taking action in social needs and show out the responsibility for others.
Most predictive variables of LO	Reflection	Using multiple reflection through the SL process, connect prior experience and learning outcome from college, will boost up the positive learning outcome for students.

Abstract_leng-Chong Leong

**Online science Teaching
under The Covid-19 Pandemic**

Suphanwadee Prasong
Ph.D. student, Science Education
Faculty of Education, KasetSart University, Thailand
Email: suphanwadee.p@ku.th

KU
KASETSART
UNIVERSITY

Purpose

To investigate the students' views on readiness for online learning and their satisfaction for online science teaching under the COVID-19 pandemic

Materials

The research instruments were (1) the online questionnaire and (2) the variety tools in science online teaching for the teacher such as Google Classroom, Google Meet, LINE, YouTube, etc.

Methods

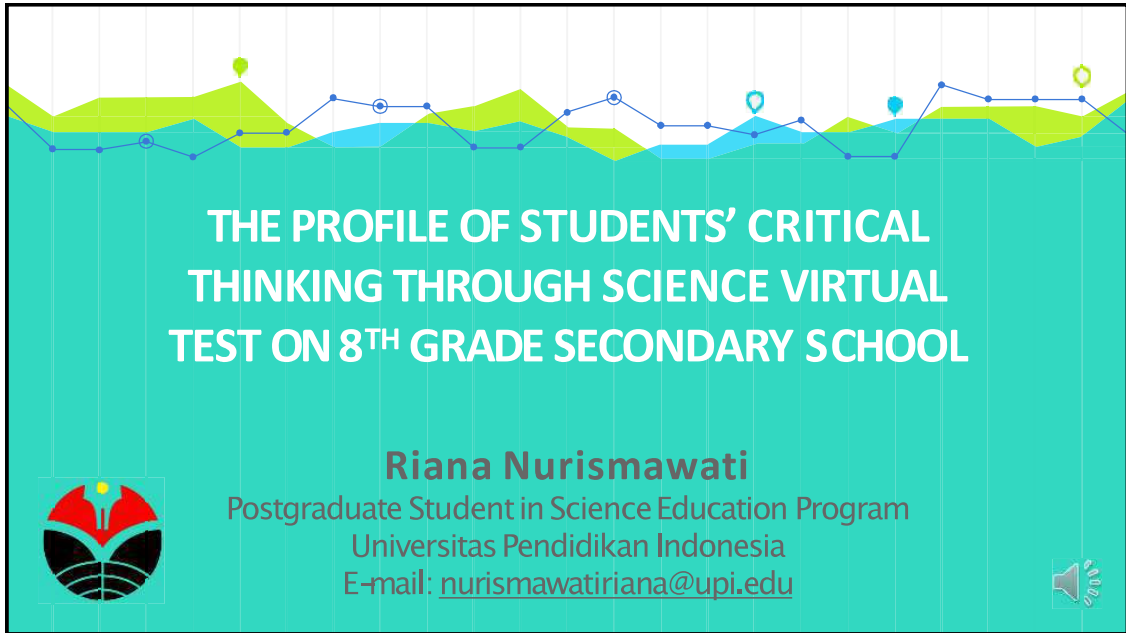
The sample groups used in the research were 74 students who studying in grade 10-12 at suratpittaya 2 school, Suratthani, Thailand. The data collected from questionnaire and semi-structure interview of students' views on readiness for online learning, and their satisfaction on science teaching under the COVID-19 pandemic. The statistics used for data analysis were percentage mean standard deviation.

Online science teaching under the COVID-19 pandemic

Results and Discussion



Results		Discussion
<p>Readiness for online learning</p> <ul style="list-style-type: none"> • Respondents are 21 male and 53 females • 46% of students use social media 7-12 hours/day • 41% of students use YouTube, followed by 27% Facebook • Most of the students are moderately ready to online learning. 	<p>Students' satisfaction toward online learning</p> <ol style="list-style-type: none"> 1) The students were very satisfied with the science online teaching 2) The teacher used a variety of tools to teach online 3) LINE was the most favorite social media 4) 91.89% of the students took their responsibility to study, but 64.86% of the students had a medium level of understanding and only 16.21% had a high level of understanding on learning 	<ol style="list-style-type: none"> 1) Online instruction would operate effectively, and all students are able to learn, if fundamental infrastructure such as online learning materials and good quality internet signal must be provided by Thai government to reduce disparity; everyone has equal learning opportunities. (Aliyyah, 2020; Assembly, 2015) 2) The teacher used a variety of tools and integrated technology to support teaching and learning online for the students and gave appropriate amount of work to the student. (Carrillo & Flores, 2020) 3) The learning efficiency of the learners is not equal to that of on-site teaching at school. (Tang et al., 2020)
<p>Online teaching strategy</p> <ol style="list-style-type: none"> 1) Video lecture is useful. 2) Real time communication, e.g., talking or chatting 3) LMS is important for collecting assignments and activities 4) Appropriate amount of work assigned to the students 		

Online science teaching under the COVID-19 pandemic



THE PROFILE OF STUDENTS' CRITICAL THINKING THROUGH SCIENCE VIRTUAL TEST ON 8TH GRADE SECONDARY SCHOOL

Riana Nurismawati
 Postgraduate Student in Science Education Program
 Universitas Pendidikan Indonesia
 E-mail: nurismawatiriana@upi.edu

INTRODUCTION

PURPOSES

- To examine the level of students' critical thinking through science virtual test on 8th grade secondary school for overall and each Inch's elements
- To examine the level of students' critical thinking for each topics on living things and environmental sustainability theme

RESEARCH METHOD

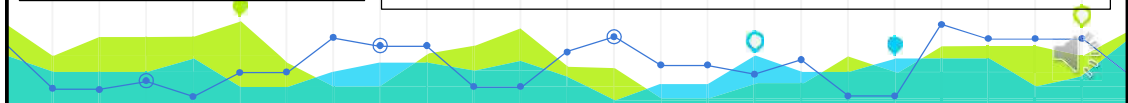
Descriptive (non-experimental study)

RESEARCH INSTRUMENT

- ⊙ Science Virtual Test:
 - ✓ 26 questions based on 8 critical thinking elements
 - ✓ Topic of living things and environmental sustainability theme: **structure and function of plant, radiation, reproduction system, greenhouse effect and climate change.**

POPULATION AND SAMPLE

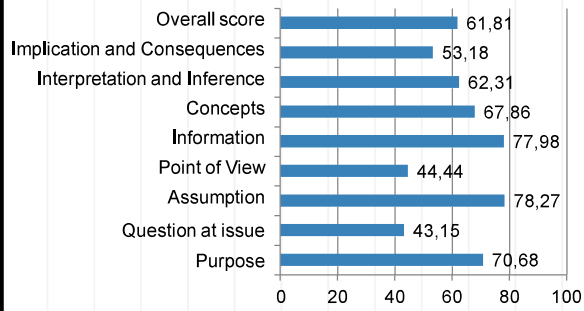
168 students from 8th grade students in three public schools Tasikmalaya City



RESULT AND DISCUSSION

1. Profile of Students' Critical Thinking Skill

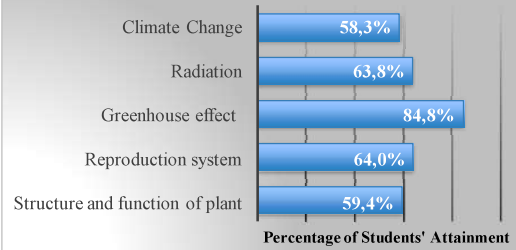
Mean of students' critical thinking attainment



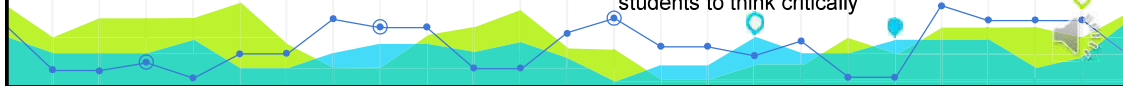
Overall: a moderate level

2. Profile of Students' Critical Thinking Based on Science Topic

Students' Attainment Based on Science Topic



The characteristics of a certain topic might foster students to think critically



<D1> 11:00

Dr. Poschanan Niramitchainont

Associate Professor, Program Director of Educational Management (International Program) Department of Education Faculty of Social Sciences and Humanities Mahidol University

- 1 IRPMD111-1
Are You Really Being Nice?
Chiba Prefectural Sakura High School
Hinata IIDA, Sorami IWATA, Momoko TOKUNAGA
- 2 IRPMD113-1
Development of Grade 10 Students' Argumentation Skills through STEM Approach by 6E learning
Biology Teacher , Sirirattanathorn School
Saharad YOKYONG
- 3 IRPMD115-1
Teaching Art during lockdown : Challenge and Change
Lecturer, Faculty of Education, Chiang Mai University
Weena THANACHAISAKUL
- 4 IRPMD116-1
EXPEDITION MUNDUS An adventure in science education
Chiba University
Pedro TERRA
- 5 IRPMD118-1
The Integration of Educational Materials for Sustainable Development in Junior High School
Science Curriculum
Universitas Pendidikan Indonesia (Indonesia University of Education)
Nanda Syah PUTRA

Are You Really Being Nice?

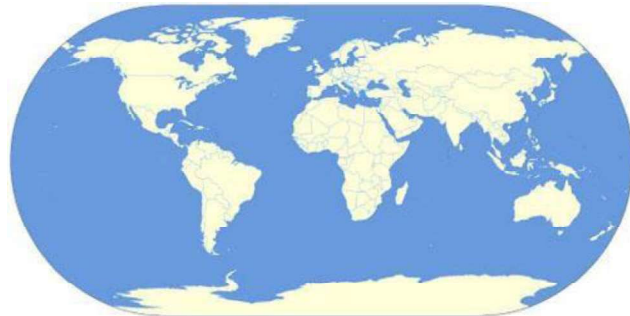
Chiba Prefectural Sakura High School
Hinata Iida Sorami Iwata Momoko Tokunaga

**In Japan, how many students have
more than one background?**

A. 5%

B. 9%

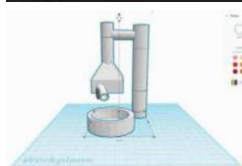
C. 14%



Development of Grade 10 Students' Argumentation Skills through STEM Approach by 6E learning



Mr. Saharad Yokyong
Biology teacher from Sirirattanathom school



KU

Master's Degree in Science Education.

Faculty of Education, Kasetsart University, Thailand. Email: Saharad.yo@ku.th

**KASETSART
UNIVERSITY**



Purpose



To develop grade 10 students' argumentation skills through STEM approach by 6E learning on Topic of Mission of Environmental Conservation.

Materials and Methods

The participants of this study

25 grade10 students of Science-Mathematics program in a secondary school in Bangkok, Thailand.

The research instruments

1. the argumentation skills test consisted of 5 components which were claim and warrant, evidence, counterargument and supportive argument
2. informative interviews

Data analysis

The quantitative data were analyzed by means, frequencies and percentages, and the qualitative data were analyzed by content analysis.



KU

Mr. Saharad Yokyong

Biology teacher from Sirirattanathom school, Bangkok, Thailand



**KASETSART
UNIVERSITY**



Results and Discussion



Results

The findings showed that 92 % of students have the increased development of argumentation skills, 8% of them haven no development of their skills. When considering each component of argumentation skill, the researchers also found that the components that most of students developed were supportive argument and the components that fewer students developed were claim and warrant.

Discussion

STEM approach by 6E learning, especially Engineer phase can develop students' argumentation skills because this phase implemented by the argumentation activity made students practice to present their prototype and convince their friends to choose the most effective prototype which can solve oil spills in the sea.

KU

Mr. Saharad Yokyong
Biology teacher from Sirirattanathom school, Bangkok, Thailand



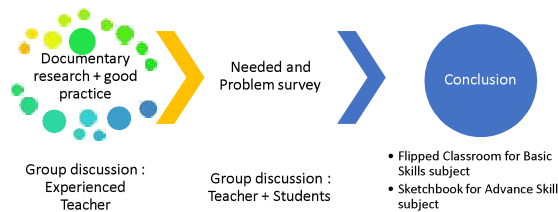
KASETSART
UNIVERSITY



Teaching Art during lockdown: Challenge and Change

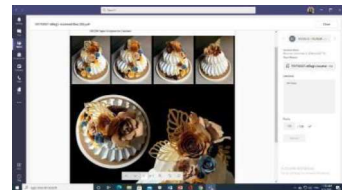
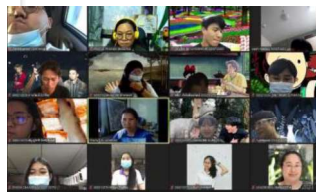
By Weena Thanachaisakul. Art Education Program – Chiangmai University

- Research background : The top priority of the pandemic response plan of the university and of every faculty was to create a path to keep the educational mission moving forward. This is a big challenge for a subject based on practice, skill development and require hands-on demonstration, such as art. The instructor must find the best way to support our students as we make our way through this trying time.
- The purpose of this research is to
 - a) Survey the needs and problems of learning art-related subjects during pandemic conditions.
 - b) Find suggestions to improve online art courses in an online platform.
- Qualitative method are used on this research



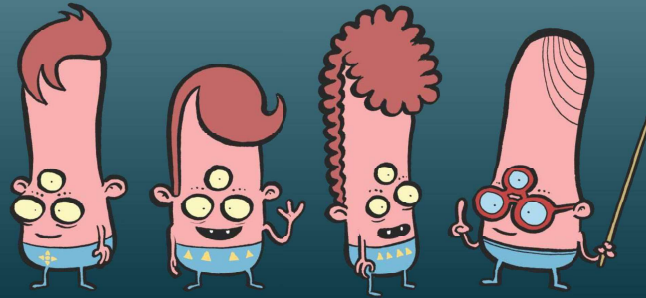
Result and Discussion

- The Covid-19 pandemic forced most of the universities to convert all their courses to emergency remote teaching and learning. This circumstance reminds us to make a good use of the online technology as much as possible. The Art Education program tried to adjust our normal practices in art skills into self-directed learning with a follow-up schedule for evaluation. We found out that learning online can be stressful and isolated.
- Students face an increased workload, lack of motivation, feeling lonely and stressed. Teachers must change their role into that of a supportive mentor and adjust assignments to a proper level by combining skills along with creative tasks to help students to reach subject goals without losing their mental well-being and enjoyment of their learning. Under the present circumstances, it is important to focus on the progress of each student rather than the amount of the artwork produced.



EXPEDITION MUNDUS

An adventure in science education



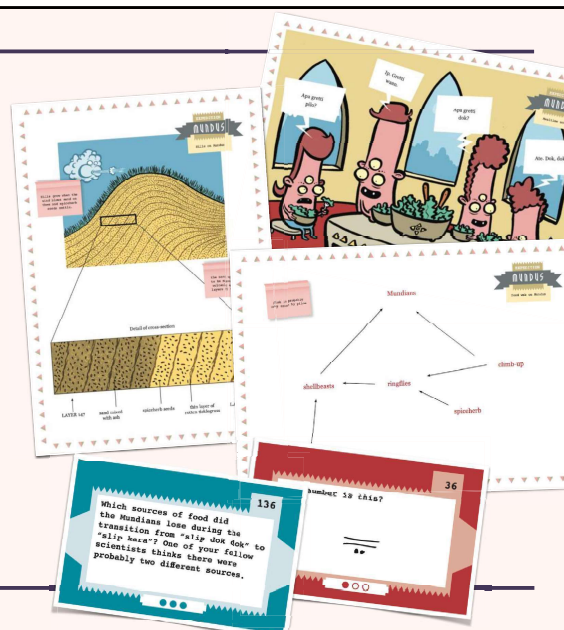
FEBRUARY 14TH, 2021

Pedro Terra | Chiba University, Faculty of Education

千葉大学国際研究発表会

EXPEDITION MUNDUS

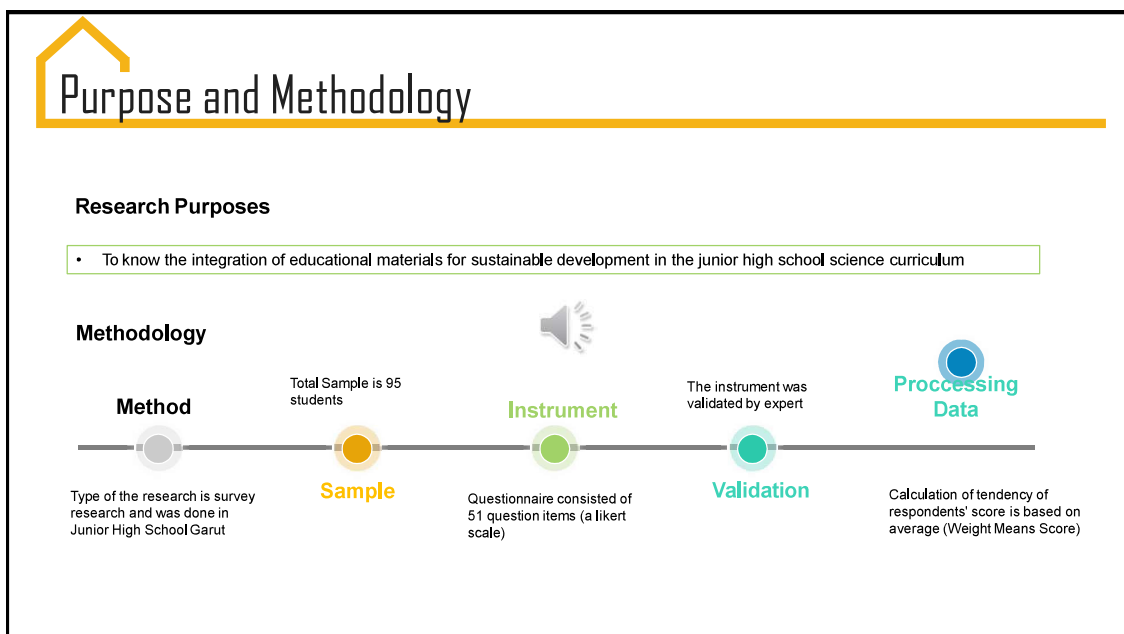
- Free educational game that aims to teach students about scientific research.
- An expedition to an unknown planet.
- Aimed at elementary and junior high school students.
- Develops competencies and abilities related to science education.




CONTENTS OF THE PRESENTATION

- **Motivation: learning goals established by the OECD and MEXT.**
- **What the game is about.**
- **How the game is played.**








Result And Discussion

Result

Discussion

Student Score for Each Theme (ESD Material)

Theme	Average	Category
• Environmental	2.99	Agree
• Waste	3.15	Agree
• Water	3.24	Agree
• Energy	3.11	Agree
• Disaster	3.08	Agree
• Health	3.33	Very Agree
Average	3.15	Agree



- The results average of all themes is categorized "agree"
- "Agree" means students give positive respond in supporting sustainable development
- From the result we know that there is integration of ESD material in Science Curriculum

<D2> 12:00

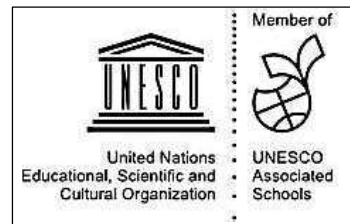
Shuji Shimonagata

Associate Professor, Faculty of Education
Chiba University

- 1 IRPMD121-1
Matsukoku SDGs!!
Matsudo Kokusai High School
Akari KANDA, Sato KITAGUCHI, Rina TOKUNAGA
- 2 IRPMD122-1
Lanna Women and Education
Dr. Faculty of Education, Chiang Mai University
Pakdeekul RATANA
- 3 IRPMD123-1
Opportunities and Challenges of Educational E-leadership in Pandemic
Mahidol University
Chun YANG
- 4 IRPMD124-1
Pre-Service Teachers' Preference and Academic Achievement in Using Different Types of Online Learning during Pandemic
PANGASINAN STATE UNIVERSITY- PHILIPPINES
Vemma Mae Ramirez GUINTO
- 5 IRPMD125-1
High School Students' Mental Health During the Pandemic in Indonesia
SMAN 1 Bandung (High School 1 Bandung)
Pelangi Savana Puspa ROMADONI
- 6 IRPMD126-1
SYNTHESIS ON BRUNER'S SPIRAL APPROACH: THE CASE OF PHILIPPINES' REFORMED K to 12 SCIENCE CURRICULUM
Chair, Teacher Education Department, University of San Carlos
Monell John F. CAÑIZARES
- 7 IRPMD127-1
Analysis of difficulties experienced by teachers in science learning during the covid-19 pandemic
Universitas Pendidikan Indonesia (Indonesia University of Education)
Windy KASMITA

Matsukoku SDGs!!

Matsudo Kokusai High School, Japan



Our school is one of the UNESCO associated schools.
We are working towards the achievement of the SDGs.

Volunteer Club



Green Fund-raising



Boccia Recreation

Cooking Club

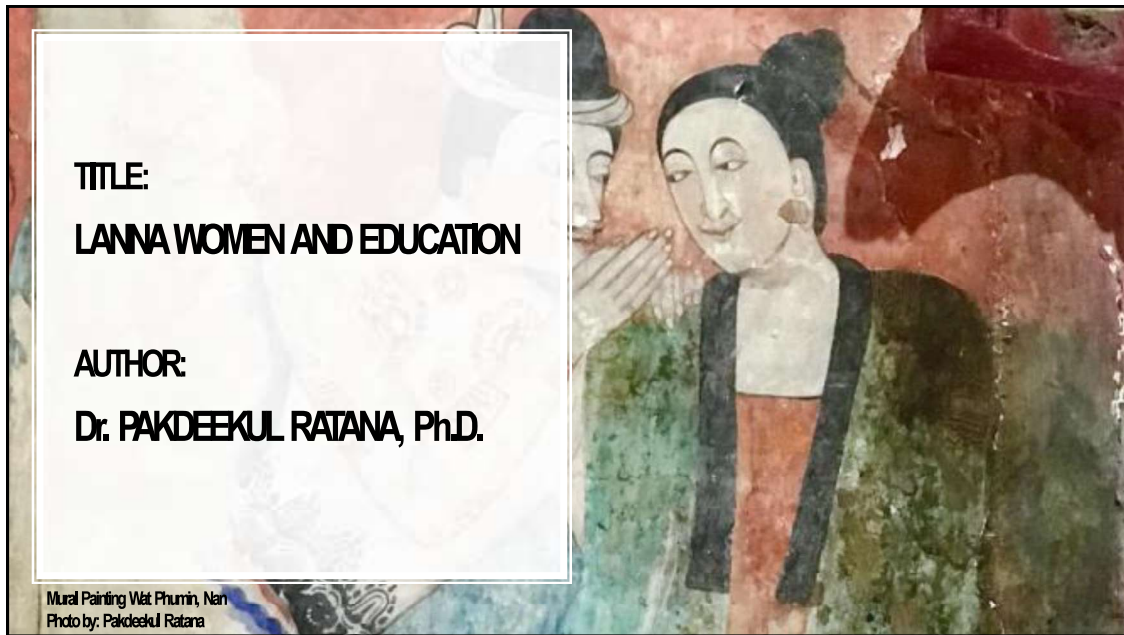


- Sharing our activities online
- Collaboration with a company
- Lectures from experts



<p>Presentations on Global Issues</p>	<p>Homeroom Activities</p>	
		
		
	<p>"Let's fight against coronavirus" cards sent to the people at a nursing home for the elderly.</p>	
<p>Group presentations on the themes related to SDGs</p>		

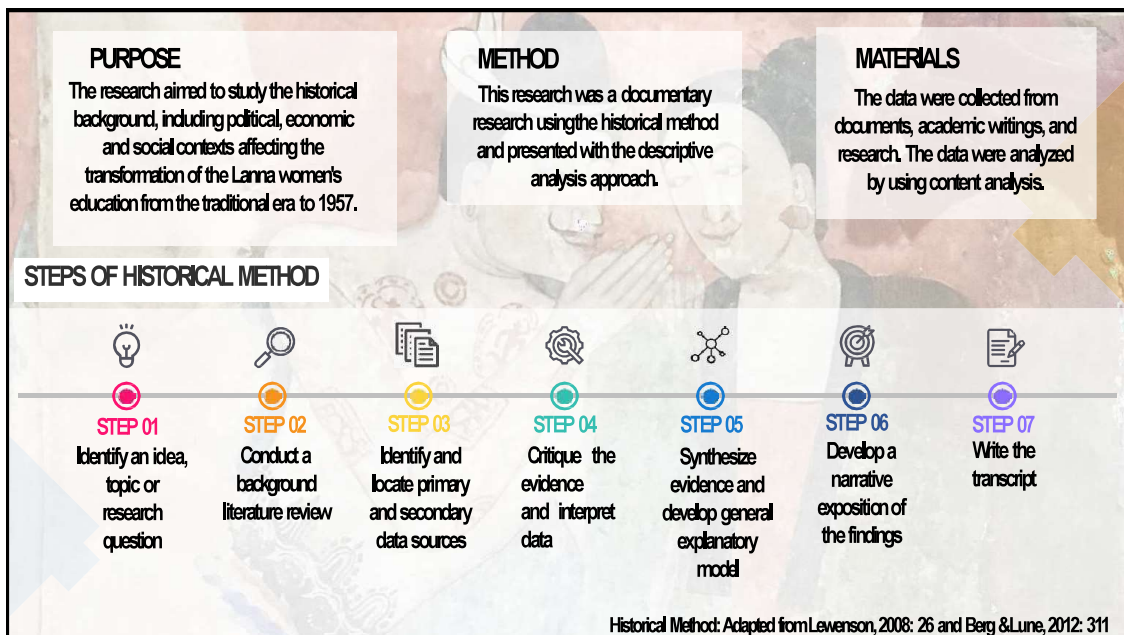
<p>Picking up garbage around the school ~Matsukoku ESD Kagayaki Tai~</p>	
	<p><u>Guidance</u></p> <ul style="list-style-type: none"> - Get a "choi bora" passport <p><u>Picking up garbage</u></p> <ul style="list-style-type: none"> - After school - On the school routes <p>This leads to...</p> <div style="display: flex; justify-content: space-around;"> <div data-bbox="874 1715 1070 1939">  </div> <div data-bbox="1091 1715 1287 1939">  </div> </div>



TITLE:
LANNA WOMEN AND EDUCATION

AUTHOR:
Dr. PAKDEEKUL RATANA, Ph.D.

Mural Painting Wat Phumin, Nan
 Photo by: Pakdeekul Ratana



RESULTS & DISCUSSION


The education of Lanna women is relevant and changes according to the corresponding and surrounding contexts in each historical period.

This reveals the chronology of education in Lanna, as well as the curriculum creation process and body of knowledge which Lanna women have learned.



Opportunities and Challenges of Educational E-leadership in Pandemic

Chun Yang (Ph.D.) Doctoral Student
Faculty of Social Science and Humanities, Department of Education, Mahidol University, Thailand
E-mail: yangchunbritney@163.com



Opportunities and Challenges of Educational E-leadership in Pandemic

Purpose
Explore the challenges and opportunities of E-leadership in COVID-19 pandemic

Materials
Official data of past pandemic
Journal article

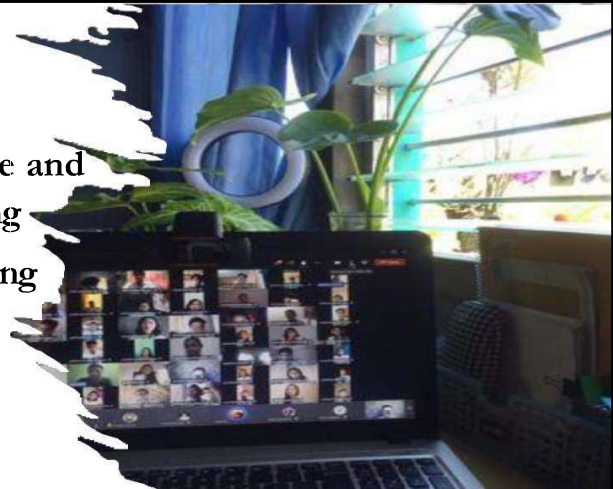
Methods
Qualitative research
_____ content analysis

Successfully
explored
opportunities and
challenges of E-
leadership

Tested the
effectiveness of E-
leadership in
pandemic

Conclusion and Discussion

Pre-Service Teachers' Preference and Academic Achievement in Using Different Types of Online Learning during Pandemic



Vemma Mae Ramirez Guinto, LPT, MAEd

Faculty, Pangasinan State University- Bayambang Campus

Bayambang, Pangasinan, Philippines

Email: vemmaguinto@psu.edu.ph



Purpose:

This study presents the preferences and Academic Achievement of the Pre-Service Teachers on the Types of Online Learning where they learn best, to propose online learning policies appropriately.

Materials and Methods

Research Design and Sampling Technique:

- Descriptive and Quasi-Experimental

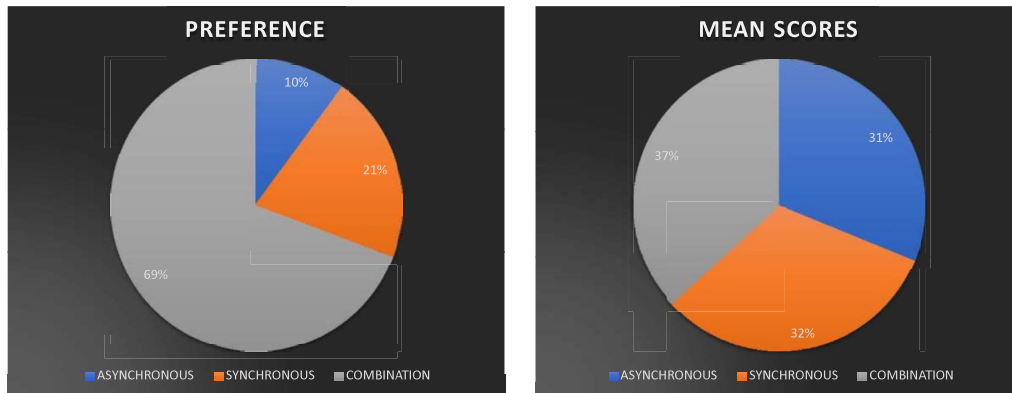
Population and Instrumentation:

- 130/ 160 Respondents
- Survey Questionnaire
- Class Record

Data-gathering Procedure and Data Analysis:


- Survey-questionnaire Technique
- Simple Frequency Counts, Analysis of Variance, Simple Ranking and Mean Difference using SPSS v26.



RESULTS

Pre-Service Teachers of Pangasinan State University- Bayambang Campus preferred and scored best using the combination of Asynchronous and Synchronous Online Learning. Universities and Colleges offering Teacher Education Programs may refer to the results of this study in making policies for online learning.






Hello.
How are you, really?

High School Students' Mental Health During the Pandemic in Indonesia

Pelanggi Savana Puspa Romadoni

SMAN 1 Bandung
Jl. Ir. H. Juanda No.93, Lb. Siliwangi, Kec.oblong, Bandung, Jawa Barat 40132
Web: <http://sman1bdg.sch.id/>

Background & Purpose:



- Poor quality of high school students' mental health
- Negative stigma
- Lack of discussion and information

“ To gain insight into High School students' understanding about mental health, in general and personally, during the pandemic. ”

Method: Google Form Survey

Knowledge about mental health	Awareness of their own mental health	Awareness of support systems
3 Questions	2 Questions	3 Questions

Results:

<i>ASPECTS</i>	<i>RESULTS</i>
HS students' knowledge of mental health in general	98.5% = aware of the term "mental health" 52.8% = heard/learned about the term through social media. 56.8% = Knows the signs of a good or bad mental health
HS students' awareness of their own mental health during the pandemic.	92% = mental health quality declined during the pandemic 75% = overwhelming workload and struggling to adjust to the new online system declined their mental health quality. 55% = social isolation caused decline in mental health quality.
HS students' awareness of support systems available for them during the pandemic	69.5% = not enough discussion/education surrounding mental health at school 71.4% = not enough discussion/education surrounding mental health in families 21.1% = don't have anyone to turn to 1.6% = turn to their teachers at school

**SYNTHESIS ON BRUNER’S SPIRAL APPROACH:
THE CASE OF PHILIPPINES’ REFORMED
K to 12 SCIENCE CURRICULUM**

*The Annual Meeting of Asia and ASEAN Center for
Educational Research
February 11, 2021*

Manell John F. Cañizares,
Chair, Teacher Education Department
University of San Carlos
DLSU Ph.D. candidate
mjfcanizares@usc.edu.ph
manell_canizares@dlsu.edu.ph







**UNIVERSITY
of SAN CARLOS**
SCIENTIA • VIRTUS • DEVOTIO


**DE LA SALLE UNIVERSITY
MANILA**
RELIGIO • MORES • CULTURA



INTRODUCTION



-  Curricular reform has been a continuous phenomenon (Chisholm & Leyendecker, 2008; Cheng, 2009; Jeffers, 2011).
-  Teaching approach and instruction is handled and studied delicately (Macintosh, 1994).
-  In 2012, the Philippines launched its “K to 12” program. A comprehensive educational reform in its basic education.
-  Under the new curriculum, two years of education had been added and its science instruction is changed into spiral approach (Okabe, 2013).



METHOD OF SYNTHESIS

DEFINING THE RESEARCH INTEREST

- Spiral progression approach
- Curricular reform experiences
- K to 12 science curriculum
- Professional development

PERFORMING LITERATURE SEARCH

- DLSU library's journal databases
- Google scholar publication
- Scopus indexed journals
- Taylor & Francis, Elsevier and Mendeley database

ESTABLISHING EXCLUSION AND INCLUSION CRITERIA

- Articles relevant to spiral curriculum
- Studies in Philippine context
- Clarity of research objectives
- In-depth analysis of findings

SYNTHESIZING THE COMMON THEMES

- 7 journal articles and research paper were selected
- Common patterns, ideas and arguments were identified
- Established themes were analyzed and interpreted

CHALLENGES TO THE SPIRAL APPROACH

Congested curriculum

- Learning in the spiral is not immediate and may take time to develop (Gibbs, 2014).
- Spiral curriculum give the appearance of too many topics to cover.

Vicious cycle of repetition

- Serious concerns on the over-emphases of the repetitive cycle of the spiral (Gamoran, 2001).
- Substantial portion of time is spent on topic review that only limited progress can be made.

Subject-matter specificity

- Confining the curriculum to the discipline's structure separates it from the immediate experiences of the learner (Deng, 2004).
- Subject matter of the curriculum is something ready-made, existing in an independent way.

IMPLICATIONS FOR A SUSTAINABLE K to 12 PROFESSIONAL DEVELOPMENT IN THE PHILIPPINES



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- Macintosh, H. (1994). *A comparative study of current learning theories and practices in assessing students achievement at primary and secondary level*. Final report. IBE Document series, number 4. International Association for Educational Assessment.
- Resurreccion, J. and Adanza, J. (2015). *Spiral progression approach in teaching science in selected private and public schools in Cavite*. Presented at DLSU research congress 2015. DLSU, Manila, Philippines.



“We begin with the hypothesis that any subject can be taught in some intellectually honest form to any child at any stage of development.”

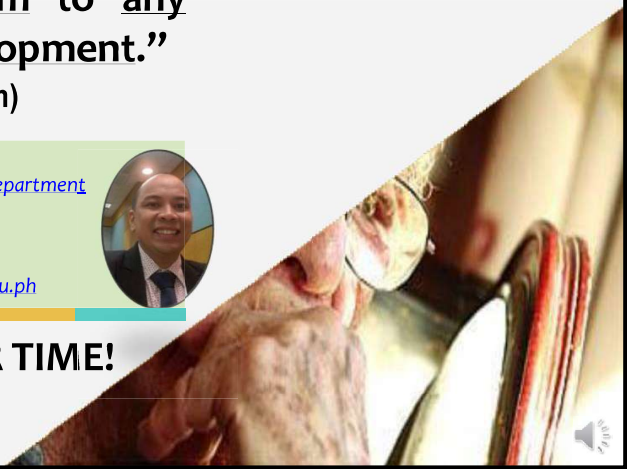
(1960, p.30, The Process of Education)

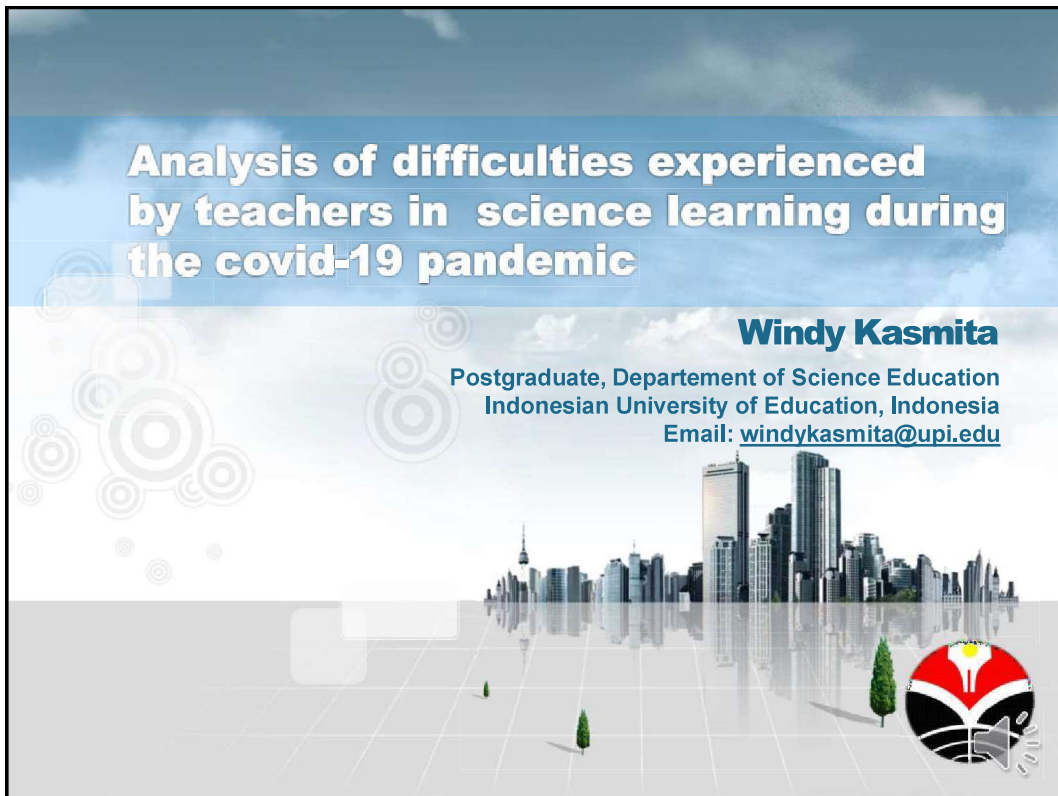
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DLSU Ph.D. candidate
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monell_canizares@dlsu.edu.ph



THANK YOU ALL FOR YOUR TIME!

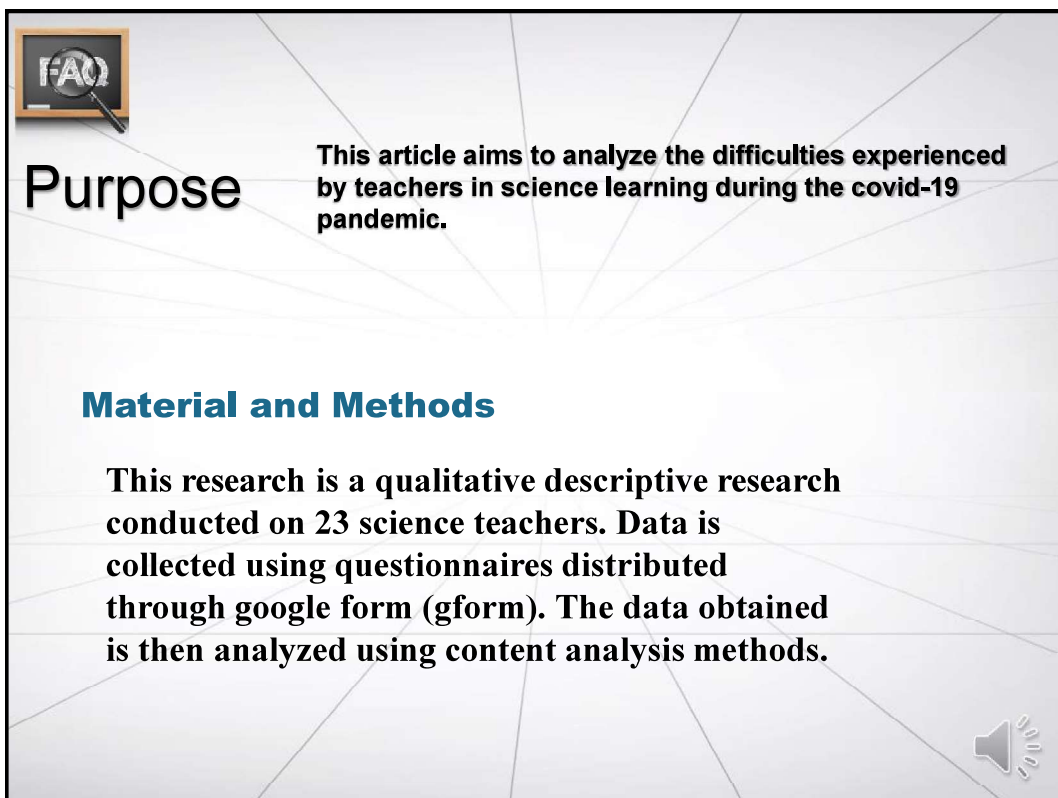
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Analysis of difficulties experienced by teachers in science learning during the covid-19 pandemic


Windy Kasmita
Postgraduate, Department of Science Education
Indonesian University of Education, Indonesia
Email: windykasmita@upi.edu



Purpose This article aims to analyze the difficulties experienced by teachers in science learning during the covid-19 pandemic.

Material and Methods

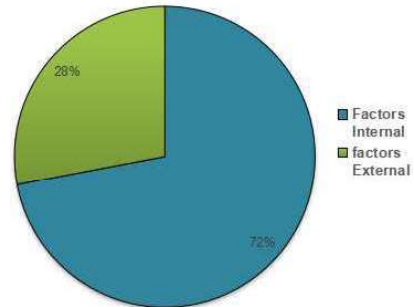
This research is a qualitative descriptive research conducted on 23 science teachers. Data is collected using questionnaires distributed through google form (gform). The data obtained is then analyzed using content analysis methods.



RESULTS AND DISCUSSION

No.	Categori	Frekuensi (%)
Factors Internal		
1.	Ability of Explaining learning materials	23%
2.	Ability of Implementing Science Laboratory	23%
3.	Selecting Media	17%
4.	Evaluating Students' Learning Outcome	9%
Factors External		
4.	Student motivation	5%
5.	Parental participation	5%
6.	Internet network	9%
7.	Communication between the student and the teacher	9%

Difficulties Experienced by teachers based on Internal and External Factors of teachers



The findings of this study stated that 72% of science teachers experience difficulties inflicted on themselves (internal factors) and 28 % from external factors. The difficulties that exist in teachers can be improved by conducting training for science teachers to master distance learning, selection of ICT-based learning media that is suitable to support learning, and the use of virtual lab applications to carry out science practicum virtually.



<D3> 13:30

Udomluk Koolsriroj, Ph.D

Associate Dean for International affairs Faculty of Education
Kasetsart University

- 1 IRPMD131-1
Every Cloud Has A Silver Lining ~To Help Industrial Trainees Under Covid 19 Crisis~
Urawa Girls' Upper Secondary School
Naho HORII, Yui MIZOGUCHI, Kana OZAWA, Chisato SAWATARI
- 2 IRPMD132-1
2020 Activity Report Educational for Sustainable Development
Ichihara Chuo High School
Keinan PROMNITZ HAYASHI, Mei MIZUNO
- 3 IRPMD133-1
Research on the current situation of higher education reform in China under the influence of COVID-19
Mahidol University
Tingting WU, Yong YANG
- 4 IRPMD134-1
Social science major students learn biology in high school
Universitas Pendidikan Indonesia (Indonesia University of Education)
Anna Nurul ALFYAH
- 5 IRPMD135-1
CONTEXTUALIZATION ON STUDENTS' PERFORMANCE AND ATTITUDE IN BIOLOGY
PANGASINAN STATE UNIVERSITY- PHILIPPINES
Kimberly INALDO
- 6 IRPMD136-1
Effects of Context-based Lessons in Physics on Student's Motivation
University of San Carlos
Rolando V. OBIEDO
- 7 IRPMD137-1 THAI SCHOOLS'MORNING ASSEMBLY
Satitchula secondary school
Lalyn PESTONIJI

Every Cloud Has A Silver Lining

~To Help Industrial Trainees Under Covid 19 Crisis~

Urawa Girl's Upper Secondary School

Horii Naho Mizoguchi Yui Ozawa Kana Sawatari Chisato

Every Cloud Has A Silver Lining

~ To Help Industrial Trainees Under Covid 19 Crisis ~

Urawa Girls' Upper Secondary School

1. Introduction

During the pandemic this year, a lot of trainees lost their jobs. They cannot pay the cost of living and return to their country.

In March this year, Japanese government introduced a new temporary rule, stating that trainees can have a different type of job. The old rule banned working in other industries. According to the rule, trainees can change their industries and continue to work in Japan.

However, it is just temporary, effective only for the time of pandemic.



2. Research Question

In order to make permanently possible for trainees to change industries, what are the problems to be solved?

SDGs 8,9,17



3. Method

Date: September 20th, October 30th 2020

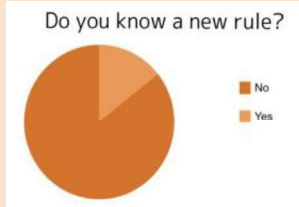
Place: Japan Vietnam Mutual Support Association

【Interview 1】 Subject: Ms Yoshimizu, Director of the Association. Some trainees from Vietnam.

【Interview 2】 Subject: Dr. Saito Yoshihisa, Kobe University

4. Findings

1. Lack of access to information



2. Reasons for restrictions for changing industries

5. Discussion/Solution

1. Overcome of Language Barrier

- Starting SNS hotline in native language
- Making application process easier in their own language



2. Better Working Conditions

- Seminars for employers to promote better understanding of trainees → Securing the number of competent workers in specific industries

6. Conclusion.

If changing industries is not restricted but permanently allowed it will greatly benefit industrial trainees working in Japan.
They can continue to work not as cheap labor but a competent worker even under the future crisis like COVID-19 pandemic.



2020 Activity Report
Educational for Sustainable Development
Ichihara Chuo High School



Promnitz Hayashi Keinan & Mei Mizuno, Ichihara Chuo High School, 2nd Grade, Japan
 プロモニツ林慶南、市原中央高等学校、2年生、日本


Background and Our Activity


Ichihara Chuo High School is a coeducational high school in Ichihara City, Chiba Prefecture, Japan. It was founded in 1983 and now offers three courses: High Level Challenge Course, Global Leader Course and Art (Music and Fine Art) Course. The school year is divided into two terms and there are various school events throughout the year, including a school festival, a sports carnival and various smaller events such as concerts, exhibitions and competitions. Extracurricular activities include 22 clubs and committees. If students opt for Global Leader Course, they will spend all three years studying English intensively. In addition to taking part in general lessons they also have many subjects taught exclusively in the course like Cross Cultural Studies, Current Affairs and UNESCO.

We provide students with opportunities to experience international cooperation not only through research and classroom lessons, but also in concrete, real-life situations. We equip the students with knowledge and understanding of international affairs, global peace and welfare education in order to enable them to be active members of the international community.

Activity Report

Activities we are conducting in ICH for the aim of contributing to the sustainable development can be categorized in mainly four groups: ordinary, internal, external activities, and international interaction. Under the state of COVID-19 this year what we could do was really limited. But we tried to do what we can do not to stop working, to keep sustainable. We had a foreign currency donation for children around the world suffering from COVID-19 with the help of unicef. And we sent many unused towels to Kumamoto where lots of people lost their houses because of heavy rains last summer. In this project, we could work together with the students in *Kumamoto Kokufu High School*. Also, we had many online seminars and workshops to learn more about the actual state of the world under COVID-19. With the information and understanding we got there we exchanged our opinions in a model United Nation. This gave representative students a chance to participate in online high school students summit to introduce one of our ordinary volunteer activities, marble crayon project. As a new project, we had an online interaction project program with *Donggang High School* in Taiwan. In this presentation, we'd like to introduce some of the activities we did this year.







Mahidol University


Research on the current situation of higher education reform in China under the influence of COVID-19

Tingting Wu Yong Yang




Background and Purpose

Background	Purpose
<ul style="list-style-type: none">• 3 hundreds million people have online classs during covid-19• To solve prominent problems in higher education• Government policy• Digital competencies training• PE reform• Aesthetic education reform	<p>To investigate current focus of higher education reform, its implimentation and feedback from teachers so as to find out problems and seek for improvements</p>




Materials and Methods




Research method

- qualitative research employing government document
- quantitative research employing questionnaire




Data

- questionnaire
- online interview



Sample

- 100 teachers from comprehensive university in guangxi province



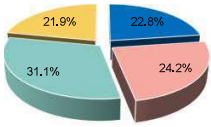
Data analysis

- Demonstration of the questionnaire

Results

Basic data of 100 teachers

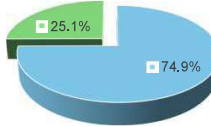
number of teachers



Title	Percentage
Assistant	21.9%
Associate Professor	31.1%
Lecturer	24.2%
Professor	22.8%

- 22.8% assistant
- 24.2% lecturer
- 31.1% associate professor
- 21.9% professor

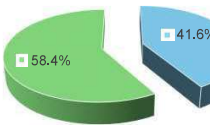
type of school



School Type	Percentage
Public University	74.9%
Private University	25.1%

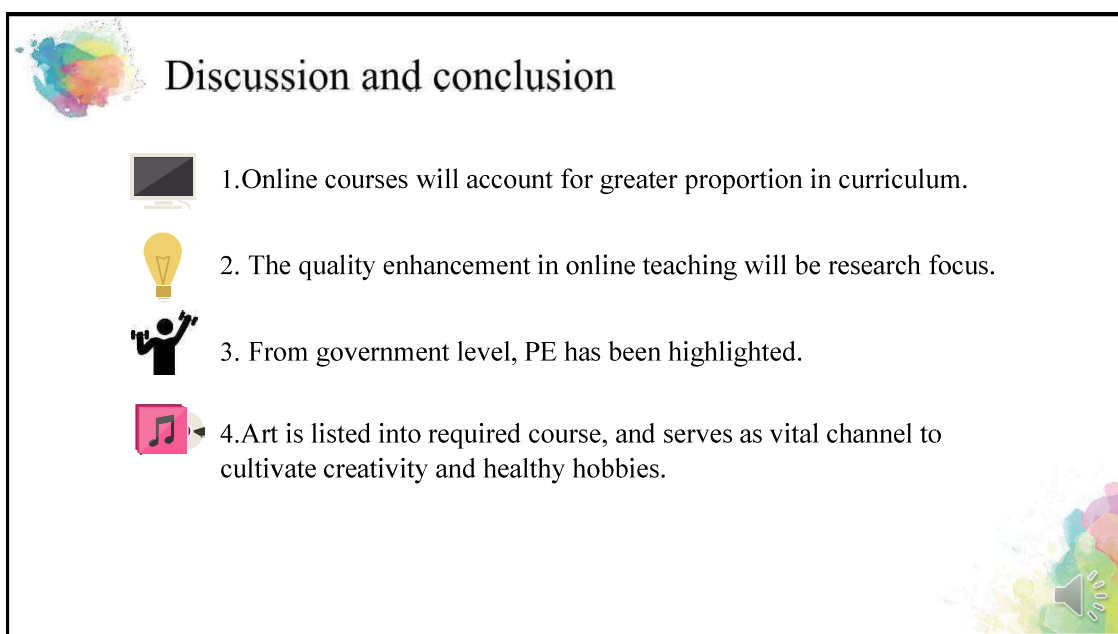
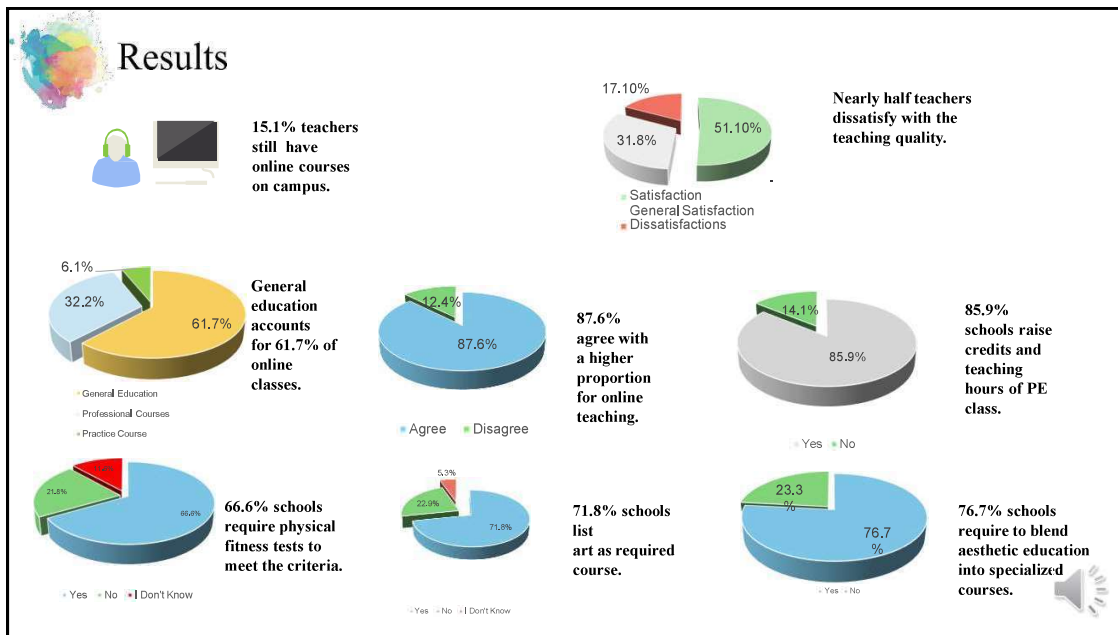
- 74.9% from public school
- 25.1% from private school

gender



Gender	Percentage
Female	41.6%
Male	58.4%

- 41.6% female
- 58.4% male





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Universitas Pendidikan Indonesia, Indonesia

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Social science major students learn biology in high school :

Critical thinking and problem solving skill of social science major students in biology classroom



Purpose

- Provide data about the change of social science students' critical thinking and problem solving in a biology course and students' view about learning natural science

- Research Design
One Group Pretest-Posttest Design

Data obtained from 34 students of grade 10 social science majors in Kota Cimahi.

- Social science students grade 10 who picked biology as cross-interest course learned about plant classification, structure, and function with observational learning for 3 weeks

Critical thinking and problem solving test was based on indicators from P21:

- Reason effectively
- Use systems thinking
- Make judgments and decisions
- Solve problems



DISCUSSION

- The result of critical thinking and problem solving of social science students about plant classification, structure and function scored below 50 which indicated students' level.
- Social science students view observational learning is interesting and help them to learn about science.
- The low score of the pretest showed that students have low prior knowledge about plants which can lead to a low increase of critical thinking and problem solving skill.
- Students fascinated by biology as a natural science that every piece of information connects each other and creates a big "chunk" of knowledge.



CONTEXTUALIZATION ON STUDENTS' PERFORMANCE AND ATTITUDE IN BIOLOGY

Kimberly B. Inaldo, MAEd
Faculty, Professional Education Department
Pangasinan State University – Bayambang Campus, Philippines
Email: kinaldo@psu.edu.ph

Purpose, Materials and Methods

Purpose: To determine the effects of Contextualization on Students' Performance and Attitude in Biology.

Methods: The single-blind experimental method of research was used, and pretest – posttest control group design was employed. The students in the experimental group were exposed to contextual approach, while the students in the control group were exposed to conventional approach.

Materials: The instrument used to measure the effect of the two teaching approaches on the performance of students is a researcher-made test questions. It was a 50-item multiple choice type and was based from the table of specifications. Meanwhile, the Biology Attitude Questionnaire of Russell and Hollander (2011) were used to assess the attitude of the students towards Biology after their exposure to their respective approaches.

Results and Discussion

Table 1: Descriptive Measures of the Pretest Scores of Grade 10 Students in Biology

Approaches	Performances	F	%	\bar{x}	S	CV	Skewness			Kurtosis		
							Sk	Se	D	Ku	Se	D
Contextual	Poor (11 - 20)	3	9.7									
	Average (21 - 30)	28	90.3	25.29	3.70	14.63	-0.985	.421	NND	1.03	.821	ND
	Total	31	100.0									
Conventional	Poor (11 - 20)	6	20.0									
	Average (21 - 30)	24	80.0	25.10	4.55	18.13	-1.27	.427	NND	.290	.833	ND
	Total	30	100.0									

Table 2: Descriptive Measures of the Posttest Scores of Grade 10 Students in Biology

Approaches	Performances	F	%	\bar{x}	S	CV	Skewness			Kurtosis		
							Sk	Se	D	Ku	Se	D
Contextual	Average (21 - 30)	11	35.5									
	Satisfactory (31 - 40)	11	35.5	54.87	7.84	22.48	-1.29	.421	ND	-1.16	.82	N
	Very Satisfactory (41 - 50)	5	23.0									
	Total	31	100.0									
Conventional	Poor (11-20)	1	3.3									
	Average (21 - 30)	11	36.7									
	Satisfactory (31-40)	13	43.3	33.10	7.75	23.41	-1.09	.427	ND	-1.26	.83	N
	Very Satisfactory (41 - 50)	5	16.7									
Total	30	100.0										

The performance of students exposed to conventional approach remains the same in terms of their scores for pretest and for posttest. Meanwhile, the performance of students exposed to contextual approach increased from pretest to posttest in terms of their scores.

Table 3: T-test between the Performance of the Students Exposed to the Two Different Approaches

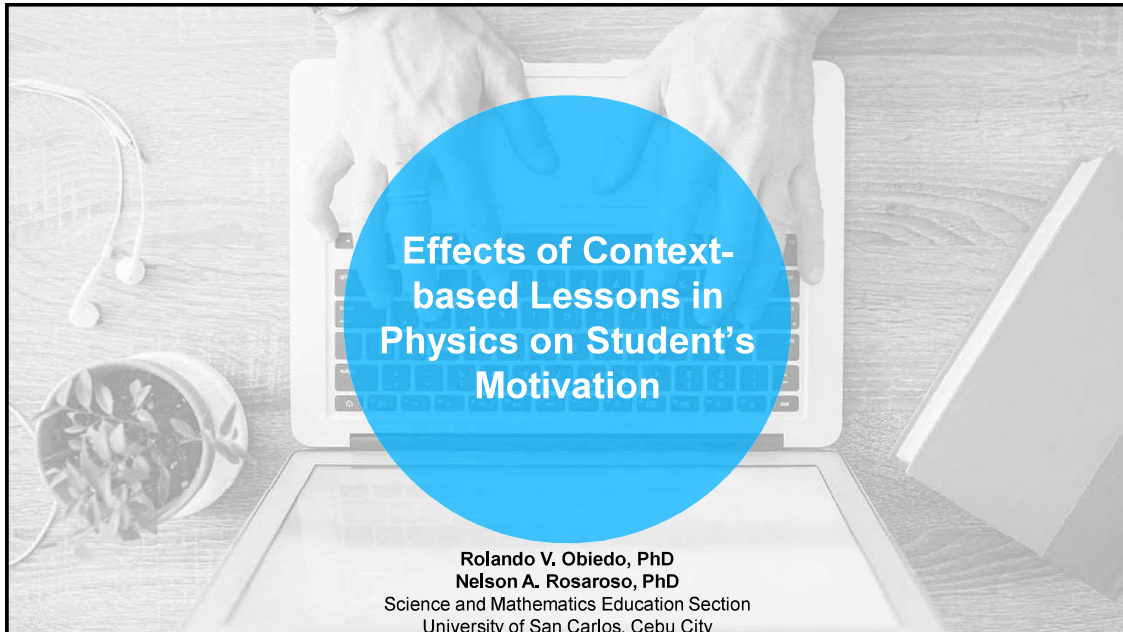
Performance	Approaches	Mean Rank	Wilcoxon W	p-value	Description
Pretest	Contextual	30.02	930.500	0.658	Not Significant
	Conventional	32.02			
Posttest	Contextual	33.03	867.000	0.363	Not Significant
	Conventional	28.90			

There is no significant difference between the performances of students exposed to the two different approaches.

Table 4: Spearman Rho test of Relationship between Attitude and Performance of the Students after Exposure to the two Different Approaches

Approaches	Performance	Attitude		
		Correlation Coefficient	Sig. (2-tailed)	Description
Performance	Contextual	0.556**	0.001	MHPC
	Conventional	0.506**	0.004	MHPC

There is a significant relationship between the performance of the students and their attitude after their exposure to the two different approaches.



Effects of Context-based Lessons in Physics on Student's Motivation

Rolando V. Obiedo, PhD
Nelson A. Rosaroso, PhD
Science and Mathematics Education Section
University of San Carlos, Cebu City

PURPOSE, MATERIALS and METHODS

K to 12 Curriculum
"making the curriculum relevant to learners"

→

Context-based lessons in Physics

→

Holistically developed Filipino

Improve the motivation of students towards science in order to bridge the gap between school science and natural science through the use of relevant examples encountered by students in their daily life.

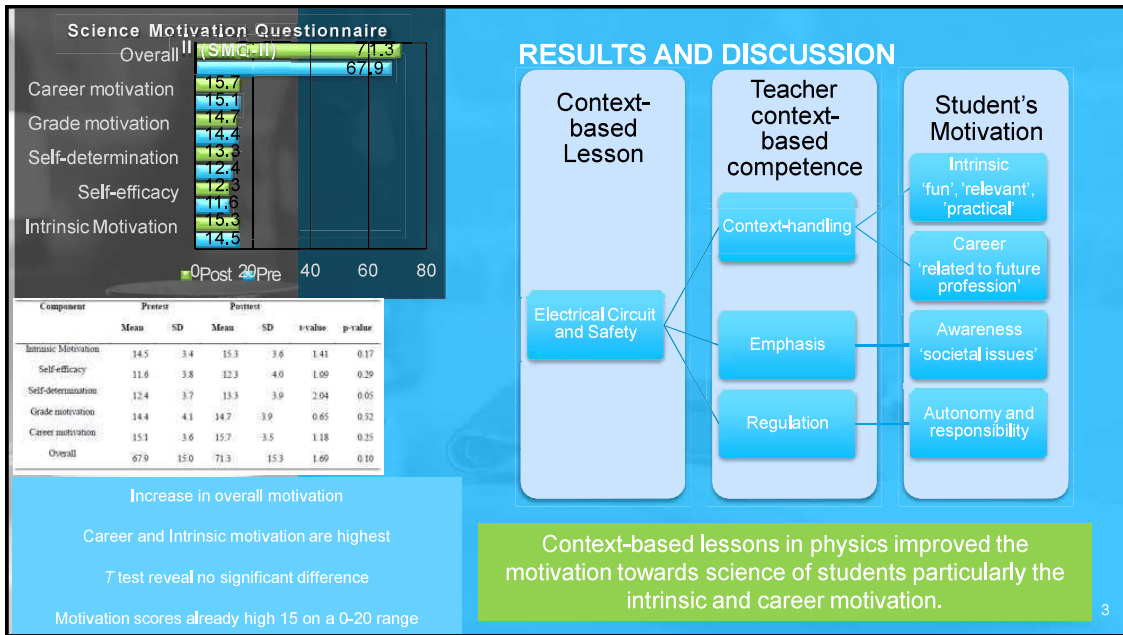
MATERIALS

- ✓ Teacher-developed unit plan on Electrical Circuits and Safety using the 5C Context-based model
- ✓ Science Motivation Questionnaire (Glynn et. al, 2011)
- ✓ Context-based competence Scale (de Putter-Smits et. al, 2012)

METHODS

- ✓ Mixed Method
- ✓ Sequential Explanatory
- ✓ Quasi-experimental
- ✓ One group pretest-posttest design

2







THAI SCHOOLS' MORNING ASSEMBLY
KAO ROP TONG CHAD

Lalyn Pestonji (ลลน) [๓๓๓]
Satitichula secondary
school student

BACKGROUND AND PURPOSE IN GENERAL

- Field Marshal Pibulsongkram (who was the prime minister at that time) wanted Thai residence to be proud of our own contry and to unite as one.
- the first ever ceramony was held on 14 July 1942.
- every morning (8:00 am) the Thai flag will be raise and will be taken down every evening (18:00 pm) during the national anthem



BACKGROUND AND PURPOSE IN SCHOOLS

- to create discipline and patience in each students.
- to inform about news and activities.
- to congratulate student's achievements.
- to tighten the relationship between students in different grades.



SHORT EXPLANATION I

- every morning, students need to be at school before 7:50 am
- students from each classes will take shifts raising the flag, sing the anthem and pray.
- all of us stand in lines (classes) and prepare for the national anthem.
- we sang to the national anthem while the flag was being raise
- on Fridays we sing the king's anthem
- we pray
- teachers inform the news
- congratulate student's achievements
- dresscode (once in while)
- students come and inform abot activities and camps.
- students who came after 7:50 will be standing in a seperate line and will be punished
- then students walk back to their class room and homeroom session begins

SHORT EXPLANATION II

- students grade 10-12 doesn't have to attend kao rop tong chad except on Friday. The male students has military training on Tuesday (no 10-12 grade students aer at school that day), so we have extra classes in the morning and afternoon.
- usually the ceramony will be held in the football field but during this pandemic situation we do it in class.

DISCUSSION TEACHER'S POINT OF VIEW

Advantage

- to make students plan ahead and to be punctual
- to create confidence for students to come up and sing / pray
- for younger students to be inspired

Disadvantage

- a waste of time

DISCUSSION

STUDENT'S POINT OF VIEW

Advantage

- to socialize 😊
- for students to keep up the good work / to be inspired
- to get to know others in different grades

Disadvantage

- time consuming
- not an efficient way to inform news
- hot heat strokes ☹️
- sleepy

CONCLUSION

(MY POINT OF VIEW 😊)

- i believe this kao rop tong chad ceremony is still necessary for young students to learn about punctuality and patience.
- but in higher grade they need rest, therefore the ceremony isn't that necessary.
- news could be inform in a more efficient way

<D4> 14:30

Phetcharee Rupavijetra, Ed. D

Associate Professor, Faculty of Education

Chiang Mai University

- 1 IRPMD141-1
Changes in Japanese beauty image from Edo Period to the Meiji Period
Shibaura Institute of Technology Kashiwa Senior High School
Kaho HIGUCHI, Chiro ICHIKAWA
- 2 IRPMD142-1
The Relationship between Anxiety and English Learning of College Students in Taiwan
National Taiwan Normal University
Yu-Lin LIU
- 3 IRPMD143-1
HOW TO PREPARE YOUTH TO BE LEADERS
Mahidol University
Amal Hussain ATEF
- 4 IRPMD144-1
Development of online classes for Health Education with collaborative style by Homeroom teacher
and Health education teacher
Chiba University
Ayako TSUCHIYA
- 5 IRPMD145-1
Information Education Campaign for Ecological Solid Waste Management
University of San Carlos
Jleian Mard M. LOSEÑARA
- 6 IRPMD146-1
Analysis of Sustainability Consciousness of Junior High School students in Indonesia
Universitas Pendidikan Indonesia (Indonesia University of Education)
Yeni SETYOWATI

Changes in Japanese beauty image from Edo Period to the Meiji Period

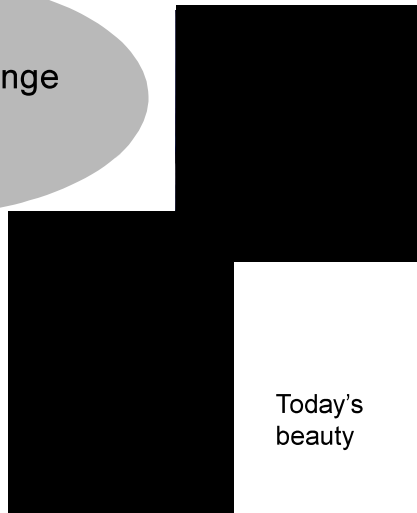
Shibaura Institute of Technology Kashiwa High School
Kaho HIGUCHI
Chihiro ICHIKAWA



Old beauty



When did it change so much ?



Today's beauty

Changes in beauty image



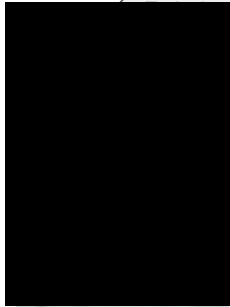
Nara era (710-794)



Edo era (1600~1868)



Meiji era (1868~1911)



Reiwa era (2019~)

BIG DIFFERENCE



The Relationship between Anxiety and English Learning of College Students in Taiwan

Domain: Language Acquisition

National Taiwan Normal University
Pei-Jung (Penny) Chiang
I-Hua Hsu
Yu-Lin (Isabella) Liu
May, 2017

Purpose, Materials, and Methods

Is anxiety a beneficial thing to the academic performances?
We've decided to discuss about this by knowing the learning experience students have had since they were little.

- **Participants:**
100 non-English majors from NTNU(50% students of science, 50% students of literature)
- **Instrument:**
Questionnaire: Foreign Language Classroom Anxiety, results of the English proficiency test, name of the department.
- **Method:** Collect answers to make charts and diagrams to show the relativity between the results of the English proficiency test and anxiety. Use the T-test method to analyze the difference between students from science and students from literature.

Results & Discussion

From the components of the respondents, we found out that most of the students of science are male and the students of literature are female. Therefore, the result of Students of Science V.S. Students of Literature can be an equivalent of Male V.S. Female.



1. Compare the average anxiety level of students of science and students of literature.
 2. In which question did the students of science and the students of literature get the highest level of anxiety?
 3. The Relation Between Academic Performances and Anxiety Level
 4. Differences in anxiety level of students of science and students of literature
-

 Mahidol University
Wisdom of the Land




HOW TO PREPARE **YOUTH** TO BE **LEADERS**

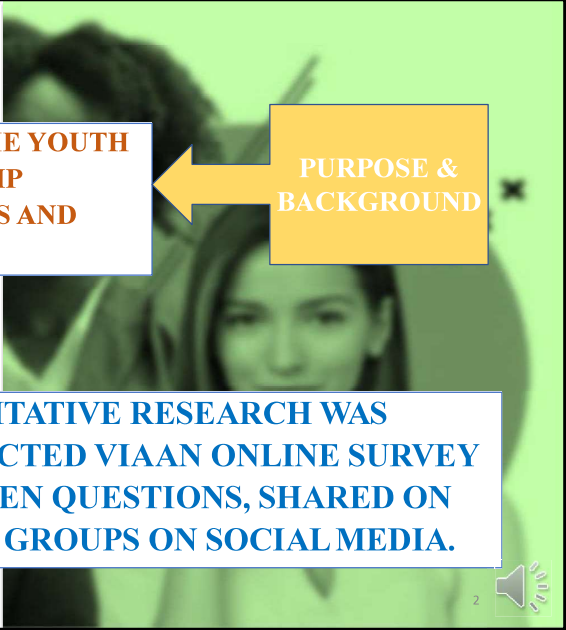
MINI RESEARCH - ABSTRACT

Presenter : Amal Atef , PhD Student - Education Management
College of Education - Mahidol University
Kingdom of Thailand

<https://www.think.org/how-to-skills-young-leaders-need-for-the-21st-century/>

1 

 Mahidol University
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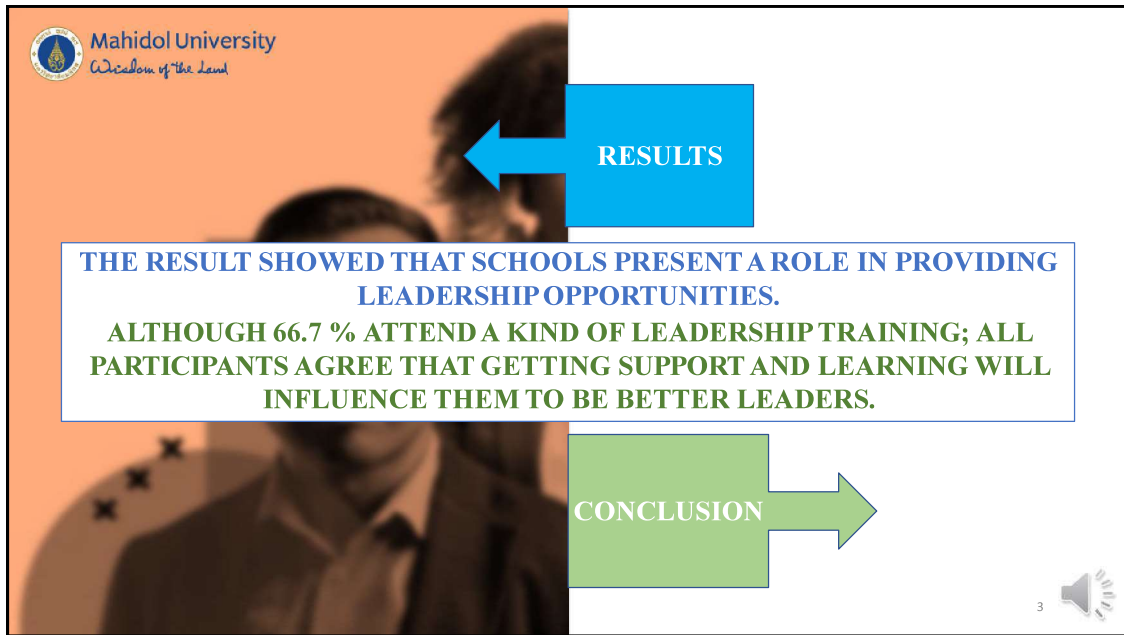
THE STUDY AIMS TO DETERMINE THE YOUTH PERSPECTIVES TOWARD LEADERSHIP PURPOSE AND WHAT ARE THE NEEDS AND BARRIERS.

PURPOSE & BACKGROUND

METHODOLOGY

QUANTITATIVE RESEARCH WAS CONDUCTED VIA AN ONLINE SURVEY WITH TEN QUESTIONS, SHARED ON YOUTH GROUPS ON SOCIAL MEDIA.

2 




RESULTS

THE RESULT SHOWED THAT SCHOOLS PRESENT A ROLE IN PROVIDING LEADERSHIP OPPORTUNITIES.

ALTHOUGH 66.7 % ATTEND A KIND OF LEADERSHIP TRAINING; ALL PARTICIPANTS AGREE THAT GETTING SUPPORT AND LEARNING WILL INFLUENCE THEM TO BE BETTER LEADERS.

CONCLUSION

3 

Development of online classes for Health Education with collaborative style by Homeroom teacher and Health education teacher

~For the improvement of elementary school education~

Ayako Tsuchiya, Jun Nomura

Graduate school of Education, Faculty of Education



Purpose

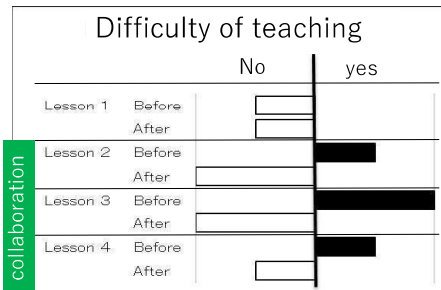
Homeroom teacher teach all subjects at their class in Japan including Health education. Majority of teachers did not have a chance of learning Health Education during their training periods. Therefore, most of them feel difficulty to teaching the subjects. On the other hand, Health care teacher has a lot of knowledge about children's health, but at the present, they only take care of student's health and do not teaching in the class. In this study, a novel collaborative teaching methods with Homeroom teacher and Health care teacher were developed utilizing the online study technique for efficient student learning.

Methods

Specialized teaching materials for online health care class were developed by the Health care teacher, and then share the class schedule with Homeroom teacher. Homeroom teacher taught health care subjects in his/her class. On the same time, Health care teacher support them by utilizing the ZOOM meeting system. Opinions, feeling and effects of the class were surveyed by questionnaire.




Results




Discussion



- Collaboration with Homeroom teacher and Health care teacher by online is useful.
- Homeroom teacher can support student's learning during the Health care teacher's lecture.
- Adapt this method to other subjects. e.g. invite the specialist of the subject in the Science class



Information Education Campaign for Ecological Solid Waste Management



Jleian Mard M. Loseñara
Ph.D. Student, University of San Carlos
Faculty Member, Cebu Technological University
Cebu, Philippines
E-mail Address: mard.loseñara@gmail.com



Background: *poor solid waste management
lack of education and inconsistent compliance*




- **POLLUTION:** Overpopulation and Development
 - Economic development, urbanization and improving living standards
- **Philippines** - 3rd highest thrower of plastics into the ocean
- Goal of every teacher to see students who are "practicing what is being preached"

Purpose: *to evaluate whether lessons learned in the classroom are practiced
assess the solid waste management practices of students*



Methodology

- Quantitative, non-experimental (descriptive-correlational)
- 2nd Year BEEd Students taking up Ecology subject at CTU-Tuburan Campus
- **RQ1:** Moral Responsibility to the Environment questionnaire
- **RQ2:** Interpreted Final Grade of students/respondents
- **RQ3:** Chi Square Test
- **RQ4:** 10 Items with the lowest mean score
- **RQ5:** Proposed IEC materials



Results and Discussion

Solid Waste Management Practices according to the *Anthropocentric Moral Responsibility*

Practices	Weighted Mean	Verbal Interpretation
1. Participation in newspaper and bottle collection campaign.	2.33	Never
4. Recycling of notebooks instead of buying new ones.	1.44	Always
5. Use of both sides of the paper before throwing it away.	1.60	Always
6. Preference to big containers of shampoo, lotion and conditioners than sachet.	2.13	Sometimes
10. Giving unused or worn out clothes to others than throwing it away.	1.08	Always

Solid Waste Management Practices according to the *Biocentric Moral Responsibility*

Practices	Weighted Mean	Verbal Interpretation
11. Feeding leftover foods to pets.	1.08	Always
15. Feeding animals and wild livestock in residential areas that it can cause diseases.	2.27	Sometimes
16. Not disposing batteries and other chemicals into the ground as they poison other organisms.	1.67	Sometimes
17. Not throwing garbage into the sea as these may be mistaken as food by sea animals.	1.42	Always
19. Reporting smoke belchers because it can affect other organisms, trees and plants.	2.44	Never

Solid Waste Management Practices according to the *Ecocentric Moral Responsibility*

Practices	Weighted Mean	Verbal Interpretation
22. Burying of garbage.	2.15	Sometimes
23. Not performing open burning of garbage.	2.17	Sometimes
26. Picking up pieces of papers or wrappers littering the house.	1.33	Always
28. Seeing to it that our trash is picked up by the garbage truck.	2.04	Sometimes
29. Seeing to it that there are appropriate segregation containers.	2.06	Sometimes

Overall Mean Score of Solid Waste Management Practices

Practices	Weighted Mean	Interpretation
Anthropocentric	1.76	Sometimes
Biocentric	1.84	Sometimes
Ecocentric	1.91	Sometimes
General Mean Score	1.84	Sometimes

Interpreted Final Grades of the Respondents on the Ecology Subject

Interpretation	Percentage
Excellent	0
Superior	52
Very Good	44
Good	4
Fair or Passing	0
Total	100



Results and Discussion

Chi Square Test of the Relationship between the Performance of the Respondents and their Practices on Solid Waste Management

Practices	Df	χ^2	Pvalue	Significance
Anthropocentric	4	16.42	0.0025*	Highly significant
Biocentric	4	37.78	0.0000*	Highly significant
Ecocentric	4	29.66	0.0000*	Highly significant

Issues and Concerns on Solid Waste Management

Item	Rank
Reporting smoke belchers because it can affect other organisms, trees and plants.	1
Participation in newspaper and bottle collection campaign.	2
Reminding individuals who raise live stocks in residential areas that it can cause diseases.	3
Preference to big containers of shampoo, lotion and conditioners than sachet.	4
Burying of garbage.	5
Not performing open burning of garbage.	6
Reminding somebody who burns garbage on its effect to human health.	7
Discouraging households to use sewers since they spread diseases.	7
Not feeding spoiled or about to spoil food to animals.	9
Seeing to it that there are appropriate segregation containers.	10



Conclusion and Recommendation

- *Sometimes (Overall)*. This implies that even if the students are practicing their responsibilities to the environment, there is a need for improvement in the awareness of students in environmental management.
- *Sometimes (Each category)*. This may mean that the students possess an equal perception on their moral responsibilities to the environment whether it be human-centered, affecting all biotic factors of the environment or their direct responsibility to the environment.
- Having identified that there is a relationship between performance in the subject and their practices, information education campaign materials are designed to answer the issues and concerns.



Analysis of Sustainability Consciousness of Junior High School students in Indonesia

Yeni Setyowati
Postgraduate student of Science Education Program
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Email: yeni.thevailer@gmail.com



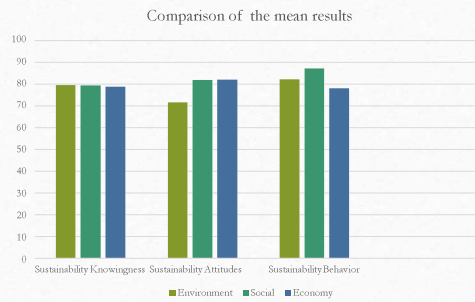
Purpose: to describe the sustainability consciousness of participants, including their three constructs in the three dimensions of sustainable development (environmental, social and economic)

Materials and Methods

- The participant were 47 Junior High School students in Indonesia
- The instrument was the Sustainability Consciousness Questionnaire
- Analysis data used descriptive statistic
- Analysis data used descriptive statistic



Results & Discussion: The mean of student's Sustainability Consciousness was 79.98%



Comparison between aspects results

Aspects	Percentage (%)
Environment	77,58
Social	82,94
Economy	79,43

