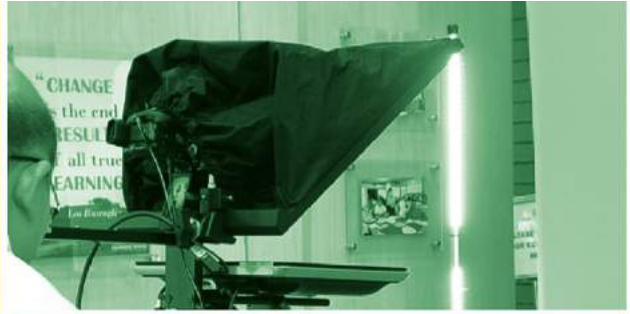
HIGH-IMPACT EDUCATIONAL PRACTICES

HIEPs

The Malaysian Higher Education Experience











First-Year Seminars and Experiences (FYS)
Service Learning (SL)
Community-based Learning (CBL)
Learning Communities (LC)
Intensive Academic Writing (IAW)
Diversity/Global Learning (DGL)
Collaborative Assignments and Projects (CAS)
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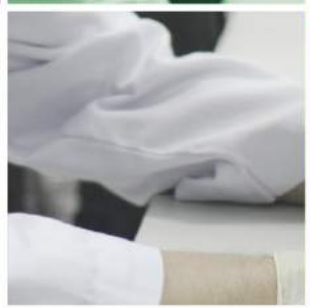
Common Intellectual Experiences (CIE)




Volume 1

JPT DEPARTMENT OF HIGHER EDUCATION
MINISTRY OF HIGHER EDUCATION
MAGNETIC Malaysian Higher Education Teaching and Learning Council

High-Impact Educational Practices (HIEPs): The Malaysian Higher Education Experience

Volume 1

Editors

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The HIEPs implementation is showcased in two volumes. Volume 1 focuses on involvement of students and their engagement with the communities.

Volume 2 focuses on the teaching and learning involving interdisciplinary approaches recommended for the later years upon graduation.


HIEPS
What is a Compu
are hardware and software?
Hardware
The electric, electronic, and mechanical equipment that makes up a computer
HIEPS
2020
HIGH-IMPACT
EDUCATIONAL PRACTICES

Contents

Abbreviation

A Affective
AAC&U Association of American Colleges & Universities
ADDIE Analysis, Design, Development, Implementation and Evaluation
ADeC Academic Enhancement and Leadership Development Centre
AMBER Agriculture Moves Beyond Extraordinary
AMU Asia Metropolitan University
ARC Asia Research Centre
ASEAN Association of Southeast Asian Nations
C Cognitive
CADe Centre for Academic Development
CAS Collaborative Assignments and Projects
CAP Capstone Projects
CBL Community-based Learning
CIE Common Intellectual Experience
CLO Course Learning Outcomes
CMID Civic-minded instructional design
CoMAE-i Centre for Management of Academic Excellence and Innovation
CS Communication skill
CSR Corporate Social Responsibility
CTPS Critical Thinking and Problem Solving Skill
DGL Diversity/Global Learning
DPT Diploma in Agriculture
DPPM Diploma of Food Estate Management
EM Entrepreneurial and Managerial Skill
ER Empirical Research/Undergraduate Research
FCR Food Conversion Ratio
FRGS Fundamental Research Grant Scheme
FYS First-Year Seminars and Experiences
GC Global Classroom
GL Global Learning
GOALs Global Open Access Learning System
HIEPs High-Impact Educational Practices
HLI Higher Learning Institution
IAW Intensive Academic Writing
ICT Information and Communications Technology
ID Interdisciplinary Approach to Assessment
IDT Instructional Design and Technology
IIUM International Islamic University Malaysia
IN Internships
ISRA International Shari'ah Research Academy
KESPER *Kesatuan Siswa Pertanian*
KOSPEN *Komuniti Sihat Perkasa Negara*
KPI Key Performance Indicator
KTP Knowledge Transfer Programme
KUIPSAS *Kolej Universiti Islam Pahang Sultan Ahmad Shah*
LAD *Latihan Amali Dakwah*
LC Learning Communities
LL Lifelong Learning
LMS Learning Management System
LO Learning Outcome
LS Leadership Skill
MAGNETIC Malaysian Higher Education Teaching and Learning Council
MARDI Malaysian Agricultural Research and Development Institute
MGSEB Malaysian Graduate School of Entrepreneurship & Business
MIG Muamalat Interactive Game
MIT Master in Instructional Technology
MOHE Ministry of Higher Education
MOOC Massive Open Online Course
MoU Memorandum of Understanding
MoA Memorandum of Agreement
MPOB Malaysian Palm Oil Board
MPU *Mata Pelajaran Umum*
MQF Malaysian Qualification Framework
MUST Malaysian University of Science and Technology
NEP National Education Philosophy
P Psychomotor
PBL Problem-based Learning
PIS Politeknik Ibrahim Sultan
PLO Programme Learning Outcome
PnP *Pengajaran dan Pembelajaran*
PSAS Politeknik Sultan Azlan Shah
RECSAM Regional Centre for Education In Science and Mathematics
SDG Sustainability Development Goal
SEAMEO Southeast Asian Ministers of Education Organization
SEED Social Enterprise for Economic Development
SL Service Learning
SLT Student Learning Time
SOP Standard Operating Procedure
STD Sexually Transmitted Disease
STEM Science, Technology, Engineering and Mathematics
SULAM Service Learning Malaysia – University for Society
TnL Teaching and Learning
TPU *Taman Pertanian Universiti*
TS Teamwork Skill
UiTM Universiti Teknologi MARA
UKM Universiti Kebangsaan Malaysia
UM Universiti Malaya
UMK Universiti Malaysia Kelantan
UMP Universiti Malaysia Pahang
UMS Universiti Malaysia Sabah
UMT Universiti Malaysia Terengganu
UNESCO United Nations Educational, Scientific and Cultural Organization
UniKL Universiti Kuala Lumpur
UniMAP Universiti Malaysia Perlis
UNIMAS Universiti Malaysia Sarawak
UniSZA Universiti Sultan Zainal Abidin
UNITEN Universiti Tenaga Nasional
UPM Universiti Putra Malaysia
UPNM Universiti Pertahanan Nasional Malaysia
UPSI Universiti Pendidikan Sultan Idris
USM Universiti Sains Malaysia
USIM Universiti Sains Islam Malaysia
UTAR Universiti Tunku Abdul Rahman
UTeM Universiti Teknikal Malaysia Melaka
UTHM Universiti Tun Hussein Onn Malaysia
UTM Universiti Teknologi Malaysia
UTP Universiti Teknologi PETRONAS
UUM Universiti Utara Malaysia
VR Virtual Reality
WEF World Economic Forum

Preface

This infographic book on High-Impact Educational Practices (HIEPs) showcases innovative efforts of educators to design, implement and assess impactful and meaningful learning experiences for their students. These ongoing on-the-ground efforts in various Higher Learning Institutions across Malaysia brings to life aspirations laid out in the Malaysian Education Blueprint 2015-2025 (Higher Education) to nurture and grow holistic, entrepreneurial and balanced graduates. The three dozen cases featured in the book are also a testament to Malaysian higher education's commitment to UNESCO's Sustainable Development Goal, SDG 4, Quality Education.

Initially conceptualized by the Academic Excellence Division, Department of Higher Education and the Malaysian Higher Education Teaching and Learning Council (MAGNETIC) as an update to a 2013 guidebook of nine High-Impact Educational Practices (HIEPs). However, the book soon took on a life of its own in the hands of a team of dedicated editors and passionate contributors, culminating into a lively two-volume infographic compilation of 27 innovative examples of impactful teaching and learning covering 13 HIEPs. Each example not only outlines the design, delivery and assessment of the particular HIEP, but also provides evidence of its impact. To complement the 13 HIEPs showcased in the book is a special e-learning chapter featuring tools and technologies for teaching and learning. As online learning increasingly becomes a new norm in higher education, HIEPs will play a highly important role in ensuring that our students benefit from impactful and meaningful learning experiences, seamlessly in any learning environment-whether offline, online or blended.

This infographic book's attractive design beckons the reader to flip through its clean and colourful pages. But the true value of the book can only be realized by reading the contents of the lively pages. It is our hope that the HIEPs cases in the book may offer inspirational ideas and useful examples for you not only to adopt High-Impact Educational Practices in your teaching and learning but also to redesign learner's immersive learning experiences with HEIPs.


UNIVERSITI PUTRA MALAYSIA

- George D. Kuh -

Chancellor's Professor Emeritus of Higher Education, Indiana University

Foremost Expert on HIEPs

Founding Director, National Institute for Learning Outcomes Assessment

Author of the highly influential book *High Impact Practices* (2008)

"Embedding **High Impact Practices (HIPS)** in the program of study produces unusually positive effects. When students participate in high impact practices, the psychological size of the institution shrinks. They get to know other students and the faculty members well. They are also involved in deep, integrative learning that significantly enhances their learning experience."

Introduction

Muta Harah Zakaria[1,2*], Amira Sariyati Firdaus[3,4], Mai Shihah Abdullah[5], *Najah Nadiah Amran*[6], *Siti Salhah Othman*[7,8] & Ras Azira Ramli[9,10]

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High-Impact Educational Practices (HIEPs) aim to enhance student learning through authentic and impactful learning activities and assessments to prepare them for life and the world of work.

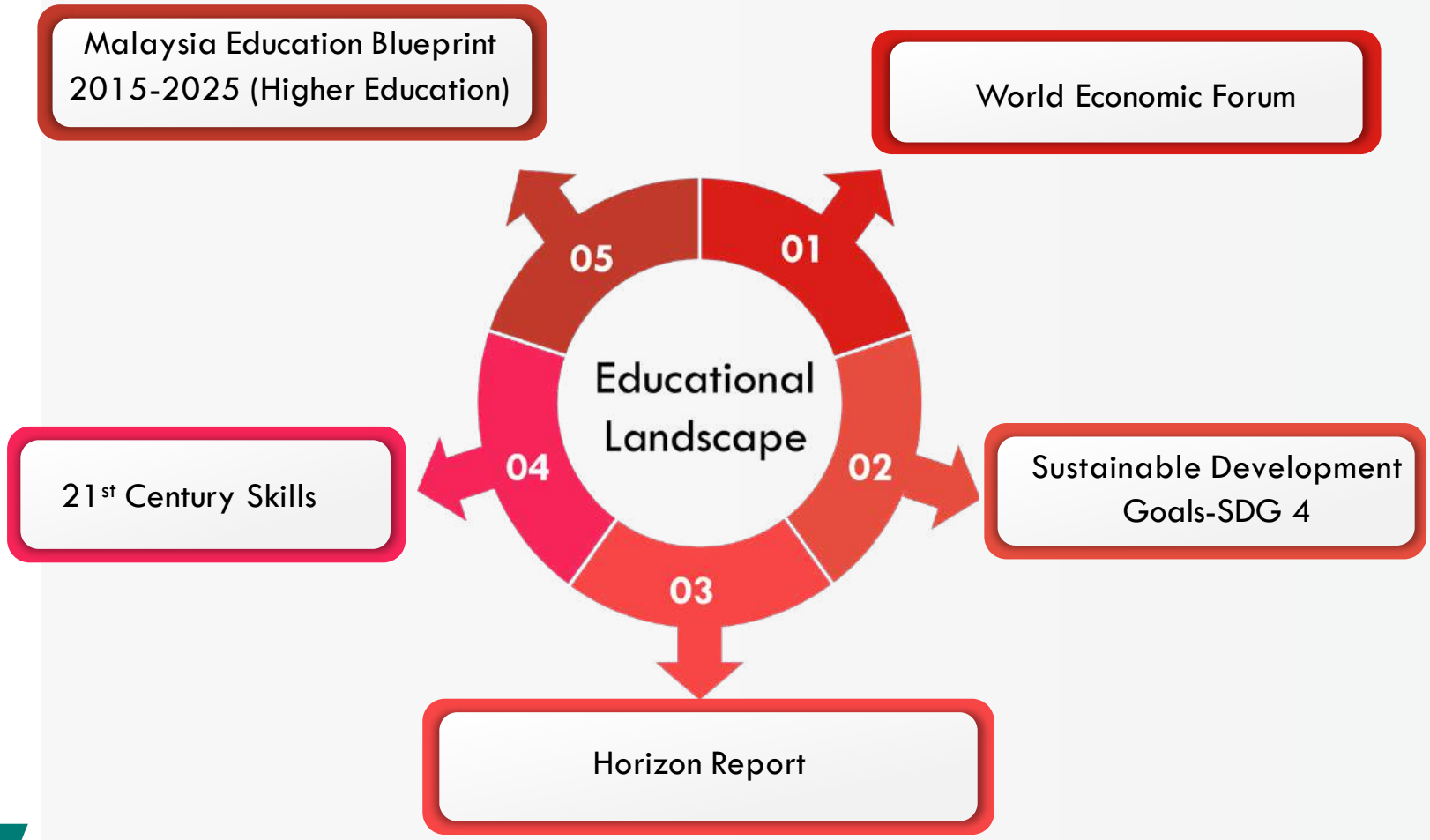
HIEPs were formally introduced and subsequently implemented by Malaysian Higher Education Institutions in 2015. This infographic book, initiated by the Malaysian Higher Education Teaching and Learning Council (MAGNETIC) serves as a reference and guide to inspire Malaysian academicians to integrate HIEPs into their teaching and learning (TnL) practices.

The book is divided into two volumes covering 13 types of HIEPs comprising 27 case study examples from across 17 universities currently helping to make reality the forward-looking Malaysia Education Blueprint 2015-2025 (Higher Education).

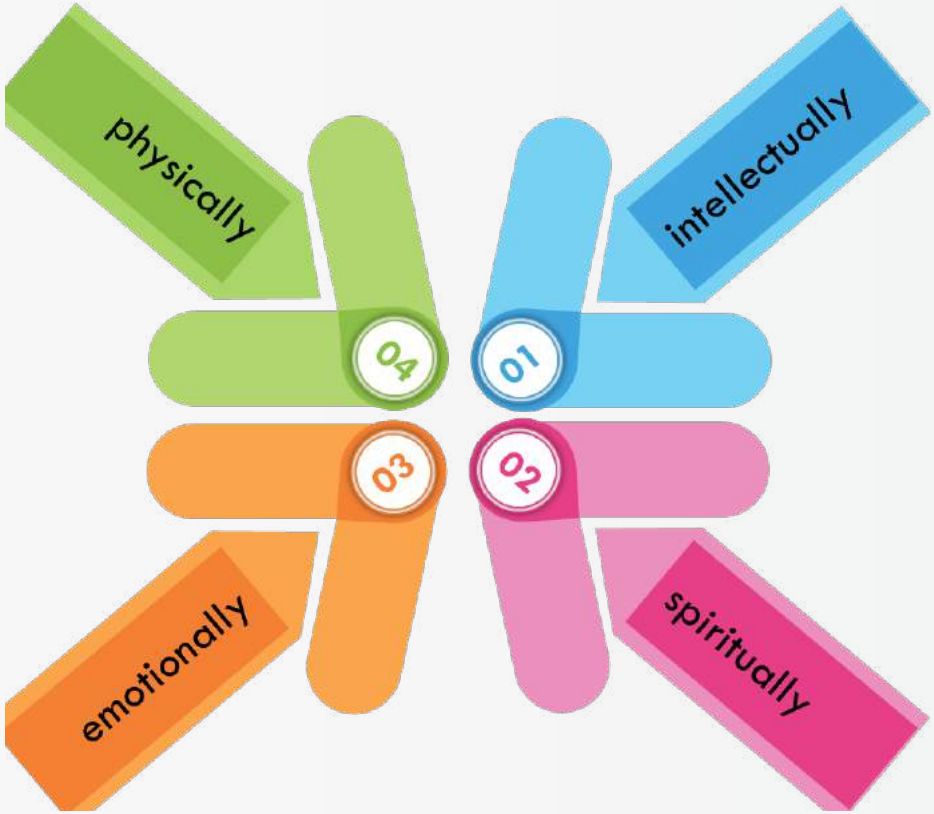
The introduction chapter outlines the alignment of HIEPs with Malaysia's educational philosophy and blueprint as well as current global initiatives. This is followed by an introduction to the 13 HIEPs showcased in the book, as well as a discussion on the why's, how's and when's of implementing HIEPs. Volume 1 showcases HIEPs examples that focus on student involvement and community engagement, while interdisciplinary HIEPs useful in the later years of study are showcased in Volume 2. In addition to the 13 HIEPs, a special e-learning chapter at the end of Volume 2 showcases 9 examples of technology and tools for teaching and learning. The integration of digital and networked technology into higher learning is significant (if not integral) to impactful TnL in the 21st century whether through use of technology in the classroom, via blended learning, distance learning, MOOCs, or even emergency remote teaching.

The editors and authors truly hope that this book will be a source of inspiration for impactful TnL practices.

To achieve Malaysia's aspirations for holistic, entrepreneurial and balanced graduates, Malaysian higher learning institutions can draw inspiration from our timeless National Education Philosophy (NEP) as well as current global developments. Findings from the World Economic Forum (WEF), Sustainable Development Goal, SDG 4 promoting Quality Education, recommendations from the Horizon Report and newly identified 21st century skills provide input to impactful educational practices in Malaysian higher education. This book is one effort to showcase some of the High-Impact Educational Practices (HIEPs) currently helping to make reality the forward-looking Malaysia Education Blueprint 2015-2025 (Higher Education).



National Education Philosophy (NEP)



A common educational vision, enshrined in the Malaysia National Education Philosophy is the on-going mission to humanise education and to ultimately nurture our students into *Insan Sejahtera*.

Malaysia National Education Philosophy (NEP)

"Education in Malaysia is an ongoing effort towards further developing the potential of individuals in a holistic and integrated manner so as to produce individuals who are intellectually, spiritually, emotionally and physically balanced and harmonious, based on a firm belief in and devotion to God"

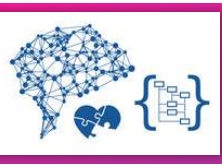
Top 10 Skills

Past

in 2015

1. Complex Problem Solving
2. Coordinating with Others
3. People Management
4. Critical Thinking
5. Negotiation
6. Quality Control
7. Service Orientation
8. Judgement and Decision Making
9. Active Listening
10. Creativity

Present



in 2020

1. Complex Problem Solving
2. Critical Thinking
3. Creativity
4. People Management
5. Coordinating with Others
6. Emotional Intelligence
7. Judgement and Decision Making
8. Service Orientation
9. Negotiation
10. Cognitive Flexibility

Future

in 2022

1. Analytical Thinking and Innovation
2. Active Learning and Learning Strategies
3. Creativity, Originality and Initiative
4. Technology Design and Programming
5. Critical Thinking and Analysis
6. Complex Problem Solving
7. Leadership and Social Influence
8. Emotional Intelligence
9. Reasoning, Problem Solving and Ideation
10. Systems Analysis and Evaluation

Source: Future of Job Report, World Economic Forum

Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

SDG-UNESCO

Source: https://en.unesco.org/sdgs

The Horizon Project can be regarded as **education's longest-running** exploration of emerging technology trends that **support teaching, learning and creative inquiry.**

Source: https://library.educause.edu/resources/2019/4/2019-horizon-report

16 Skills for 21st Century Skills

Foundational Literacies How students apply core skills to everyday task.	**Competencies** How students approach complex challenges.	**Character Qualities** How students approach their changing environment.
1-Literacy	7-Critical thinking/ problem solving	11-Curiosity
2-Numeracy	8-Creativity	12-Initiative
3-Scientific literacy	9-Communication	13-Persistence/ grit
4-ICT literacy		14-Adaptability
5-Financial literacy	10-Collaboration	15-Leadership
6-Cultural and civic literacy		16-Social and cultural awareness

Lifelong Learning

Source: http://www.tomorrowtodayglobal.com/2016/04/25/16-skills-21st-century-education/

Malaysia Education Blueprint: 2015-2025 (Higher Education)

Patriotism and Unity in Diversity

High-Impact Educational Practices (HIEPs) such as experiential learning and service learning are particularly appropriate for developing national unity and 21st century competencies.

Strategy A
A Developing holistic and integrated curriculum

Wave 1 (2015)
Introduce HIEPs and lessons on experiential learning and entrepreneurial immersion to public and private HLIs

Shift 1 Holistic, Entrepreneurial and Balanced Graduates

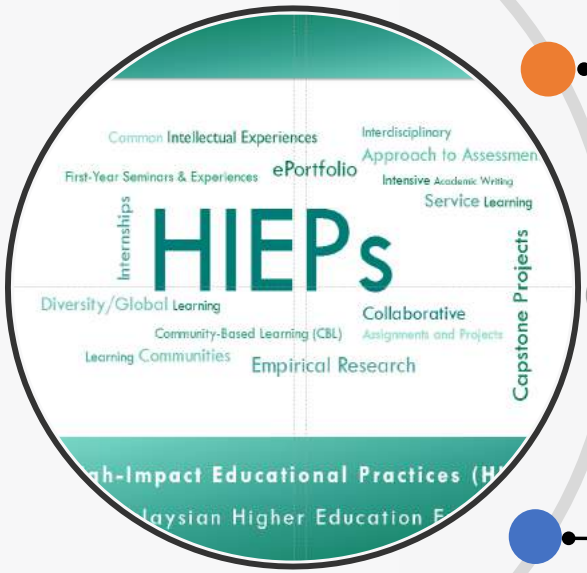
Strategy A: Developing holistic and integrated curriculum

HLIs are to develop constructively aligned, holistic and integrated curriculum that embeds HIEP, which encompasses cognitive and conceptual clarity, entrepreneurial skills, experiential learning, and innovation. The curriculum will be both student-centered and outcome-based. This means that the curriculum, learning experiences, and learning interventions must target:

- The advanced mastery of the discipline;
- The development of personal, interpersonal and social skills; and
- The habits and virtues of the mind and heart (*adab*).

HLI-Higher Learning Institution

Why HIEPs?



Involve students in purposeful learning

Engage diversity and collaboration as resources to learning

Require meaningful interaction with lecturers and students

Provide frequent and substantive feedback

Invest meaningful time and effort

Graduate Attributes

- Holistic
- Entrepreneurial
- Balanced

High-Impact Educational Practices (HIEPs)

HIEPs are techniques and designs for teaching and learning that have proven to be beneficial for student engagement and successful learning for students from various backgrounds.

01 First-Year Seminars and Experiences (FYS)

02 Service Learning (SL)

03 Community-based Learning (CBL)

04 Learning Communities (LC)

05 Intensive Academic Writing (IAW)

06 Diversity/Global Learning (DGL)

07 Collaborative Assignments and Projects (CAS)

08 Empirical Research/Undergraduate Research (ER)

09 Interdisciplinary Approach to Assessment (ID)

10 Internships (IN)

11 Capstone Project (CAP)

12 ePortfolio

13 Common Intellectual Experiences (CIE)

Source: Association of American Colleges & Universities, AAC&U (n.d). High Impact Practices.
Kuh, G., O'Donnell, K. & Schneider, C. G. (2017). HIPs at Ten.


Definition

CAS
Collaborative Assignments and Projects

- Combines learning to work and solve problems collaboratively through course-based study groups, team-based assignments, written work and cooperative projects.
- Sharpening one's own understanding of a problem or issue by actively listening to the insights of others.

ID
Interdisciplinary Approach to Assessment

- Integrative learning that combines components from two or more courses/ fields to create a task.
- Examine and synthesise an issue from multiple perspectives and disciplines to acquire deep and thorough understanding of complex issues.

DGL
Diversity/ Global Learning

- Fosters learning beyond their immediate surroundings and circles by sharing and gaining perspectives from diverse communities within Malaysia and globally.
- Involve critical analysis and engagement with interdependent global systems and legacies to explore the implications on people's lives and earth's sustainability.

LC
Learning Communities

- Students take two or more linked courses to explore a common topic as a group with one another and with their lecturers.
- Encourage integration of learning across courses to involve students with "big questions" that matter beyond the classroom.

CBL/SL
Community-based Learning/Service Learning

- Field-based experiential and reflection lea ning approaches involving community partners.
- Students gain experience through utilization of knowledge and skills from their course to solve problems or provide service in a real-world to a group, community, movement or non-profit or anization.

FYS
First-Year Seminars and Experiences

- Crucial for setting early expectations regarding student involvement and interactions with learning.
- Enhancing students' engagement in academia and social life across the campus.

Source: Association of American Colleges & Universities, AAC&U (n.d). High Impact Practices.
Kuh, G., O'Donnell, K. & Schneider, C. G. (2017). HIPs at Ten.

IAW
Intensive Academic Writing

- Writing skills to be developed via writing exercises, assignments and projects integrated with disciplinary subject matter.
- Tasks are written in forms and formats relevant and meaningful for contemporary readers of their discipline.

ER
Empirical Research/ Undergraduate Research

- Typically undertaken in a student's final year and closely supervised by academic staff.
- Formulate research questions, review literature, design an empirical study, collect and analyse data, discuss study findings and draw conclusions.

CIE
Common Intellectual Experiences

- Refer to any curricular and/or co-curricular programme designed to build a student cohort focusing on a common broad theme.
- Approach that generates an understanding of themes and ideas connected to a linked experience through the real world.

IN
Internships

- Students gain work experience and apply their classroom learnings to the real-world workplace via industrial training and attachments.
- May also lead to job offers.

CAP
Capstone Project

- Final year course or project integrating learning outcomes from multiple courses aimed to synthesize knowledge and skills gained throughout their academic programme.
- Typically comprise of a practical project-based or research-based component and a reporting component, usually in the form of a written report.

ePortfolio

- Accumulate and present digital evidence of authentic student accomplishment including the curation of specific proficiencies and dispositions at given points in time.
- Fosters students reflection and deepens learning while making achievement visible to students themselves, their peers, faculty and external audiences.

Source: Association of American Colleges & Universities, AAC&U (n.d). High Impact Practices.
Kuh, G., O'Donnell, K. & Schneider, C. G. (2017). HIPs at Ten.

Differences between Community-based Learning (CBL) and Service Learning (SL)

Community-based Learning (CBL)

- Community or community institution is a space for learning.

Learning cycle

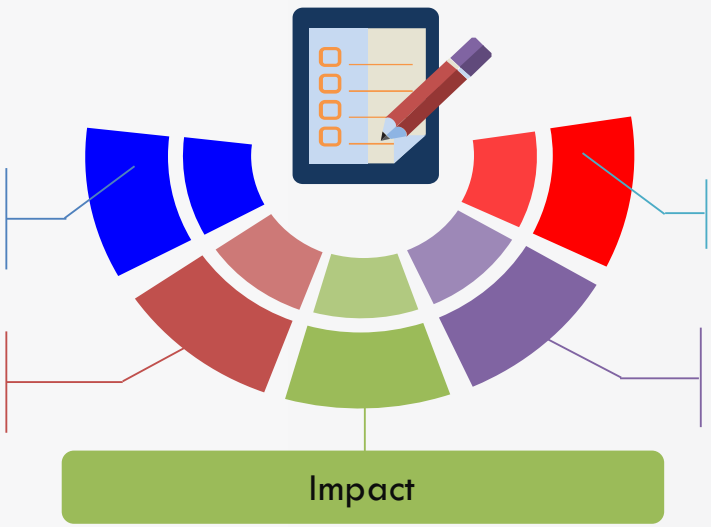
The assignments may not fulfil community's expectations or needs, but students learn from the experience.

Learning time

Less than 20 hours. Students may carry out less than 20 hours of activities.

Learning outcomes

The primary objective of LO is the application of theory.



Impact

CBL-Primarily, only students obtain benefit from activities with the community.

SL-Impactful for all parties involved; (a) students, (b) community and (c) university/industry. SL must contribute to solutions for problems or improvement to life in the community.

Service Learning (SL)

- Learning through community service
- Students apply theoretical knowledge learnt in the classroom to serve the community.

Learning cycle

The SL learning cycle starts with theory, followed by structured activities/tasks aimed at meeting the needs of the community. The final cycle involves reflective components including application of theory and experience during and after completing assignments.

Learning time

More than 20 hours. Students are required to be with the community or travel back and forth to the location over a specified time period.

Learning outcomes

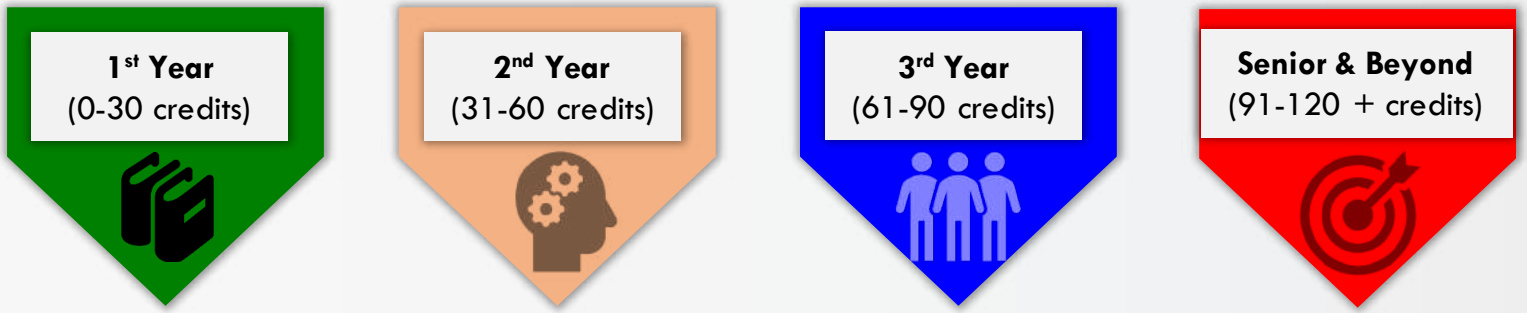
Learning outcomes must include; (a) students' application of theory, (b) skills and (c) direct impacts to the community and other participating parties.

Source: Mohd Zaki et al. (2019). SULAM: Service Learning Malaysia, University for Society.

HIEPs Implementation

The key towards implementation of embedded curriculum is to address three key questions:

"What to teach"
"When to teach"
"How to teach"
?

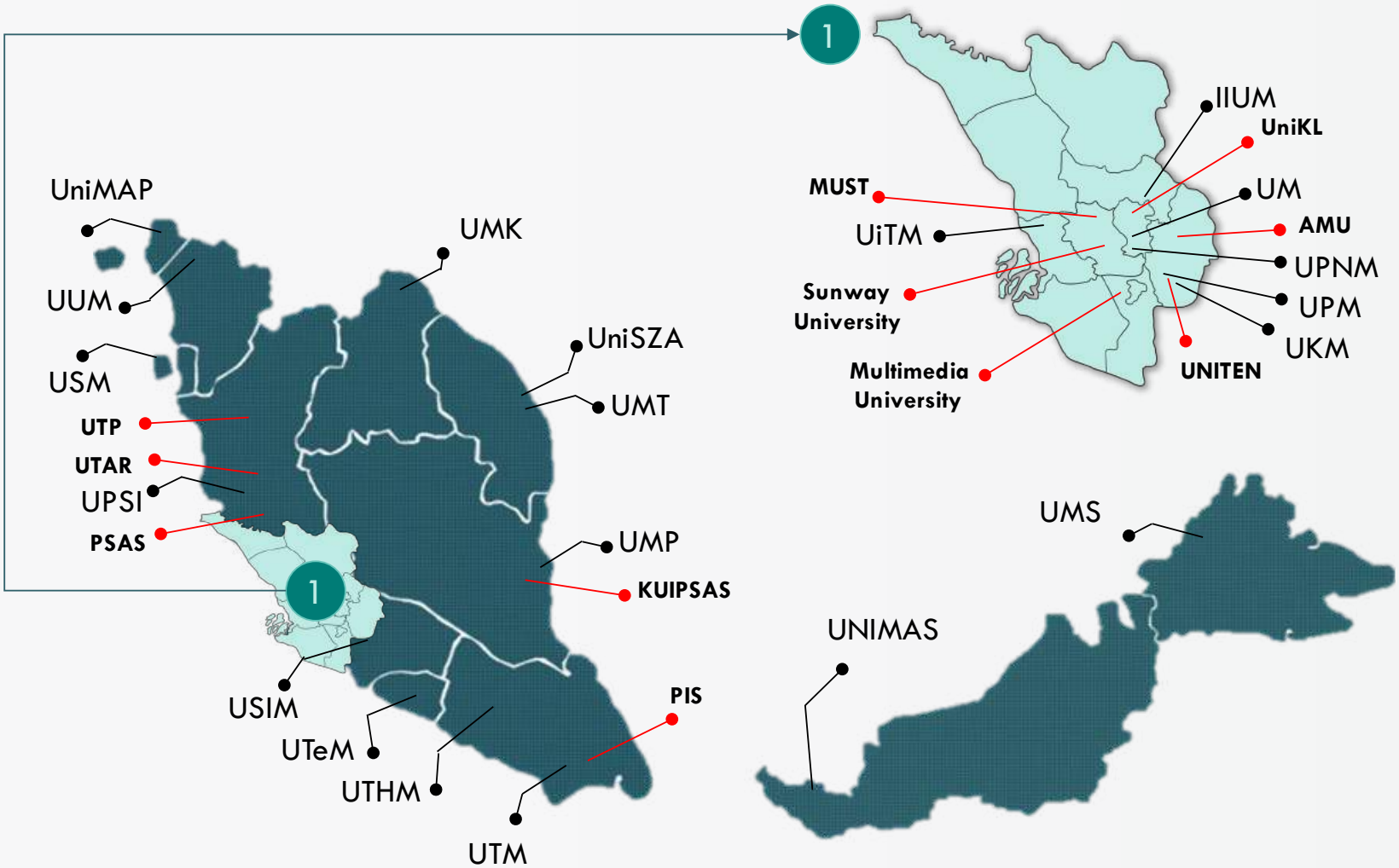


EXAMPLES

First-Year Seminars and Experiences (FYS)	Interdisciplinary Approach to Assessment (ID)	#Service Learning (SL)/SULAM	Empirical Research (ER)
*Community-based Learning (CBL)	*Diversity/Global Learning (DGL)	*Intensive Academic Writing (IAW)	Capstone Project (CAP)
*Common Intellectual Experiences (CIE)	*Learning Communities (LC)	Internship (IN)	Collaborative Assignments and Projects (CAS)
			*ePortfolio

* These selected HIEPs can be implemented throughout the academic programme
# Can be implemented in second, third and final years of the academic programme

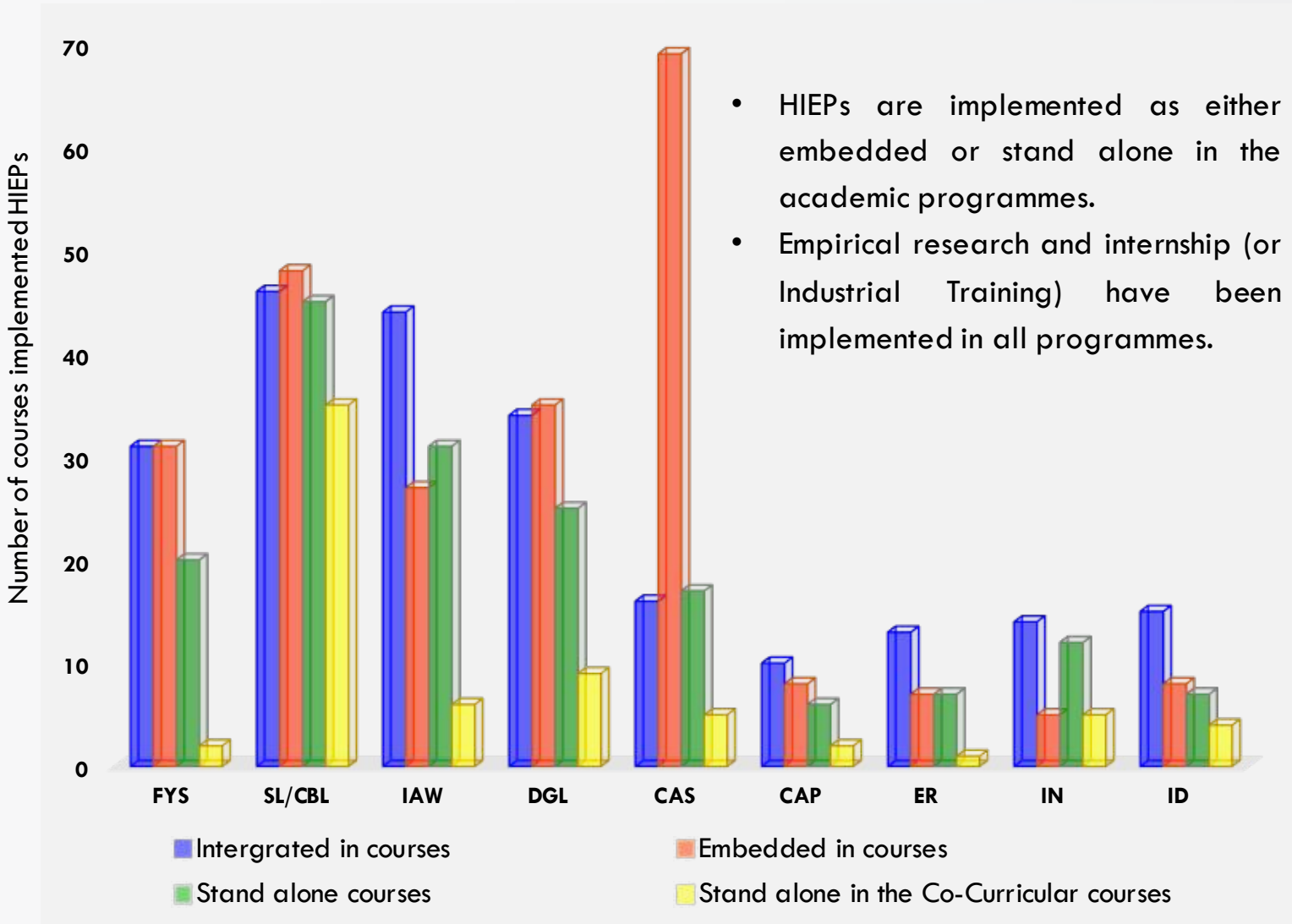
Implementation of HIEPs in Malaysia Higher Educational Institutions



Public and Private Universities are implementing HIEPs

Public University Private University

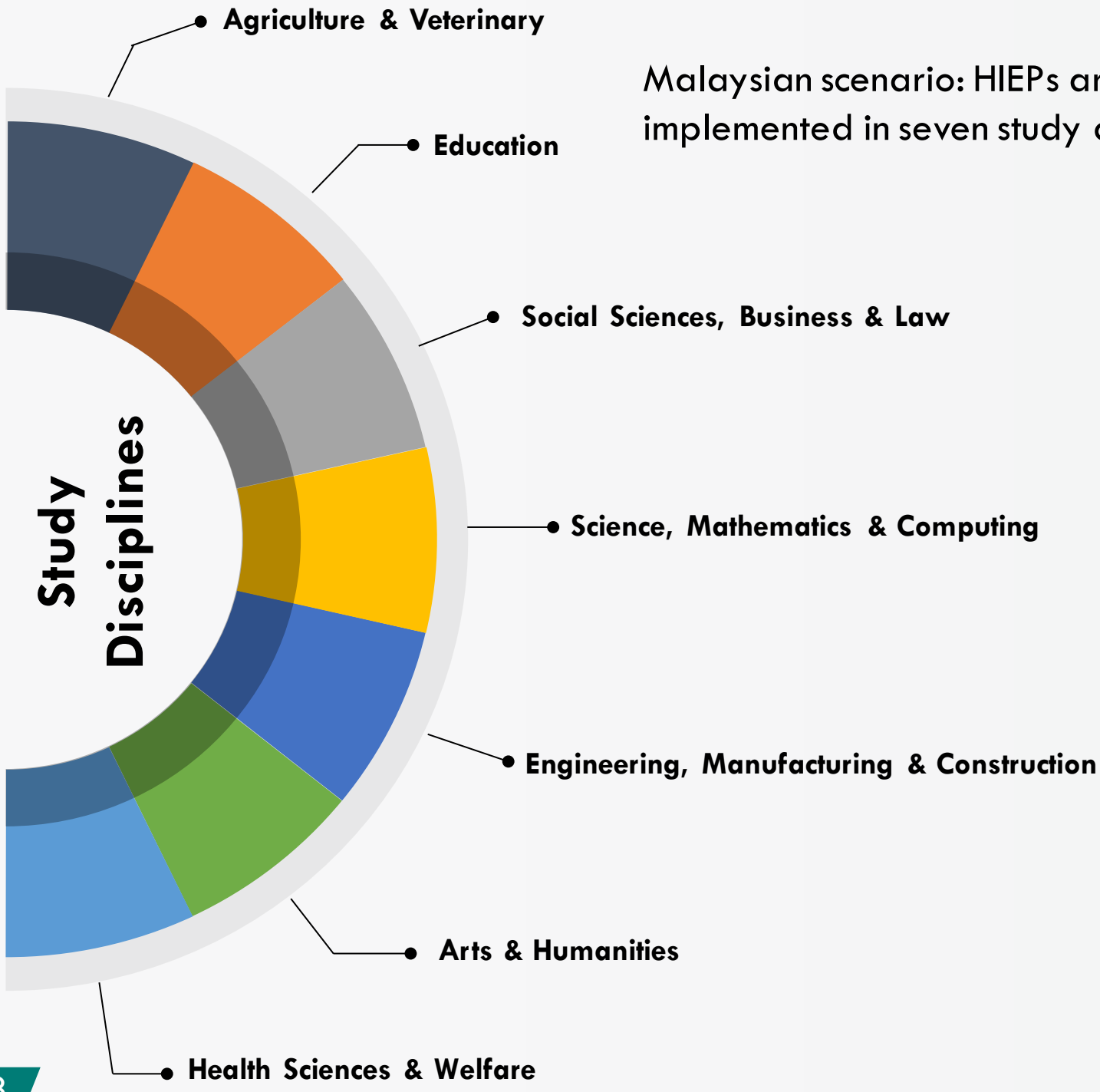
Types of HIEPs Implemented in Malaysian Universities



- HIEPs are implemented as either embedded or stand alone in the academic programmes.
- Empirical research and internship (or Industrial Training) have been implemented in all programmes.

(Data collected between March - September 2019)

Malaysian scenario: HIEPs are implemented in seven study disciplines



First-Year Seminars and Experiences

Forestry Camp

Amir A'ffan Abdul Azim[1]* & Mohd. Hafizal Ismail[2]

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[2]Department of Nature Parks and Recreation,
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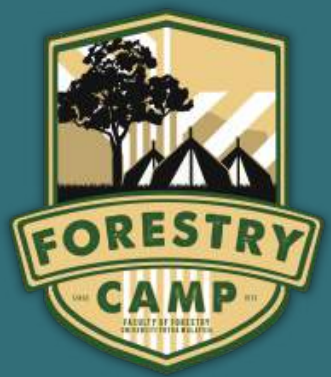


Course Information: Forestry Camp (2 credits) highlights to students the importance of forests and the ecosystem for society and the nation. Through fieldwork, students are trained in a range of forestry skills, and also given the opportunity to develop their character and values.

Course Outcomes: At the end of the camp, students are able to:

1. perform forestry camp activities in effective teams (P3, CS, TS)
2. demonstrate basic forestry skills based on learned theories (C3, P3)
3. organize oneself to perform forestry camp activities (A3, EM, LS)

Course Synopsis: Forestry Camp is a core First Year course, offered by UPM's Faculty of Forestry since 1973. Formerly an unstructured 1 credit course, since 2016 the camp has been upgraded into a 2-credit structured course. The camp runs for two weeks during the semester break, with a total student learning time (SLT) of 85 hours. The course encompasses several modules covering basic forestry knowledge, forest management skills and also covers forestry products and services. Faculty lecturers, support staff and senior students collaborate to run the Forestry Camp for First Year students.

Constructive Alignment

	Course Learning Outcome (CLO)	PLO Assessment Percentage					
		Cognitive	Psychomotor	Affective			
		Knowledge and Understanding	Practical Skills	Communication Skills	Interpersonal Skills	Ethics and Professionalism	Leadership, Autonomy and Responsibility
FHS4904 Forestry Camp	Perform forestry camp activities in team effectively (P3, CS, TS)		√	√	√		
	Demonstrate basic forestry skills based on learned theories (C3, P3)	√	√				
	Organize oneself in performing forestry camp activities (A3, EM, LS)					√	√
	TOTAL (%)	**30**	**40**	**10**	**10**	**5**	**5**

CLO	PLO	Teaching & Learning Activities	Assessment Activities Weightage (%)						
			Modular Seminar	Peer Assessment	Applied-skill Evaluation	Forestry-skill Evaluation	Modular task/Quiz	Role Play	**TOTAL (%)**
Perform forestry camp activities in team effectively (P3, CS, TS)	**Communication Skills**	Team-based Learning	10						**10**
	Interpersonal Skills			10					**10**
	Practical Skills				20				**40**
Demonstrate basic forestry skills based on learned theories (C3, P3)		Game-based Learning				20			
	Knowledge and Understanding						30		**30**
Organize oneself in performing forestry camp activities (A3, EM, LS)	**Ethics and Professionalism**	Cooperative Learning						*5*	**5**
	Leadership, Autonomy and Responsibility							*5*	**5**
		TOTAL (%)	**10**	**10**	**20**	**20**	**30**	**10**	**100**

"I hear and I forget. I see and I remember.
I do and I understand."
-Confucius-

For further information, scan the QR Code

Forest for Future: Tree planting activity

Forest Survival : Hands-on practice with bamboo-cutting

Forest Survival : Hands-on practice cooking in the wild using bamboo

Forestry Camp Activities

Forest for Future: Briefing for lecturers before handling field activities

Forest Survival: Briefing by instructor at one of the stations

First year students from varied academic backgrounds are given exposure to Forestry knowledge, skills and experiences through a series of five structured modules, offered by three different departments within the Faculty of Forestry. Each module allows students to gain hands-on experience with close monitoring by faculty members.

Forest Bioresource: Creative and innovative prototype presentation made of wood and non-wood materials

Developing Ayer Hitam Forest Reserve as Recreation and Ecotourism Centre: Group poster and model presentation

Forestry Camp group video journal published on YouTube, developed by students as their final outcome. For further information, scan the QR or click the play button.

Forest for Future: Gamification activities on changes of forest land-use

Forest Adventure Challenges: Survival task with group members at distributed area in the forest for 3 days and 2 nights

Forestry Camp in Media


UTUSAN ONLINE

Berita Rencana Hiburan Bisnes Sukan Mega TV Utusan Deals Lagi

160 penuntut UPM, universiti Indonesia diberi pendedahan perhutanan

Nur Izzati Izzah Nadzi

KUALA LUMPUR - Seramai 160 penuntut baharu Universiti Putra Malaysia (UPM) dan dari beberapa universiti Indonesia menerima pendedahan teori dan kemahiran asas perhutanan dalam Kem Perhutanan 2019 di Hutan Simpan Ayer Hitam, Puchong dekat sini sejak 30 Jun lalu.

Antara modul pembelajaran yang diberi penekanan melalui kem tersebut adalah kepentingan ekosistem dan hutan serta pendedahan mengenai penghasilan produk hijau yang berkualiti.

For more news, scan the QR Code

"Tell me and I forget..
Teach me and I remember..
Involve me and I learn.."
-Benjamin Franklin-

Conclusion

Forestry Camp is a First-Year Seminars and Experiences HIEP which genuinely inspires students and develops their competencies in the field of forestry.

"Special acknowledgement to all staff and students of the Faculty of Forestry, UPM, for their direct and indirect contributions to the success and sustainability of the Forestry Camp ..."

International recognition as a Summer Camp

Collaboration with professional agencies

Future Directions

Integration with ICT in TnL activities

"Gain new knowledge and learning experiences, thus increase interest to pursue Forestry"

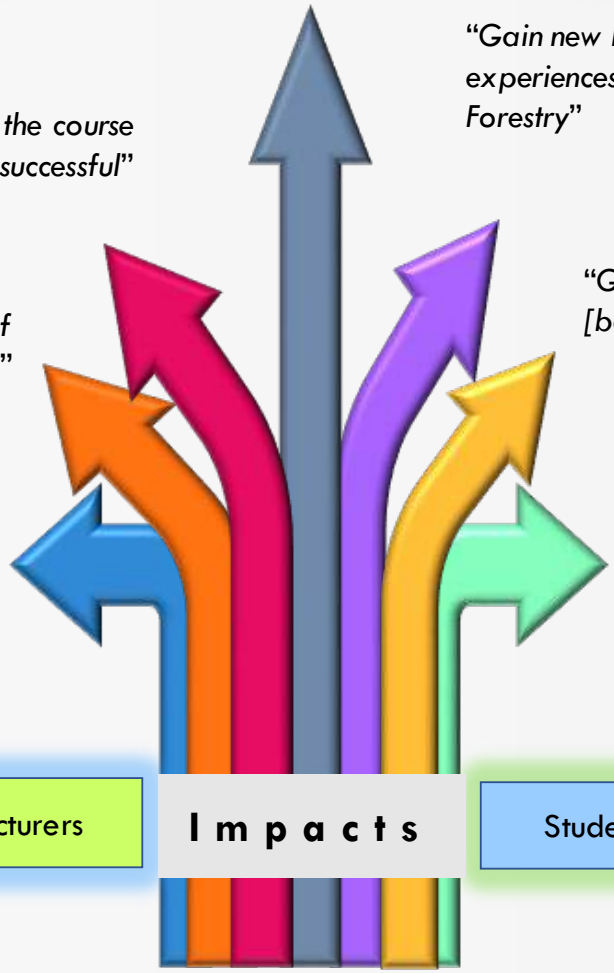
"Course management itself makes the course successful"

"Get to know each other [better]"

"Mastering [techniques] of alternative assessments"

"Forestry Camp provides [an] opportunity to develop skills and self-competencies"

"Innovative and adaptive teaching and learning activities"



Lecturers

Impacts

Students

For further feedbacks, click the QR Code

For further feedback, click the QR Code

First-Year Seminars and Experiences

Design Marathon Project: Architectural Studio 1

Lutfiah Natrah Abbas[1] & Noor Dina bt Md Amin[2*]

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Faculty of Technical & Vocational Education,
Universiti Tun Hussein Onn Malaysia, 86400 Parit Raja,
Batu Pahat, Johor, Malaysia

[2]Department of Architecture,
Faculty of Civil and Environmental Engineering, Universiti Tun Hussein Onn Malaysia, 86400 Parit Raja, Batu Pahat, Johor, Malaysia

*Corresponding author: dina@uthm.edu.my

Course Information:

- The aim of this project is to expose students to the basic principles of architectural design and the fundamentals of architectural design process
- This project is a part of an **ARCHITECTURAL STUDIO 1** course offered to 1st year students of UTHM's Bachelor of Architecture.
- This studio-based project is compulsory for students.
- Duration of the project is 4 weeks. At the end of the project, students will be assessed by a panel of expertise comprising of lecturers and industry representatives.
- It is a final project in which students generated design concepts by exploring various resources and ideas. It involves sketching, drawing and model-making.

Project Learning Outcomes:

- Recognize basic principles of architectural design. (PLO1, C1)
- Develop the design process for personal space requirement. (PLO4, P4)
- Present ideas effectively through good command of oral communication and drawing presentation. (PLO3, A2)

Mapping of (a) LOs, (b) Delivery and (c) Assessment

Learning Outcome	Delivery	Assessment	SLT
Recognize basic principle of architectural design. (PLO, C1)	Lecture, Studio Work, Group work discussion	Individual critique session, peer review, progress monitoring	9
Develop the design process for personal space requirement. (PLO4, P4)		Final design/product/ model/drawing, final presentation	25
Present ideas effectively through good command of oral communication and drawing presentation. (PLO3, A2)		Presentation	2

Duration/SLT : SLT of this project is 36 hours

Evidence

1 Week 1

- In the 1st week of the project, students were divided into small groups. Each group consisted of 2 to 3 members.
- The project required students to create a house (comprising of walls, floor and ceiling) by using RECYCLED PAPER BOXES as their main material.
- Students were required to create the following deliverables:
  - Drawing (housing plan)
  - Housing Model (size 1:1)

Lecturer brief the task to the students

2 Week 2 – Week 4

- Students begin exploring different geometrical shapes, sketching their ideas and making the model.
- The duration of this activity is 3 weeks.
- During this activity, students work independently and collaboratively with teamwork being an important element.

Students put the sketching to show their own concept/ideas

The process of making housing model

Evidence

3 **Week 5**

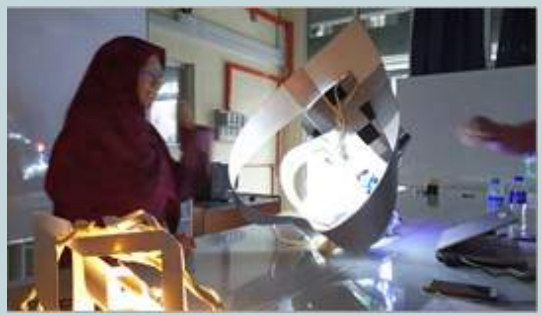
- In week 5, students organize a small exhibition assessed by lecturers and industry panels.
- In this exhibition, students display their products (house model and drawing) to be assessed by a panel
- This activity comprises of an oral presentation and critique session. The duration of this activity is 30 to 60 minutes for each group.

Student presented the project

Presentation assessed by lecturers

Presentation assessed by industry panel

Panels visited students' area



A student presented her model

Impact on Students

- Creates good networking between industry and university
- Improves students' communication skills

Impact on Academicians

- Expands projects into publications

Conclusion

Students are exposed to the basic principles of architectural design through the exploration of case studies illustrating architectural principles

Future Directions

- Build a gallery for prototypes and drawings
- ePortfolio

Service Learning

LAD - Latihan Amali Dakwah

Najah Nadiah Amran[1], Ahmad Irdha Mokhtar[2*], Abd. Ghaffar Don[2], Hasanah Abd. Khafid [2] & A'dawiyah Ismail[2]

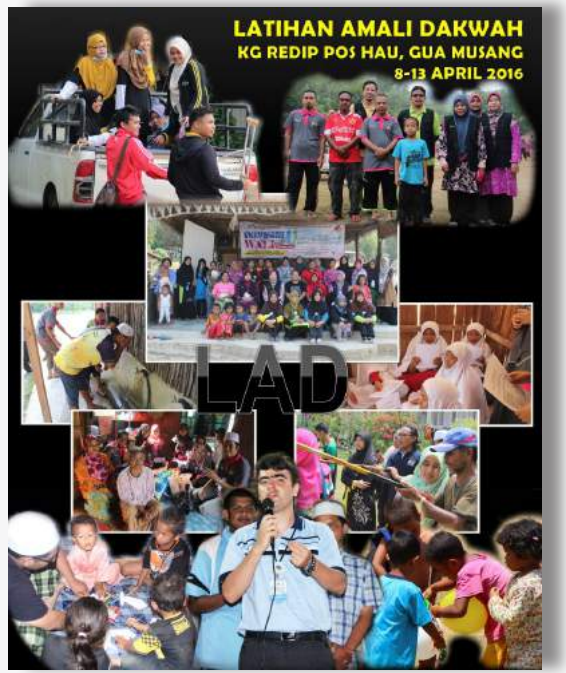
[1]Research Centre for Quran and Sunnah, Faculty of Islamic Studies, Universiti Kebangsaan Malaysia, 43600 UKM Bangi, Selangor, Malaysia

[2]Research Centre for Dakwah and Leadership, Faculty of Islamic Studies, Universiti Kebangsaan, 43600 UKM Bangi, Selangor, Malaysia

*Corresponding author: irdha@ukm.edu.my

Universiti Kebangsaan Malaysia
National University of Malaysia

Service Learning with the indigenous communities is one of the vital learning experiences offered to second year students from the Programme of Dakwah and Leadership, Faculty of Islamic Studies, Universiti Kebangsaan Malaysia for the course *Methods of Da'wah to Muslims (PPPM3013)*.



Students of the course applied knowledge gained in classroom and extended it to the community

Methods of Dakwah to Muslims

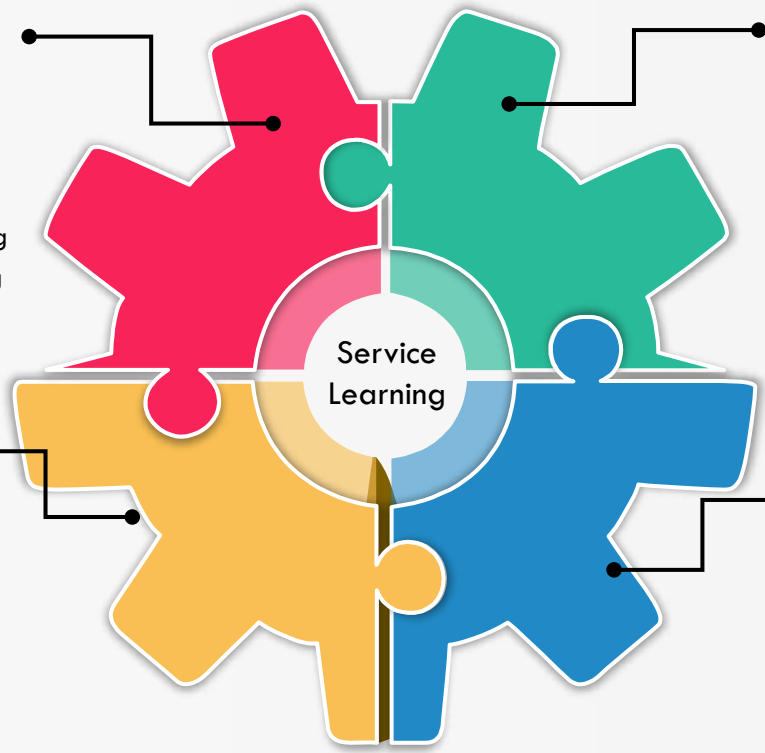
The course introduces the students with theories and methods of Dakwah. They learn how to deliver the teaching of Islam to Muslims from diverse backgrounds, ages and ethnicity. The course consists of **three parts** which are:

A	The face-to face teaching of theories and methods of Dakwah.
B	The fiel work/service/project-based activity – Known as *Latihan Amali Dakwah (LAD).*
C	The integration of reflection, discussions of the se vice experiences with the classroom theories.

The selected community provides real on-site educational space and experience for the students who enrolled for the course. In reciprocity, they would benefit a mutual exchange of religious knowledge and resources that enhance their religiosity and social well-being.

A student was delivering lesson of Islam to the indigenous Muslim

The Application of Service Learning Model in LAD Programme



Service Learning and Course/Programme Learning Objectives

- Service Learning Concept
- Element of Service Learning
- Models of Service Learning

Implementation Process

- Teaching Preparation and Course Outline
- Structure of Service Learning in Course/Programme
- Students' Roles during SL
- Methods of Documentations

Impacts of Service Learning

Impacts of Service Learning:

- Students
- Academics
- Community
- Agencies/industries

Assessment Process

- Preparation of Assessment Process
- Challenge-based Learning Rubric
- Field-Assessment
- Critical Reflection

Source: Najah Nadiah et al. (2019). Service Learning Model for Malaysia Higher Education (FRGS1/2016/SSI09/UKM/03/4)

Mapping of (a) LOs, (b) Delivery and (c) Assessment

PPPM2023 Methods of Dakwah to Muslims At the end of the course, students should have the ability to; (a)		Bloom's Taxonomy	Indicators	PLO/ MQF		(b) Delivery Methods	(c) Assessment		
							PBL / LAD	Presentation	Final Examination
CLO1	Classify different types of dakwah methods	C4	Explain the principles and types of dakwah methods	PLO1		Lectures & Tutorials			20
CLO2	Evaluate the appropriate methods to be applied in delivering Islamic teachings and dakwah	C4	Discuss approriate methods of application	PLO3		Lectures & Tutorials			10
CLO3	Synthesis theories of dakwah methods with practical applications and experiences	A4	Synthesis gathered theories and experiences	PLO6		Problem-based Learning (PBL) & Discussion		20	
CLO4	Apply the methods of dakwah and the theories on site	P6	Apply the learn theories on site	PLO8		PBL/ Latihan Amali Dakwah	50		
Total							50	20	30

Service Learning

LAD: An Engaged Service Learning

Students arrival on-site

During the first six weeks of the semester, the students and lecturers/course coordinators prepare for the Service Learning project. These include teaching/ learning in classroom about the theories as well as the discussions on the cultural diversity of the selected community. Visits and discussions with state religious authority and head of the community occurred before the Service Learning project begun.

Week 1 – Week 6
Learning the theories of knowledge. Preparing for fieldwork and site visits

STEP 01

Week 7
Service Learning @ LAD
Reflection on Action
Implementation

STEP 02

Week 8 – Week 14
Reflection of Action
Presentation
Discussion

STEP 03

A student was demonstrating and assisting a villager on how to perform an ablution before prayer

Summary of Service Learning Activities for PPPM3013

	Teaching and Learning Activities	Student Learning Time
1	Lecture	12 hours
2	Tutorial	6 hours
3	Self learning, reading and information searching	20 hour
4	Project preparation	12 hours
5	Instrument preparation for case studies	10 hours
6	On-site service	40 hours
7	Reflection of action and final report writing	10 hours
8	Presentation	10 hours
	TOTAL SLT	120 hours

Impact of SL@LAD

Students	Academics/University	Community
Apply and extend their knowledge and theories to the target community directly	Provide direct contribution on-site by applying the theories to solve targeted community's social and religious problems	Benefit from the knowledge sharing
Involve in structured civic responsibility activity through meaningful service	Build network and collaborate with the religious bodies and agencies	Build network and mutual relationship with the outsiders
Assist in solving and improving social-religious standards of the targeted community	Create opportunities for students to undergo meaningful and engaged learning experience	Strengthen relationship with the communities and universities
Develop good character and enhance essential skills	Increase the employability and functionality of graduates	Improve communities standard of living
	Receive funding from local agencies for further research	Receive well-researched solution for community well-being from the university-agencies collaboration.
		Enhance religious and spirituality

Kampung Redip Pos Hau Gua Musang, Kelantan, 2016

1 Opening ceremony

2 Ice breaking – activity with the indigenous families

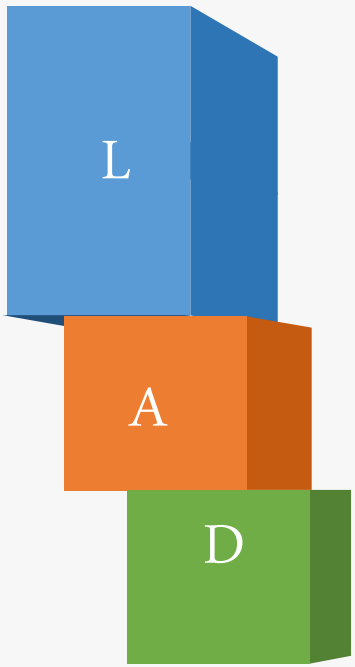
3 Students learnt from the community on how to use traditional appliances

4 Students teach the community recitation of Surah al-Fatihah

5 Indigenous children learn religious instruction through play

6 Students apply religious knowledge learnt from classroom in the community

Conclusion



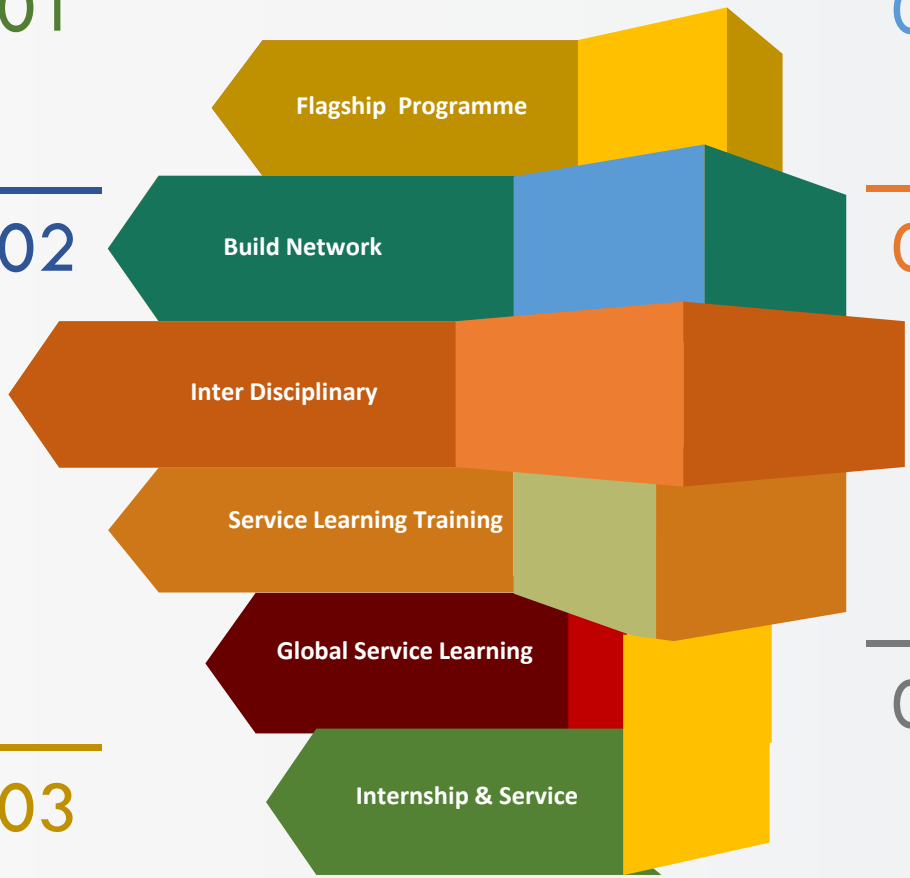
- SL@LAD helps students to have direct and meaningful learning experience.
- The students learn the theory of knowledge and apply directly to solve community issues.
- Service Learning build good character, civic responsibility and new insights to students. Furthermore, SL is able to sharpen students employability and life skills
- The community itself open new opportunities for the students and academics to apply what they have learnt/taught in real-world settings.
- The rigorous and thorough reflection after the service encourages them to navigate future possibilities. These will lead them to other social innovations and contributions.

Future Directions

01 Acknowledge LAD as faculty flagship Service Learning programme

02 Build effective network with local and federal religious agencies that significantly contribute to social, economical and religious well-being of indigenous community through MoA and MoU

03 Involve students from other programmes, fields and faculties



06 Encourage young academicians to attend Service Learning training

05 Encourage students to join regional and international Service Learning working with people of minorities and indigenous community

04 Encourage students involvement in service-internship with community agencies before and after the services on-site

Service Learning

Instructional Design and Technology (IDT) Field

Farrah Dina Yusop

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UNIVERSITI MALAYA

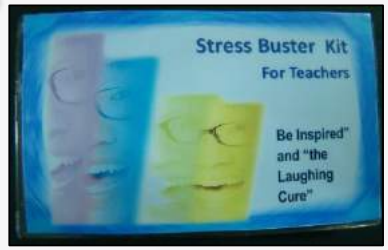
- POA7002 Foundations of Instructional Design and Technology is a 3-credit postgraduate course.
- It is a compulsory course for the Master in Instructional Technology (MIT) programme at the University of Malaya.
- One of the requirements of the course is students to undertake instructional designer projects with a civic-minded approach as a civic-minded instructional designer, or CMID (Yusop & Correia, 2012):
    - Students develop, implement and evaluate instructional experiences specifically designed for members of socially- and/or economically-disadvantaged groups and communities, for example:
        - Single mothers
        - Visually impaired people
        - Children
        - Indigenous people and
        - Elderly people.

Mapping of CLOs, Delivery and Assessment

CLOs	Delivery	Assessment
1. Apply instructional design processes to solve problems related to teaching and learning	Class discussions, Project	Project proposal
2. Use an instructional design model to design, develop and evaluate a project of own choice	Class discussions, Project	Project design and development report
3. Manage an instructional development project	Class discussions, Project	Project presentation; project final report

Examples of CMID projects

- Stress buster kit for teachers
- Pre-marital education
- Cyber security
- E-book for the blind
- One-stop resource center for single mothers
- Haze training apps
- Mobile donation apps
- Super-Teeth apps
- … and many more



Scan the QR Code or click the play button for more info.

CMID and Service Learning

01	Students identify community to serve
02	Students and community identify knowledge or skills gap and possible solutions
03	Students design a technological educational/training product to meet the community's needs
04	Students and community collaborate to implement or disseminate innovative solutions
05	Students, peers and lecturer reflect on learnings from CMID project
06	Community continue use of product or skills gained

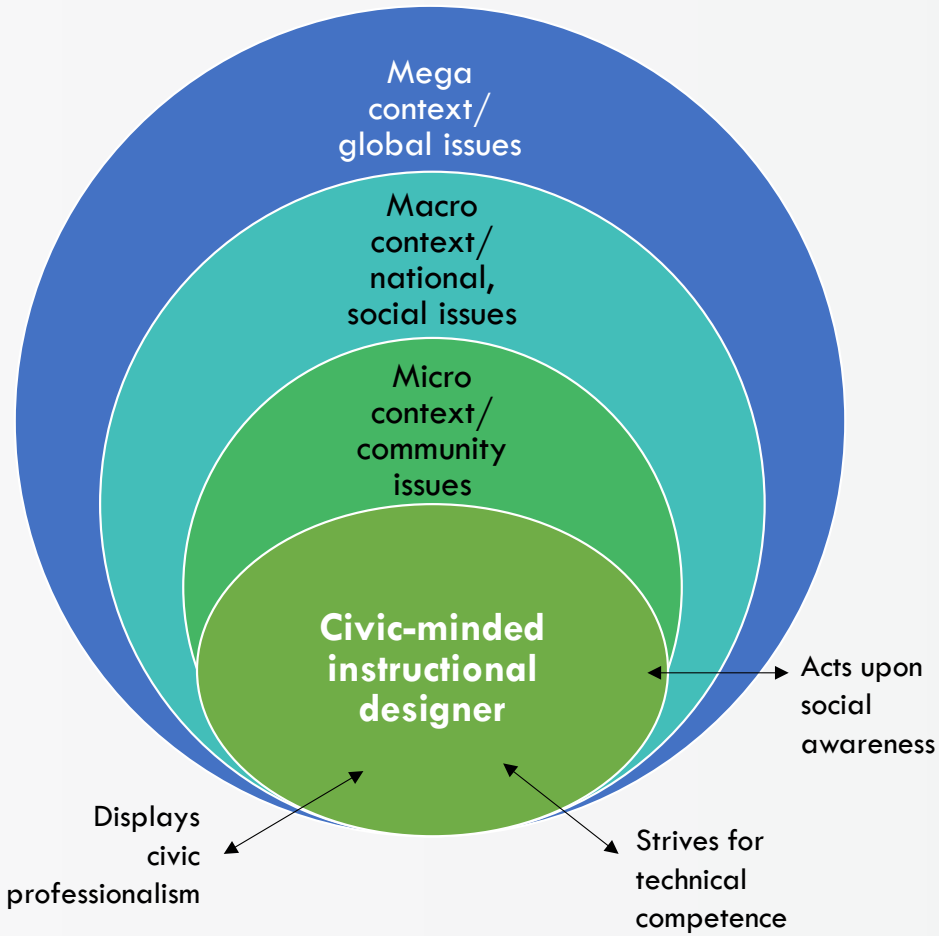
Civic-Minded Instructional Designer (CMID)

Transformative power to initiate social change

- Makes explicit links to social issues in micro, macro and mega contexts in teaching IDT
- Clarifies the roles of IDT profession in solving social issues
- Stresses the importance of nurturing designers' civic identities by embedding the CMID conceptual framework in IDT curricula

CMID attributes

- Civic professionalism
- Socially aware
- Technically competent



Service Learning Reflections

We made a terrible mistake for not following the steps in ADDIE. The FIRST STEP; ANALYZE. We realized that we have to change our audience as after our initial learner analysis, it was not the children that need to be educated more on nutrition or healthy food. It is their mothers who need this knowledge. The children are learning about nutrition, healthy eating and unhealthy food at school but most of the Orang Asli mothers did not attend school or have enough knowledge on nutrition. So we are back to square one again. I personally feel that I have learnt a valuable lesson, a lesson which I might not gain by just attending lectures or taking examinations by making this 'precious' mistake.

- Learning by doing (Ell, Indigenous People project)
- Learn from mistakes

Service Learning Reflections

Nowadays, I tend to look at issues in my surroundings in a different light. When I face an issue, I tend to have an inkling of a design in my mind. The other day as I was monitoring the remedial class in my school, I noticed a problem one of the boys had with word and sentence construction in Bahasa Malaysia. The boy finds it difficult to spell words and construct meaningful and correct sentences. I watched the teacher with the boy and an idea came to my mind. I discussed it with the teacher and came up with a quick solution to help the boy. Further discussions led both of us to begin designing a word and sentence construction kit for the remedial class. To date, we are finishing the analysis phase of the ADDIE model. I told the teacher about model with the help of the textbook, of course. If the kit proves to be successful in my school, I may submit to the annual Pertandingan Inovasi PnP in Putrajaya.

(Mona, School Principal)

Here are some photos of the prototype of the kit that was produced:

Word board + syllable cards to be used to help student read & spell words

Rohaizat using the word board to spell the kv + kv words

Syazwan using the word board to spell the kv + kv words

Inspired to apply in new situation

Conclusion

- Engaging students in Service Learning projects is not only helpful to enhance their knowledge and skills, but also to build their civic-minded agencies (Yusop & Correia, 2012; 2014).

- However, the course must be carefully designed, delivered and monitored to ensure it mutually benefits the students and communities involved.

- One of the most important elements in Service Learning approach is continuous reflections of the experiences - both by the lecturers and students – to create meaningful learning experiences.

Future Directions

- Together, both students and academicians will explore more suitable technologies to enhance the Service Learning projects.
- To share this initiative via publications, sharing of best practices and competitions.
- To commercialize products to the public at reduced costs.

Service Learning

SEED - Social Enterprise for Economic Development

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Najah Nadiah Amran[3]

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Kemasyarakatan dan Pembangunan Ekonomi USK 4012

This course focuses on the concept and stages of social entrepreneurship. Students enrol for the course apply field knowledge and skills that are helpful in solving communities' problems.

Social entrepreneurship principals, types and practices of social service as well as professional ethics are explored and implemented during the course. Students are exposed to evaluate the impacts and changes occured in the communities after the service.

Kemasyarakatan dan Pembangunan Ekonomi USK 4012: An Engaged Service Learning

The course is a community service course that emphasises on assisting communities in solving their social-economical problems.

The aims of the course are:

A to investigate socio-economical challenges for the community

B to develop feasible business action-plan and strategy for the focused community

C to perform appropriate socio-economical activity for the focused community.

Students enrol for the course can apply their field knowledge and generic skills

The students collected data about socio-economical problem and used these data to create action plan in solving community problem.

Mapping of (a) LOs, (b) Delivery and (c) Assessment

USK4012 Kemasyarakatan dan Pembangunan Ekonomi **At the end of the course, students should have the ability to;** **(a)**		**Bloom's Taxonomy**	**Indicators**	**PLO/ MQF**	**(b) Delivery Methods**
CLO1	Investigate socio-economical challenges for the community	C4	Explain the challenges	PLO4	Problem-based Learning (PBL) and **SEED programme**
CLO2	Develop feasible business action-plan and strategy for the focused community	C4	Develop approriate business plan	PLO3	Problem-based Learning (PBL) and Discussion
CLO3	Perform appropriate socio-economical activity for the focused community	A4	Synthesis gathered theories and experiences	PLO6	**SEED Programme**

Continuous Assessment: 100%

- Daily Logbook - 15%
- Fieldwork -25%
- Writing/Report - 30%
- Presentation - 30%

Service Learning

SEED: Social Enterprise for Economic Development

A community-based intercultural leadership programme.

Expose students from different universities in Europe and Asia to the unique traits of villages where poor community resides.

Co-organized by Universiti Malaysia Kelantan (UMK), the Asia Research Centre (ARC), University of St. Gallen and ASEAN Learning Network.

Leverage on the entrepreneurial principles and students' knowledge to design and suggest feasible business action-plans to village entrepreneurs.

The students from different universities and countries discussed and shared their knowledge. They applied their leadership skills under supervised facilitators and instructors

Source: Wee & Zakaria (2012). Promoting Civic Engagement Through a Service Learning Experience. Vol.2 No.12: 83-88

Summary of Service Learning Activities

SEED Activity – Experiential Learning

During the SEED programme, UMK students were assigned to study and examine small-scale businesses managed by the villagers for a week. They had to list down problems and challenges encountered by the villagers.

Discussion of SEED participants with a banana cracker owner (Mini SEED 2019)

Transferable Skills

During the course and project, students apply:

- Critical thinking
- Problem solving
- Teamwork
- Entrepreneurial skill
- Ethic and professional skills

Discussion of SEED participants with one of fish cracker industry owners (Mini SEED 2019)

Kemasyarakatan dan Pembangunan Ekonomi:

An Engaged Service Learning

USK4012 students discussed with the focused community

Impact of SEED

- Students apply knowledge and theories to the targeted community directly
- Promote awareness of social injustice for marginalised community
- They assist in solving and improving social-economy standards of the targeted community
- Students intent to participate for future community service
- Promotes good values
- Develop competence for civic action
- Develop good character and enhance essential skills
- SL activities enhance their civic accountability

Academics/University	Community
• Provide direct contribution on-site by applying the theories to solve targeted community's social and economic problems	• Benefit from the knowledge sharing • Enhance religious and spirituality
• Build network and collaborate with the local and regional agencies	• Build network and mutual relationship with the outsiders
• Create opportunities for students to undergo meaningful and engaged learning experience	• Strengthen relationship with the communities and universities
• Increase the employability and functionality of graduates	• Improve communities standard of living
• Receive funding from local agencies for further research	• Receive well-researched solution for community well-being from the university-agencies collaboration

The SEED participants demonstrated an inovative product to solve the fresh water problem in a village

SEED students discussed how to improve the quality of cake packaging and business concept with owner of cake industry in Kampung Pantai Getting, Tumpat, Kelantan

Cultural diversity learnt from SEED projects

Global Service Learning

Students learnt the process of producing cakes in Kampung Pantai Getting, Tumpat, Kelantan

SEED participants from European and other Asian countries

SEED@UMK Service Learning Ecosystem

3 Classroom/University and Local government agencies

Students propose solutions and seek collaboration with the suitable agencies

4 Local, Regional and Global Service Learning

UMK Students conduct Service Learning activities collaborating with other Asian and European/International students

2 Community

Student conduct field trip to selected areas

1 Classroom

Students learn theory in classroom

Source: Najah Nadiah et al. (2019). Pembinaan Model Service-Learning Universiti Awam Malaysia - FRGS/1/2016/SSI09/UKM/03/4

Conclusion

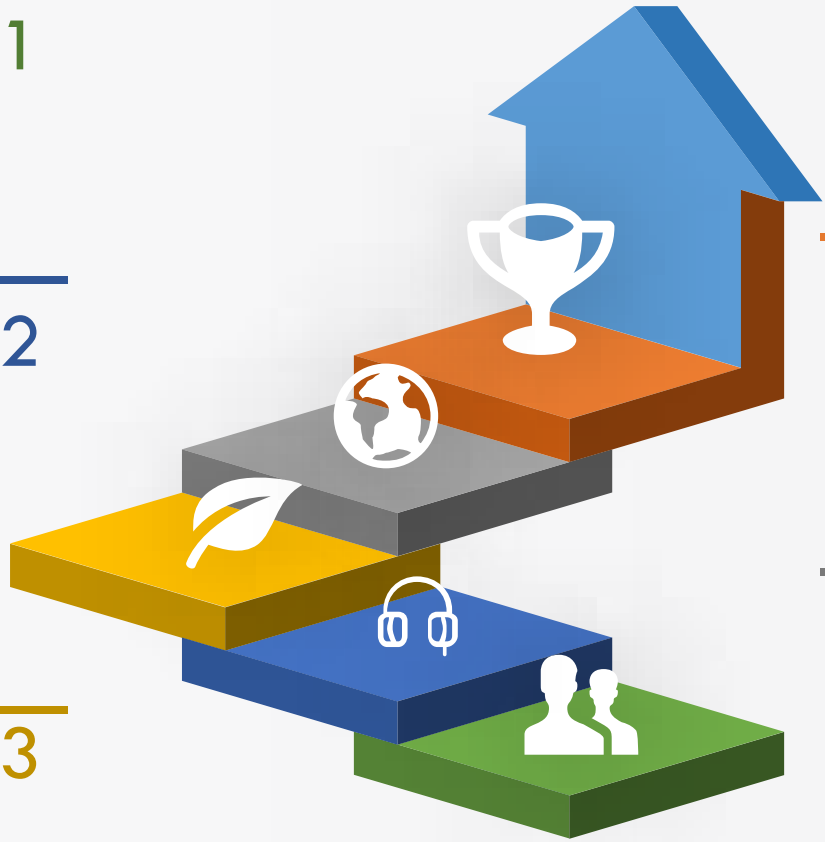
- SEED projects help students to have direct and meaningful learning experience.
- The students learn the theory of knowledge and deal directly with the community issues.
- Service Learning builds good character, civic responsibility and new insights to students. Furthermore, SL is able to sharpen students employability and life skills.
- Community is a new opportunity for the students and academicians to apply what they learnt/taught in real-world settings.
- The rigorous and thorough reflection after the service encourage them to navigate future possibilities. These will lead them to other social-economical innovations and contributions.

Future Directions

01 Acknowledge SEED as UMK flagship Service Learning programme effectively

02 Build effective network with local and federal agencies that significantly contribute to social and economical to the local communities

03 Involve and invite students from other programmes, fields and faculties



06 Encourage young academicians to attend Service Learning training

05 Encourage students to join regional and international Service Learning activities

04 Encourage students involvement in service internship with community agencies before and after the services on-site

Service Learning

Sexually Transmitted Disease Awareness Campaign

Suet Lin Chia*, Adelene Ai-Lian Song, Saila Ismail, Asilah Ahmad Tajuddin, Mohd Termizi Yusof & Wan Zuhainis Saad

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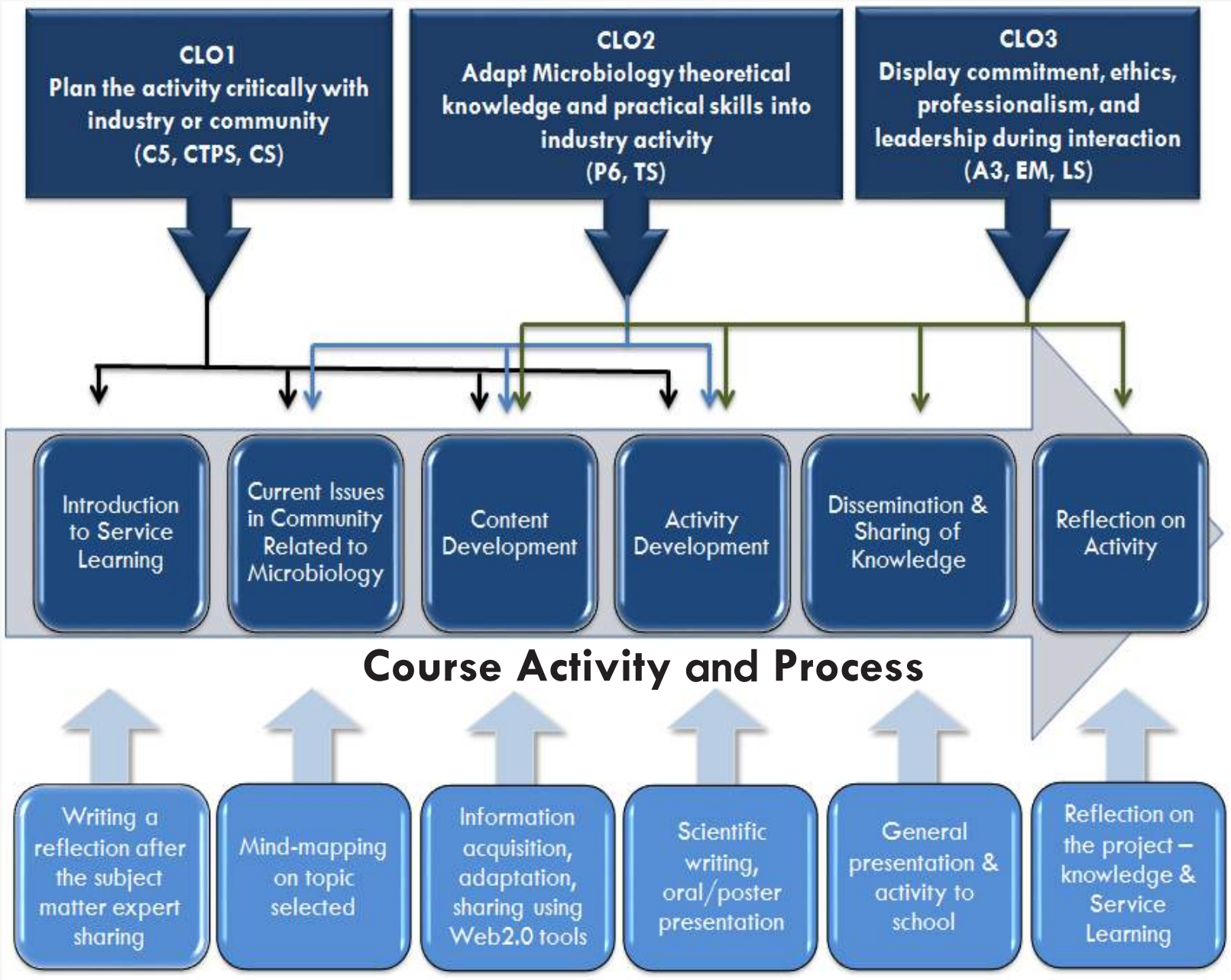
*Corresponding author: suetlin@upm.edu.my

- UPM Department of Microbiology's Awareness Campaign on Sexually Transmitted Disease (STD) tasked students with assimilating and transforming specialist knowledge learned in the classroom into an easy-to-understand campaign designed to foster youth awareness on STDs.
- The campaign involved students from four related but separate courses offered in the same semester:
  - Pathogenic Microbiology
  - Immunology
  - Microbial Genetics
  - Service Learning in Microbiology
- Through Service Learning's experiential learning approach, students were engaged in an integrated range of learning and community service activities:
  - Learning about STD in the community and STD awareness campaigns.
  - Researching the topic of STD and undertaking scientific writing and translating scientific knowledge for a general audience.
  - Conducting the STD awareness campaign in a nearby school.


Course Learning Outcomes (CLO)
CLO1
Plan the activity critically with industry or community
(C5, CTPS, CS)
CLO2
Adapt Microbiology theoretical knowledge and practical skills into industry activity
(P6, TS)
CLO3
Display commitment, ethics, professionalism, and leadership during interaction
(A3, EM, LS)
Introduction to Service Learning
Current Issues in Community Related to Microbiology
Content Development
Activity Development
Dissemination & Sharing of Knowledge
Reflection on Activity
Course Activity and Process
Writing a reflection after the subject matter expert sharing
Mind-mapping on topic selected
Information acquisition, adaptation, sharing using Web2.0 tools
Scientific writing, oral/poster presentation
General presentation & activity to school
Reflection on the project – knowledge & Service Learning
Course Assessment

Subject Matter Expert Sharing Session

Mr. Raymond Tai from Pink Triangle Foundation

Sharing session by Mr. Raymond Tai from Pink Triangle Foundation. Students learned about STDs and the challenges that volunteers encountered. Students also interacted with the speakers and shared their opinions regarding the subject.

Student's Reflection

Reflection writing

NUR IZZAH ATIKAH BINTI JOMAIN 186871

On 20th September 2018, our lucky class have been chosen to attend talk from Mr Raymond Tai and Jeremy from PT Foundation. The talk was to spread awareness about Human Immunodeficiency Virus (HIV) and Sexually Transmitted Diseases (STDs). For the first time in my life, I am paying one hundred percent attention until the talk ended. I never knew that this topic could be so interesting which make me want to ask more and more. Before I elaborate more, I want to thank Dr. Eddie for giving this golden opportunity to us.

So, from what I have learned, I just knew that HIV started from USA and come to Malaysia around 1986. Disease can be classified as epidemics only when it reach more than 5% population. It is said that Malaysia still low in prevalence. As stated on the slide, there are 93, 089 people living with HIV, 111, 916 are reported HIV, 23, 717 are reported Acquired Immunodeficiency Syndrome (AIDS) and 18, 827 had AIDS related death. Mr Raymond said that the phrase "people die because of HIV or AIDS" are wrong. The people actually died because of their low immune system which lead to some

A Reflection of the Talk on the Awareness about HIV and STDs by Mr. Raymond Tai from PT Foundation

By Hemalah Lakshmanan

Last Thursday (20th September 2018) I had attended a short talk on Awareness about HIV and STDs together with my classmates, which was given by Mr. Raymond Tai and his junior, Mr. Jeremy from Pink Triangle Foundation (PT Foundation) has shared his experience participate as a volunteer in PT foundation during his internship. The talked was divided into two parts, the first one is about the HIV situation in Malaysia and the second part about what PT Foundation doing about it. PT Foundation is all about diversity and inclusivity regardless of ethnic groups, sexual orientation, gender identity and etc. The first thing I like was his starting in the speech where he mention, "There's no use of studying in the university

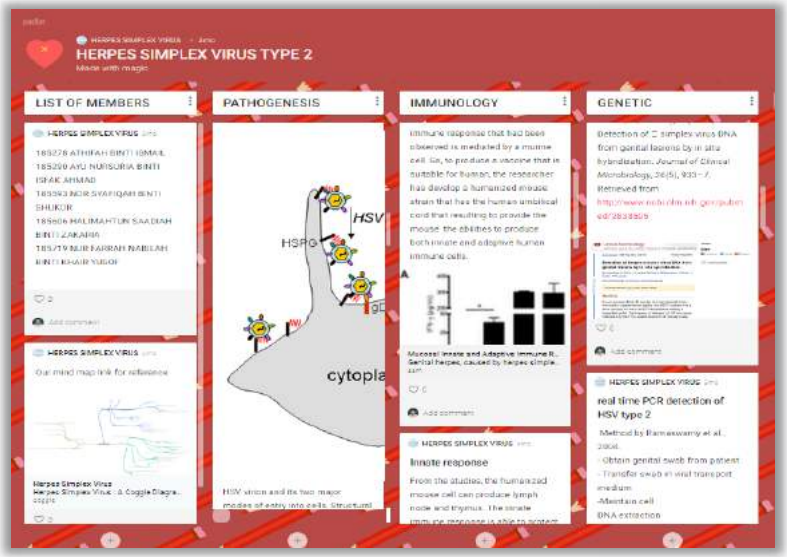
A reflection on the talk given by PT Foundation's representatives

By Suruthimitra Okpoluaefe (188793)

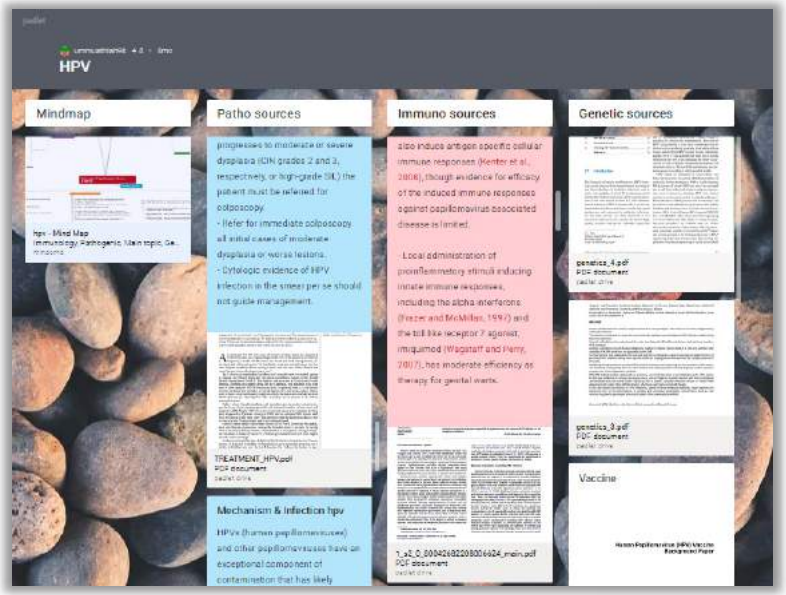
Last Thursday which was equivalent to the 20th of September 2018, my classmates and I attended a short talk given by two representatives from PT Foundation (PTF), namely Mr. Raymond Tai, its named CEO, and Mr. Jeremy, a proactive volunteer who started off with PTF to do his internship with them in order to successfully graduate with his psychology degree. The talk lasted for approximately 2 hours. PT Foundation in its non-abbreviated form stands for Pink Triangle Foundation. They are a Malaysian based non-profit non-government organization that does voluntary work to empower people from vulnerable communities. Some of their support programmes include workshops regarding sexual health, HIV and AIDS education, and the prevention and care of HIV and AIDS. They also provide services like anonymous HIV screening, counseling; telephone and face-to-face. PT Foundation was founded back in 1987 and has been actively participating in the prevalent human discourses revolving around the support of members from vulnerable communities. The members of this organizational structure are consisting of people from all walks of life, from people of

Mind-Mapping and Content Development

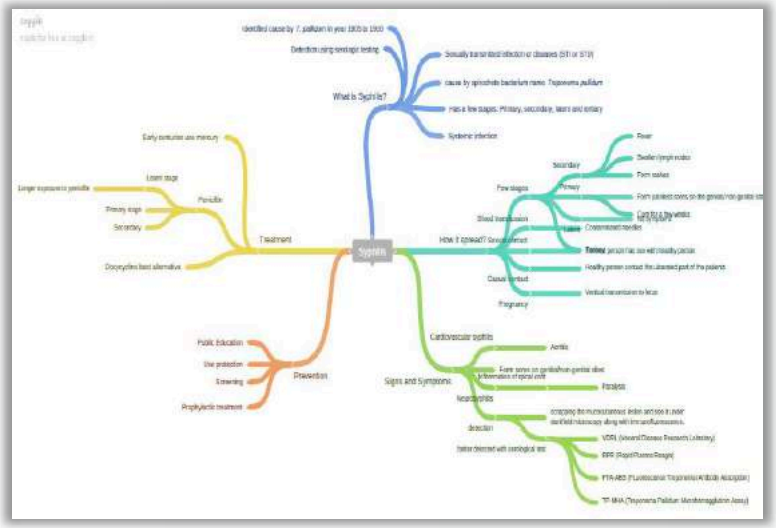
Padlet for information sharing



Information search focusing on different aspects of STDs based on the three courses' learning outcomes, and sharing it with their peers virtually using Web2.0 tools such as Padlet and Trello.



Students started brainstorming on the topic using MindMap tools such as Mindomo and Mindmeister.



Using Web2.0 tools, students are able to more effectively share information and lecturers are able to provide better feedback for a more efficient learning process.

Scientific Write Up

1.0 Abstract

Sexually transmitted disease (STDs) is a disease caused by bacteria, viruses or parasites that is passed from one person to another person through sexual interaction. Types of sexually transmitted diseases are such as Chlamydia, Chancroid, Genital Herpes, Hepatitis B, Trichomoniasis, HIV, AIDS and Human papillomavirus (HPV). One of the diseases that are chosen for this writing is Trichomoniasis. Trichomoniasis is a sexually transmitted disease that is caused by *Trichomonas vaginalis*, a single-celled protozoan parasite which inhabits and infects in the female lower genital tract and the male urethra and prostate. In terms of Pathogenic Microbiology, the aspects involved are the symptoms, way of transmission, and treatments. The infection is transmitted through sexual contact, which is from penis to vagina, from vagina to penis or from vagina to vagina. Trichomoniasis usually does not show any symptoms upon their infections, and if they do cause symptoms, it would be in the range of mild irritation to severe

2.0 Introduction

Trichomoniasis is a sexually transmitted disease (STD) that cause by the parasitic protozoan which is *Trichomonas vaginalis.* The *T. vaginalis,* was identified by Alfred Francois Donne in 1836 who observed motile microorganisms in purulent, frothy leukorrhea of women presenting with genital irritation and vaginal discharge (Seema & Arti, 2008). The research of *T. vaginalis* that focused on the biochemical test and the microscopic examination to study the growth characteristics and behaviour of organism was conducted in 1960s and 1970s. The immunological technique and the biomolecular technique became available on 1980 and was applied to study the pathogenesis and immunology of this organism.

3.0 Epidemiology

Trichomoniasis is a very common sexually transmitted disease in countries outside Malaysia, whereas for Malaysia, this disease rarely occurs. The disease is also known to be the most common treatable disease in worldwide but unfortunately, trichomoniasis can also leads to the association with other kind of sexually transmitted diseases such as gonorrhea. Majority women infected with trichomoniasis have been diagnosed to be infected with bacterial vaginosis (R. Schwebke & Burgess, 2004). Moreover, the genital inflammation which happens due to this disease can also leads to HIV and at the same time can be transmitted to their sex partners ("STD Facts - Trichomoniasis", 2017).

4.0 Pathogenic Microbiology

Two schools of thought exist regarding the pathogenesis of *T vaginalis*, i.e., contact-dependent (Pindak FF & Gardner WA, 1993) and contact-independent mechanisms (Pindak FF & Gardner WA, 1993). It is likely that both are important. Graves and Gardner (Graves A & Gardner WA, 1993) showed that adherence, contact-independent factors, hemolysis, acquisition of host macromolecules by the organisms and the host response are all important factors in the pathogenicity of this parasite. Four adhesin proteins ranging from 65 kDa to 21kDa or less are associated with cytoadherence (Arroyo R & Alderete JF, 1989). These adhesins were not identified on *Thermoproteus tenax*, a nonpathogenic trichomonad. Protease treatment diminished cytoadherence, suggesting these proteins are unique and important factors in the pathogenicity of *T vaginalis*. Cysteine protease was found to be necessary for parasite adherence to epithelial cells

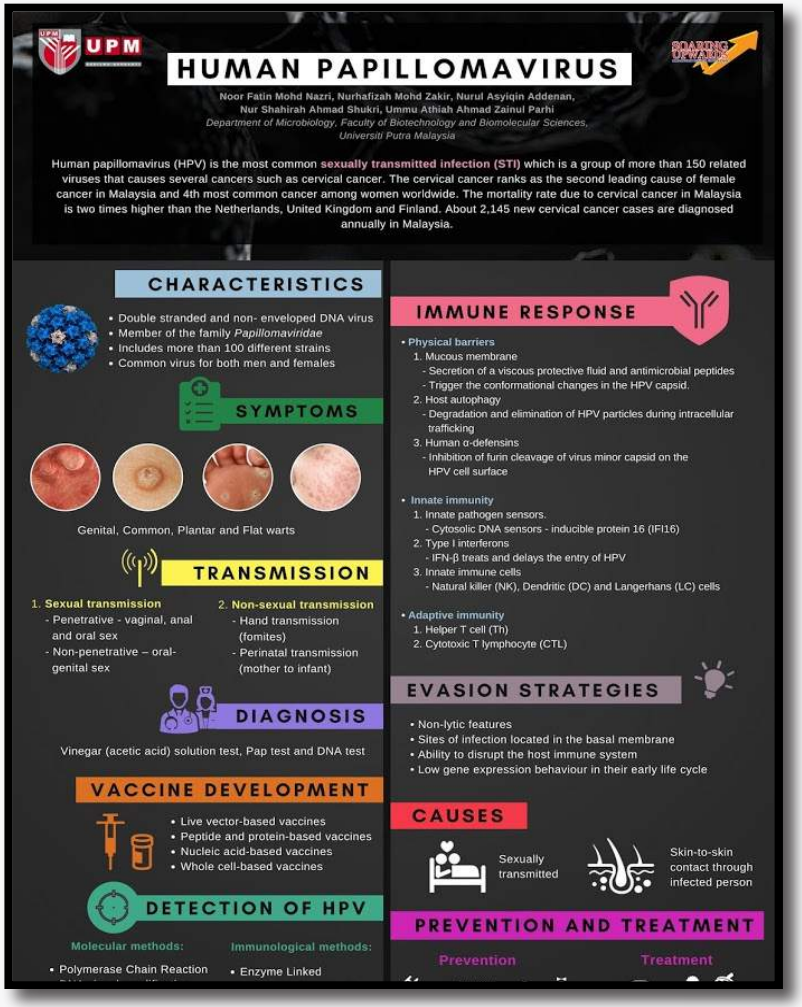
5.0 Immunology

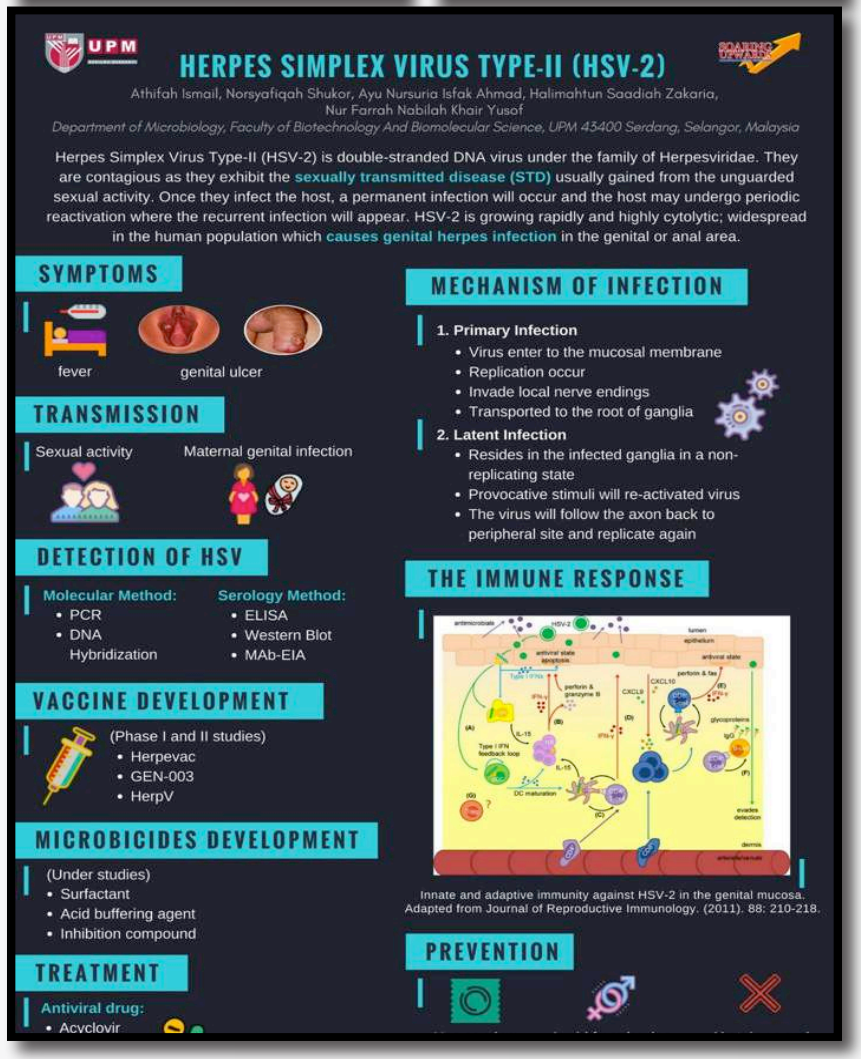
Back in 2008, it has been reported that up to 160 till 180 million people worldwide was diagnosed with Trichomoniasis. 8 million of the worldwide population was only located in the United States of America. Due to the high amount of infection, it has led to trichomoniasis to become a non-viral sexual transmitted disease on a global epidemic level (Fichorova,2009). Owing to the fact above, researchers started to conduct thorough studies on the morphology and life cycle of *Trichomonas vaginalis.* As a result, the immunopathogenesis of trichomoniasis towards the immune system was identified. Equally important, through the extensive studies made on the life cycle and the morphology of the organism above, it has been discovered that the organism actually selectively cohere at the vaginal epithelial walls in human(Fichorova,2009).

6.0 Microbial genetics

Prior to antibody based techniques, there are recent studies that indicates that antibody based techniques are not specific in determining the recent infection from remote ones. it is true that monoclonal antibodies from 62Kda up to 65Kda can be determined, however this method was abandoned for the use of PCR-based technology(Garber,2005). Recently, in PCR-based technology, the amplification of *T.vaginalis* nucleic acids through polymerase-chain reaction or through transcription-mediated amplification definitely changed the game in diagnosing *Trichomoniasis*. This is because of the highly sensitivity that are able to screening for epidemiologic purposes and are able to test asymptomatic patients for both men and women as these methods are able to accept urogenital specimens. In addition to that, using Nucleic acid amplification test prevents from being contaminated by bacteria (Soba,2015).

Poster Presentation

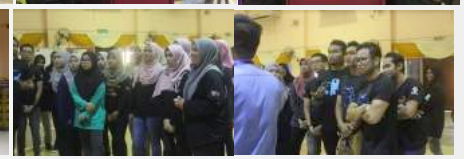




Students transformed their knowledge into scientific write-up and poster presentations which were evaluated by lecturers for scientific accuracy. Feedback was given for improvement prior to sharing to school.

Knowledge Sharing and Activities with Sekolah Berasrama Penuh Integrasi Gombak

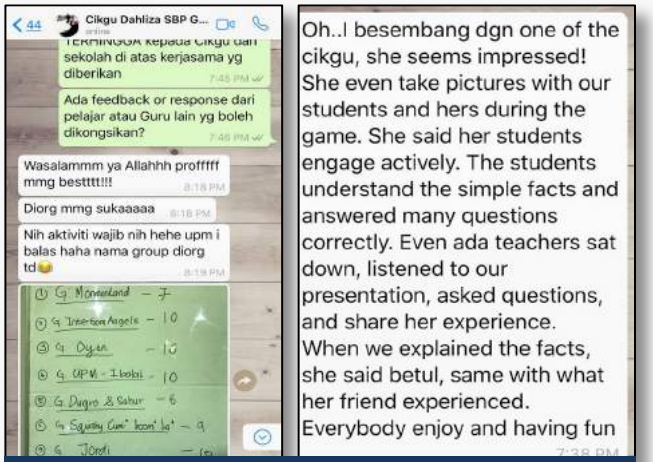
Briefing on the campaign



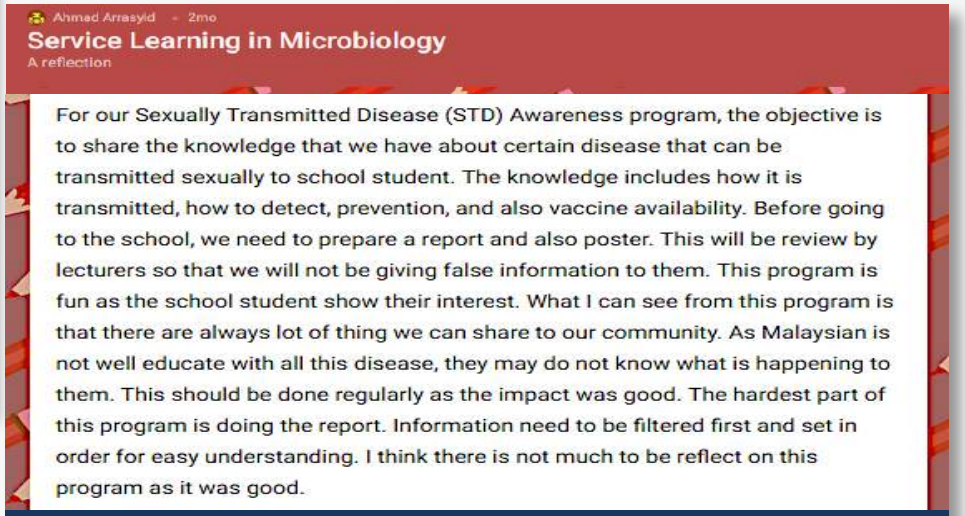
Knowledge sharing and Question-answer session

Games to test students' understanding

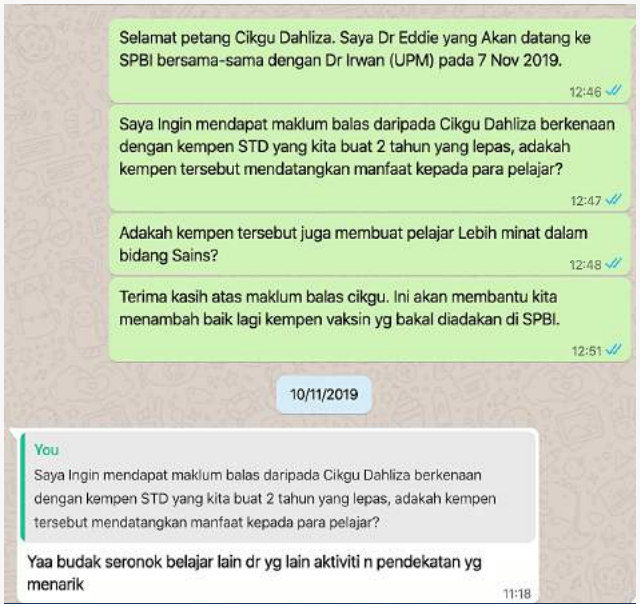
Feedback and Reflection on the STDs awareness Campaign



School's feedback and request for annual programme



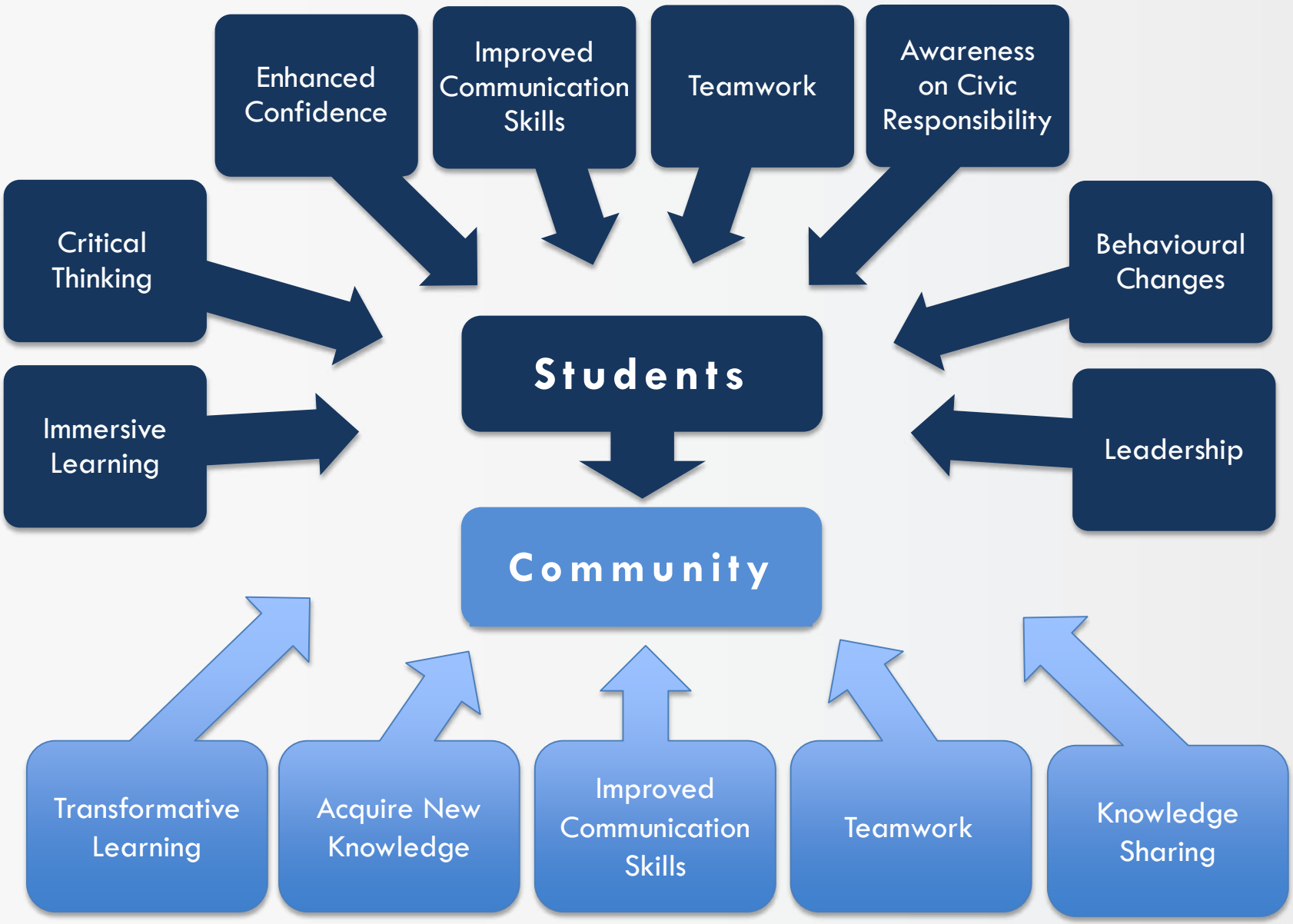
Student reflection writing and video reflections



School's feedback after two years

Students are more confident to speak

Impact of the Project



Conclusion

Service Learning in Microbiology is an initiative to bridge the gap between university students and the community, while producing meaningful interactions that benefit both parties. It is our hope that the seed of giving back to the society is planted in the heart of all the students and one day they would voluntarily join the effort to improve life in the community for a better future.

Future Directions

- Service Learning in Microbiology' course will engage the general public with expanded activities for various communities, including people in the rural areas.
- Involvement of industry or government agencies would also make the project more impactful.

Service Learning

AMBER: Real Life with Real Exposure

Juju Nakasha Jaafar[1]*, Muhammad Asyraf Md Hatta[2], Shairul Izan Ramlee[1] & Uma Rani Sinniah[1]

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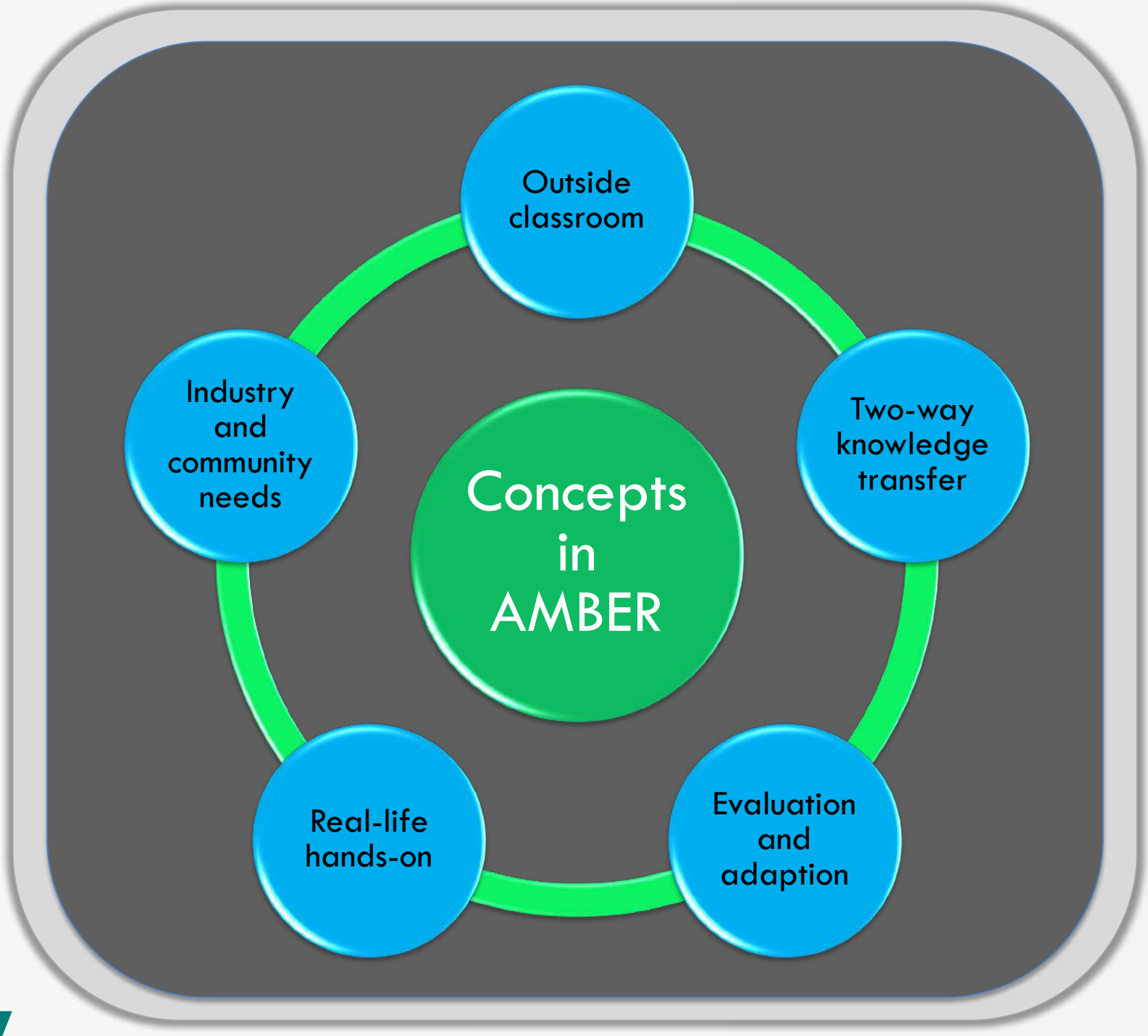
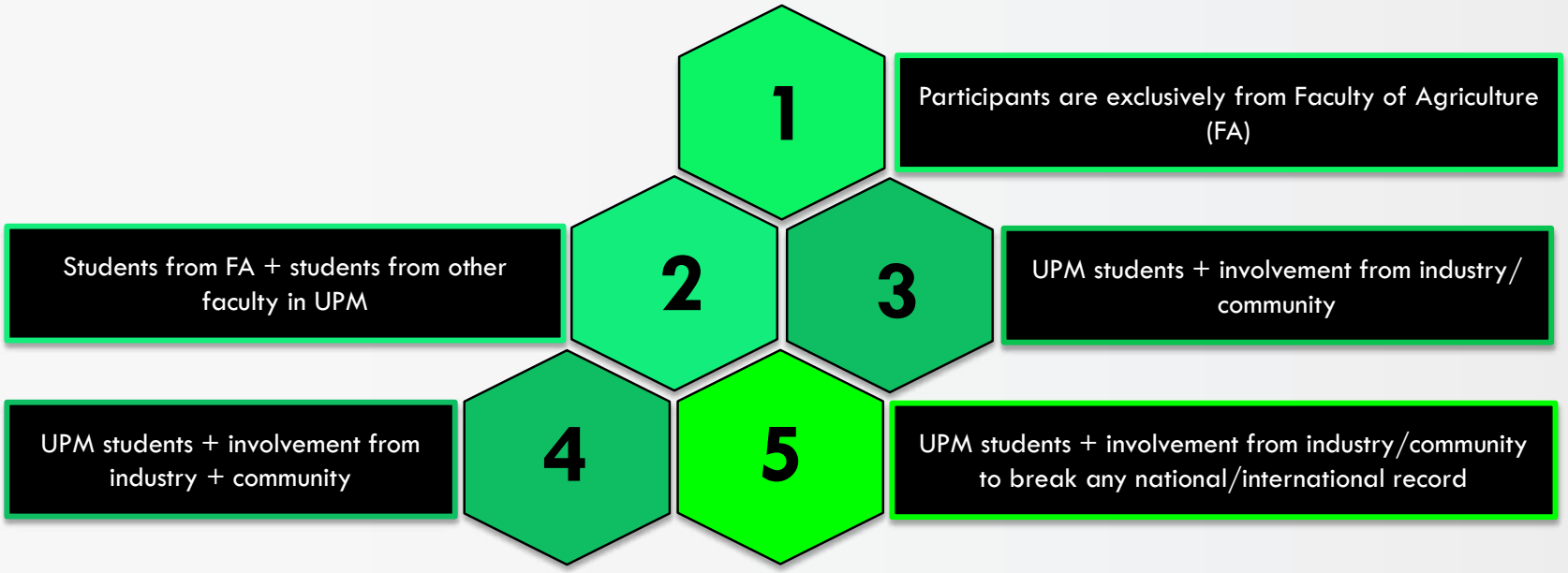
- AMBER is an acronym for Agriculture Moves Beyond Extraordinary. It is a teaching innovations developed in 2017 by the Department of Crop Science, Faculty of Agriculture, Universiti Putra Malaysia.
- AMBER offers different teaching and learning experiences to students and academicians in the form of competition, exhibition as well as community and industry engagement.
- AMBER encourages academicians to create an activity or event that provides students with real life experiences to prepare them for the future. Events created under AMBER are organized by students, and enhances their generic skills. Excellent generic skills contribute directly to students' competencies and positive character development.

AMBER

DEPARTMENT OF CROP SCIENCE
FACULTY OF AGRICULTURE
UNIVERSITI PUTRA MALAYSIA


Outside classroom
Two-way knowledge transfer
Evaluation and adaption
Real-life hands-on
Industry and community needs
Concepts in AMBER

The AMBER programme is organized into 5 scales, and the educator can freely choose the scale that he or she wants to integrate into their students' teaching and learning experience.

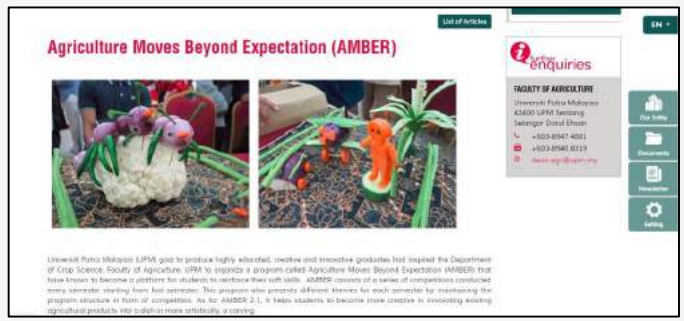


Example: A new academician would like to create an event for his students. For a start, he wish to include only students from his class. He can thus opt for AMBER 1. The scales that are created in AMBER will encourage the educator to aim for a higher scale level for the next event.

Journey of AMBER

AMBER 1.1 is the first AMBER that was successfully organized on 1st of December 2017 at Agriculture Hall, Faculty of Agriculture, UPM. A total of 3 courses had joined this event, and each course carried out their own competition based on their individual niche. For example, in Seed Technology (AGR4802) course, the students required to create handcrafted product from different types of seeds. This implies on PO8 in the course learning outcome which is managerial and entrepreneurship skills. This programme was launched by the Deputy Dean of Academic, Student Affairs and Alumni, Assoc. Prof. Dr. Nur Azura Adam.

AMBER programme has further developed into 3.1 scale on 12th of May 2018. The AMBER 3.1 was organized at Agriculture Hall, Faculty of Agriculture, UPM with more participants and courses. A total of 4 courses had joined the event and each course conducted their own competition within the 2-hour programme. External judges were invited from Kolej MARA and the programme was sponsored by Rimbun Sekebun Sdn. Bhd.



Journey of AMBER

AMBER 4.1 was conducted at Agriculture Hall, Faculty of Agriculture, UPM on 8th of December 2018. This event was participated by students, community (PA Seri Perlis 2) and industry (Rimbun Sekebun Sdn. Bhd.). A total of 4 courses had joined and one of the slots in this event was a competition between the students and community in vegetable and fruit carving. The event was launched by the Head of Crop Science Department Prof. Dr. Mahmud Tengku Muda.

AMBER 4.2 was the first in the series of AMBER that had been conducted outside UPM and was held on the 9th of December 2018. Students who undertook the Agriculture Production System (PRT3007) course were brought to Perumahan Awam Seri Perlis 2, Datok Keramat, Kuala Lumpur for a three-days-and-two-nights programme. The programme was sponsored by different agencies including Kuala Lumpur City Hall, Department of Agriculture and Department of National Unity and Integration. The students were exposed to urban agriculture that has been practiced by the community.

Project Overview AMBER 4

Students were brought to stay with the community for 3 days and 2 nights at Perumahan Awam Seri Perlis 2. A total of 54 students with 150 participants from the community joined the programme.

Course: Agricultural Production System (PRT3007)

Co-organizers

- Dewan Bandaraya Kuala Lumpur
- Jabatan Perpaduan Negara dan Integrasi Nasional
- Jabatan Pertanian Malaysia
- Pejabat Kesihatan Daerah Titiwangsa
- D'Saji

AMBER 4
Program Putra @ SRN Satu Komuniti Program

Mapping of LOs, Delivery and Assessment

Learning Outcome	PO	Bloom's Taxonomy	Delivery Methods
To relate the major factors of agricultural production to relevant management systems	PO1	C4	Lecture, discussion and video
To describe different agricultural production systems	PO4	A2, CS	Lecture and Service Learning
To be able to give opinions on the methods of sustainable agricultural production	PO7	LL	Lecture and Service Learning

AMBER 4.3 programme that was conducted in this course is an example of Service Learning. Students under this programme were given a task to create a documentary video based on their experience in this programme. Students' involvement in the AMBER programme contributes to 30% of their coursework marks.

Assessment during AMBER: Video (15%), Report (10%), Reflection (5%)

Service Learning
AMBER 4

Agriculture-based Activities

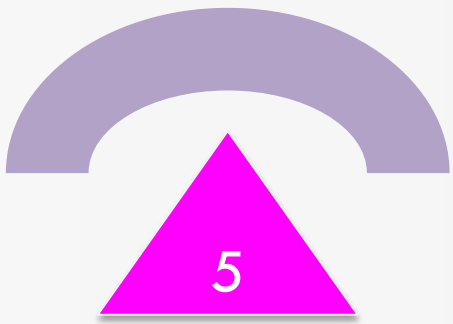
Establish Urban Agricultural Plot
(Pembukaan Kawasan Pertanian Bandar)

Composting
(Pembuatan Kompos)

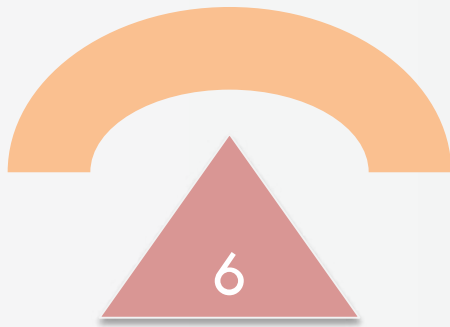
Agricultural Literacy Programme
(Program Cilik Pertanian)

Community-based Activities

10,000 Healthy Steps
(Sihat 10,000 Langkah)



Health Screening
(Saringan Kesihatan)



Cooking Competition
(Pertandingan Memasak)

AMBER 4 Photo Gallery

1. Urban Agricultural Plot (*Pembukaan Kawasan Pertanian Bandar*): Students were given a new plot and needed to transform it into an urban agriculture plot. Other agencies also helped in giving advices to the students during the opening of the new urban agriculture area

2. Composting (*Pembuatan Kompos*): Students were briefed by University Community Transformation Centre (UPM) on composting. After the briefing, hands-on training on composting was shared with the community

AMBER 4 Photo Gallery

Agricultural Literacy Programme *(Program Cilik Pertanian)*: Students were divided into groups and each group required to assist children below 12 years old in planting vegetables

10,000 Healthy Steps *(Sihat 10,000 Langkah)*: The students were ready to go for 10,000 steps walk around the community area. This activity was aimed to encourage them to have a healthy life style

Health Screening *(Saringan Kesihatan)*: Pejabat Kesihatan Daerah Titiwangsa provided free dental check up, as well as general health screening to the students and community

Cooking Competition *(Pertandingan Memasak)*: Students together with the community participated in cooking competition. A total of 20 teams competed and the prizes were sponsored by D'Saji

SERVICE LEARNING *AMBER 4.3*

An official poster made by the community to welcome students from the Faculty of Agriculture. In order to achieve Service Learning, five Knowledge Transfer Programmes (KTPs) were conducted including Composting, Improvement of Urban Agriculture Landscaping, Pests Identification as well as Control and Handling of Post-harvest Products. All programmes under KTP were handled by lecturers from Faculty of Agriculture.

The students also conducted Agric-based activities with community's children, such as identification of vegetables, colouring contest and demonstration on making drinks by using *Clitoria ternatea*. Besides, the students experienced the real urban agriculture practiced by the community and learnt how the community utilizes the limited space and able to generate side income from urban agriculture. Other activities such as 10,000 steps brisk walk, cooking competition, BBQ night and health check-up were also conducted in this event. AMBER 4.3 has benefited both parties in a wide range whereby the exchange of knowledge was actively occurred during this three-day-and-two-night programme.

AMBER 4.3 Photo Gallery

Knowledge exchange session between students and community

Students carried out demonstration on making drinks from *Clitoria ternatea* flower

Sharing session by Assoc. Prof. Dr. Siti Zaharah on handling of post-harvest products

Students showed the harvested cucumbers that were planted by the community for their side income

Demonstration on making compost from household waste

AMBER 4.3 Photo Gallery

Abd. Samad (Deputy President of the Senate Parliament of Malaysia) was chatting with students during the programme

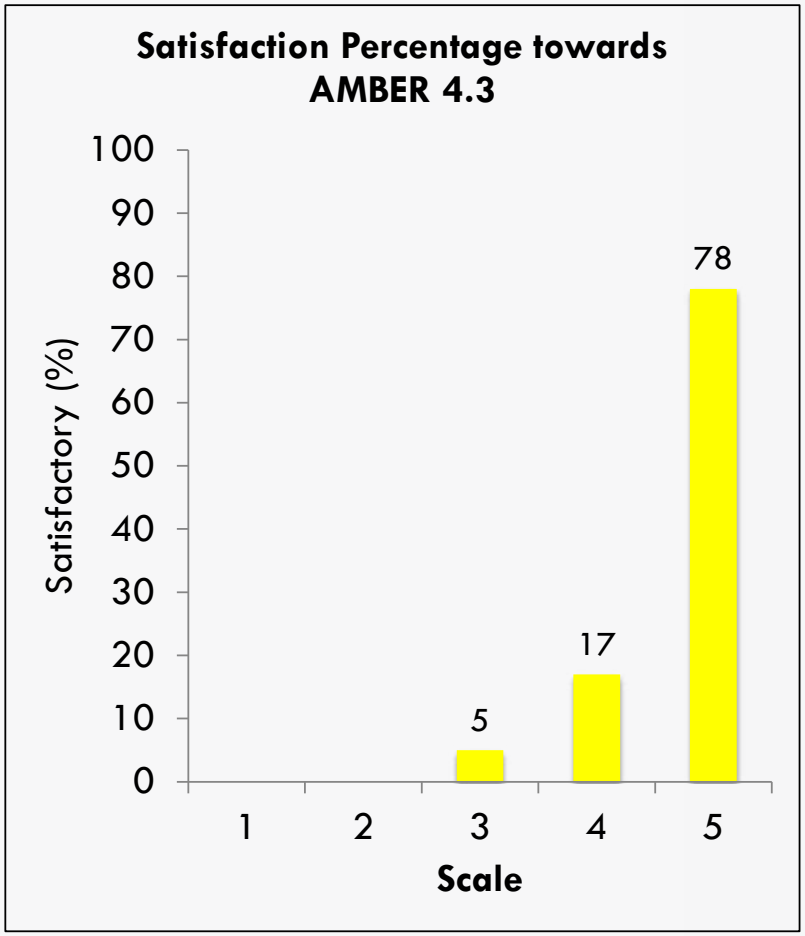
Students played traditional game with community

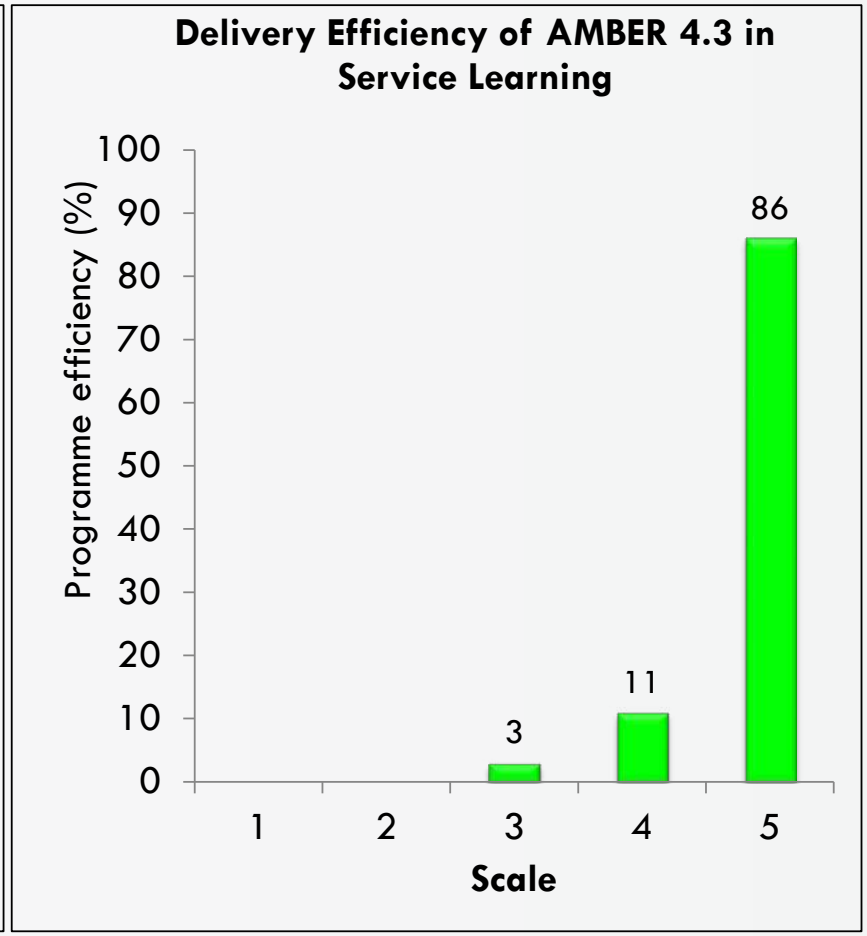
Students teamed up with community in cooking competition

Morning exercise led by "Komuniti Sihat Perkasa Negara" (KOSPEN)

Photography session after closing ceremony of AMBER 4.3. Closing ceremony was officiated by Mr. Ahmad Zamri Asa'ad Khuzami (President, Citizens' Representative Council of Federal Territory of Kuala Lumpur, Titiwangsa Zone)

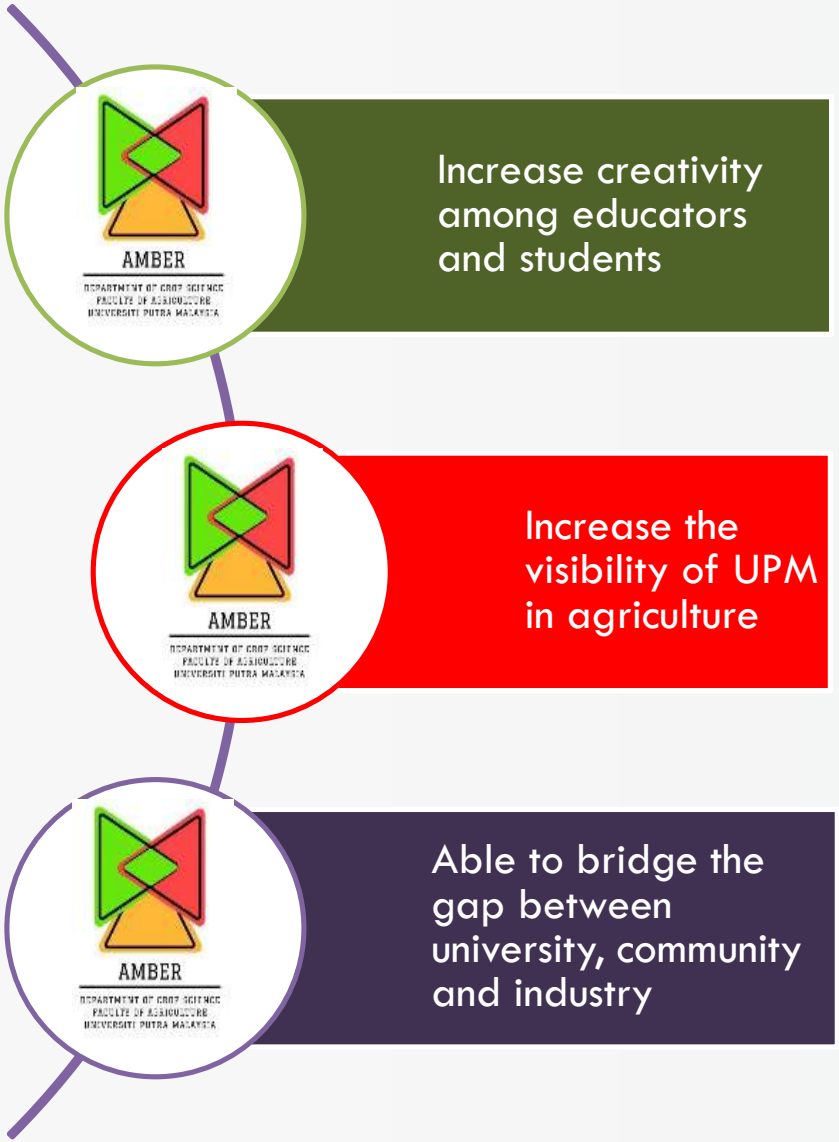
Impact: Programme Assessment





At the end of AMBER 4.3, students were asked for their opinion regarding the programme. 78% of the students are highly satisfied with AMBER 4.3, meanwhile, 86% of the students feel that this event is highly efficient in knowledge exchange between students and community. This data proves that the service learning has been accomplished through AMBER 4.3

Conclusion and Future Directions



Conclusion

AMBER is a teaching innovation that can be applied by all educators in the field of agriculture. It is a flexible teaching and learning method whereby the educators are free to create any activity outside the classroom whilst maintaining the AMBER concept. AMBER also motivates educators to be more creative in achieving their course learning outcomes. "Excellent students are born from creative educators".

Future Directions

More programmes will be organized for students, with the aim of achieving AMBER 5. The concepts and scales that are stated in AMBER can also be adopted in other fields.

Community-based Learning

Community Engagement Project: Lombok, Indonesia

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- This course is a compulsory for all UTP undergraduate students to enable them to apply knowledge and skills gained in the classroom and extend it to the community. The social skills nurtured in this community engagement project is in line with UTP mission to produce all-rounded, balanced and holistic graduates with a broad mind-set.
- This course implements Community-based Learning (CBL) provides opportunities to UTP undergraduate students to deal with authentic problems faced by targeted community and formulate problem solving solutions to address them.
- In this chapter, we feature a community engagement project designed by students from Chemical Engineering programme in helping a community in Lombok, Indonesia which was affected by earthquake in 2018.
- Major problem faced by the community was the limited access to clean water supply. This project provides opportunities for the students to transfer and apply their knowledge on water filtration technology.

Mapping of CLOs, Delivery and Assessment

Learning Outcomes	Delivery	Assessment	Student Learning Time
CLO1 Plan a community engagement project with a targeted community (A3)	Group discussion	30%	24
CLO2 Implement team-based community engagement project with a targeted community (P4)	Hands-on training and field work	70%	56
Total		**100%**	**80 hours**

Implementation of Community-based Learning

1. Plan a community engagement project with course instructors

2. Conduct virtual discussion with representatives from Madrasah Sayang Ibu, Lombok

3. Collect and analyze data related to the water supply problems faced by the community

4. Develop the prototype of the water filtration system

5. Build the final water filtration system

6. Share knowledge with the community to maintain the water filtration system

7. Gather feedback and respond to the comments from the community

Water Filter Installation

- After the installation of water filter, the knowledge related to the filtration system was shared with the students at Madrasah Sayang Ibu, Lombok.
- Video on water filter installation:

Feedbacks from Community

7. What were the best things about this project?

kebersamaan, kekompakan, kreatifan, keceriaan dan kekeluargaan antara TIM untuk bersilaturuya semua project

8. Is there any suggestion to make the program better?

kami harap ini bukan kunjungan pertama & terakhir, tapi akan ada selanjutnya di lain waktu

(Signature)

Name: Haasyir Syarif

Position: Teacher

7. What were the best things about this project?

Relationship between the student of MSI and UTP.

8. Is there any suggestion to make the program better?

Maybe next time, the project can be more longer and have more the other great project like this

(Signature)

Name: Utfa Destiana

Position: Mathematic Teacher

Impact of Community-based Learning

- Improves standard of living and health of the community in rural area.
- The UTP students learnt to apply knowledge on installation of the water filtration technology to the targeted community.

PENGABDIAN MASYARAKAT

Mahasiswa UTP Malaysia Pasang Alat Pengolahan Air

MATARAM-Mahasiswa Universiti Teknologi Petronas (UTP) Malaysia selama sepekan terakhir mengadakan kegiatan pengabdian masyarakat di Lombok. Mereka menyasar sekolah yang ada di Lombok Barat yaitu Madrasah Sayang Ibu (MSI) Dasan Griya dan Pondok Pesantren Nurul Hakim Kediri. Kegiatannya pemasangan alat pengolahan air minum. Turut diberikan berbagai informasi dan motivasi kepada siswa dan santri yang ada di kedua sekolah tersebut.

Ketua Kelompok Mahasiswa di MSI Ariff Syazwan bin Ariffin mengatakan total 43 mahasiswa UTP Malaysia berkegiatan di Lombok. Sebanyak 19 mahasiswa berada di MSI. "Kegiatan kami berfokus pada sustainability (keberlanjutan,Red)," ujarnya kepada *Lombok Post*, kemarin (23/8).

NURUL/LOMBOK POST

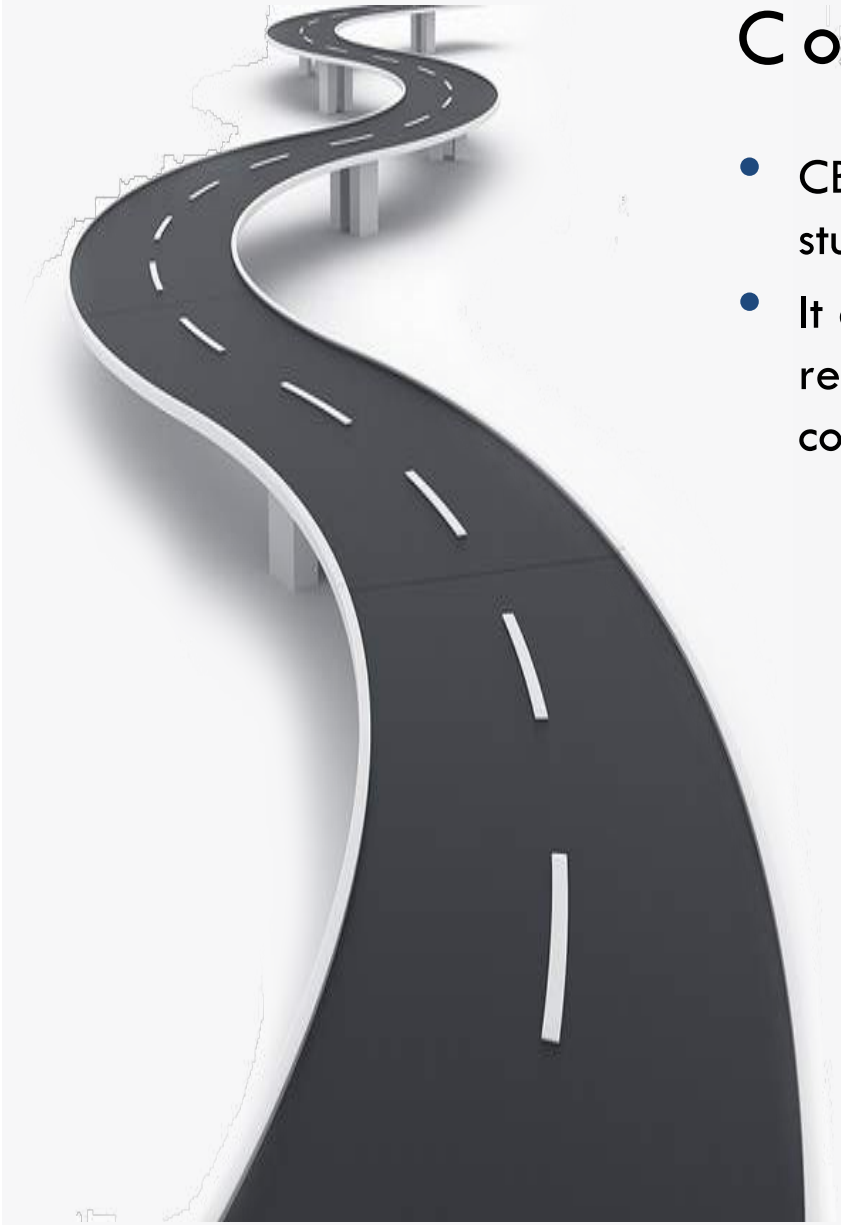
PENGABDIAN: Mahasiswa Universiti Teknologi PETRONAS Malaysia saat berbagi informasi perkembangan teknologi kepada siswa Madrasah Sayang Ibu, Dasan Griya, Lobar, kemarin (23/8).

Salah satu mahasiswi peserta kegiatan, Nurul Nadhilah binti Kasim mengatakan pengabdian ini terbagi dalam beberapa sektor. Diantaranya edukasi, sosio-ekonomi, dan lingkungan. "Sasaran sektor ini disesuaikan dengan lingkungan sekitar tempat pendidikan untuk program ini," tuturnya.

Kepala MTs MSI Kuswandi Sastra Nova mengatakan apresiasinya telah didatangi dan dibantu mahasiswa UTP Malaysia. "Tadi yang fokus di sekolah dan bantuan yang diberikan untuk filtrasi air. Bantuan ini diberikan karena air lingkungan sekitar masih harus disaring, hingga mampu dimanfaatkan," tandasnya. (nur/r9/*)

(Lombok Post, pg. 18, Saturday, 24th August 2019)

- Raises awareness to the community about the importance of protecting the environment to preserve water for the future generation.
- Builds the character of UTP students in the area of communication skill, social responsibility, leadership skill and moral development.



Conclusion

- CBL provides many positive impacts to the students and targeted community.
- It also contributes towards an impactful relationship between UTP and the targeted communities from neighbouring countries.

Future Directions

- Collaboration with industries involved with the technology should be established.
- New batch of students should continue to help the same community to ensure the sustainability of this project.

Community-based Learning

Hello Microbes: Insights into Microbial World Project

Hamidah Idris[1]*, Noraida Othman[2] &
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Universiti Pendidikan Sultan Idris, 35900 Tanjong Malim,
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Jalan Sultan Azlan Shah, 11700 Gelugor, Penang,
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Introduction

This course introduces students to the basic principles in Microbiology which includes both theoretical and experimental approaches. In line with Universiti Pendidikan Sultan Idris (UPSI) status as the national No. 1 Education University, introduction to science in early childhood education syllabus is made possible through a mini project developed by a group of students from UPSI, entitled "Hello Microbes: Insights into Microbial World Project".

Course Content

Principles in Microbiology (SBB3033) covers relevant comprehensive information on different aspects of microbes. This course provides the latest information available on microorganisms with analysis of their strategies for carrying out essential life functions and contribution to the overall health and welfare of human and the environment.

Delivery Methods

The delivery methods of the course are lecture, laboratory practical, discussion and mini project.

Mapping of CLOs, Delivery and Assessment

Learning Outcomes	Delivery	Assessment	Student Learning Time
CLO1 Explain the diversity of microorganisms that influences survival and interactions (C4)	Interactive lecture Group discussion	50%	56
CLO2 Carry out experiments to prove some principles in microbiology (P4)	Laboratory Group discussion	15%	20
CLO3 Work with community to apply microbiology knowledge (A3)	Mini Project-based Learning Group discussion	20%	24
CLO4 Show concern on current issues of microbiology (A3)	Mini Project-based Learning Group discussion	15%	20
		100%	**120 hours**

Hello Microbes: Insights Into Microbial World Project





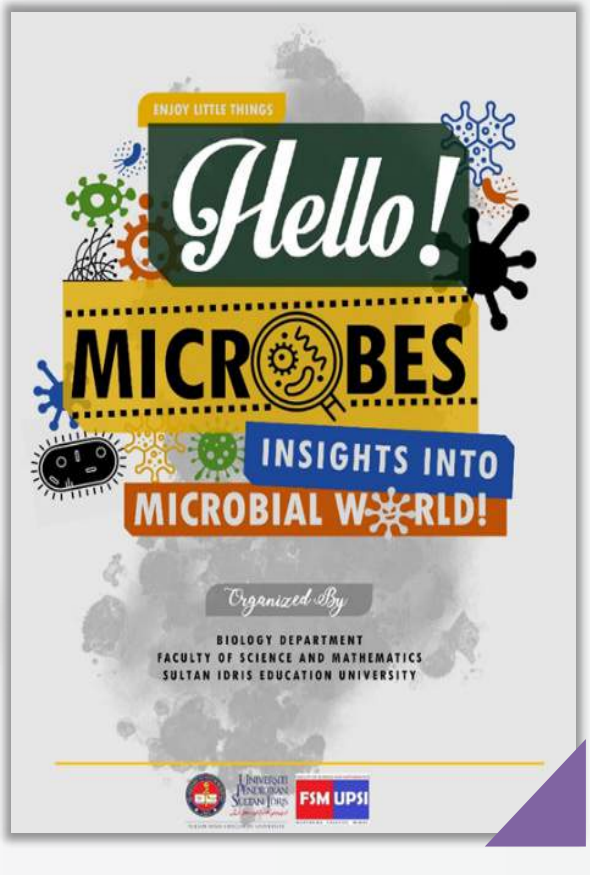

The mini project was developed to transfer scientific knowledge and basic laboratory skills using appropriate early childhood education approaches.

Through this project, students have the opportunity to apply their knowledge in microbiology and teaching techniques learnt during lecture, while preschool children gain experience in a fun and exciting way.

Students Activities

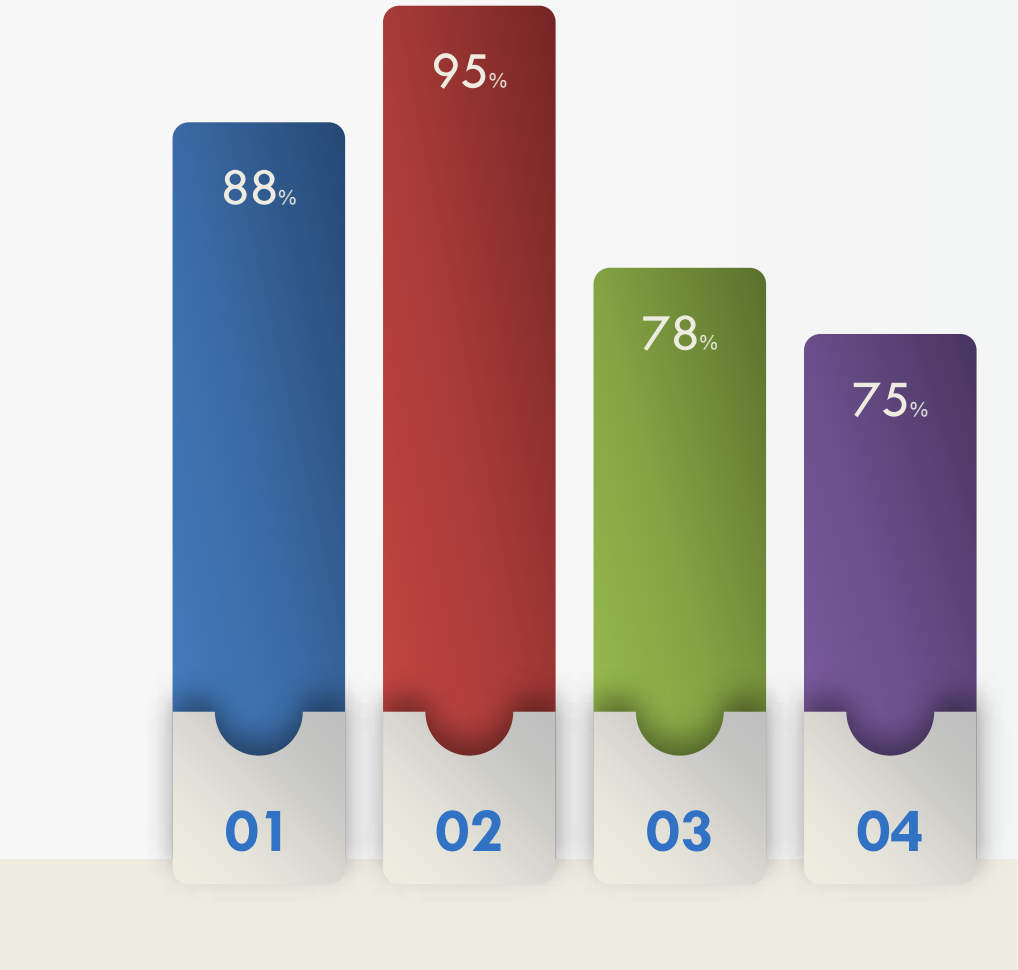
Develop microbial models and teaching tools suitable for preschool education

Conduct laboratory practical to test run the developed teaching tools



Organize Community-based Learning mini project

Student Feedback



01 **88%** Strongly agree the mini project **enhances understanding** in microbiology

02 **95%** Strongly agree the mini project **improves early childhood teaching skills**

03 **78%** Strongly agree **SBB3033 provides the essential knowledge** on microbiology

04 **75%** Strongly agree the mini project **provides opportunities to improve knowledge** on microbiology and teaching skills

Student Feedback

I enjoyed organizing this project. It has developed my soft skills and I have gained valuable experience communicating with teachers and kids. This project also gives me the chance to learn to organize events. Thank you Dr. and my coursemates.

This course provides opportunities for students from other faculties to become committee members and gain knowledge in basic Microbiology.

The Hello Microbes project exposes preschoolers to science and experiments at early age. It is a good way to spark their interest in science. The project also pushes me to step out of my comfort zone. Before joining the project, I was not good with children because I seldom interact with them. However, after joining this project, I have learnt techniques on handling and making young children understand better.

A good project because I had the experience to interact with kids. We both gained benefits. This project exposes me to a lot of experience on how to conduct lessons and deal with the preschool kids. At the end of the project, we have both learnt new things.

I am happy to be part of this project and I hope to join it again in the future, as a moderator... Overall, the objectives of the project were achieved and I have gained much experience from it.

This was one of the best thing I had ever experienced in my life. It has taught me a lot of things. Although it was tiring, but it was fun and exciting! Thank you so much Dr. ♥

The project was a great experience for me. Having to deal with preschool children makes me consider on having my own child!... just kidding. Through the project, me and my friends have learnt ways and tricks on how to handle kids and shared with them some useful yet interesting knowledge on microbes. I enjoyed the 2 days project with the kids very much because they are simply too cute for me!

Impact of Hello Microbes: Insights Into Microbial World Project

Students gain opportunities to apply knowledge with the community

Enhance student understanding towards knowledge efficiently

Enhance student interest in science through engagement with the community

Nurture scientific skills among children through exciting, guided hands-on activities and observations

Build student self confident and develop soft skills related to interpersonal

Increase student awareness on the importance and various applications of microbiology knowledge

Conclusion and Future Directions

Conclusion

This course is essential for students to improve their teaching skills and enhance preschool children understanding about microbial world, which is an essential knowledge in their daily life. Community-based Learning implemented in the course through mini project allows exploration and application of scientific skills across different fields of studies.

Future Directions

Develop microbiology teaching and learning tools that integrate visual and digital technologies.

Collaborate with schools to conduct Hello Microbes Project at primary and secondary school levels.

Design more hands-on and gamified activities to deliver knowledge and information on microorganisms to learners.

Learning Community

Bridging Two Universities in a Collaborative Mandarin Language Learning Community

Kang Mei Feng[1]*, Yeoh Li Cheng[2], & Gan Leong Ming[3]

[1]Centre for Modern Languages, Universiti Malaysia Pahang (UMP)

[2]Centre for Language Studies, Department of International Languages, Universiti Tun Hussein Onn Malaysia (UTHM)

[3]Faculty of Mechanical & Automotive Technology Engineering, Universiti Malaysia Pahang (UMP)

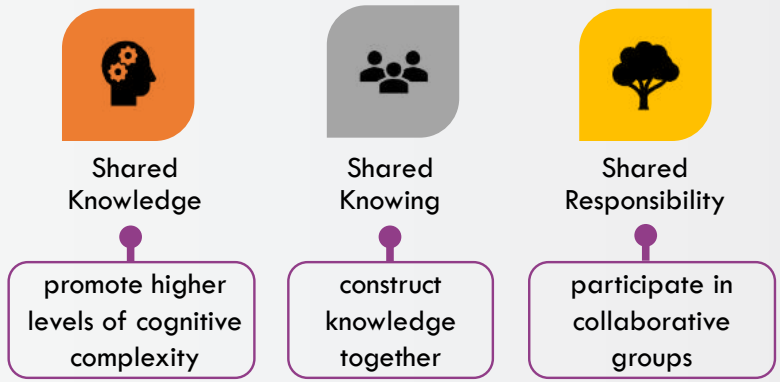
*Corresponding author: kmfeng@ump.edu.my

Overview

Learning the Mandarin language in Malaysia is a challenging endeavour for non-native speaker of the language. The non-native speaker of Mandarin is expected to be reluctant due to their lack of confidence in speaking the language intelligibly. Therefore, to expose non-native Mandarin speakers to authentic language use, a virtual learning environment is created through learning community concept.

Objectives

- To create a Mandarin communication opportunity through interactive coursework.
- To engage both universities students in a collaborative endeavour towards a common goal-to enable students to communicate using simple Mandarin.



Learning Communities Implementation

Universiti Malaysia PAHANG — Mandarin Class — UTHM

Searching partner and collaborative team

Both student reluctant to speak Mandarin due to their lack of confidence and learning environment

Establish a collaborative team

Identify partnering institution and conduct team discussion

Briefing and defining problems

Mastering Basic Mandarin Skills Content

Title: Self Introduction and Time

Define learning community goals

Course design

Plan the teaching scopes and classroom activities

Plan the teaching scopes and classroom activities.

Class Coordination

Interaction Session

Quiz Session

Assess student learning

Quiz session
Listening and Speaking session

Student feedback

Survey conducted by using QR code scanner to document the student perception in learning communities

Mapping of CLOs, Delivery and Assessment

<table>
<tr><th>Course Learning Outcome (CLO)</th><th>Delivery</th><th>Assessment</th><th>SLT</th></tr>
<tr><td>CLO1

To express and communicate using Mandarin language according to the given topics.</td><td rowspan="4">• Aims to enable students to speak simple Mandarin with each other.

• Students will be exposed to simple phrases and basic sentence structures.

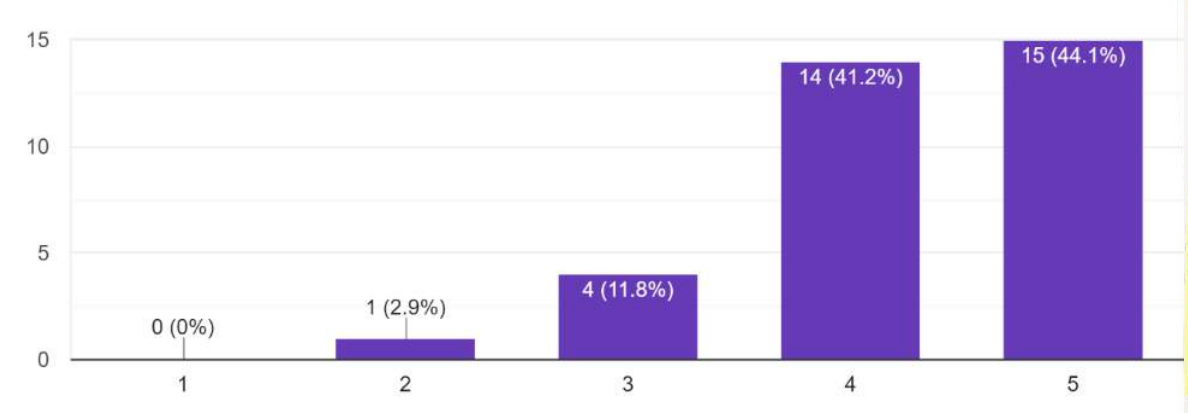
• Classroom activities will include 4 skills which are listening, speaking, reading and writing.</td><td>• Interactive session
- Listening
- Speaking
• Quiz session (Kahoot)</td><td>• 1 day</td></tr>
<tr><td>CLO2

To distinguish and identify the pronunciation of Chinese vocabulary, phrases and sentences in Han Yu Pin Yin.</td><td>• Interactive session
- Listening
- Speaking
• Quiz session (Kahoot)</td><td>• 1 day</td></tr>
<tr><td>CLO3

To promote authentic learning that enables students to connect and transfer learning within and beyond their linked courses.</td><td>Video conferencing on 20 February 2018 & 17 April 2018</td><td rowspan="2">• 2 days</td></tr>
<tr><td>CLO4

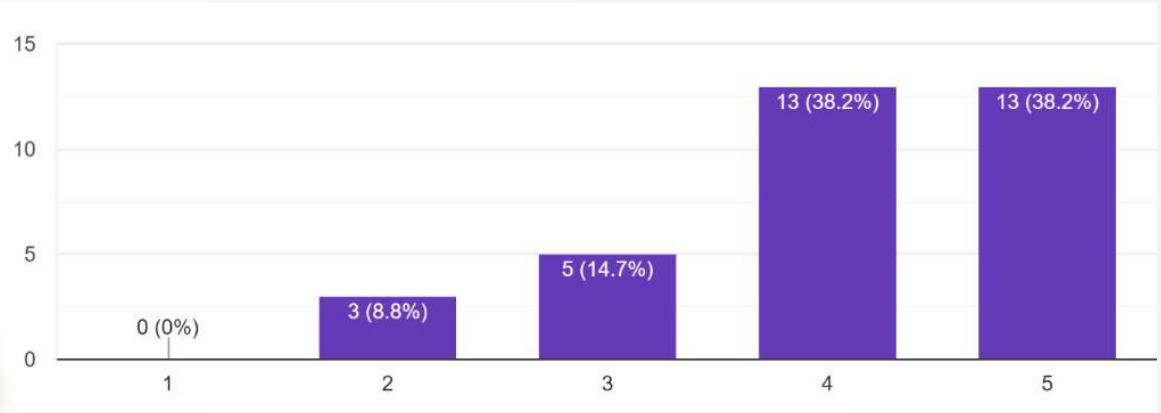
To provide students with learning opportunities that help students gain confidence in speaking the mandarin language.</td><td>Video conferencing on 20 February 2018 & 17 April 2018</td></tr>
</table>

Feedback from UMP and UTHM Students



Most of the students from UMP and UTHM showed a positive feedback and feel motivated to learn Mandarin languages.

Most of the students from UMP and UTHM learn more and better in the classroom using video conferencing technology.



What is the most important thing you learnt from this class?

- ✓ Cooperation
- ✓ How to pronounce words

- ✓ Can make me better in Mandarin

- ✓ Skill
- ✓ Learn Independently
- ✓ Express myself

- ✓ Learn new things

- ✓ Learning global is fun and enjoy

- ✓ I can know the word and the meaning

- ✓ Communicate to another person bravely even speak in Mandarin

- ✓ I can bravely talk or answer the question with another student

- ✓ I can learn about how to speak Mandarin

- ✓ Encourage you to talk Mandarin more

- ✓ Communication skills

- ✓ We learn to speak Chinese with other University

- ✓ Two way communication
- ✓ Mandarin is fun also interact with others

- ✓ Technology connect both Universities student study together

- ✓ I can know the word and meaning more clear

- ✓ Encourage to speak in front of people

What is the BEST part session?

- ✓ Attract student to focus
- ✓ When playing KAHOOT with both Universities
- ✓ When join speaking activities
- ✓ Everything is fun !
- ✓ The part that UMP and UTHM KAHOOT quiz together
- ✓ Communicate session is the Best part session!
- ✓ Sharing the question with other friends
- ✓ Quiz and KAHOOT session
- ✓ We can communicate with people from other University
- ✓ Challenging while answering session
- ✓ I can know the word and meaning more clear

In THREE words, how would you describe this experience?

- ✓ First time experience
- ✓ Best
- ✓ I'm very excited
- ✓ Attractive way to learn
- ✓ Enjoyed and best
- ✓ So exciting
- ✓ Challenging, happy, interesting
- ✓ Nice and fun
- ✓ Love this session
- ✓ Best day ever
- ✓ Best, funny, interested

Evidence of the Project Delivery

Scan the QR Code or Click the Icon for Video Documentary:

Impact on Students

- ✓ Enables shared learning
- ✓ Collaborative Problem Solving
- ✓ Provides many experiences/activities
- ✓ Dialogue with other student
- ✓ Validation of learning
- ✓ Improves involvement and connectedness within universities students
- ✓ Provides opportunities to practice and develop presentation and communication skill in learning the second language
- ✓ Boosts students' level of intercultural and global competence
- ✓ Engages students' digital and media literacy
- ✓ Creates more interactions

Impact on Academics

- Creates a learning platform with university partner in promoting research and competency skills;
- Enhances collaboration and innovation in teaching and learning;
- Engages in educational fruitful activities (e.g., academic integration, active and collaborative learning);
- Involves in educational experiences;
- Promotes deep learning;
- Meets academic and social needs; and
- Bridges between two universities.

Conclusion

Learning Community provides direct experience in communication and interaction.

Geographically, distant instructors and students between the participating universities can communicate effectively.

The use of technology during the learning reduces travel time and money expenses.

Knowledge is shared in real time. In term of assessment, students may get prompt feedback from the instructors and peers.

Future Directions

- Enhance collaboration through regular teaching and learning activities with other linked Mandarin language courses.
- Create an instructional strategy towards a common goal.

Diversity/Global Learning

Global Classroom: Beyond Boundary Engagement

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[1]Faculty of Mechanical & Automotive Technology Engineering, Universiti Malaysia Pahang (UMP)

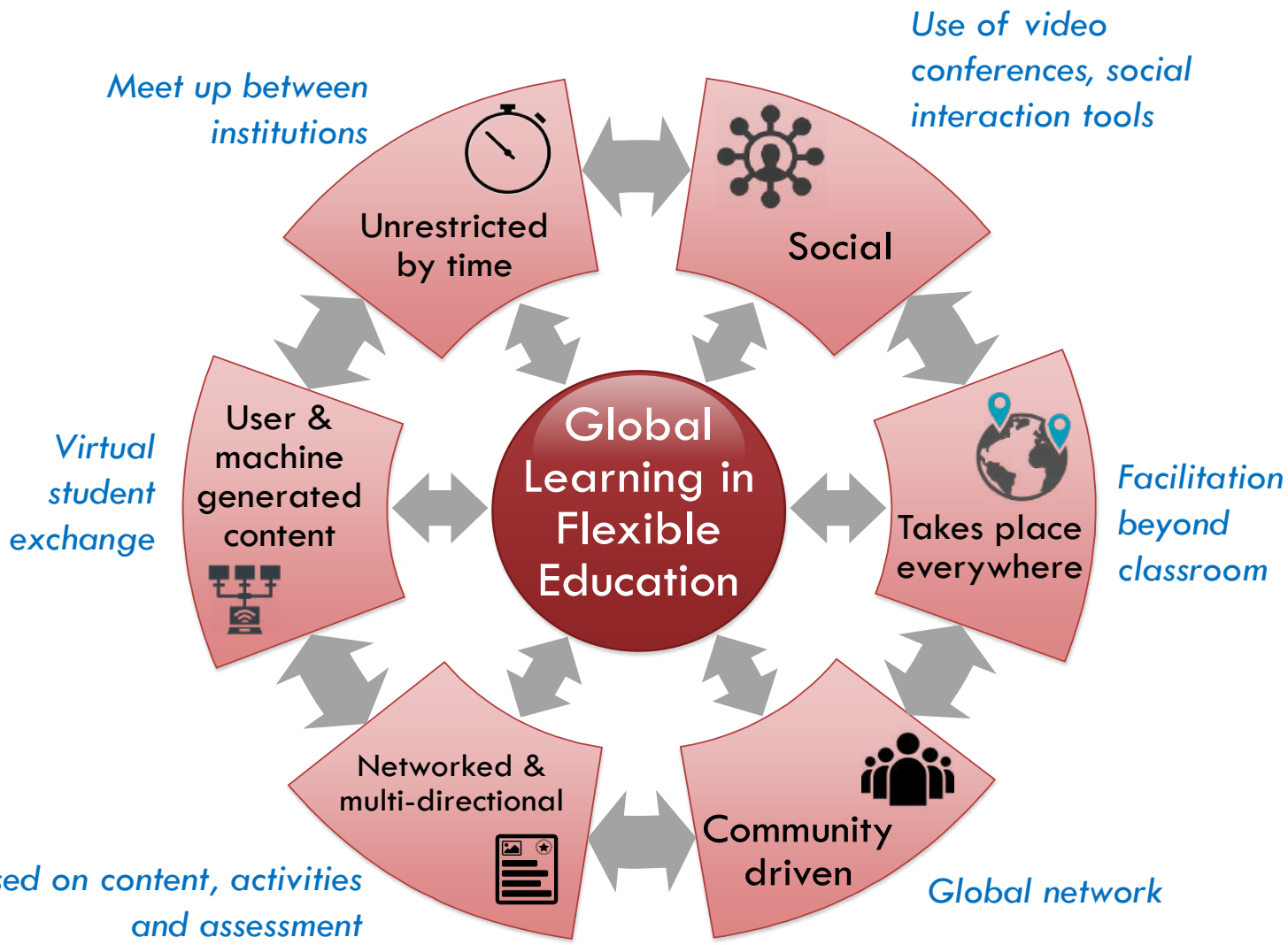
[2]Centre of Instructional Resources & e-Learning, Universiti Malaysia Pahang (UMP)

[3]Faculty of Computer, Universiti Malaysia Pahang (UMP)

*Corresponding author: ming@ump.edu.my

Global Learning (GL) is a contemporary teaching practice which is beyond classroom boundary (regardless of geographical, time zone, languages and cultural barriers) as students **collaborate virtually** while being facilitated by both **LOCAL and INTERNATIONAL** partners (not limited to learning institution or industry) through **technology integrated** Collaborative **Learning.**

Global Classroom: **Promoting Flexible Education**



Basic Global Classroom

Learning must achieve minimum 5% Collaborative Learning or equal to 3 hours student learning time.

Assessment is optional

GC Index : AVERAGE

Standard Global Classroom

Learning must achieve a minimum of 30% Collaborative Learning or equal to 12 hours student learning time for a ONE credit course.

Required a minimum of 10% of the total assessment weightage.

GC Index : GOOD

Advanced Global Classroom

Course structure is benchmarked and designed for the implementation by both participating institutions with more than 60% online collaborative/team classroom.

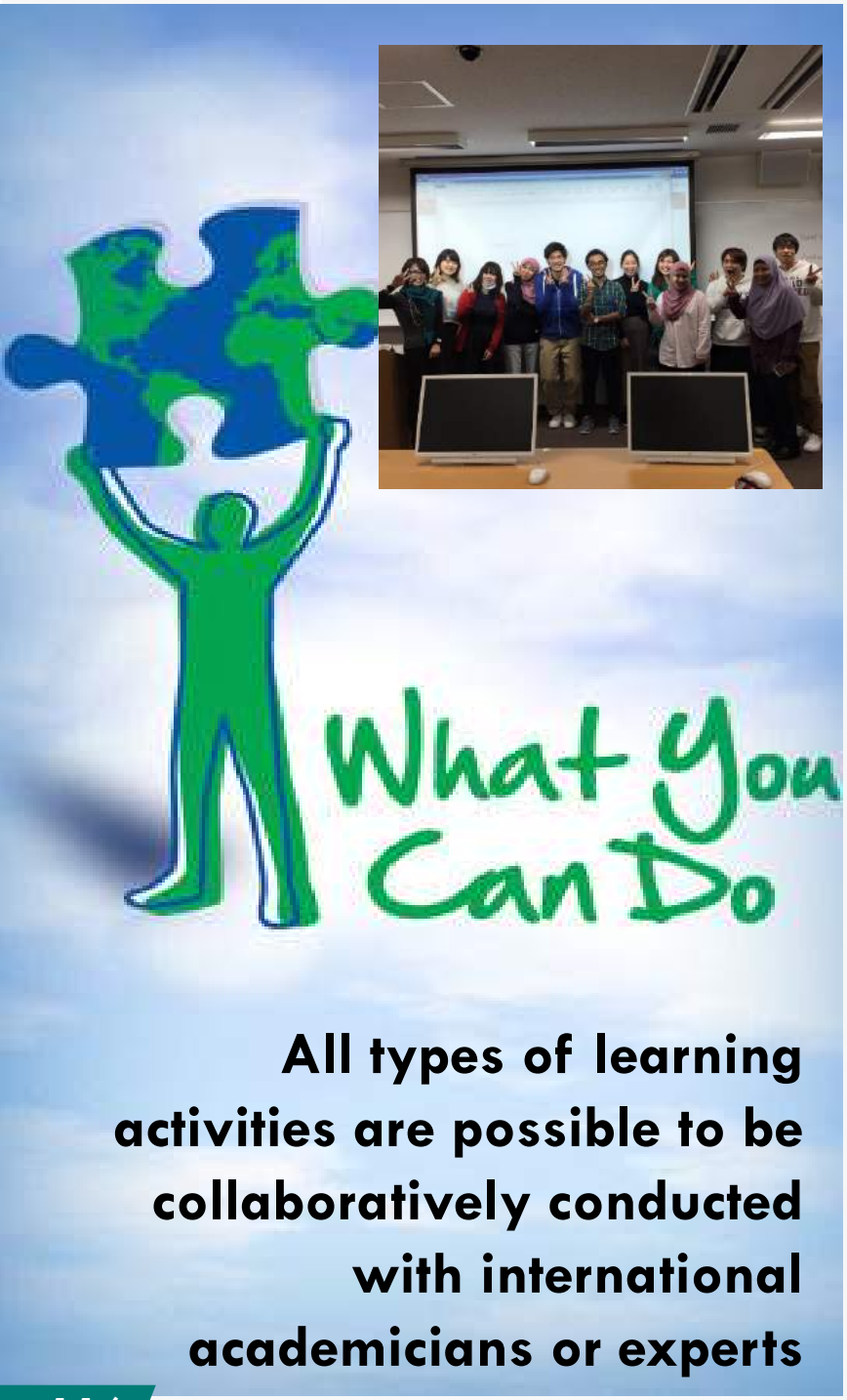
Required a minimum of 30% of the total assessment weightage.

GC Index : EXCELLENCE

Global Classroom Type

SLT and Assessment Reference

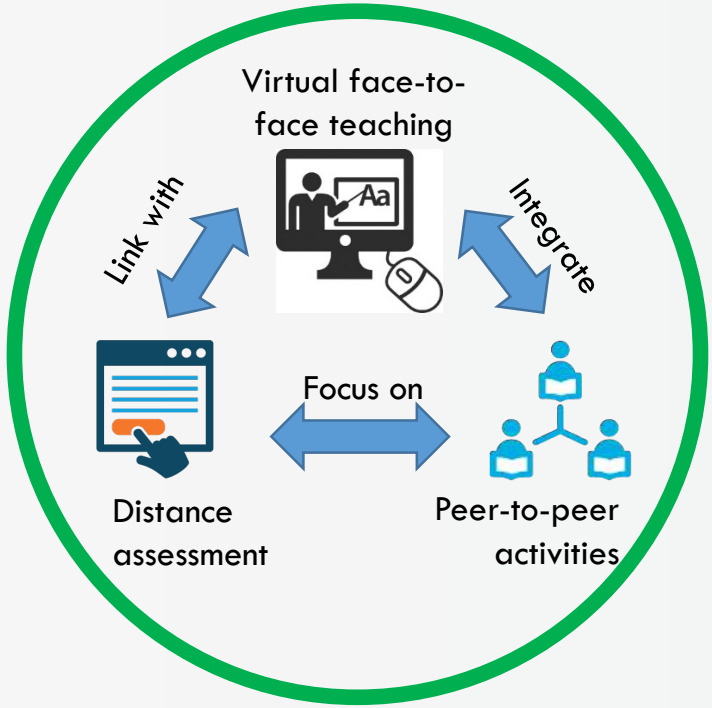
- The implementation of Global Classroom (GC) can be categorized into three different stages from BASIC engagement, STANDARD operation and to ADVANCED classroom.
- Literacy skill enhancement both in online learning pedagogy and Web2.0 tools utilization.



All types of learning activities are possible to be collaboratively conducted with international academicians or experts

Global Classroom

Actively Engaged and Immersed



Collaborative Lecture

Virtual Forum

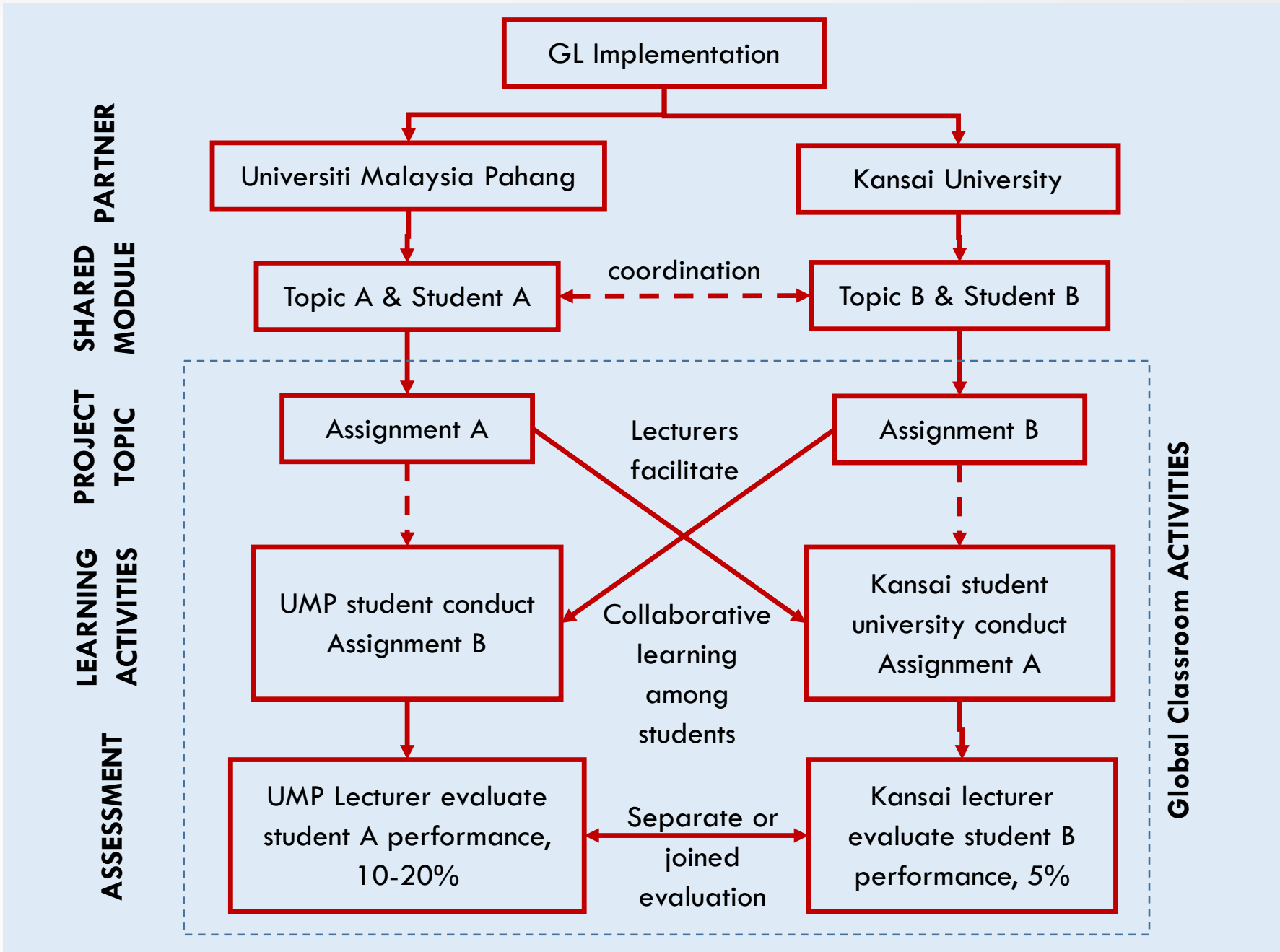
Online Assignment

Collaborative Presentation

Topic Exchange

International Projects

Others



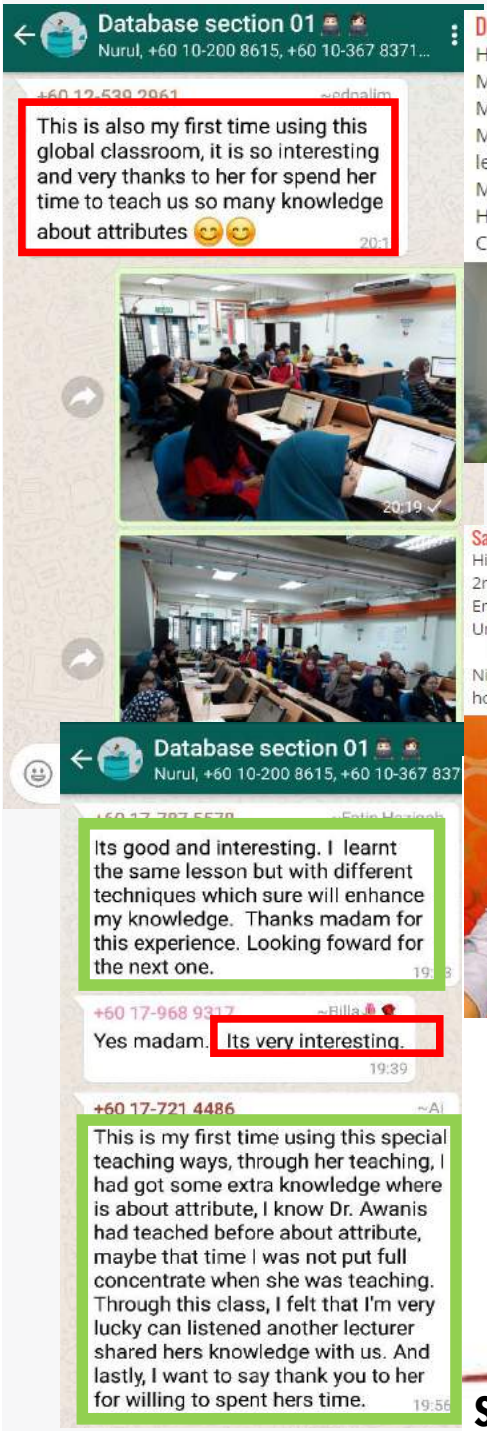
How Global Classroom Takes Place?

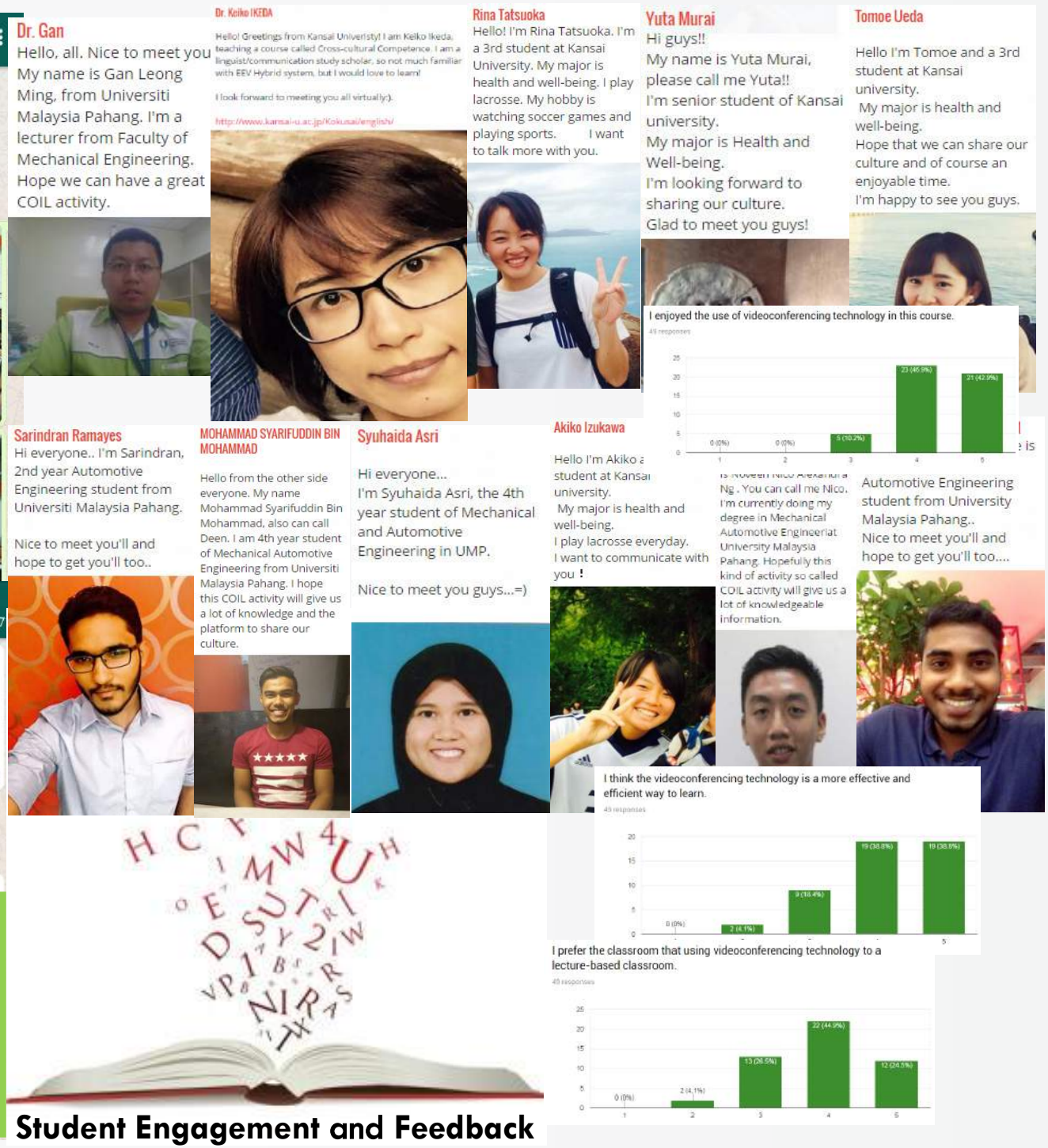
Example of GC Profile : Mapping of LOs, Delivery and Assessment

Faculty Name	**Faculty of Industrial Management**		
Course Name and Code	KPP 1223 Business Research Method		
Instructor Name (s) and email	Dr. Diyana Kamarudin, yanakamarudin@ump.edu.my		
can be more than one instructor			
Types of GC	Basic GC	Standard GC	Advance GC
Learning time	5% collaborative learning (equal to 3 hours SLT)	30% collaborative learning (equal to 12 hours SLT)	100% team teaching
Assessment	Optional	Minimum 10%	30% and above
GC Index	Average	Good	Excellence
Choose one type [/]	[ ]	[/]	[ ]
Remarks for assessment : **The assignment submitted by the students were examined by both collaborative instructors with a ratio of 1:1 weightage. For example, if the total marks for group assignment is 20%, both are allocated with 10% individually.**			
Shared Module Name(s)	**Research Methodology**		
can be more than one module			
Collaborative Learning Topic(s)	Sampling – Dr. Diyana Qualitative Research – Dr. Diyana		
Learning Outcome(s)	1) Differentiate between qualitative and quantitative research methods 2) Propose a research method for problem solving		

Example of GC Profile : Mapping of LOs, Delivery and Assessment

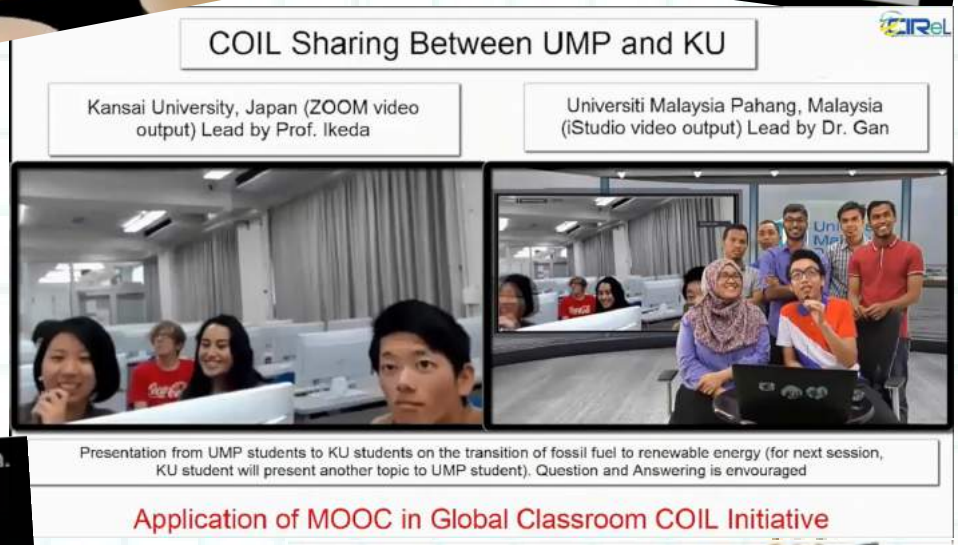
ICT Tools depends on institution proposal/preference and coordination	**Communication**	**[/]**	**Activity**	**[/]**	**Assessment**	**[/]**
	Webex		Prezi Presentation		Quizbean	
	ZOOM	/	Survey Monkey		Openlearning	
	WhatsApp/Messenger	/	PowerPoint		Kahoot	/
	Facebook		Google Drive		Quizlet	
	email		Padlet		Google drive	
	Blendspace		Asynchronous discussion		Window 360	
	Line/WeChat		Synchronous discussion/ Forum	/	LMS	
	Other(s)*Please Specify		Other(s)*Please Specify		Other(s)*Please Specify	
Preferred Date (s) and time	Monday, Thursday 8 pm – 11 pm (Malaysia)		Number of Students recommended max 30 students in a group		15	
Example : 5-21th October 2017 (Every Tuesday and Friday 2 pm to 4 pm)						
Other requirement/ Survey/constraint						
***please specify any special requirement in term of partner, course level, language and etc.**						





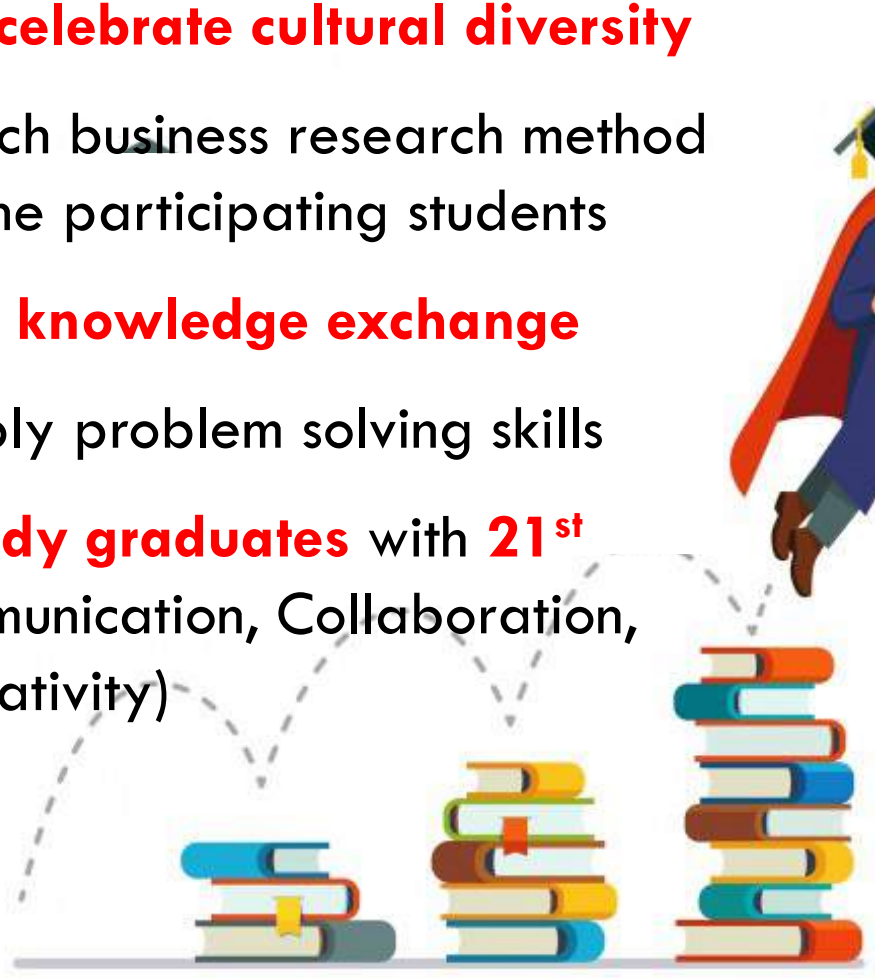
Student Engagement and Feedback

Evidence of Delivery



Impact of Global Classroom for Students

- Emphasizes students to **explore others' perspective** and **worldviews**
- Students **learn and celebrate cultural diversity**
- **Internationally** enrich business research method knowledge among the participating students
- **Promotes authentic knowledge exchange**
- Collaboratively apply problem solving skills
- Prepares **future ready graduates** with **21st century skills** (Communication, Collaboration, Critical thinking, Creativity)



Impact of Global Classroom for Academicians

Internationalization on campus

Promotes staff **mobility internationally**

Expands international institutional **partnerships**

Increases intercultural awareness and understanding

Promotes **Flexible** Online Learning Course

Conclusion

- Global Classroom is an engaged online learning pedagogy.
- It is an active outcome-based learning.

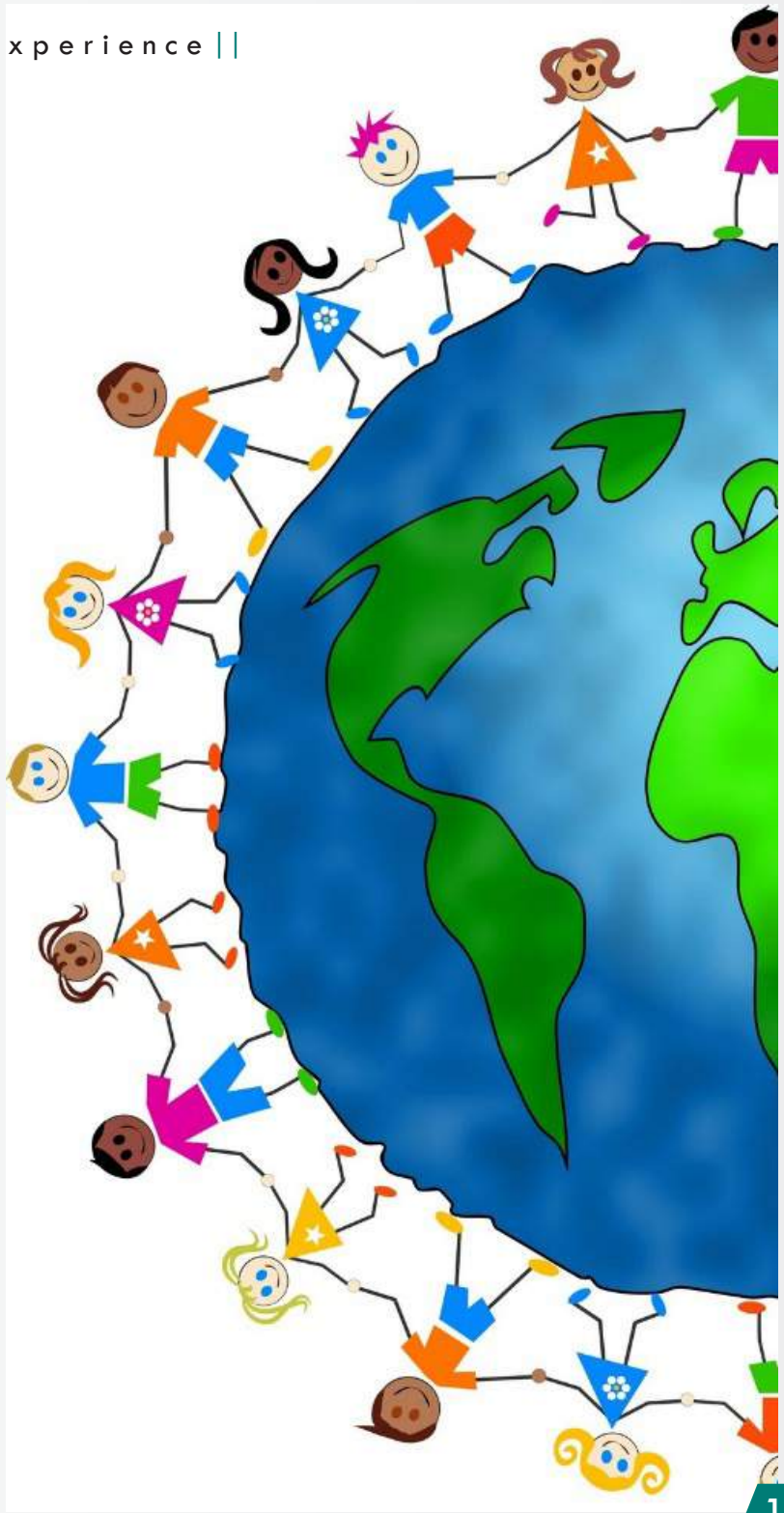
Future Directions

Aim:

30% of the current courses offered at the University internationally collaborated with other participating universities worldwide to achieve **STANDARD or Full GLOBAL CLASSROOM requirement**

Encourage

student exchange virtually



Interdisciplinary Approach to Assessment

Fiqh Muamalat

Syahidawati Shahwan[1*], Syadiyah Abdul Shukor[1] & Siti Salhah Othman[2,3]

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UNIVERSITI SAINS ISLAM MALAYSIA
جامعة العلوم الإسلامية الماليزية
ISLAMIC SCIENCE UNIVERSITY OF MALAYSIA

Introduction

This course aspires to realize USIM's mission of "Integrating Naqli and Aqli Knowledge". The course integrates knowledge of Fiqh (Islamic jurisprudence) with Muamalat (commercial transaction).

Course Content

Fiqh Muamalat covers the wide subject of contract and its basic elements, and the course is further strengthened with elements of Fiqh in the Muamalat perspectives (e.g. *riba*, applications of Muamalat contracts in the banking and financial industry). The focus of this course is mainly on the Malaysian context and ecosystem of Muamalat.

Activities and Assignment

Group of students are required to conduct a study trip to various industries/companies to identify Muamalat issues and related problems. Analysis of the problems and issues are used to trigger authentic problem solving strategies which are then presented in Muzakarah Muamalat, an event organized by students.

Learning Outcomes

Assessment of learning outcomes include assessment of ethics and values, teamwork and communication.

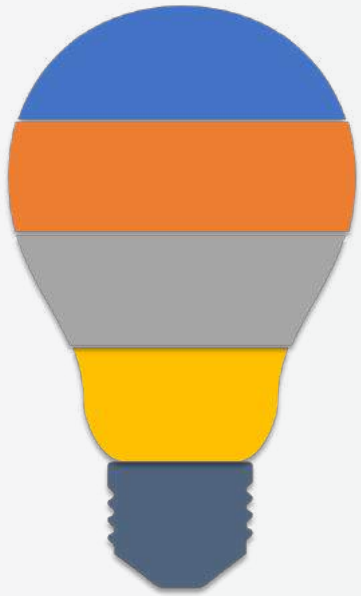
Sequential Process of Interdisciplinary Approach to Assessment

Identification of **problem** to be addressed

Identification of **relevant disciplines** to address problem

Creation of **common ground** for disciplines through a framework of analysis

Combination of disciplines for **solving the problem**



Mapping of CLOs, Delivery and Assessment

Learning Outcomes	Delivery	Assessment	Student Learning Time
CLO1 Distinguish main theories and contracts in Muamalat as well as their theoretical background in Islamic jurisprudence. (PLO1, C3)	Lecture, Tutorial, e-learning (GOALs and MOOC)	60%	60
CLO2 Demonstrate the application of Fiqh Muamalat contracts in various industries and institutions. (PLO5, A3)	Game-based Learning, Case Study, Group Work	30%	47
CLO3 Present the Muslim scholars' opinions on the application of Fiqh Muamalat with due respect of their differences. (PLO6, C3)	Library Search	10%	13
		100%	**120 hours**

Student Activities

Muamalat Muzakarah Series 1.0 and 2.0 organized by students to discuss latest issues related to Fiqh and Muamalat in Islamic banking and finance

Enhancement of Students Knowledge through Gamification

MUAMALAT INTERACTIVE GAME©

Muamalat Interactive Game© is an innovation that incorporates the concepts and operations related to retail products offered by Islamic banks. Players take on the role of contracting parties who use retail Muamalat Islamic banking products for personal financial management. These financial products utilise Islamic contracts such as ijarah, tawarruq, rahnu, musharakah mutanaqisah, murabahah and other supporting contracts.

This game features interactive Muamalat transactions between the contracting parties, in a fun learning environment. The knowledge gained are useful for Islamic banking retail product users and Islamic finance practitioners, as well as students in **Fiqh Muamalat**, Islamic Finance, Islamic Banking and Islamic Accounting courses, besides those who are interested in Islamic finance.

This game will assist players to realize the underlying Shariah concepts in the contracts involved. This game also teachers ways to invest using halal investment concepts and creates awareness towards Shariah-compliant banking and finance.

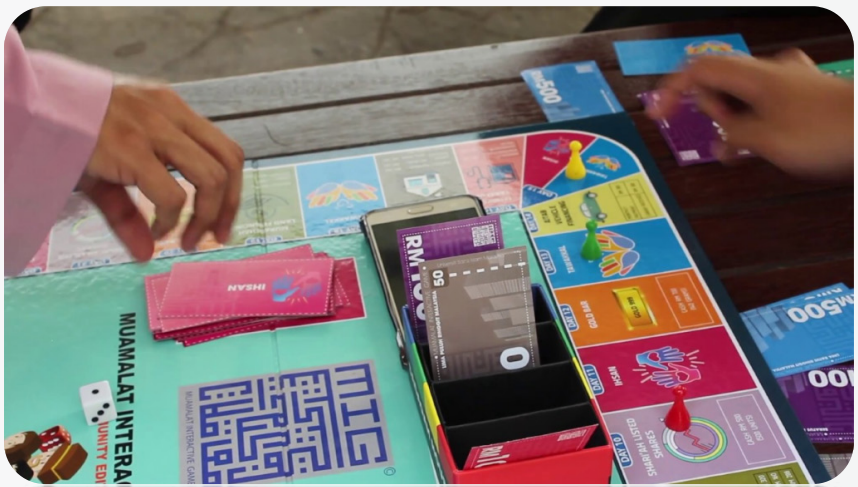
Educational, interactive and fun way to enhance students knowledge in Fiqh Muamalat

Scan the QR Code or Click the Play Button for more interactive content

Student Feedback



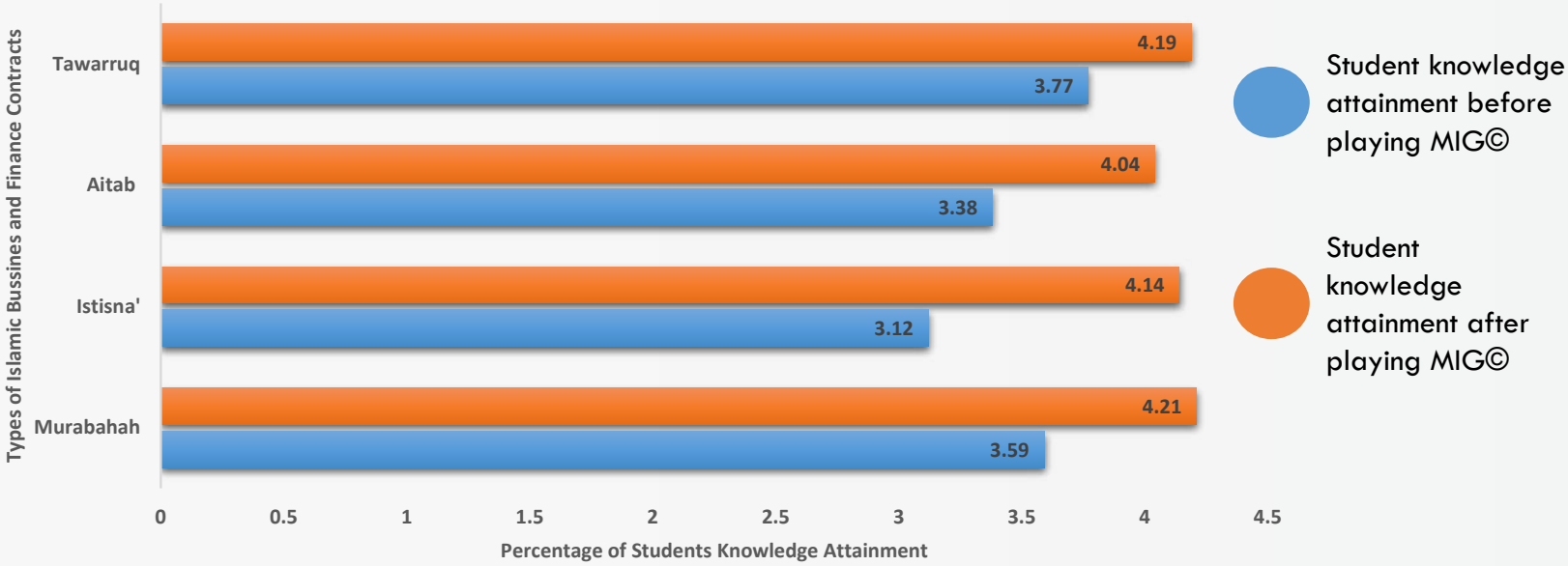
Muamalat Interactive Game as a tool in the delivery of Fiqh Muamalat course



Muamalat Interactive Game as a tool in the delivery of Fiqh Muamalat course

Scan the QR Code or Click the Play Button for more interactive content

Impact of Interdisciplinary Approach on Students Knowledge Attainment



Student knowledge attainment measured using 5-point Likert scale showed increase in understanding of Fiqh Muamalat concepts after playing the MIG©

- Provides an opportunity to explore the benefits of studying various subjects and their applications
- Improves students' performance level and enhances various skills
- Students learn in more exciting and engaging ways through integrated disciplines

Conclusion

This course is essential to prepare students to demonstrate knowledge of Fiqh Muamalat at the workplace.

Future Directions

Conduct workshop on Fiqh Muamalat issues every semester to enhance student understanding of Fiqh Muamalat.

Collaborate with industry practitioners (such as ISRA, Bank Negara and Securities Commission) in effort to highlight the importance of Fiqh Muamalat in the Islamic finance and banking sector.

Interdisciplinary Approach to Assessment

Seagrass Ecosystems: Issues and Challenges Ahead

Muta Harah Zakaria[1,2*] & Japar Sidik Bujang[3]

[1]Department of Aquaculture, Faculty of Agriculture, Universiti Putra Malaysia

[2]Centre for Academic Development (CADe), Universiti Putra Malaysia

[3]Department of Biology, Faculty of Science, Universiti Putra Malaysia

*Corresponding author: muta@upm.edu.my

Programme Overview

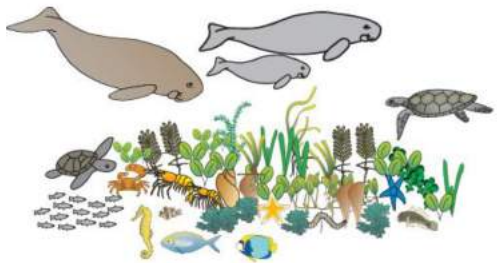
Seagrass ecosystems are sources of food and continually facing threats by natural events and human activities. Coastal development is causing their fast degradation and possible habitat loss. Positive human effects include effective and enforced legislation to protect seagrass, increased protection of coastal ecosystems, and committed efforts to monitor and restore the marine ecosystem.

Mapping of CLOs, Delivery and Assessment

AKU4601	PO	BGY4406	Activity	ID
Evaluate the importance of various wetland ecosystems (C5).	+ ✓	Describe the morphological characteristics, diversity and ecology of seagrasses (C5).	Lecture, class work, discussion	+✓
Organize the various of aquatic life based on types of wetland ecosystem and their importance (P5, CTPS).	+ ✓	Perform the systematic sampling techniques, characterization and preservation of seagrass specimens (P5, CTPS).	Practical, mini project, discussion	+✓
Proposed management of various wetland ecosystems (CS)	+ ✓	Relate the environment and significant of aquatic organisms (A5, LL).	Lecture, information search	+✓
Total				(20%)

AKU4601/BGY4406	Delivery	Assessment	Student Learning Time
Seagrass cover by using Random quadrat-photo of quadrat with seagrass for laboratory image-cover analysis (C5, CTPS)	Search for information	5%	4 hours
Collect and record good photographs of seagrass and seaweed samples (Macroalgae) for UPM Marine Plants herbarium (P5)	Lecture, Field excursion	10%	5 hours
Transplant selected seagrass species for conservation purpose (P5, LL)	Class work, Field excursion	10%	6 hours
Total		**25%**	**15 hours**

Seagrass Bed,
Batu Empat, Port Dickson, Negri Sembilan



BGY4406 Biology and Ecology of Seagrasses
&
AKU4601 Ecology and Wetland Management

Seagrass Awareness Program, 24 November 2018

Seagrass

- Seagrass species and diversity
- Seagrass area and their importance
- Issues and challenges
- How to preserve them?

UPM
UNIVERSITI PUTRA MALAYSIA

JABATAN BIOLOGI
DEPARMENT OF BIOLOGY

Rujukan Kami : UPM/FS-Projek TAL/2017-
Tarikh : 27th November 2017

Mr. Shamugapthy Kathitasapathy
Country Garden Pacificview Sdn Bhd
Country Garden Danga Bay Sales Gallery
Jalan Skudai, Johor Bahru
80200 JOHOR

Dear sir,

PERMISSION TO VISIT THE FOREST CITY & CONDUCTING FIELD WORK AT MERAMBONG SEAGRASS AREA FOR UPM STUDENT'S

The above matter refers.

2. This is to inform you that we would like to seek permission to visit the forest city and conducting the field work at Merambong Seagrass area (university course AKU4242-Aquatic Flora Culture, lecturer Assoc. Dr. Muta Harah Zakaria & BGY4406-Biology & Ecology of Seagrasses, lecturer Prof. Dr. Japar Sidik Bujang) from 2nd to 4th December 2017. The students will be conducting the ecological survey and transplanting of seagrasses at the shoal.

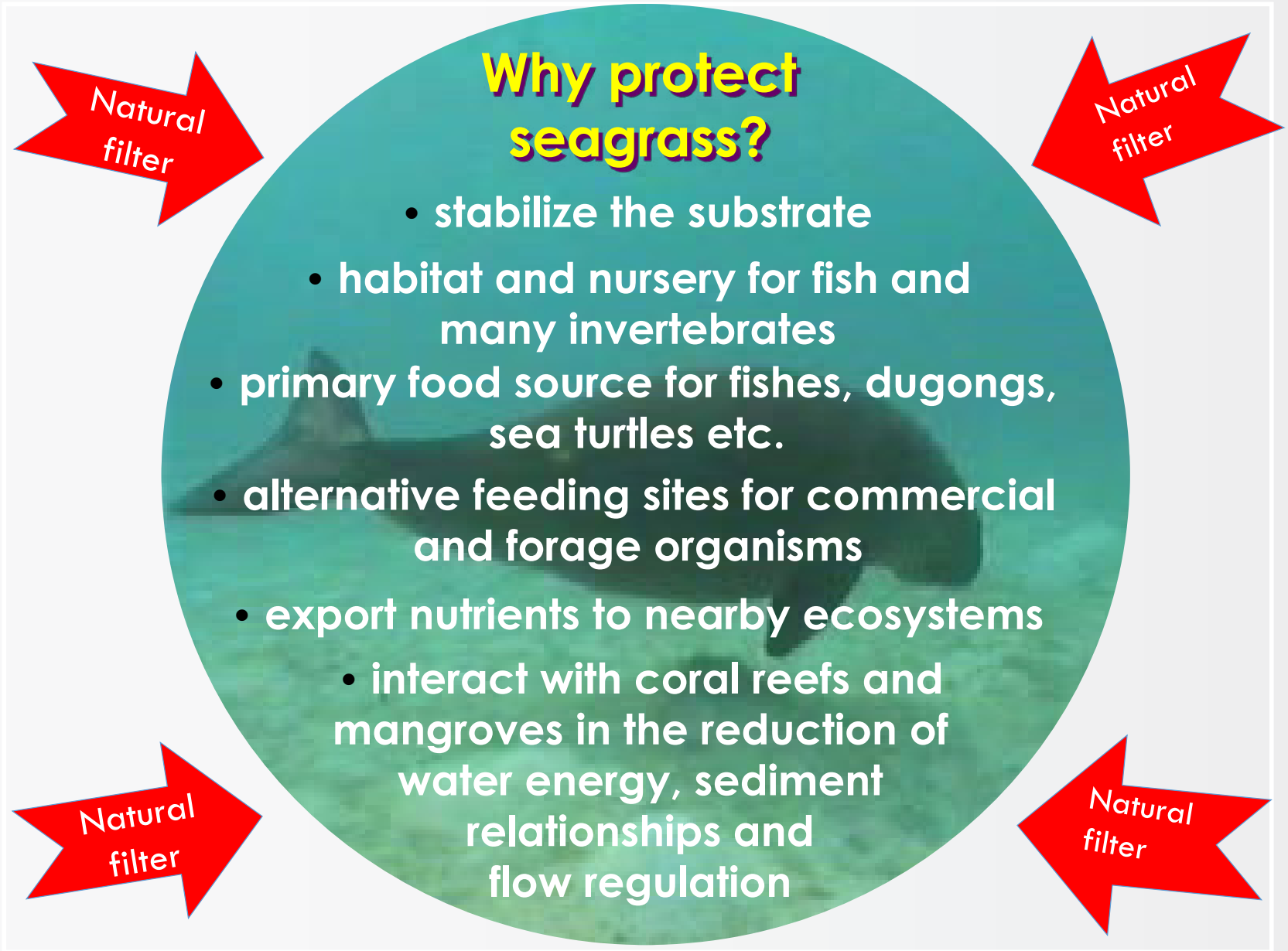
3. We also seek permission to enter the parking area for our vehicles, i.e., 1 bus and 2 cars. Your attention and cooperation regarding this matter is highly appreciated.

Thanking you in advance.

Yours faithfully,

PROF. DR. JAPAR SIDIK BUJANG
Lecturer of BGY4406
Department of Biology
Faculty of Science
Universiti Putra Malaysia

PROF. MADYA DR. MUTA HARAH ZAKARIA
Lecturer of AKU4242
Department of Aquaculture
Faculty of Agriculture
Universiti Putra Malaysia

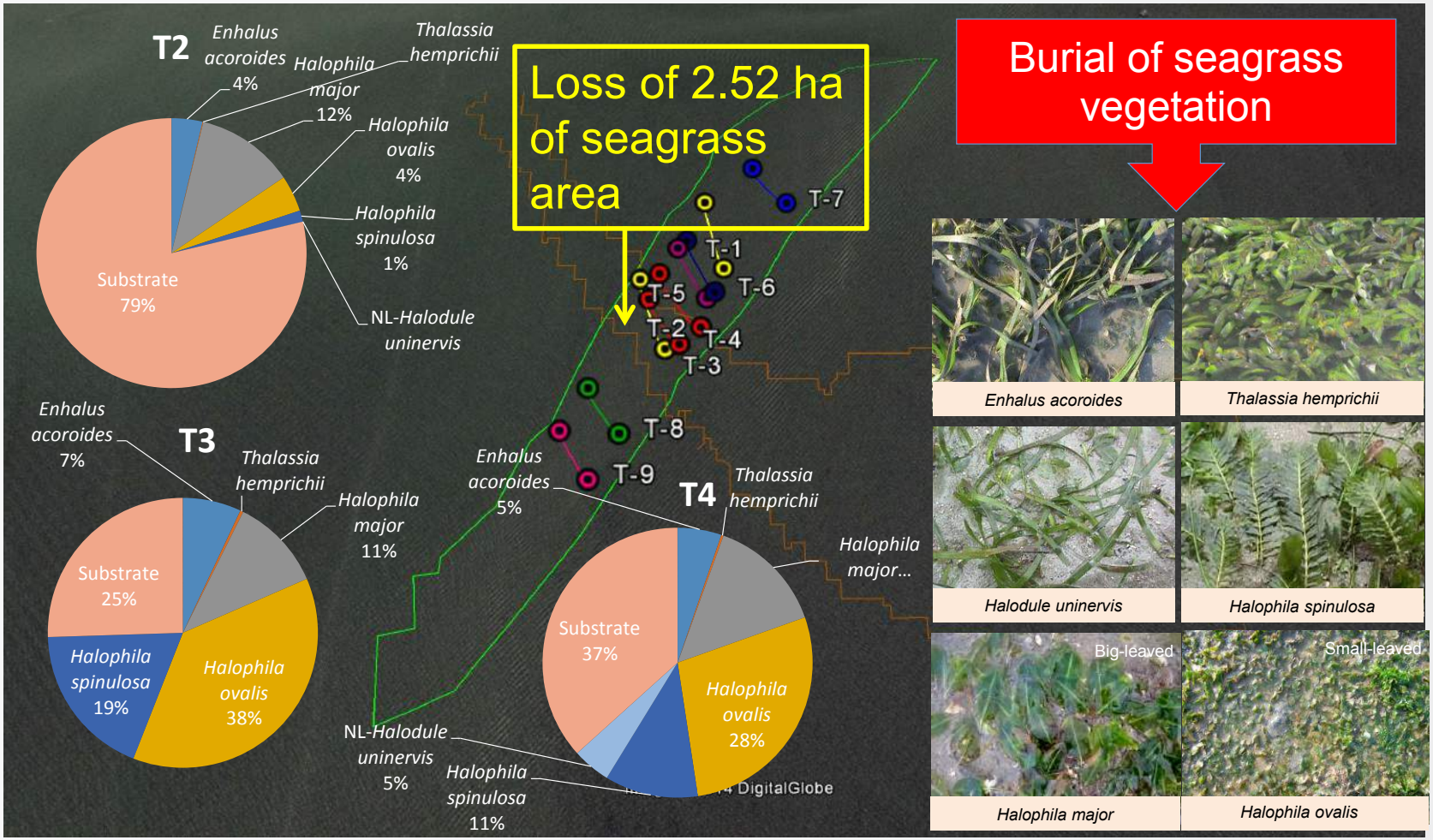

Natural filter
Natural filter
Why protect seagrass?
• stabilize the substrate
• habitat and nursery for fish and many invertebrates
• primary food source for fishes, dugongs, sea turtles etc.
• alternative feeding sites for commercial and forage organisms
• export nutrients to nearby ecosystems
• interact with coral reefs and mangroves in the reduction of water energy, sediment relationships and flow regulation
Natural filter
Natural filter

Ecosystem services in Merambong shoals, Southwest Johor

Ecosystem Services	Direction of change	Changes in ecosystem services	Primary drivers	Public awareness	Institution managing this service	Certainty of information
Provisioning Services						
Traditional captured fisheries (fishes, prawns, crabs)	Degrading	-3	Changes in habitat structure and ecology. Land reclamation	High	Fishermen and their cooperatives. Fishery Department	4
Regulating Services						
Domestic waste disposal and waste treatment	Degrading	-1	Changes in major primary producers	Medium	Local Town Council/Department of Environment	3
Erosion (sediment) regulation	Degrading	-1	Land use change/Land reclamation	Medium	Local Town Council/Department of Environment/ Department of Fisheries	2
Natural hazard regulation	Degrading	-1	Climate change/ Land use change/Sea	Low	Local Town Council/Department of Environment	2
Cultural Services						
Recreation and ecotourism mainly related to seafood	Degrading	-2	Changes in biodiversity, Land use change/Sea	Medium	Local Government and Federal Government, Tourist Boards	3
Educational values	Improving	+2	Changes in biodiversity, Land use change/Sea	Medium	Local Town Council, Department of Fisheries, Universities (UPM, UKM, USM, UMT) and Non-governmental Organization	3

Nakaoka et al. (2014)

Direct effects of reclamation



Direct effects of land reclamation on seagrass vegetation

How to conserve seagrass and seaweed?

Awareness programme with Port Tanjung Pelepas and Johor Port Authority

Continuous monitoring of seagrass ecosystem, e.g., seagrass cover, species diversity

AKU4601/BGY4406

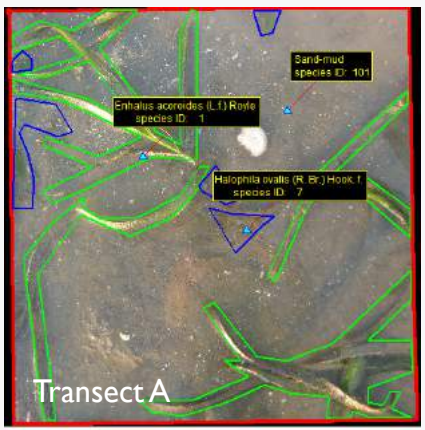
Figure 3. Flora species at Batu 4 beach (a) *Gracilaria salicornia* (b) *Halimeda sp.* (c) *Caulerpa racemosa* (d) *Caulerpa lentillifera* (e)*Dictyota dichotoma* (f)*Acanthophora spicifera* (g)*Amphiroa fragilissima* (h) *Halodule pinifolia* (i) *Avicennia alba* (j) *Sonneratia alba*

Diversity, coverage, distribution of seagrass and macroalgae

Seagrass monitoring and transplanting AKU4601 & BGY4406

Transect A

Transect C

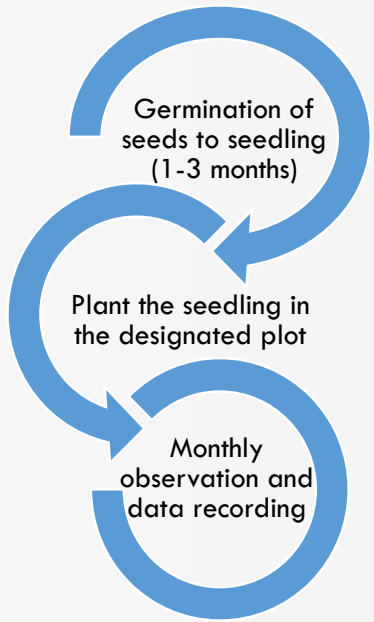


Transect A

Seagrass cover 23.7%
B-B scale: 2

Transect B

Seagrass cover 61.3%
B-B scale: 4



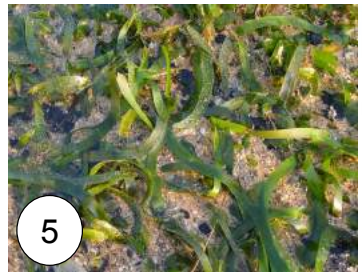
Transplanting activities

Learning marine plants (seagrass and seaweed, 2 groups of student (AKU4601 & BGY4406 and international students mobility programme)

AKU4601 & BGY4406: Seagrass Transplanting Activities at Merambong B with **ForestCity group**

Transplanting activities with local and international students using *Enhalus acoroides*, *Halophila spinulosa*, *H. ovalis* and *H. major* in Merambong A and B shoals

Impact of Transplanting Activities



20 AHAD 3 JUN 2018 • SINAR HARIAN

SENTRAL

Beting Merambong ke saiz asal

Perubahan positif rumput laut hasil program kolaborasi CGPV, UPM

MOHD FIRDAUS YON

ISKANDAR PUTERI

Beting Merambong yang rosak akibat reklamasi sekitar tahun 2014, kini ke arah untuk kembali ke saiz asalnya iaitu 26.3 hektar.

Semua ini terjadi kerana program pemulihan dijalankan oleh Country Garden Pacificview Sdn Bhd (CGPV) dengan kerjasama dan kepakaran dari Universiti Putra Malaysia (UPM).

Perjanjian selama tempoh lima tahun ditandatangani antara CGPV dan UPM sejak 1 Mac 2015 itu sedang membuahkan hasil.

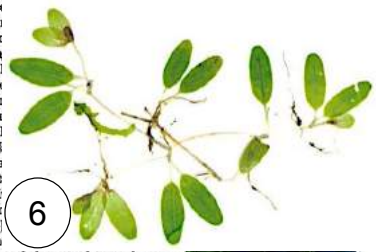
Malah perjanjian itu menzahirkan kolaborasi antara dua pihak untuk memelihara dan memulihara rumput laut dengan pemantauan ke atas pelbagai spesies dan penyesuaian terhadap tekanan.

Kolaborasi tersebut melibatkan inisiatif seperti pemindahan anak benih serta menambah rumput laut yang mengalami penyusutan.

Dalam aktiviti pemindahan baru-baru ini, kumpulan warga kerja CGPV dan saintis dari UPM meneroka sebuah kawasan yang menjadi 'rumah' sejumlah besar spesies marin dan rumput laut.

Aktiviti itu merupakan sebahagian daripada program pemulihan untuk pemindahan beberapa spesies rumput laut ke Beting Merambong.

Sejumlah 12 spesies rumput laut iaitu Halophila spinulosa, Halodulepinifolia, H ovalis, H uninervis, Thalassiahemprichii, Halophila decipiens, H beccarii, H major, Cymo-



percambahan untuk tempoh satu ke tiga bulan di makmal sebelum benih rumput laut itu ditanam.

"Pasukan tersebut akan memantau benih berkenaan secara bulanan. Anak benih yang kita telah tranplantasi pada 2016 kini sedang membesar dengan baik.

"Kawasan padang rumput laut ini perlu dilindungi kerana ia menyokong persekitaran sihat pesisiran dan sangat penting dalam mengekalkan aktiviti rekreasi dan perikanan komersil," katanya.

Beliau berkata, berdasarkan kajian dijalankan pada tahun lalu, sejak Mei 2017, rumput laut spesis Halophila dan Halodule ditemui sebagai rumput laut yang cepat membesar dan kemudiannya menguasai kawasan koreng lain.

"Ekosistem rumput laut menyediakan pelbagai manfaat kepada nelayan tempatan selain menyumbang kepada rawatan sisa dan penapisan air," katanya.

Menurutnya, majlis untuk meraikan kejayaan kolaborasi tersebut selama tiga tahun di Galeri Jualan CGPV diadakan pada 23 April lalu dan UPM memuji sikap dedikasi Forest City terhadap usaha kerjasama dan menyampaikan cijil pengiktirafan kepada CGPV.

Pengarah Strategi CGPV, Ng Zhu Hann berkata, CGPV melihat isu alam sekitar sebagai perkara yang serius terutamanya apabila berlaku

Aini (tiga, kiri) menerima cenderahati daripada Ng (empat dari kiri) sambil diperhatikan Aziz (kiri), Borina (kanan) dan Mohammad Ezanni (lima dari kiri) di majlis gabungan kerjasama konservasi dan rehabilitasi ekonomi rumput laut Tanjung Kupang.

Kajian dan penyelidikan yang dijalankan menunjukkan bahawa kualiti air adalah baik dan ada pelbagai kehidupan marin.
- Mohammad Ezanni

di kawasan sendiri.

"Kesedaran terhadap alam sekitar adalah salah satu fokus utama program tanggungjawab sosial korporat CGPV. Kolaborasi ini hadir dengan geran penyelidikan berjumlah RM2.5 juta diberikan kepada UPM.

"CGPV berminat untuk bekerja bersama UPM pada masa akan datang dengan kolaborasi dalam pelbagai aspek," katanya.

Kumpulan pakar dimanfaatkan

Bagi Naib Canselor UPM, Prof Datin Paduka Dr Aini Ideris be- dengan menjadikan CGPV sebagai rakan industri rapat universiti pelbagaian penggayaan teknik didikan dan pengalaman belajaran menerusi penyelidikan dapat diwujudkan menerusi kolaborasi tersebut.

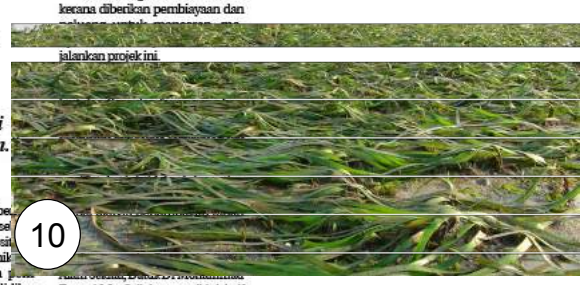
"Kami boleh memanfaatkan kumpulan pakar dalam pelbagai bidang sains dan teknologi, persekitaran dan sosioekonomi untuk membentuk pasukan sinergi yang kuat.

"Penemuan penyelidikan setakat ini, telah membolehkan CGPV mendapatkan maklumat berharga mengenai pemeliharaan dan pemuliharaan flora dan fauna rumput laut di Beting Merambong.

"Ia sekali gus melengkapkan inisiatif perlindungan alam sekitar di dalam berlakunya aktiviti pembangunan yang berterusan," katanya.

Menurutnya, penemuan daripada penyelidikan dilakukan telah memperoleh hasil dapatan yang boleh mengurangkan tanggapan negatif umum terhadap keadaan rumput laut dalam pembangunan sistematik di kawasan pesisiran pantai.

"Kami sangat berterima kasih kerana diberikan pembiayaan dan jalankan projek ini.



Ezanni Mat Salleh yang diambil dan sebagai kolaborasi ini.

"Kajian dan pe dijalankan menun kualiti air adalah b bagai kehidupan m

"Ia termasuk k bermaksud perse mempunyai ekosis sihat," katanya.

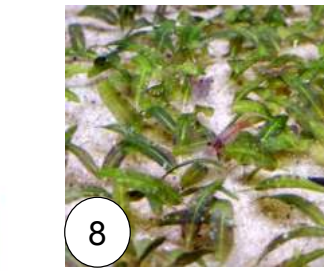
Mohammad E nyatakan harapan s yang terjalin itu jug jangka masa panj bolehkan UPM me memantau persekit nyeluruh.

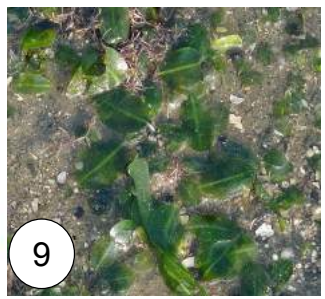
Turut terlibat da an tersebut adalah k NGO yang menda OGPV sejak tahun 2

Mereka juga teri jalankan kajian, me lumat dan mendo penemuan bersama jud kolaborasi tersebut.

Kumpulan kakitangan CGPV dan penyelidik dan saintis UPM ketika melawat Beting Merambong baru-baru ini.

Japar Sidik menunjukkan salah satu spesies rumput laut yang ditemui di Beting Merambong dalam lawatan ke tapak itu.





1-Halophila spinulosa, 2-H. ovalis, 3-Halodule pinifolia, 4-H. uninervis, 5-Thalassia hemprichii, 6-Halophila decipiens, 7-Cymodocea serrulata, 8-Halophila beccarii, 9-H. major, 10-Enhalus acoroides

Impact of Learning Experience in Natural Ecosystem

01 Acquisition of new knowledge on marine ecosystem (e.g. multi species seagrass ecosystem).

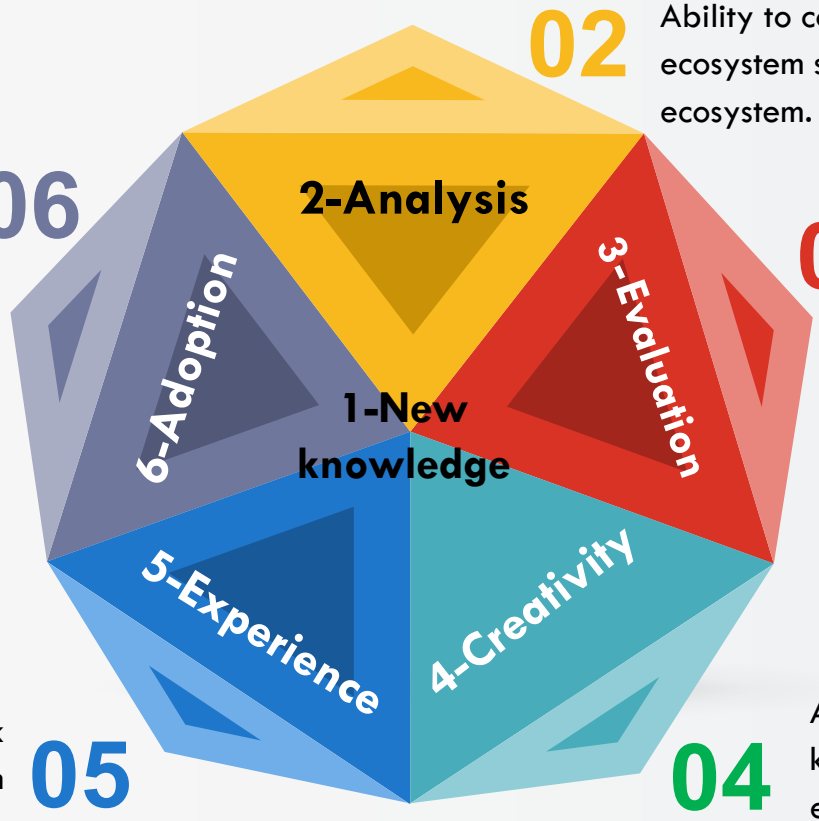
02 Ability to compare the previously ecosystem studied with the new ecosystem.

03 Evaluate the significant of seagrass ecosystem (flora and fauna- dugong and turtle).

04 Application of the acquired knowledge for seagrass ecosystem and environment awareness and conservation.

05 Gain valuable teamwork experience in multidiscipline courses.

06 Development of seagrass transplanting methods, hands on practical skills, experiential and lifelong learning, application for future use (SDG 4, environment and conservation).



Conclusion

- Method to teach interdisciplinary courses or activities differ significantly from traditional lectures. Emphases are more on the group or team skills, communication skills, problem solving, i.e., how students from two different disciplines and faculties function as one team.
- Active student engagement with interdisciplinary subjects is much more significant than traditional based approach. Students respond well to this approach.
- Students acquired relevant and essential facts, new knowledge and practices outside their major disciplines.

Future Directions

- To develop further the interdisciplinary approach to be applied to other disciplines.
- Interdisciplinary activities can be implemented to diverse populations, such as second-year students, honor students, adult learners or mobility students.
- Extend active engagement with related industries and agencies to share knowledge to benefit all parties involved.

Collaborative Assignments and Projects

From Farm to Table

Mai Shihah Abdullah[1, 2*]

[1]Department of Biology,
Faculty of Science and Mathematics

[2]Department of Agricultural Science,
Faculty of Technical and Vocational,

Universiti Pendidikan Sultan Idris,
35900 Tanjong Malim, Perak

*Corresponding author: mai.shihah@fsmt.upsi.edu.my

Project **From Farm to Table** is carried out by Bachelor of Education (Agricultural Science) students at Universiti Pendidikan Sultan Idris enrolled for VAE3012 Supervision Occupational Experience Programme course. Over a duration of one semester, the project consisted of agricultural production enterprises to ensure that what are taught in the lecture rooms (managing live stock, crop, aquaculture, horticulture and landscape, farm mechanization, pest control, soil science, agribotany, agriculture business and post harvest technology) are be tied to their occupational real problems.

To ensure these are to be experienced by students, the project is conducted in the right setting, reinforced, supervised and organized in a sequential manner.

Prior to this, each group is to present a company business plan, report writing and the project concludes with a presentation together with crops and livestock exhibits.

This course exposes students to real-life job experience in the agricultural sector. They are fully involved in planning and managing a viable enterprise under the supervision of a lecturer.

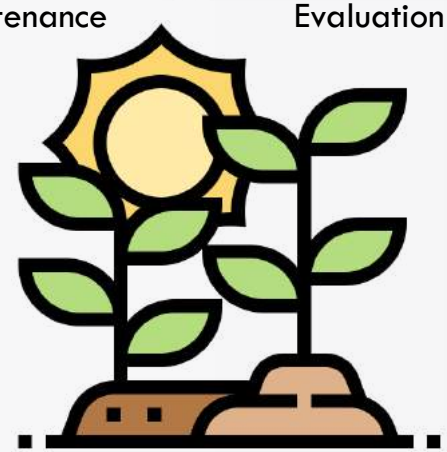
Mapping of LOs, Delivery and Assessment

Learning Outcomes	Delivery	Assessment	Student Learning Time
Generate ideas to start a type of agro-based business. (C5)	Business plan presentation	15%	18 hours
Organize and implement a business. (A4)	Business implementation	60%	72 hours
Create viable products in the agriculture sector. (P7)	Product presentation and exhibition	5%	6 hours
Build entrepreneurial characteristics, leadership properties and work ethics workers in a field of agricultural work. (CT5, KK4, EM3, LL3).	Report writing	20%	24 hours
		100%	**120 hours**

Site preparation

Crop maintenance

Evaluation session



From Farm to Table

Company Profile, Business Plan, Budget and Consultant Appointment	
Presentation	Approval
Business execution with close monitoring by the project consultant	
Business Progress	Check and Balance
Business and Product Evaluation	
Presentation	Exhibition

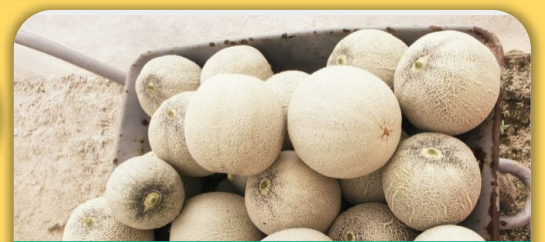
From Farm to Table Activities

Crop pollination

Crop maintenance

Crop harvesting

Marketing the harvest



Harvested rock melon

From farm to table

Mentoring hanging fertigation technique to Sekolah Rendah Behrang 2020, Tanjong Malim

School children and the hands-on activities

Future agriculturist

Hanging fertigation

Multiplying effects of the knowledge transfer programme: Lecturer to students to farmers

Impact to Communities

Hanging fertigation in the open system dual income to the farmers

- Increased plant crops yield and
- Trigona honey

Impact of Project
From Farm to Table

Students:

Issues and potentials of hanging fertigation system are undertaken and extended as final year projects.

Mentors to several schools in Muallim Districts carrying out the similar system.

Academicians:

Extended into Knowledge Transfer Programme for community in Bagan Datoh Perak.

Awarded a university grant.

Journal article publication.

Knowledge Transfer Programme site

Split over impact of Knowledge Transfer Programme: AgroTourism

Conclusion

To conclude, collaborative assignment and project element is a good practice as an eye-opener for students' to real-life experience.

Future Directions

- Internship to enable collaborative partnerships with various agricultural agencies.
- The students are to serve the community and partial evaluated by the community.

Success story of Knowledge Transfer Programme

Knowledge Transfer Programme evaluation

Collaborative Assignments and Projects

Agro-Entrepreneurship Project CET2305

Wan Asrina Wan Yahaya*

Department of Crop Science,
Faculty of Agriculture Science and Forestry,
Universiti Putra Malaysia Bintulu Sarawak Campus,
Bintulu, Sarawak

*Corresponding author: asrina@upm.edu.my

Overview

CET2305 is a compulsory course for final year students who enrolled for Diploma in Agriculture (DPT) and Diploma of Food Estate Management (DPPM) under Department of Crop Science. The course is offered in 3rd Semester and 4th semester for DPPM and DPT students.

Objectives:

- Put into practice all the knowledges and skills learned to produce high qualities agri-produce.
- Provide comprehensive learning platform for students to run a joint-venture agribusiness.
- To produce agro-entrepreneurship graduates that create job to other and enhance national's food security.

Description

A group of students (10-11 persons) were conducted an agribusiness project which involves the production of vegetables and chicken/quail self-fund raising (around RM400 – RM500/student). The collected fund was used to buy the agricultural materials (e.g., seedling, feedstocks, fertilizers, pesticides, etc.) and rental/services charged owned by Taman Pertanian Universiti (TPU), e.g., chicken coops and rotavator. A student with a financial problem can borrow the fund from KESPER (an agricultural student club) and charged a 2% interest. Each group must prepare a farm's schedule and business strategies to ensure the agriculture project is working successfully.

Learning Outcomes:

- ❖ Plan and evaluate the viability of agribusiness project (C5, TS)
- ❖ Diversify agribusiness projects and execute them according to plan (P6, KK)
- ❖ Organize and manage agribusiness project successfully (A4, LS)

Duration: 80 hours of SLT or 1 semester

- ✓ The credit hours for Agro-entrepreneurship Project is 2(0+2) with 14 weeks of independent project.
- ✓ 6 hours per week which 3 hours at field crop and 3 hours at chicken coop

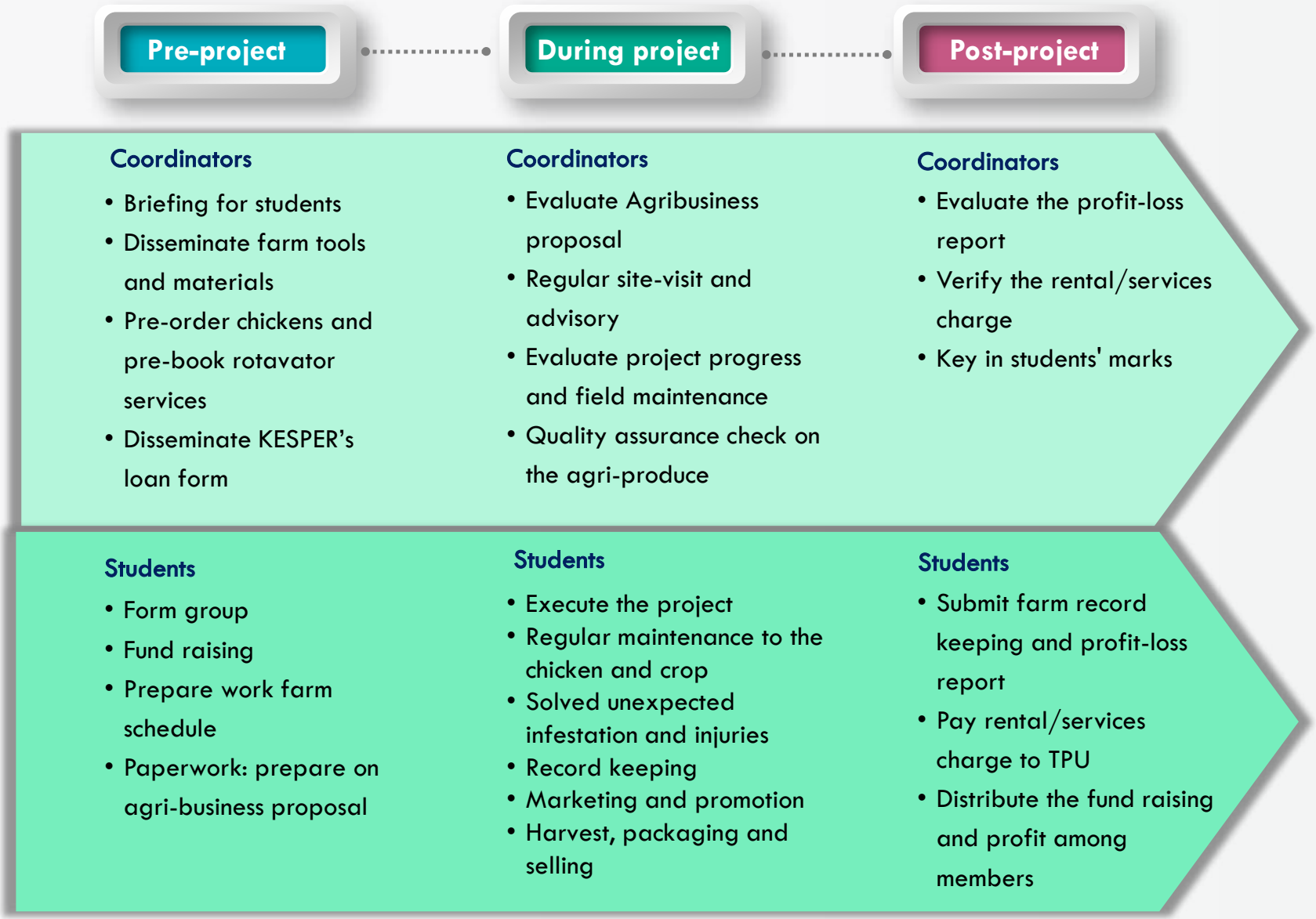
Mapping of LOs, Delivery and Assessment

CLOs	Delivery	Assessment	SLT
CLO1 Plan and evaluate the viability of agri-business project (C5, TS)	- Notes - Briefing	• Quiz • Project • Report • Presentation	14
CLO2 Diversify agribusiness projects and execute them according to plan (P6, KK)	- Notes - Briefing	• Project • Presentation • Report	50
CLO3 Organize and manage agribusiness project successfully (A4, LS)	- Briefing	• Project (periodical field assessments)	16
		Total	**80**

Mapping of POs, Delivery and Assessment

Programme Outcomes (PO)	Assessment Category and Percentage				TOTAL (%)
	Quiz	Report (Business Proposal & Profit-Loss Report)	Project	Presentation	
PO1- Knowledge	10	10	5	5	30
PO2 - Psychomotor skills	0	0	15	0	15
PO5 - Interpersonal Skills	0	0	15	5	20
PO8 - Personal and Entrepreneurship Skills	0	10	10	10	30
PO9 - Leadership, Autonomy and Responsibility	0	0	5	0	5
TOTAL (%)	**10**	**20**	**50**	**20**	**100**

Implementation of Agro-entrepreneurship Project



Evidence of the Project Delivery

CET2305 PROJEK KEUSAHAWANTANI
SEMESTER II 2018/2019
DIPLOMA PERTANIAN

ASSIGNMENT 1 AGRIBUSINESS PROPOSAL

BACKGROUND: After 8 months upon graduation day, your friends and you have agreed to start an agribusiness in vegetable and livestock production. All of you are agriculture graduates and agreed to become a share-partner with an equal share on initial capital and profit gains. Now, your company wants to move forward by expanding the business. **INSTRUCTION:** prepare a comprehensive agribusiness proposal (report and PowerPoint presentation) that will be submitted to the ***KOPERASI KESPER UPMKB*** in order to obtain a financial support amounting RM5,000.00. The proposal must include:

1. **Company Background:** company's name and registration number, information about all share partners (CV, their role in the business, initial capital), company's mission and vision, organization chart, company's address, type of company business, existing facilities, information on farm area and size, information of bank used in the business.

2. **Market Survey For The Local Area:** on the existing agribusiness and competitors, statistic on the market size (population), statistic on the demand and supply, price of agricultural products for the last five years (i.e. price fluctuation), market dynamic, marketing strategy (i.e. print media and electronic), SWAT analysis of company's agribusiness, risk analysis and company strategies to overcome the problems arise during the production process (i.e. pests and diseases infection, flash flood, death, livestock mortality, and crop damage).

3. **Agribusiness Information;** type of agricultural activities (crop/livestock production) explanation on the technology/system used in the production (please provide advantages/disadvantages in respective of production efficiency and financial), production Gantt chart, economic injuries for each agriculture production.

4. **Financial Statement;** prediction on profit/loss for this agribusiness based on farm area, fixed existing owned assets, charges on the rental facilities, return on investment (ROI) and challenges.

5. **Conclusions/Suggestions.**

Instructions on agribusiness proposal report

CET2305 PROJEK KEUSAHAWANTANI
SEMESTER II 2018/2019
DIPLOMA PERTANIAN

ASSIGNMENT 3: AGRIBUSINESS PROFIT/LOSS REPORT

BACKGROUND: BACKGROUND: Prepare a comprehensive agribusiness profit/loss report for all three activities i.e. vegetable, poultry, and 'Hari Jualan Usahawantani'. The report must consist the following items:

1. Executive summary	Summarize the main points of the report, such as the report topic, the data obtained, the data analysis methods, and recommendations based on the data. The summary could be as short as a paragraph or as long as four pages, depending on the length of the full report. While the executive summary comes first in a report, it is written after the main part of the report has been written. (1 – 2 pages only). This must include a brief explanation on company background and shareholders.
2. Introduction	The introduction sets the stage for what is included in the report. It highlights the major topics that are covered and provides background information on why the data in the report was collected
3. Financial and Business a) Financial	Reports include cash flow statements, balance sheets, or the annual financial report required for publicly traded corporations, so stockholders can see how the company is fairing financially.
b) Business management	Reports include reports about labor expenses, or customer satisfaction survey responses.
c) Situational reports	Explanation on business situation, including what it was, how it was handled, and how it impacted the business.
4. Recommendation	Explains the strategies you suggest to deal with the conclusion from your findings, or to solve the original problem. Indicate the benefits of each solution, e.g. return on investment or increase in sales. Recommendations are not your personal opinion. Findings, research and your data are the reasons (or evidence) behind your recommendations
5. Conclusion	
6. Appendix	

DATELINE: 6 MAC 2019

Instructions on profit-loss report

Students Presentation on Agribusiness Proposal

MARKET ANALYSIS

Market size

- The number of individuals in a certain market who are potential buyers of our product or service.
- Our company will do the market target in certain area before launching our products such as in Restaurant in Kampung Medan Jaya.
- With this market size, our company can take the opportunity to sell our products to the community.

Competitors

- Our company have the competitors in Teluk Panglima Garang area and mostly are big company.
- Based on our observation, there are several of companies that be our competitors which are:

1. Ayam king Banting Selangor (pembekal ayam segar)
2. Ayam Kampung - lorong pipit, 42500 Telok Panglima Garang, Selangor
3. Gerai Sayur Segar Dari Ladang banting selangor.

Marketing Strategy

- Marketing strategy is very important to attract the people to buy our products.
- Our Company do the promotion via a facebook page's, Whatsapp and printing.

5

Business Proposal: Market Analysis to estimate demand and supply

MARKETING STRATEGY

facebook pages

- Promotes through page company Chucks Chicken Enterprise
- Upload pictures and sales of chicken and vegetable on Facebook page Company.

- Spread information on Chuck Chicken Company's chicken and vegetable sales to all whatsApp contacts.
- Confirm the number and time of chicken intake with the customer before the slaughter is done.

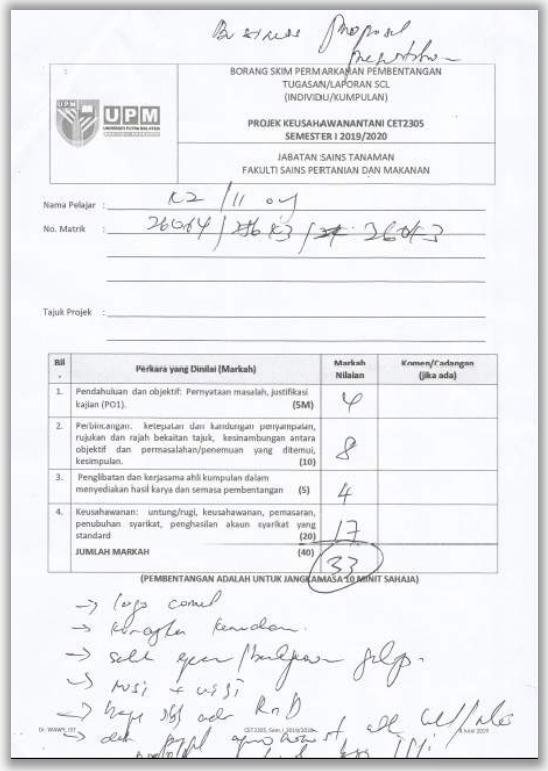
- Promote advertising through Banting area such as Taman Medan Indah, Kampung Medan Jaya, Taman Saga and Taman Desawira.
- Our method of advertising is by printing ads and pasting on the walls and spread directly to the public.

9

Business proposal: Marketing Strategy was planned three weeks in advanced

Business proposal: SWOT Analysis to enhance business operation and profit

Executive summary about the project includes company's mission and vision



BORANG SKIM PERMARKAHAN PEMBENTANGAN TUGASAN/LAPORAN SCL (INDIVIDU/KUMPULAN)

PROJEK KEUSAHAWANANTANI CET2305
SEMESTER I 2019/2020

JABATAN SAINS TANAMAN
FAKULTI SAINS PERTANIAN DAN MAKANAN

Nama Pelajar :

No. Matrik :

Tajuk Projek :

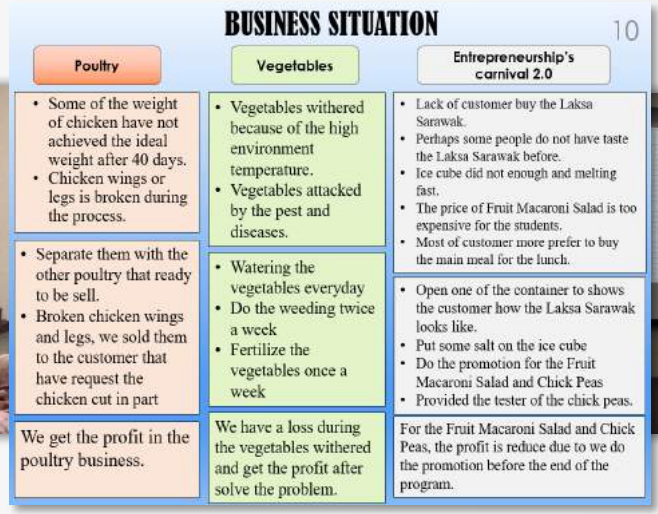
Bil.	Perkara yang Dinilai (Markah)	Markah Nilaian	Komen/Cadangan (jika ada)
1.	Pendahuluan dan objektif: Pernyataan masalah, justifikasi kajian (PO1). (5M)	4	
2.	Perbincangan: ketepatan dan kandungan penyampaian, rujukan dan rajah bekaitan tajuk, kesinambungan antara objektif dan permasalahan/penemuan yang ditemui, kesimpulan. (10)	8	
3.	Penglibatan dan kerjasama ahli kumpulan dalam menyediakan hasil karya dan semasa pembentangan (5)	4	
4.	Keusahawanan: untung/rugi, keusahawanan, pemasaran, penubuhan syarikat, penghasilan akaun syarikat yang standard (20)	17	
	JUMLAH MARKAH (40)	33	

(PEMBENTANGAN ADALAH UNTUK JANGKAMASA 10 MINIT SAHAJA)

Presentation evaluation form on Business Proposal and Profit-loss

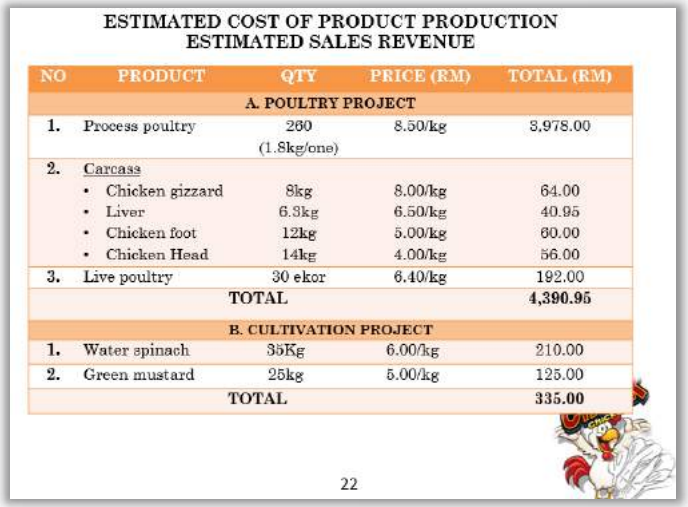
Students Presentation on Profit-Loss

Introduction on group members



Slide on business situational incidents occurred during production and processing

Discussion on net profit-loss gained from poultry and crop production



ESTIMATED COST OF PRODUCT PRODUCTION
ESTIMATED SALES REVENUE

NO	PRODUCT	QTY	PRICE (RM)	TOTAL (RM)
	A. POULTRY PROJECT			
1.	Process poultry	260 (1.8kg/one)	8.50/kg	3,978.00
2.	Carcass			
	• Chicken gizzard	8kg	8.00/kg	64.00
	• Liver	6.3kg	6.50/kg	40.95
	• Chicken foot	12kg	5.00/kg	60.00
	• Chicken Head	14kg	4.00/kg	56.00
3.	Live poultry	30 ekor	6.40/kg	192.00
	TOTAL			4,390.95
	B. CULTIVATION PROJECT			
1.	Water spinach	35Kg	6.00/kg	210.00
2.	Green mustard	25kg	5.00/kg	125.00
	TOTAL			335.00

22

Breakdown on sale and profit ained from each agriculture produce

Questions and answering session on profit-loss attained by group seven

Poultry Farm Management and Processing

a) Arrival of chicken feeds and storage management

b) Chicken was weighed weekly to calculate FCR (Food Conversion Ratio)

c) Defeathering processed on chicken

d) Organs removal, cleaning and chopping process

e) Ready processed chicken for storage, deliveries and customers pick-up.

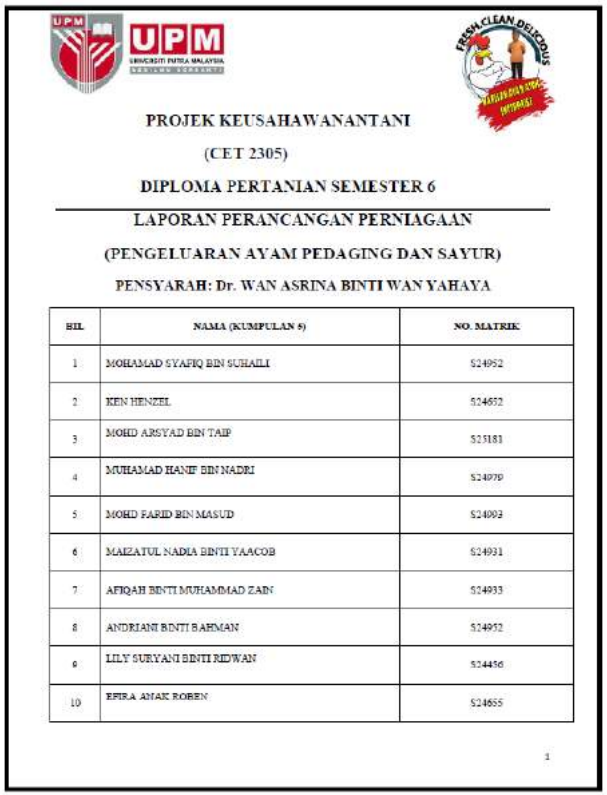
Crop Management and Harvesting Activities

Raised bed ready for transplanting and sowing

Raised bed management after a week sowing

Harvested vegetables ready for post-harvest activities

Submitted Report of Agribusiness Proposal and Profit-Loss



PROJEK KEUSAHAWANANTANI

(CET 2305)

DIPLOMA PERTANIAN SEMESTER 6

LAPORAN PERANCANGAN PERNIAGAAN

(PENGELUARAN AYAM PEDAGING DAN SAYUR)

PENSYARAH: Dr. WAN ASRINA BINTI WAN YAHAYA

BIL	NAMA (KUMPULAN 6)	NO. MATRIK
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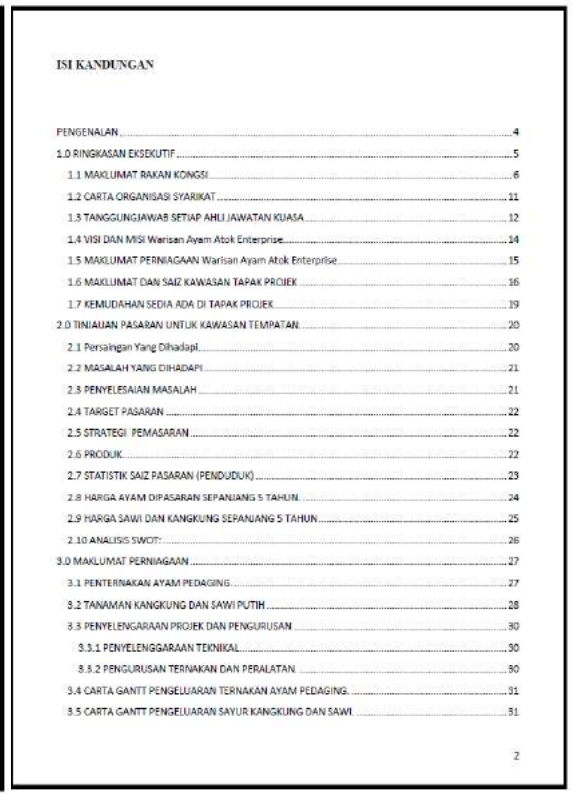
2	KEN HENZEL	524652
3	MOHD ARSYAD BIN TAIP	525181
4	MUHAMAD HANIF BIN NADRI	524979
5	MOHD FARID BIN MASUD	524993
6	MAIZATUL NADIA BINTI YAACOB	524931
7	AFIQAH BINTI MUHAMMAD ZAIN	524933
8	ANDRIANI BINTI BAHMAN	524952
9	LILY SURYANI BINTI RIDWAN	524456
10	EFIRA ANAK ROBEN	524655

1

Front cover of agribusiness proposal



ISI KANDUNGAN

2

Table of content of agribusiness proposal

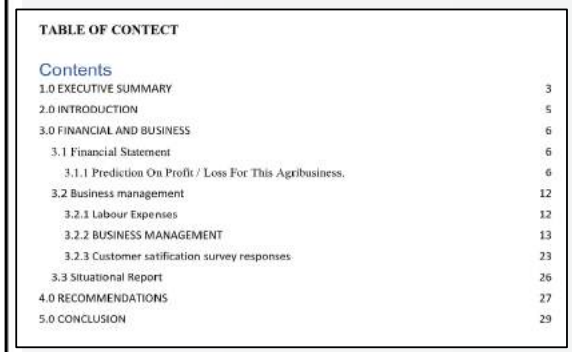


TABLE OF CONTECT

Contents

Table of content of profit-loss report

Evidence of the Project Delivery: Project Assessment Components

CET2305 PROJEK KEUSAHAWANTANI
DIPLOMA PERTANIAN
SEMESTER II 2018/2019

Tarikh: 2 Jan. 2019
Activities: Chicken and Quail Production

Group	Contributions	Problem-solving	Attitude	Focus on the task	Working with others	Time management	Farm cleaning & environment	Awareness toward chicken welfare	Record Keeping Management	Entrepreneurship Behaviour
1										
2										
3										
4										
5										

Rubric on chicken and quail assessment conducted weekly at student's farm

CET2305 PROJEK KEUSAHAWANTANI
DIPLOMA PERTANIAN
SEMESTER II 2018/2019

Tarikh: 2 Jan. 2019
Activities: Corn Production

Group	Contributions	Problem-solving	Attitude	Raised-bed productivity	Farm cleaning & environment	Harvest and Postharvest	Focus on the task	Working with others	Record Keeping Management	Entrepreneurship Behaviour
1										
2										
3										
4										
5										

Rubric on crop assessment conducted periodically at student's farm

Agribusiness Project Innovation

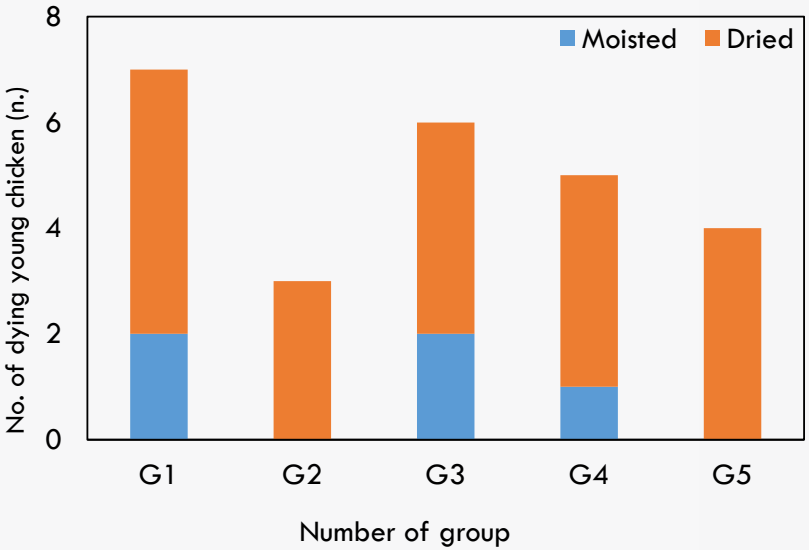
WAY TO REDUCE YOUNG CHICKEN DYING

Dried feed was moistened before given to young chicken to help eating and reduce choking and dying problem, and provide water at the same time. Post-mortem on died chicks found accumulation feed in throat.

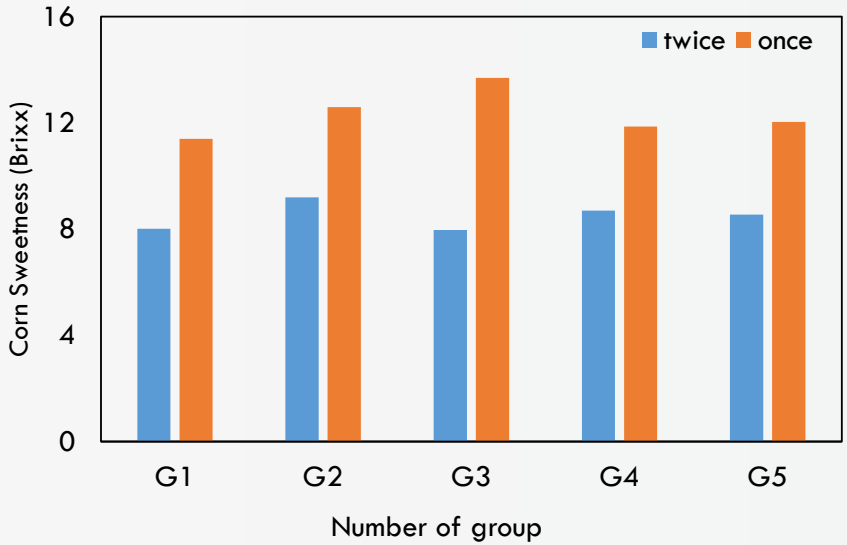
HOW TO INCREASE CORN SWEETNESS?

A week before corn harvesting, watering frequencies was reduced and done at morning time only from twice/day to once/day with aim to increase corn sweetness.

a) Number of dying young chicken across group fed with different feed type



b) Corn sweetness between across group at different watering frequencies



Student Feedback on Agro-Entrepreneurship Project

Diploma in Agriculture students Sem 02 2018/2019 at UPMKB farm

01

Excited of getting small income from this agro-project.

02

Gained more knowledge and experience after running a mini joint-venture agribusiness.

03

Blow our mind about the ideas and the reality in agriculture business.

04

Developed an effective communication and negotiation skills in business among customers.

05

Developed our teamwork skills when doing the task given and cooperation is important as a great team comes from great individuals.

Impact on Academic

Faculty

Income generation to the university through rental and service charges.

Bintulu communities are keen and eager to buy fresh agriculture produce from UPMKB.

Student

Increasing self-confident to start-up an agro-business after graduation.

Conclusion

- ☑ The Agri-Business Project can inculcate the business mindset among UPM graduates thus producing graduates entrepreneur.
- ☑ The Agri-Business project offers for Diploma in Agriculture and Diploma of Food Estate Management can be a role model programme to other related courses in UPM that have nature of product development and/or service providing to encourage the student transforming the knowledges and skills into business opportunity.

Future Directions

- ☑ Organize a biannual "Agri-Business Day" that gather all fresh produce from agro-business project offer in Diploma in Agriculture, Diploma of Food Estate Management, Diploma in Fishery, Diploma in Agribusiness, and sell to Bintulu community.
- ☑ Organize "pick and pay day" on crops to primary and secondary students where the students can have the harvesting experience.

Conclusion

Amira Sariyati Firdaus[1,2*], Muta Harah Zakaria[3,4], Mai Shihah Abdullah[5], *Najah Nadiah Amran*[6], *Siti Salhah Othman*[7,8] & Gan Leong Ming[9]

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Individual lecturers and teachers play a very important role in designing and implementing HIEPs within their own individual courses. However, for education to be truly impactful, higher learning institutions must foster and nurture a sustainable and far-reaching HIEPs culture within an integrated HIEPs ecosystem.

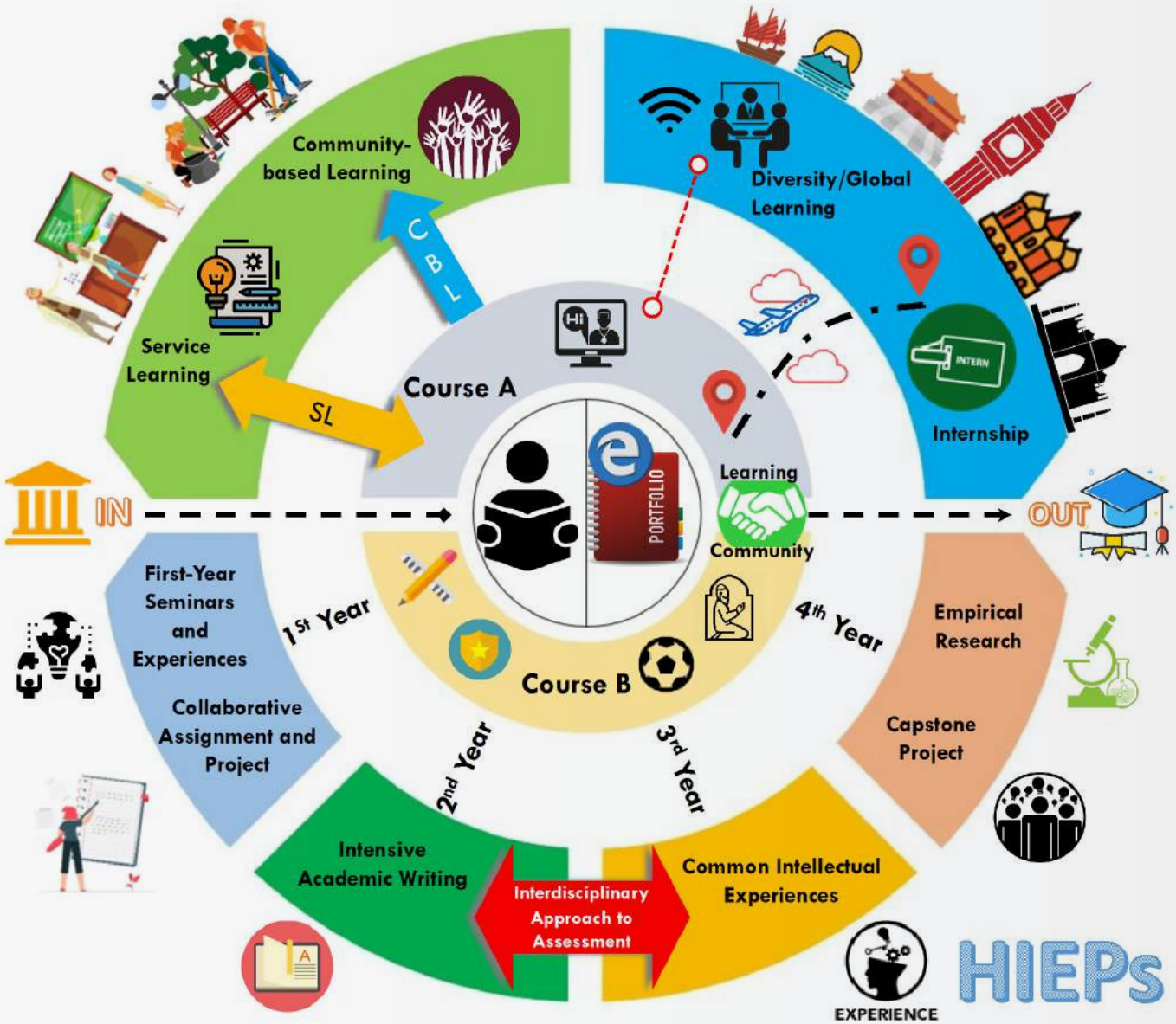
As illustrated by case study examples in earlier chapters, individual courses can both make use of existing external relationships within this ecosystem, as well as create new local and global connections, that extends learning beyond the classroom. Community-based Learning, Service Learning, Diversity/Global Learning and Internship can all be embedded within a single course, integrated into several courses within a curriculum, or even offered to students across different academic programmes to encourage interdisciplinary and transdisciplinary peer learning.

A HIEPs-based curricular ecosystem can begin with First-Year Seminars and Experiences, and Collaborative Assignments and Projects to foster self-reflection, critical thinking as well as teamwork skills. These foundational skills can help to scaffold learning in the subsequent years where Intensive Academic Writing and Common Intellectual Experiences can be introduced and an Interdisciplinary Approach to Assessment can be applied.

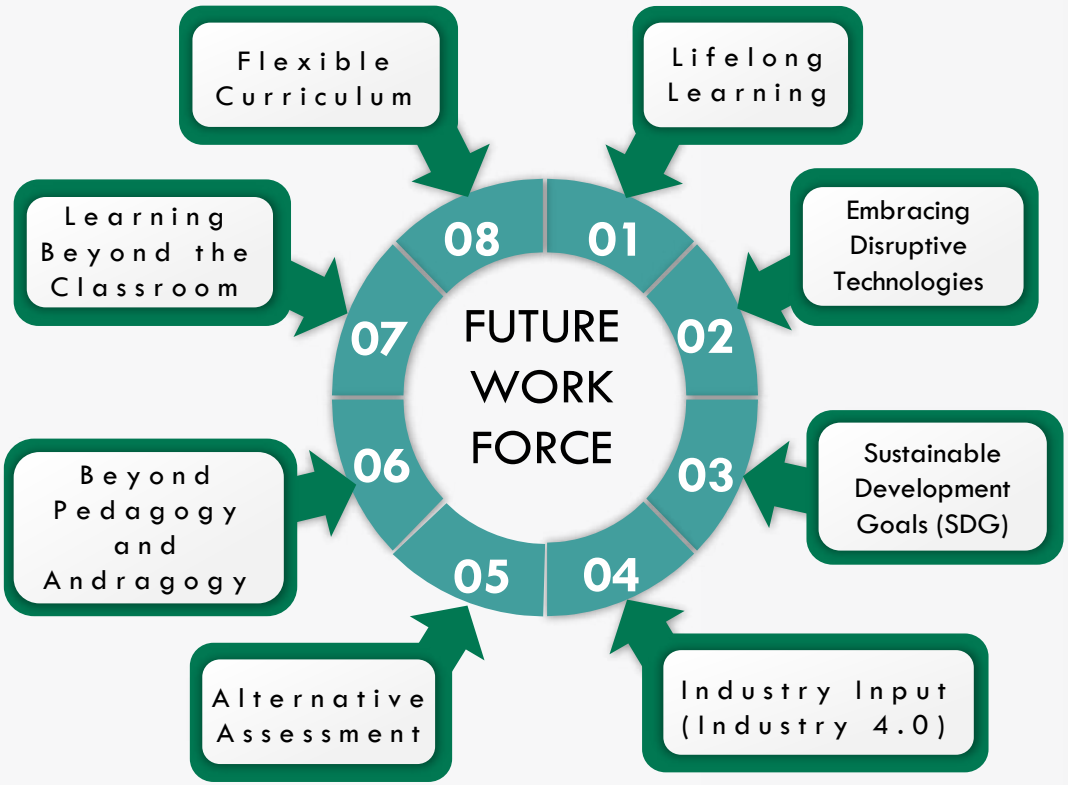
Synthesizing knowledge and skills learnt in first and middle years of study, final year Capstone Projects and Empirical Research can be designed to draw out students' self-directed learning competencies. These competencies can be displayed prominently through Internships and ePortfolio.

HIEPs Ecosystem

Interconnected infrastructure, integrated flexible curricula and interactive engagement with community and industry stakeholders are vital elements of the HIEPs ecosystem. A HIEPs ecosystem inspires, scaffolds, and expands student learning through learning spaces, networked digital technologies, experiential learning opportunities and global mobility.



One of the primary objectives of the book has been to provide readers with ideas for designing engaging and impactful learning experiences for your own students. The 13 High-Impact Educational Practices (HIEPs) and 27 case study examples will hopefully inspire HIEPs across many more courses and academic programmes, some which are already implementing HIEPs even before the publication of this book. However, the penultimate aims of the book extends far beyond programme of study and reach into the future work force.



Thoughtful design and mindful implementation of HIEPs may be key to preparing current and future generations for their roles and responsibilities in humanity's effort to achieve Sustainable Development Goals (SDGs).

In educating the future workforce, our roles and responsibilities include seeking industry input, and where applicable, using this input to prepare our students for Industry 4.0. HIEPs offers us impactful pedagogical and andragogical alternatives assessments, pedagogy and andragogy to create flexible curricula and bring learning beyond the classroom.

HIEPs prepare our students to embrace the realities of the future of work in the 21st century. Future-oriented HIEPs will foster within our students the spirit of lifelong learning and the willingness to embrace (and perhaps invent) disruptive technologies. Thoughtful design and mindful implementation of HIEPs may be key to preparing current and future generations for their roles and responsibilities in humanity's effort to achieve Sustainable Development Goals (SDGs).

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