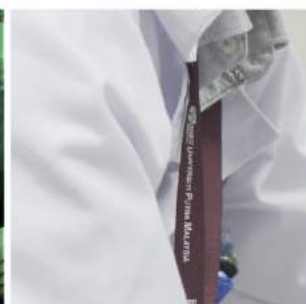HIGH-IMPACT EDUCATIONAL PRACTICES
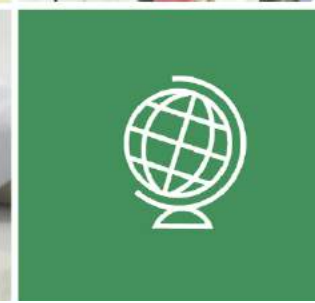
HIEPs

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)
Empirical Research/Undergraduate Research (ER)
Interdisciplinary Approach to Assessment (ID)
Internship (IN)
Capstone Project (CAP)
ePortfolio
Common Interllectual Experiences (CIE)

Volume 2

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 2

Editors

Muta Harah Zakaria, Amira Sariyati Firdaus, Mai Shihah Abdullah, Najah Nadiah Amran, Siti Salhah Othman, Wan Zuhainis Saad & Mohd Hafiz Abu Hassan

Ministry of Higher Education (MoHE)
2020

The HIEPs implementation is showcased in two volumes. Volume 1 focuses on involvement of students and their engagement with the communities.
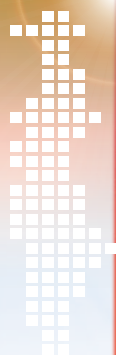
Volume 2 focuses on the teaching and learning involving interdisciplinary approaches recommended for the later years upon graduation.

Contents

Contents

Abbreviation

A Affective
AAC&U Association of American Colleges & Universities
AAS Atomic Absorption Spectrometer
AD The Engineer and Society
ADeC Academic Enhancement and Leadership Development Centre
AMU Asia Metropolitan University
AR Augmented Reality
BVC Bachelor of Design in Visual Communication & New Media with Honours
2B Buddy not Bully
C Cognitive
CAD Computer-aided Design
CADe Centre for Academic Development
CAP Capstone Projects
CAS Collaborative Assignments and Projects
CBL Community-based Learning
CDeC Creative Design Centre
CDIO Conceive, Design, Implement and Operate
CIE Common Intellectual Experience
CLO Course Learning Outcomes
CoMAE-i Centre for Management of Academic Excellence and Innovation
CREST Collaborative Research in Engineering, Science and Technology
CS Communication Skill
CSR Corporate Social Responsibility
CTPS Critical Thinking and Problem Solving Skill
CV Curriculum Vitae
7C Conceptualize, Create, Communicate, Collaborate, Consider, Combine, Consolidate
DGL Diversity/Global Learning
DOA Department of Agriculture
EAC Engineering Accreditation Council
EM Entrepreneurial and Managerial Skill
EMAS Electronic Meliponini Advanced System
ES Entrepreneurial Skill

ER Empirical Research/Undergraduate Research
F Final Examination
FP *Fakulti Pendidikan*
FST *Fakulti Sains dan Teknologi*
FYS First-Year Seminars and Experiences
GCE Ethics
GCS Environment and Sustainability
GPS Global Positioning System
HIEPs High-Impact Educational Practices
HLI Higher Learning Institution
H5P HTML5 Package
IAP Industry Advisor Panel
IAW Intensive Academic Writing
iCGPA Integrated Cumulative Grade Point Average
ICT Information and Communications Technology
ID Interdisciplinary Approach to As Assessment
IDP Integrated Design Project
IIUM International Islamic University Malaysia
IN Internships
IP Intellectual Property
IR4.0 Industrial Revolution 4.0
JPA *Jabatan Pengajian Am*
JPH *Jabatan Pelancongan & Hospitaliti*
JRK *Jabatan Rekabentuk dan Komunikasi Visual*
JUR Journal of Undergraduate Research
KUIPSAS Kolej Universiti Islam Pahang Sultan Ahmad Shah
KW Engineering Knowledge
LC Learning Communities
LL Lifelong Learning Skill
LO Learning Outcome
LS Leadership Skill
MAGNETIC Malaysian Higher Education Teaching and Learning Council

MARDI Malaysian Agricultural Research and Development Institute
MOOC Massive Open Online Course
MPOB Malaysian Palm Oil Board
MPU *Mata Pelajaran Umum*
MQF Malaysian Qualification Framework
MUET Malaysian University English Test
MUST Malaysian University of Science and Technology
NEP National Education Philosophy
NGT Nominal Group Technique
NoU Notes of Understanding
P Psychomotor
PBL Problem-based Learning
PG Postgraduate
PIS Politeknik Ibrahim Sultan
PLO Programme Learning Outcome
PO Programme Outcome
POC Participatory Online Course
PPK *Pertubuhan Peladang Kawasan*
PSAS Politeknik Sultan Azlan Shah
Q Quiz
QAPEX Quality Assurance, Policy and Academic Development Centre
Q&A Question and Answer
R&D Research and Development
SC Lifelong Learning
SCMT Modern Tools Usage
SDG Sustainability Development Goal
SK *Sekolah Kebangsaan*
SL Service Learning
SLT Student Learning Time
SME Small and Medium-sized Enterprise
SPACE School of Professional and Continuing Education
SRD Student Research Day
SULAM Service Learning Malaysia – University for Society
T Tutorial

Abbreviation

THDS Design/Development of solutions
THI Investigation
THPA Problem Analysis
TIPP Topic Establishment, Information Management, Practice and Present
TLDM Tentera Laut Diraja Malaysia
TnL Teaching and Learning
TS Teamwork Skill
TW Leadership and Tean Working Skills
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
UX User Experience
VP Value Proposition
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 HIEPs.

- 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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Malaysia (USIM)

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Innovation (CoMAE-i), Universiti Sultan Zainal Abidin
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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).

Malaysia Education Blueprint 2015-2025 (Higher Education)

World Economic Forum

05

01

Educational Landscape

04

02

03

21st Century Skills

Sustainable Development Goals-SDG 4

Horizon Report

National Education Philosophy (NEP)

physically

intellectually

04

01

03

02

emotionally

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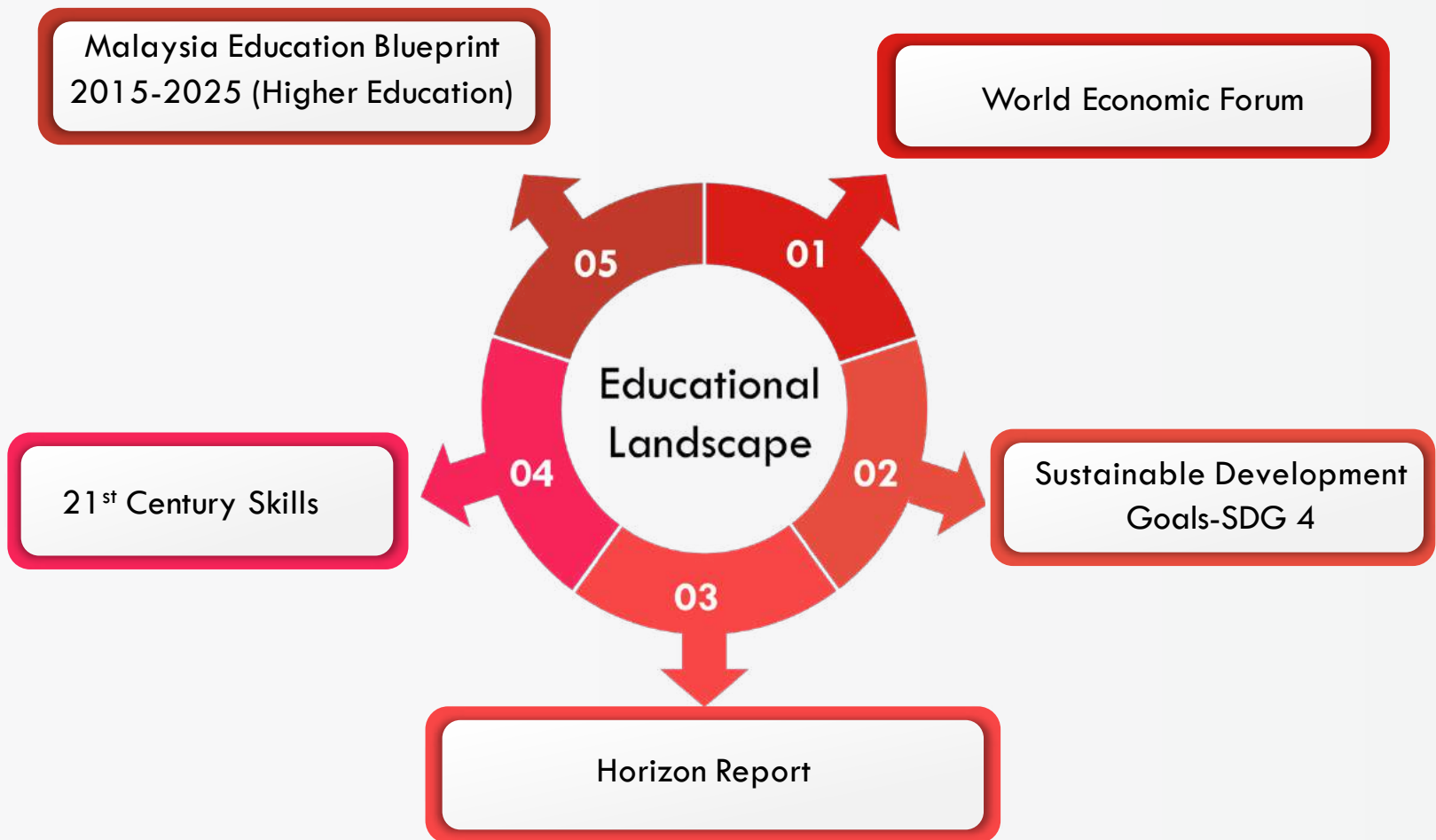
A common educational vision, enshrined in the Malaysia National Education Philosophy is the on-going mission to humanise education and to ultimately nurture our students into *Insan Sejahtera*.

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	Present	Future
in 2015	**in 2020**	**in 2022**
1. Complex Problem Solving	1. Complex Problem Solving	1. Analytical Thinking and Innovation
2. Coordinating with Others	2. Critical Thinking	2. Active Learning and Learning Strategies
3. People Management	3. Creativity	3. Creativity, Originality and Initiative
4. Critical Thinking	4. People Management	4. Technology Design and Programming
5. Negotiation	5. Coordinating with Others	5. Critical Thinking and Analysis
6. Quality Control	6. Emotional Intelligence	6. Complex Problem Solving
7. Service Orientation	7. Judgement and Decision Making	7. Leadership and Social Influence
8. Judgement and Decision Making	8. Service Orientation	8. Emotional Intelligence
9. Active Listening	9. Negotiation	9. Reasoning, Problem Solving and Ideation
10. Creativity	10. Cognitive Flexibility	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

EDUCAUSE Horizon Report | 2019 Higher Education Edition at a Glance

Key Trends Accelerating Higher Education Technology Adoption

	2019	2020	2021	2022	2023

Short-Term Driving Ed Tech Adoption in Higher Education for the Next One to Two Years
Redesigning Learning Spaces
Blended Learning Designs

Mid-Term Driving Ed Tech Adoption in Higher Education for the Next Three to Five Years
Advancing Cultures of Innovation
Growing Focus on Measuring Learning

Long-Term Driving Ed Tech Adoption in Higher Education for Five or More Years
Rethinking How Institutions Work
Modularized and Disaggregated Degrees

Significant Challenges Impeding Higher Education Technology Adoption

Solvable Those That We Understand and Know How to Solve
Improving Digital Fluency
Increasing Demand for Digital Learning Experience and Instructional Design Expertise

Difficult Those That We Understand but for Which Solutions Are Elusive
The Evolving Roles of Faculty with Ed Tech Strategies
Achievement Gap

Wicked Those That Are Complex to Even Define, Much Less Address
Advancing Digital Equity
Rethinking the Practice of Teaching

Important Developments in Technology for Higher Education

	2019	2020	2021	2022	2023

Time-to-Adoption Horizon: One Year or Less
Mobile Learning
Analytics Technologies

Time-to-Adoption Horizon: Two to Three Years
Mixed Reality
Artificial Intelligence

Time-to-Adoption Horizon: Four to Five Years
Blockchain
Virtual Assistants

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 / 2-Numeracy	7-Critical thinking/ problem solving / 8-Creativity	11-Curiosity / 12-Initiative
3-Scientific literacy / 4-ICT literacy	9-Communication	13-Persistence/ grit / 14-Adaptability
5-Financial literacy / 6-Cultural and civic literacy	10-Collaboration	15-Leadership / 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 (HIEP) 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

Common Intellectual Experiences
Interdisciplinary Approach to Assessment
First-Year Seminars & Experiences
ePortfolio
Intensive Academic Writing
Service Learning
Internships
HIEPs
Capstone Projects
Diversity/Global Learning
Collaborative Assignments and Projects
Community-Based Learning (CBL)
Learning Communities
Empirical Research
h-Impact Educational Practices (H
laysian Higher Education E

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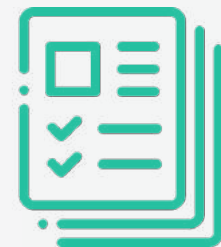
Source: Association of American Colleges & Universities, AAC&U (n.d). High Impact Practices.
Kuh, G., O'Donnell, K. & Schneider, C. G. (2017). HIPs at Ten.

Definition

- 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.

CAS
Collaborative Assignments and Projects

- 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.

ID
Interdisciplinary Approach to Assessment

- 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.

DGL
Diversity/ Global Learning

- 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.

LC
Learning Communities

- 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.

CBL/SL
Community-Based Learning/Service Learning

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

FYS
First Year Seminars and Experiences

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 ear and closely supervised by academic staff.
- Formulate research questions, review literature, design an empirical study, collect and analyse data, discuss study findings and d aw 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)

Service Learning (SL)

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

Community-based Learning (CBL)
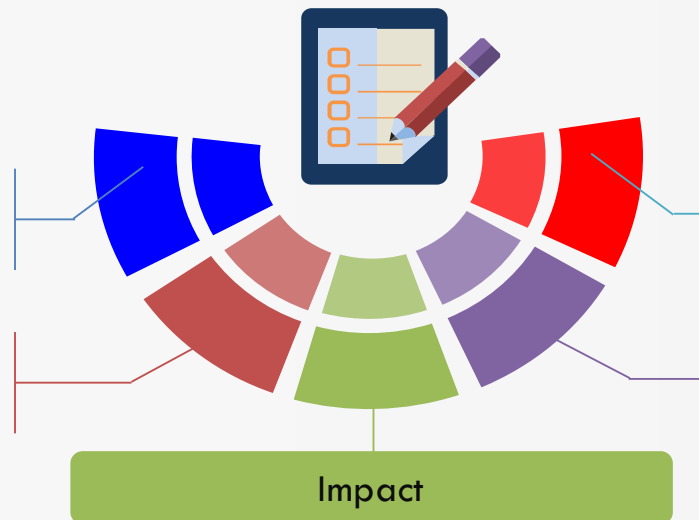
- Community or community institution is a space for learning.

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.

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.
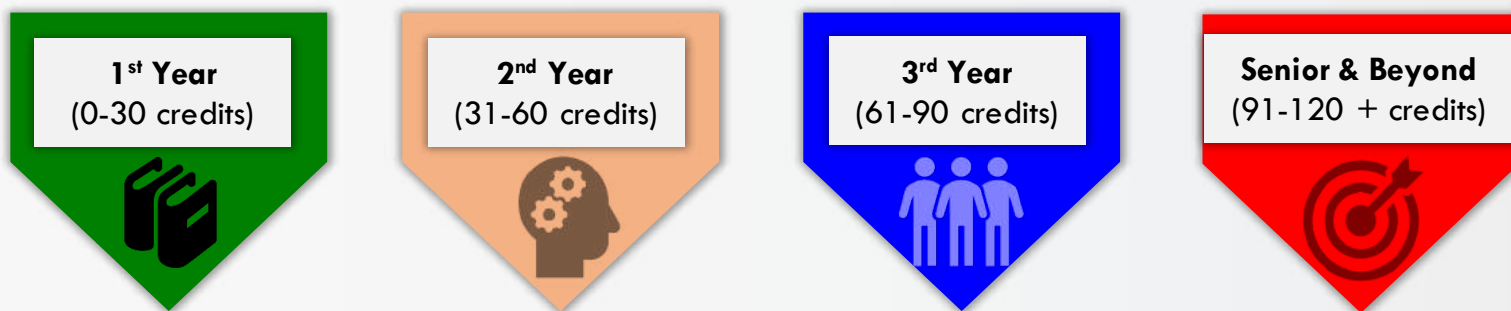
Learning outcomes

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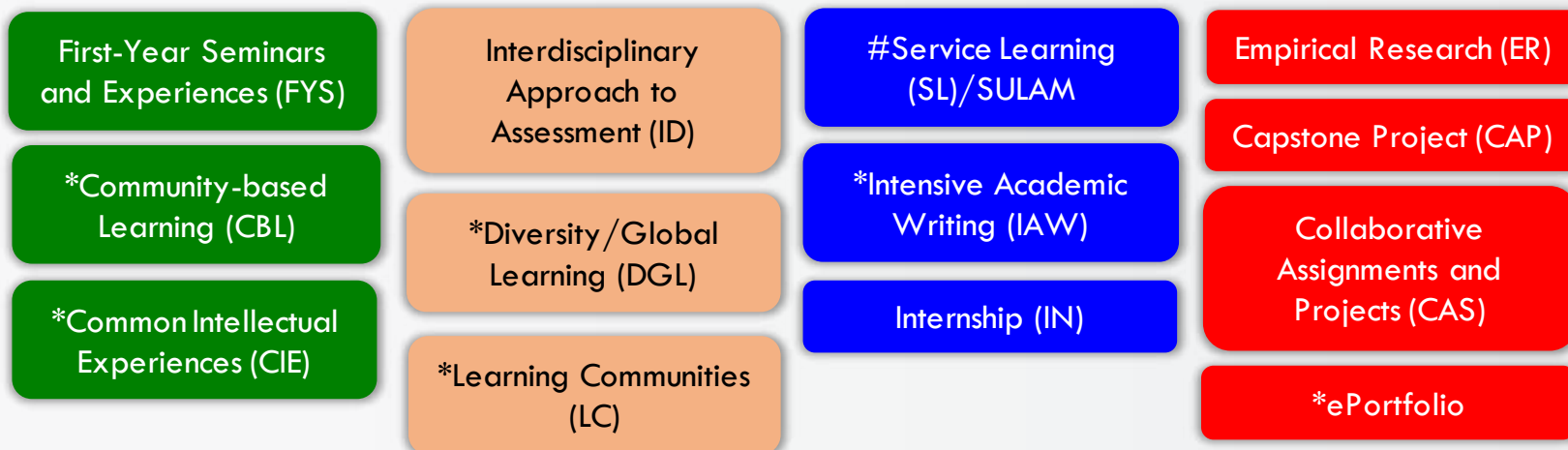
Impact

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.

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"
?

1st Year (0-30 credits)	2nd Year (31-60 credits)	3rd Year (61-90 credits)	Senior & Beyond (91-120 + credits)

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
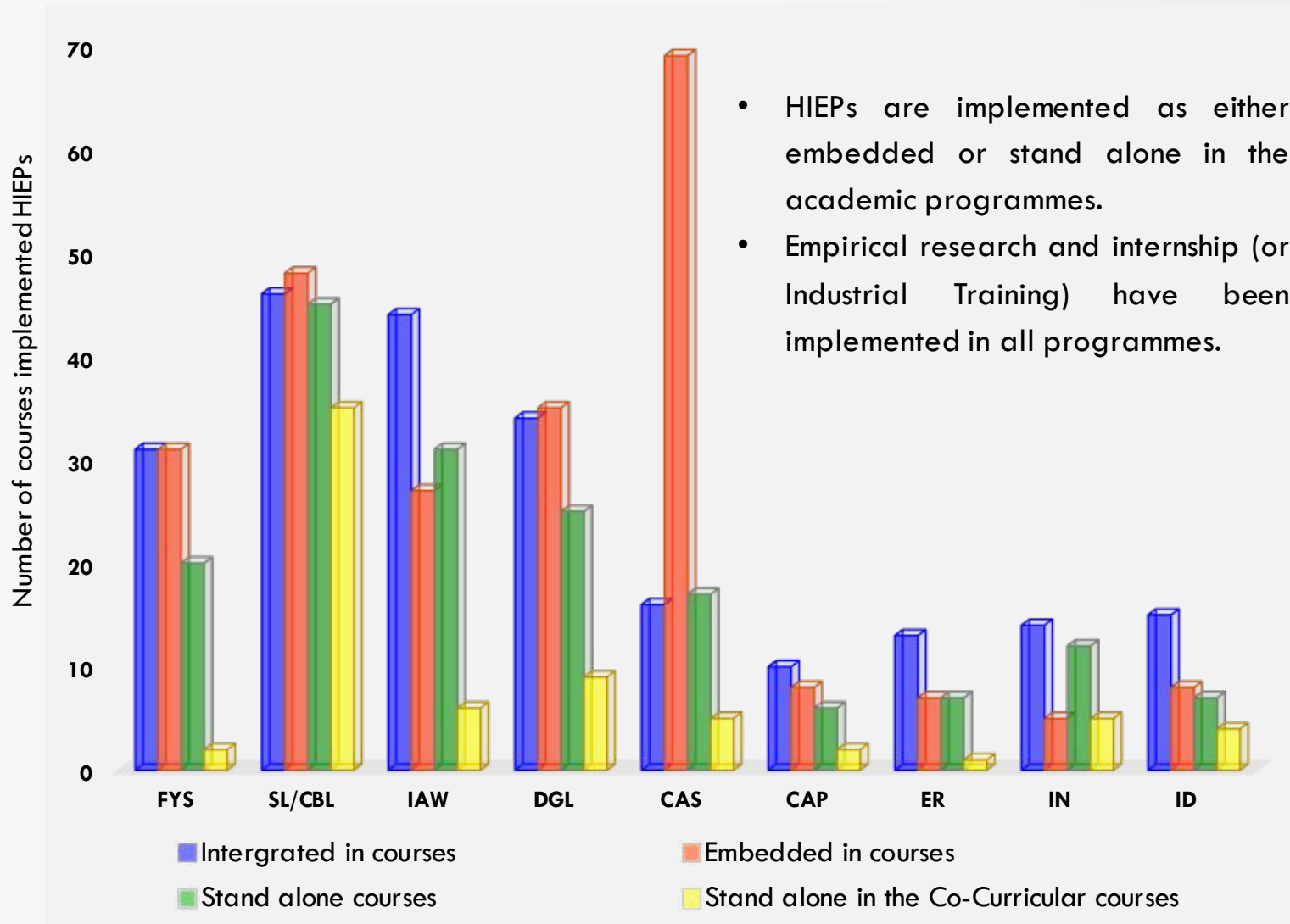# Can be implemented in second, third and final years of the academic programme

15

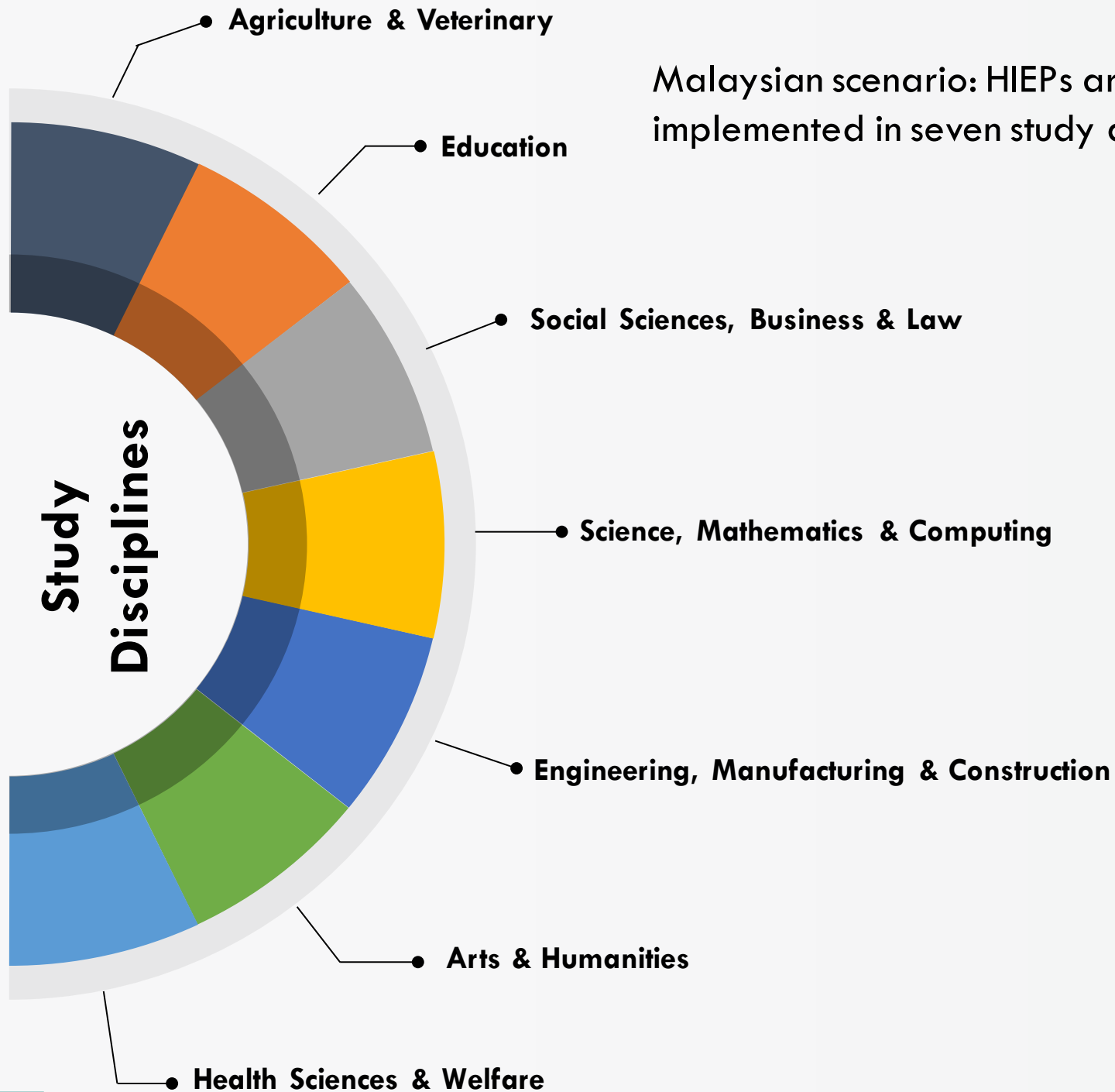# Implementation of HIEPs in Malaysia Higher Educational Institutions
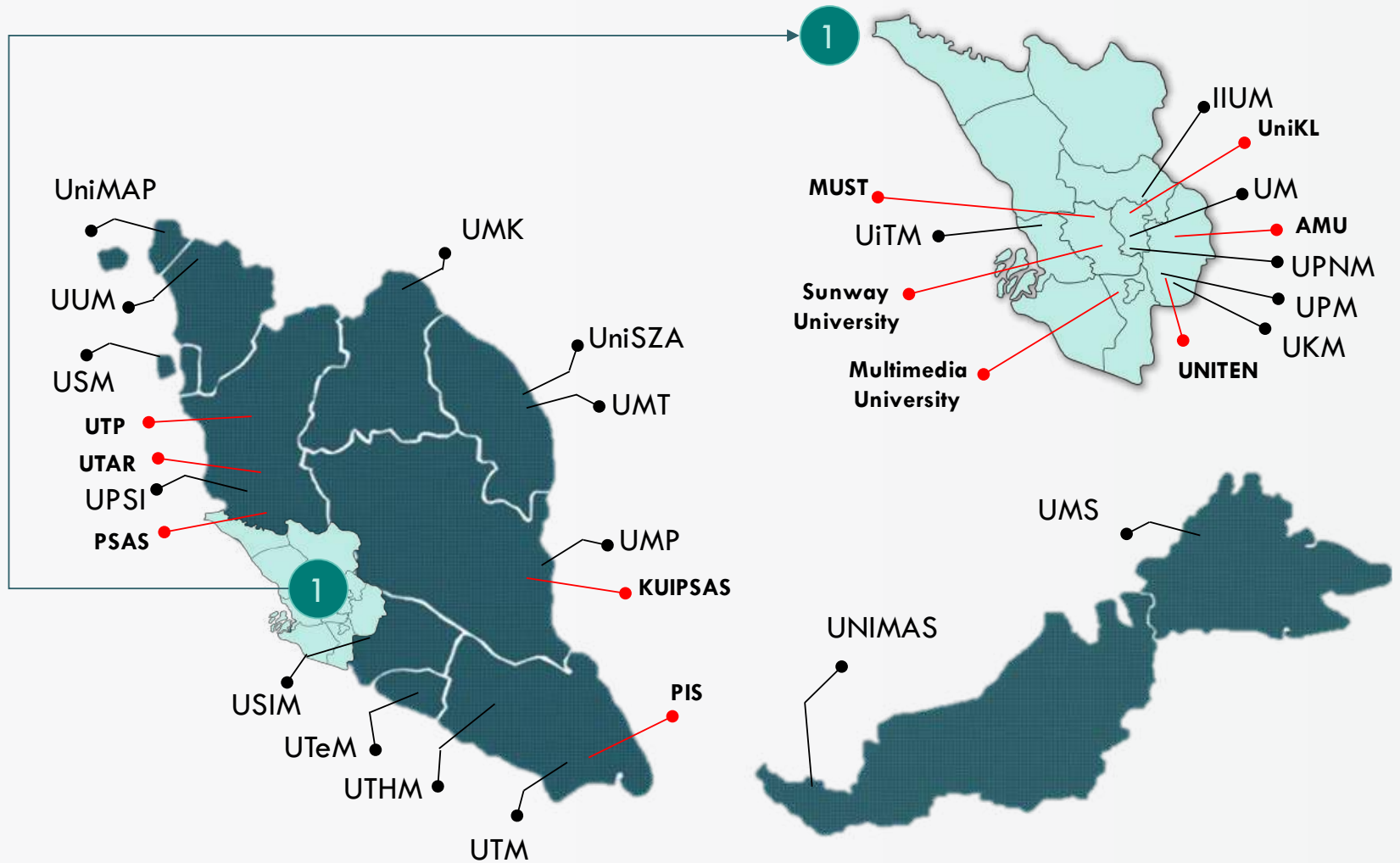
Public and Private Universities are implementing HIEPs

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.

Y-axis: Number of courses implemented HIEPs

X-axis categories: FYS, SL/CBL, IAW, DGL, CAS, CAP, ER, IN, ID

Legend:
- Intergrated in courses (blue)
- Embedded in courses (orange)
- Stand alone courses (green)
- Stand alone in the Co-Curricular courses (yellow)

(Data collected between March - September 2019)

Agriculture & Veterinary

Education

Social Sciences, Business & Law

Science, Mathematics & Computing

Engineering, Manufacturing & Construction

Arts & Humanities

Health Sciences & Welfare

Study Disciplines

Malaysian scenario: HIEPs are implemented in seven study disciplines

Intensive Academic Writing

Nukilan Da'ie Project

Najah Nadiah Amran[1] & Rosmawati Mohamad Rasit[2*]

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Faculty of Islamic Studies,
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Selangor, Malaysia

*Corresponding author: rosmawati@ukm.edu.my

Overview

Nukilan Da'ie is an **Intensive Academic Writing** initiative under the course of Dakwah Publication in Print Media (PPPM2053). The course is offered to the third-year students at the Faculty of Islamic Studies, Universiti Kebangsaan Malaysia.

Students are introduced to a comprehensive learning experience, focusing on the understanding and application of:

👉 writing and dakwah concept

👉 types of report and reporting

👉 propagation of Islamic teachings, print and social media dakwah

At the end of the course, students are able to organize writing workshops and produce writing drafts for print and online publications.

Overview of the Course

Through the course, students are introduced to:

5 Writing formulas

4 Reporting on Islam

3 Religious propagation via social media and the portrayal of Islam in print media

2 Publication of Malaysian news, books, magazines and independent works

1 The concept of religious propagation through writing

Project: *NUKILAN DAI'E*

The project's learning goals are closely related to the course learning objectives.

The aims of **Nukilan Da'ie** Project are;

👉 To orientate students to the practice of disciplinary writing

👉 To enhance students' writing ability in the propagation of Islamic teachings

👉 To produce amateur and professional dakwah writers for print and social media
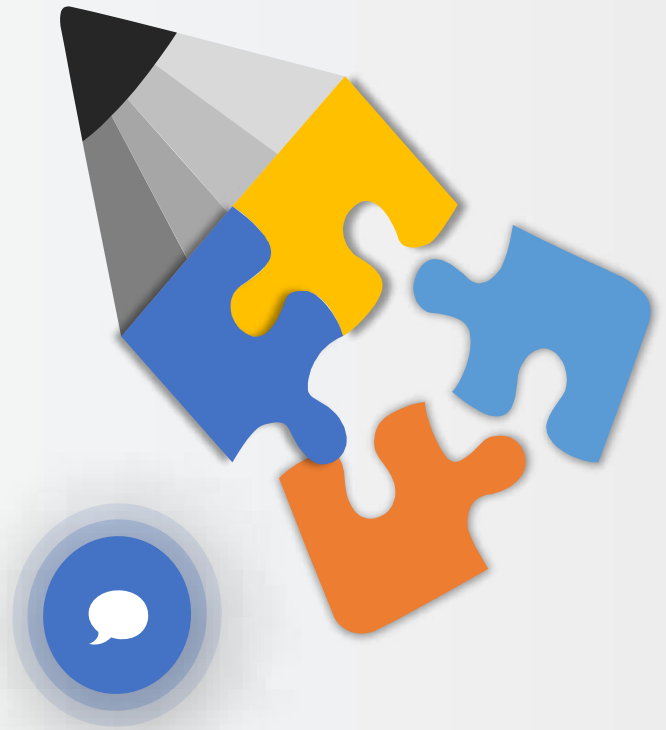
Mapping of CLOs, Delivery and Assessment

Dakwah in Print Media (PPPM2053) At the end of the course, students should have the ability to: (a)	Bloom's Taxonomy	Indicators	(b) Delivery Methods	(c) Assessment			Total
				Project	Presentation	Final Examination	
CLO1 Analyze the concept and philosophy of dakwah propagation via print media	C4	Elaborate the concept and discuss the philosophy	Lectures and Tutorials			20	20
CLO2 Evaluate the use of print media for dakwah	C4	Evaluate in print media for dakwah propagation	Lectures and Tutorials			20	20
CLO3 Justify targeted issues and marketing in print dakwah	A3	Provide views on dakwah publication projects	Small Groups Discussion and Teaching Factory		20		20
CLO4 Develop scholarly and popular dakwah writing skills	P6	Organise writing workshop	PBL	40			40
Total (%)				40	20	40	100

Implementation

Interactive Teaching and Learning Strategies

Face-to-face lectures and presentations

Online and offline small groups discussions

Teaching factory with Galeri Ilmu Publication House

Organizing Writing Workshop with Professional writer – Bonda Nor from Akademi Bonda Nor

Assessment consists of presentation, draft writing and final examination

Engaged Learning Experiences

Front cover of Book entitled CLEAR

Selected works by students published as book chapters.

CHECK IT OUT

Students' work published by Galeri Ilmu.

Small groups discussion
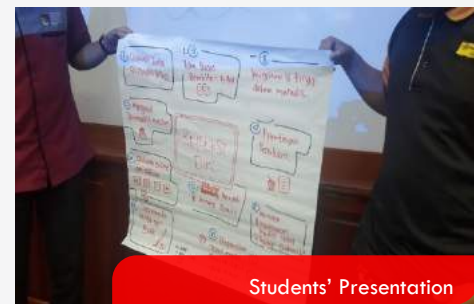
Students' Presentation

Students' Presentation

Learning Feedbacks

Dr. ROSMAWATI BINTI MOHAMAD RASIT
Salam semua

Mohon baca buku Clear. Satu antologi kisah benar tentang apa yang pernah dialami dalam kehidupan masing-masing. Berikan pandangan anda mengenai buku Clear dan sejauhmana perlu kita menulis kisah kisah sebegini untuk berkongsi dengan masyarakat.

Last update: feb 2828 at 99:40

NURUL HUSNA BINTI HISHAM Says:
Waalaikumsalam Dr.

Pendapat saya berkaitan buku Clear ada sebuah buku yang sangat berkait rapat dengan kehidupan kerana ia merupakan kisah kisah benar yang dihimpunkan dalam satu buku.. Saya membaca buku seperti saya membaca diari yang mempunyai jalan cerita yang menarik, isi cerita yang tidak berat dan mudah difahami dan santai, serta pengajaran dalam setiap cerita memberi kesedaran dan semangat baru kepada pembaca.

Pada saya, kisah-kisah benar seperti di dalam buku clear sangat perlu untuk ditulis agar dibaca oleh masyarakat kerana ia berkaitan dengan kisah kehidupan dan ujian hidup yang mungkin ada sesetengah masyarakat yang juga mengalami perkara yang sama tetapi berbeza cara dan pendekatan dalam menghadapi ujian tersebut. Ada yang berjaya dan ada juga yang gagal. Hal inilah yang perlu dikongsikan agar orang ramai dapat mengambil pengajaran terhadap kehidupan orang lain dan supaya tidak mudah putus asa dalam kehidupan ini.

feb 2828 at 1010:35

Online Discussion

Student received token of appreciation for his writing on Facebook (the most liked and shared)

Muhammad Daniel Abdullah is with Rosmawati Mohamad Rasit.
20 April ·

TUHAN BAGI APA YANG MANUSIA PERLU, BUKAN APA YANG MANUSIA MAHU

"Dah bertahun aku berdoa namun masih belum dikabulkan lagi, kenapa Tuhan tak kabulkan lagi permintaan ku? Apa salah ku?"

Seringkali manusia menyalahkan Tuhan dalam urusan kehendak diri yang belum lagi dikabulkan, setelah sekian lama menadah tangan, memohon dengan penuh pengharapan.

Ada manusia meminta kepada Tuhan supaya dikurniakan kepadanya kekayaan, Namun Tuhan lebih mengetahui apa yang terbaik untuknya. Sekiranya diberikan kekayaan barangkali dia semakin alpa dengan keduniaan dan lebih parah lagi hubungan dengan Tuhan semakin berjauhan.

Apakah manusia itu tidak tahu bahawa, Allah itu Maha Mengetahui? Pernahkan kita dengar Allah Taala berfirman :

"Dan boleh jadi kamu benci kepada sesuatu padahal ia baik bagi kamu, dan boleh jadi kamu suka kepada sesuatu padahal ia buruk bagi kamu. Dan (ingatlah), Allah jualah Yang mengetahui (semuanya itu), sedang kamu tidak mengetahuinya."

Tatkala kita merasakan Doa dan permintaan kita tidak dikabulkan, Ingatlah pesanan ini :

Apabila Allah tidak beri apa yang kita mahu, bukan beerti Allah tidak menyayangi kita, tetapi sebab Allah mahu bagi yang terbaik untuk hambanya.

- Muhammad Daniel Abdullah -

#PenulisanDakwahUkm

Student's work published on Facebook (the most liked and shared)

Students enrolled for the course received the privilege to learn directly from Bonda Nor

The course targeting for publication in print

Teaching Factory activity - Galeri Ilmu, a publisher involved in this course teaching

Student participants (Bengkel Penulisan Bonda Nor@UKM)

Learning session during the course

Impact of *Nukilan Da'ie Project* **on Students Learning**

NURSHAFIQAH BINTI JESWANDY Says:

Assalamualaikum Dr Rosmawati, terima kasih kerana memberi tunjuk ajar pada kami sepanjang sesi pembelajaran di dalam subjek Penerbitan Dakwah Media Cetak PPPM2053. Subjek ini merupakan salah satu autoriti yang mewajibkan setiap pelajar di bawah modul Komunikasi untuk mengambilnya bagi melengkapkan sesi akhir pembelajaran kami sebagai pemegang Ijazah Sarjana Muda, Jabatan Pengajian Dakwah dan Kepimpinan. Sepanjang sesi pembelajaran dibawah subjek ini terdapat banyak perkara baharu yang kami alami dan rasai yang semestinya tidak akan dimiliki oleh modul yang lain. Proses pembelajaran yang bersifat santai,kaedah penulisan kreatif yang bersahaja, ringkas dan padat mengutamakan mesej dakwah merupakan salah satu subjek yang menjadi kegemaran dalam kalangan belia seperti kami. Golongan belia seperti kami mudah tertarik dengan kaedah pembelajaran seperti ini yang menekankan konsep dakwah kepada masayarakat di dalam bentuk penceritaan dan kisah-kisah yang benar menjadi tauladan. Usaha Dr dalam melibatkan kami di dalam bidang penulisan dakwah dengan kerjasama di bawah produksi Galeri Ilmu telah memberi peluang besar kepada kami untuk menonjolkan bakat yang sedia ada. Namun begitu, di akhir kursus ini juga dapat diteliti bahawa diantara kami semua mampu untuk menghasilkan hasil karya sendiri berkisarkan kisah benar meskipun pada awalnya ada di anatara kami tidak yakin bahawa kemampuan untuk menghasilkan sebuah cerita sendiri adalah tidak mungkin sama sekali. Namun di bawah subjek ini kami turut mempelajari bagaimana untuk menulis dengan baik, mengikut kaedah yang telah diajari sepanjang berada di dalam kuliah. Selain itu, kami telah didedahkan bagaimana untuk memasarkan hasil penulisan yang telah dibukukan. Disamping jemputan tetamu istimewa, tidak lupa kepada Bonda Nor telah memberi kami inspirasi bahawa dakwah tidak semestinya secara praktikal malahan di dalam penulisan dakwah santai juga mampu menjentik hati masyarakat disekeliling. Jadi saya sangat berpuas hati dan berharap agar konsep pembelajaran ini akan diteruskan pada sesi akan datang kerana ia akan memberi inspirasi kepada mahasiswa pada masa akan datang. Terima aksih Dr. Rosmawati.

may 2929 at 11:14

Impact
of Intensive Academic Writing (IAW)

Students show their ability to 'create'

Communication skills

Students can write

"Writer-preneur" Write and Gain

Future-ready Graduates

Enhance writer-entrepreneur skills

Publication in print and online

Enrich knowledge

Internship opportunity at Galeri Ilmu

Boost motivation
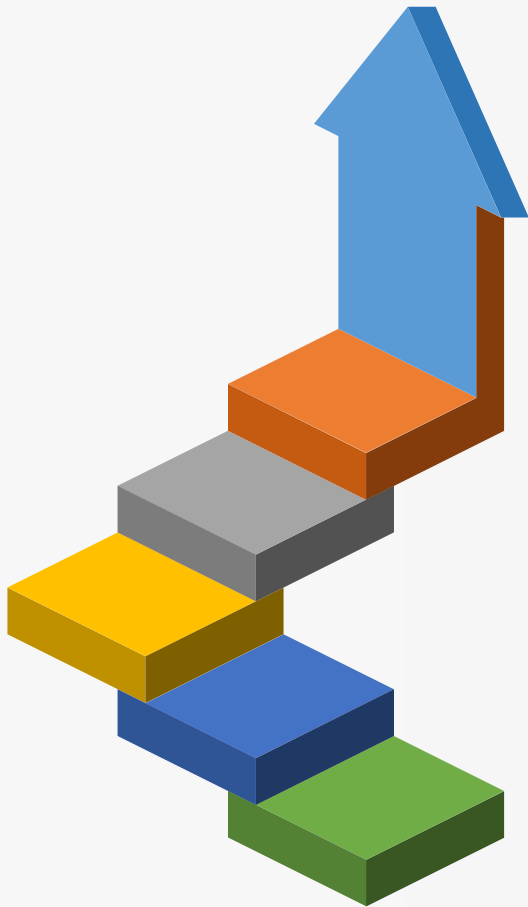
Conclusion

Students enrolled in the intensive writing course not only become familiar with the concepts and philosophy of dakwah writing, they also learnt different genres, structures and characteristics of dakwah writing. They also explored issues related to reporting Islam in print and online media. They became aware of the importance and challenges of propagating Islamic teachings through writing.

The different types of learning strategies applied by the course's instructor led to meaningful engaged learning experiences. Strategies including writing workshops and teaching activities gave a huge impact on students' cognitive, affective and psychomotor learning domains.

In preparing their final drafts to be accepted for publication, students learnt step by step the know-how of the writing process, from coming up with ideas, presenting arguments and claims, selecting evidences, all the way to outlining and writing etc.

Future Directions

Dakwah is an Intensive Academic Writing course with future and economical potentials to grow.

It can be offered to those who are interested in writing Islam off-campus.

From this course, students learn extensively how to write popular dakwah chapter/book.

In the future they may consider other types of dakwah writing targeting the new generation readers.

University and faculty may seek for regional and international strategic partners and networks that enrich students' learning experiences and writing skills.
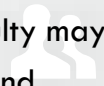
Empirical Research/ Undergraduate Research

Student Research Day

Azlina Abd. Aziz*, Ruhani Mat Amin, Jaharudin Padli & Ahmad Khairul Fitri Zahari

Faculty of Business, Economics and Social Development, Universiti Malaysia Terengganu, 21030 Kuala Nerus, Terengganu Darul Iman

*Corresponding author: aqlina@umt.edu.my

The Student Research Day at Universiti Malaysia Terengganu (UMT) was initiated by Professor Ir. Dr. Noor Azuan Bin Abu Osman, Deputy Vice-Chancellor (Academic and International). It was first held in 2018 and to date the event has grown and involved nearly 2000 participants among undergraduate and postgraduate students of UMT.

The purpose of the Student Research Day is to promote research in all disciplines, at all levels in UMT. It is also an opportunity for students to showcase their research or advanced studies undertaken as part of the requirements of the undergraduate and postgraduate programmes. The two-day event showcases students' research work via poster presentations. Dedicated sessions were also scheduled to allow students, faculty members, staffs and interested community members to further discuss research presented at the event. Assessors for the poster presentations were appointed among representatives from private and government agencies.

This event is part of a 4-credit course, ECO4999A Final Year Project II, which involves 40 hours of Student Learning Time (SLT).

Mapping of CLOs, Delivery and Assessment

Course Learning Outcome (CLO)	Delivery				Assessment (%)		
	Consultation & discussion	Presentation	Report Writing	Total SLT	Report Writing	Presentation	Total
Explain the research design related to the objectives of the study. (C-C4)	/		/	40	25		25
Discuss the findings of the research. (CTPS-A5)	/		/	50	30		30
Present the research findings of the study. (CS-A5)	/	/	/	40		25	25
Review current and relevant literature. (LL-C5)	/		/	30	20		20
Total				160			100

Student Research Day

2018 UMT
Undergraduate
Research Day

2019 Student
Research Day
@UMT

Student Research Day

Deputy Vice-Chancellor (Academic and International), Prof. Ir. Dr. Noor Azuan Bin Abu Osman observed student's presentation during the SRD@UMT 2019 at Dewan Sultan Mizan, UMT

Research posters showcased in Dewan Sultan Mizan, UMT

A student presenting research findings during SRD@UMT 2019

A student receiving feedbacks from an assessor
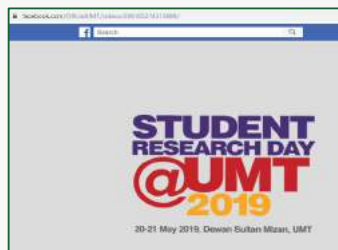
Scan QR Codes for more videos

Impact on Students and Academicians

Scan QR Codes for more information

BOOK OF ABSTRACT
STUDENT RESEARCH DAY @ UMT 2020

BRIDGING THE GAP
UMT-INDUSTRIES

UMT JUR
UNIVERSITI MALAYSIA TERENGGANU
JOURNAL OF UNDERGRADUATE RESEARCH
VOLUME 1 NUMBER 3
JULAI 2019
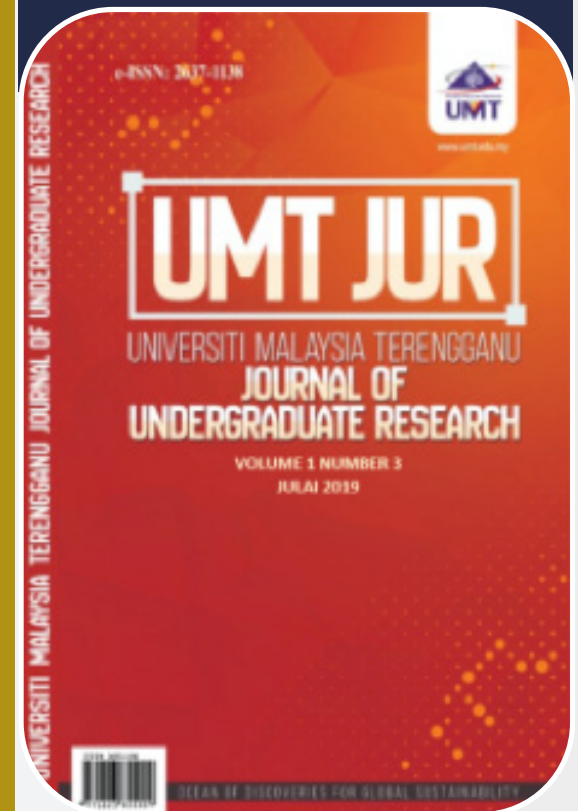
Winners of the Student Research Day
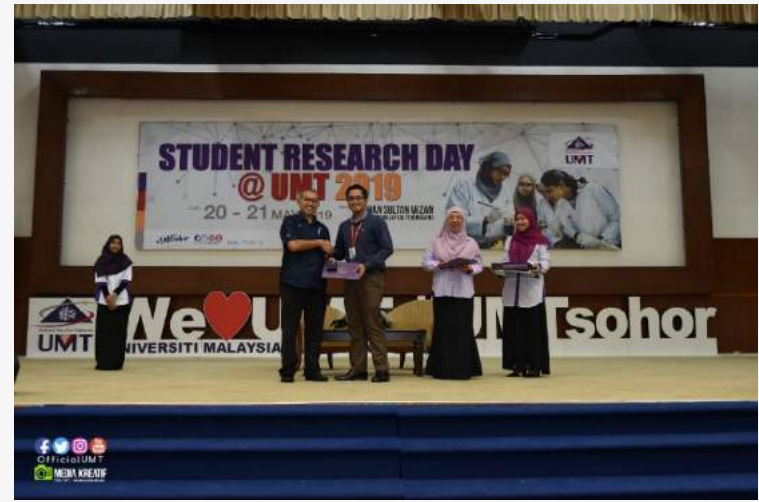
Impact on Student Research Skills

Develop useful research skills

Integrate between theory and practice

Learn how to perform research ethically

Develop ability to analyze data

Solve research problems using scientific skills

Develop ability to interpret results and make a meaningful conclusion

Learn essential laboratory techniques
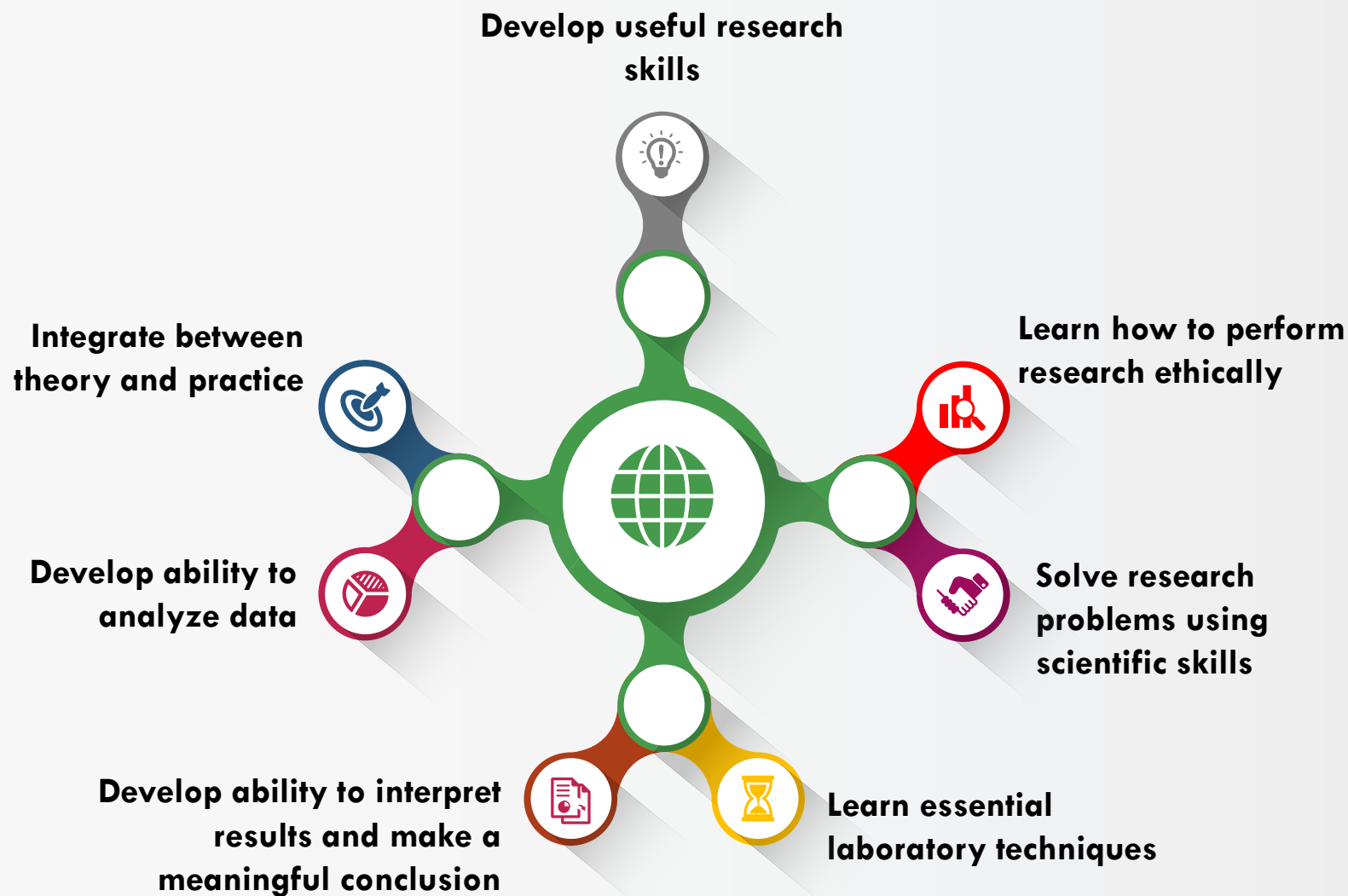
Impact on Student Attributes

Resilience facing obstacles

Learn to work independently

Learn to appreciate knowledge

Develop self confidence

Better judgement through strong supporting evidence

Develop career oriented mindset

Conclusion

The Student Research Day was an excellent platform in helping students to acquire knowledge and ethically present their research findings.

Experiences gained provide positive impacts on their career paths, fostering an intellectual generation, in line with the government's aspiration to enhance credibility among university graduates.

Provides opportunity for students to impress future employers, build strong network with stakeholders, gain insights into current research trends and their future directions, besides improving students' level of confidence, communication skill, creativity and innovation in research.

Future Directions

Expand Empirical Research initiative globally

Conduct community engagements

Establish research collaborations
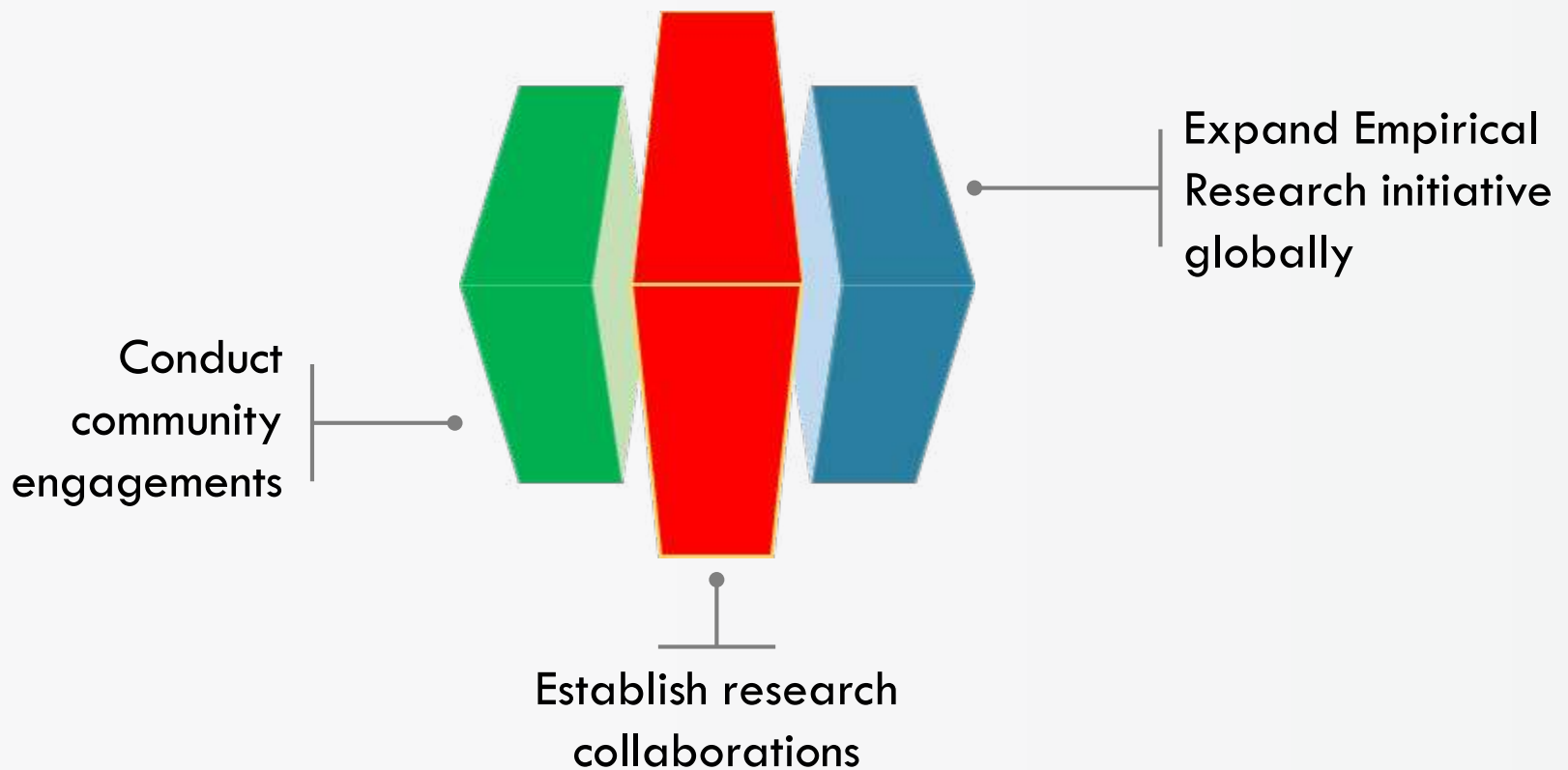
Common Intellectual Experiences

T.I.P.P. in Promoting Transdisciplinary Learning

Wan Nur'ashiqin Wan Mohamad*, Rozmel Abdul Latiff, Harieza Hussin, Sithaletchemy S. Krishnaiyer, Azizah Ya'acob & Afifuddin Husairi Hussain

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Introduction

Common Intellectual Experiences is an approach to curriculum integration that generates an understanding of themes and ideas that cut across disciplines and of the connections between different disciplines and their relationship to the real world.

Transdisciplinary learning is the exploration of a relevant concept, issue or problem that integrates the perspectives of multiple disciplines in order to connect new knowledge and deeper understanding to real life experiences.

Interdisciplinary approach and transdisciplinary learning experience are implemented in the course LMCE2012 Workplace Communication 1.

LMCE2012 Workplace Communication I

Course Overview

A problem-based language learning course is designed to equip students with oral and written communication skills to meet the needs of the workplace.

Students are required to participate effectively in meetings, give effective presentations and write a structured learning reflection.

The ultimate aim of the course is to develop students' soft skills in complex problem solving through critical thinking, creativity, coordinating with others, judgement and decision making and cognitive flexibility.

Mapping of CLOs, Delivery and Assessment

CLO	Delivery Method	Activity	Assessment
By the end of the course, students should be able to: 1. Participate effectively in meetings 2. Give effective presentations 3. Write a structured learning reflection	Problem solving by using these two techniques: • Nominal Group Technique (NGT) • Value Proposition (VP) Canvas	Students complete worksheets while actively involved in series of group discussions	• Progress Meeting • Group Presentation

WORKSHEET D
SELECTING THE PROBLEM TO SOLVE (Group Work)

Carry out Nominal Group Technique (NGT) with your team. Rank the problem listed: each member has a total of six points to rank the best three problems based on each member's choice ~ the most important gets 3 points, the least gets 1. The problem with the highest points should be the choice the group has collectively agreed to work on as your class project.

Idea #	Name of Team Member							Total
1								
2								
3								
4								
5								

What is T.I.P.P?

T.I.P.P is an approach of teaching and learning to help students with low English proficiency to gain confidence to give a speech in English Language in front of an audience.

T.I.P.P. Stages and Procedures

P
Present
Just Enjoy the Show

P
Practice
Content
Flow
Grammar
Pronunciation

I
Information Management
Mind Map
Rhetoric Function
Synthesis
Outline

T
Topic Establishment
Brainstorm
Preliminary Reading
Audience Analysis

Week 13-14

Week 8-12

Week 4-7

Week 2-3
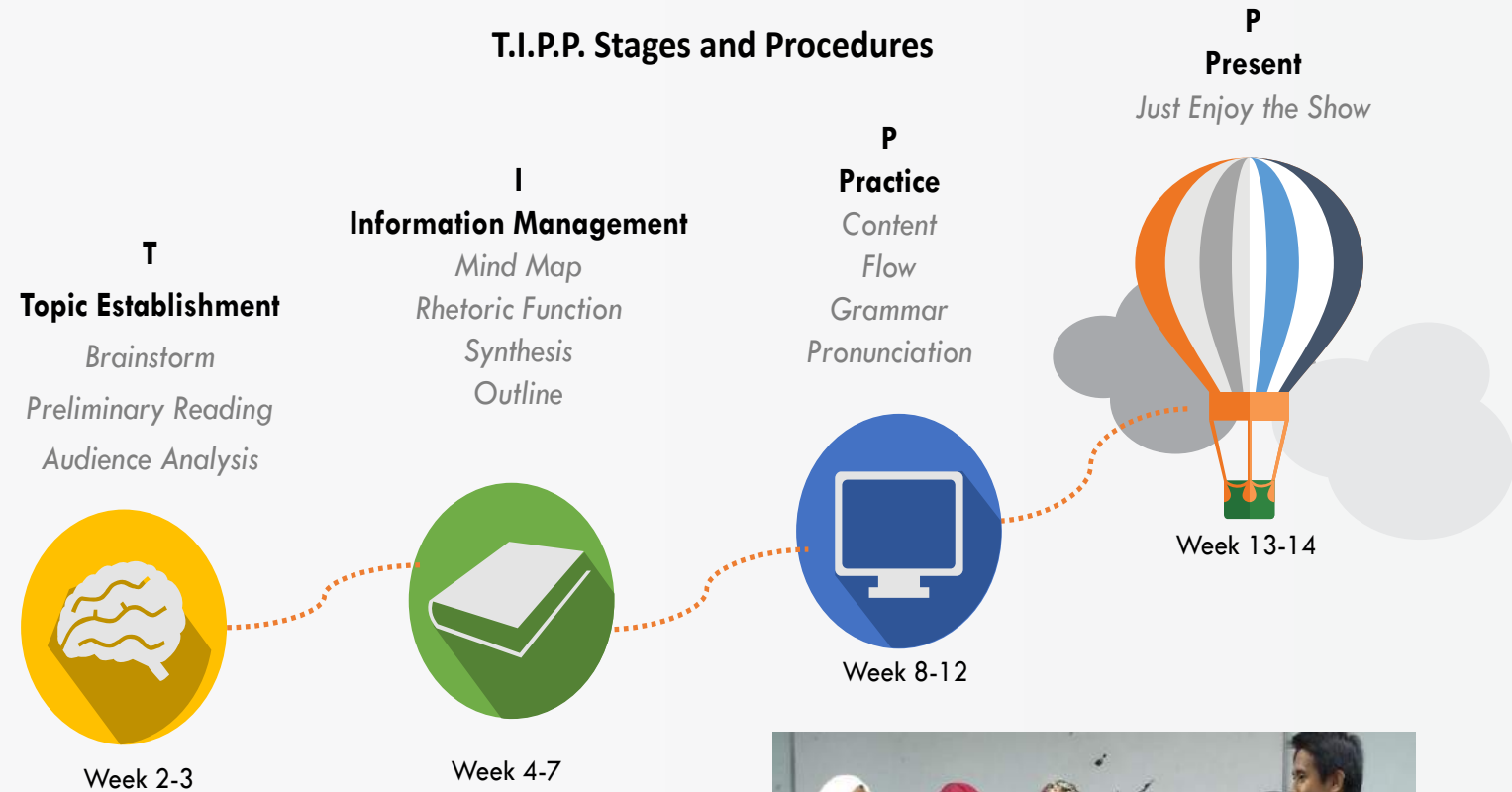
Audience Analysis

Mind Map and Outline

Presentation Practice

Step by Step Instruction (1)

Project Guideline

Practice	Guideline
1. (T) Topic Establishment by using Why3x How3x (W3xH3x) Technique and Nominal Group Technique (NGT)	The keyword is establishing the topic, not merely choosing a topic. i. Individually, students brainstorm & list at least 25 problems, then shortlist three problems and describe them (homework). ii. In class, students take turns to share their three problems with their small group members. Other members apply W3xH3x Technique to help the speaker clarify his/her ideas. iii. All problem ideas are listed and one that is favoured by all members is selected by using NGT. iv. Each group member does his/her research on the selected problem. v. The same steps above is repeated with solution ideas. Groups are heterogeneously characterized by gender, ethnic group and faculty. The techniques used here help students understand each other's perspectives on various topics and issues.

Step by Step Instruction (2)

Project Guideline

Practice	Guideline
2. (I) Information Management in testing the chosen solution, whether it matches the target group's needs by using Value Proposition (VP) Canvas	Once a solution is selected, the team decides on a target group. By using a Value Proposition (VP) Canvas, the group: i. Describes their solution. ii. Describes the target group or individuals by thinking, seeing, hearing and feeling from the target group's perspectives of the hurdles in solving the problem that they are facing and the expectations in getting the problem solved. iii. Next, the group look at their solution again and find what the solution can offer in alleviating the hurdles and meeting the expectations of the target group as far as the problem is concerned. The techniques used help students understand each other's perspectives on various topics and issues, and extending their perspectives to a third party by putting oneself in else's shoes.

Step by Step Instruction (3)

Project Guideline

Practice	Guideline
3. (P) Practice	In carrying out the earlier activities in (T) and (I), students attend to the topics of selected problem and solution(s) over and over again in series of group discussions. This is the first step of the "practice" phase for the progress meeting assessment.
4. (P) Present	Next, when they move to the next assessment, i.e. group presentation, students have mastered the content that they want to present. The aims during practice sessions are: i. To improve on structure of presentation, pronunciation etc. ii. To ensure that the message that want to deliver is understood by their audience. Practicing for the two assessments in groups, further enhance transdisciplinary learning among students.

T.I.P.P. Roll Out

Sample of a 14-week lessons whereby two cycles of T.I.P.P. were rolled out

Week 1-2	Week 3-4	Week 5-7	Week 8	Week 9-10	Week 11-12	Week 13-14
Course Induction	Problem & Solution Identification	Problem-solution Fit	Progress Meeting	Fieldwork	Poster Preparation	Poster Presentation

- The Power of Mind
- The Premise
- Deep Listening
- Course Overview
- The Game Plan

- Brainstorm
- Select & Describe
- W3xH3x
- NGT and Common Interest
- Research Solution & Share NGT and Common Ground

- Key Resources
- Key Partners
- Key Activities
- Poster Layout

- 20-30 minutes
- Project Review
- Project Progress
- What's Next?

- Data Collection
- Data Analysis

- The story
- Information Ranking
- Prioritization
- Practice

- Tell your story, show where necessary
- 3-4 mins per person

The most important step to get students to be an active part of the TnL process and establish learners' autonomy

Summative Assessment
(still in use to satisfy grading and standards needs)

Sit in a circle. → Take turns to present your solution.

Take turns to conduct W3xH3x Record keywords. → Cluster and classify. (Worksheet F)

Rewrite your solution. → If more than one solutions, conduct NGT to select the most viable one. (Worksheet G)

Intensive T.I.P.P. is carried out as continual formative assessments with active participation by both learners and facilitators

TOP 10 SKILLS 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. Coginitive Flexibility
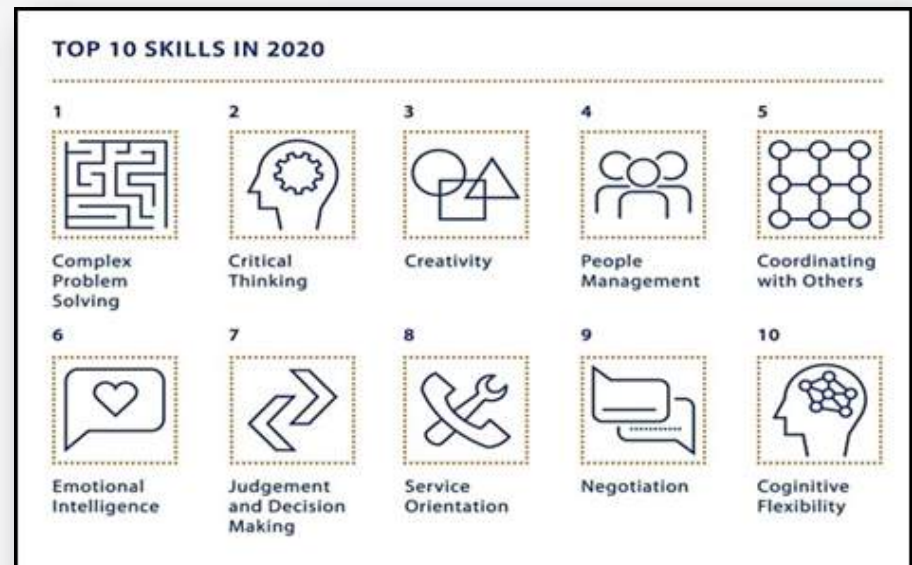
Activity 1 Homework (before Week 3) Worksheet B & C

Individually brainstorm and list 20-25 problems.
Use the form provided.

Ref: Worksheet B

Shorlist three (3) problems from your list.

Describe these 3 problems above in writing. Use full sentences.

Ref: Worksheet C

Choose one that you will present orally to your team.

These are documented and compiled in student group project portfolio

Activity 2 In Class (Weeks 3 – 4) Worksheet C & D

Pin up your individual **Worksheet C** on the wall together with your other team members.

Silently read all your team members' write-ups on the wall.

When done, sit in a circle.

Cluster and classify the keywords.

Take turns to conduct W3xH3x as a member present his/her problem.
Record the keywords.

Take turns to verbally share your individual chosen problem with your team members

List the problems in the NGT form.
(Worksheet D)

Conduct NGT to select a problem commonly agreed by all members.

Propose your solution. Do your research!
Worksheet E

LMCE2012 Workplace Communication I
Semester 2 Session 2016/2017

Activity 5 In Class (Week 5-7)

NOTES AND SAMPLE

PROBLEM-SOLUTION FIT (Group Work)
Do I have a problem worth solving?
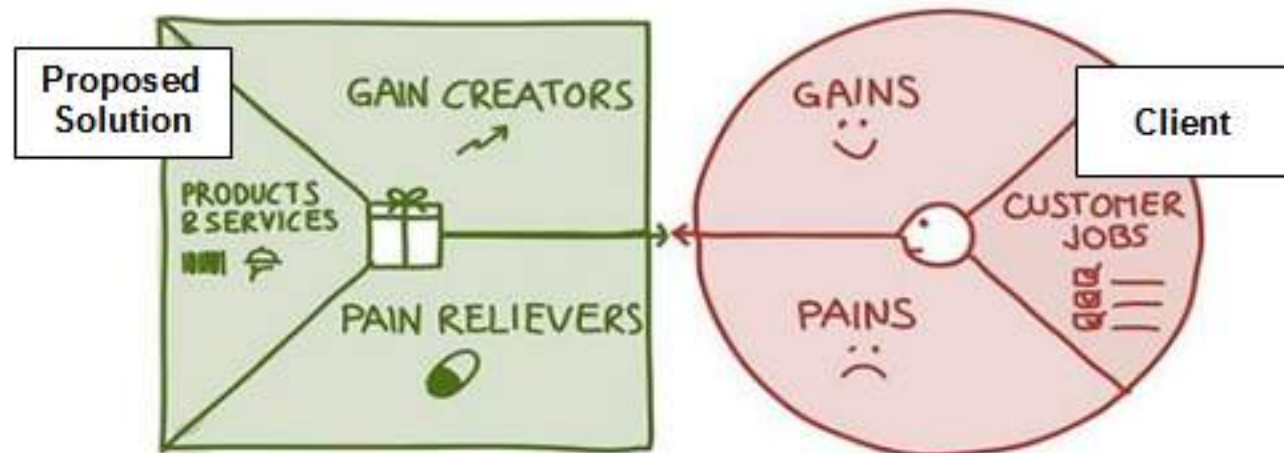
1. First, state your problem again.
2. Then, based on your observation, describe your target client.

* Client refers to the people for whom the proposed solution is intended. They are the people affected by the problem.

Example

Problem: BBBangi residents find it difficult to get a taxi

Student Feedback and Impact of T.I.P.P

Improve Communication Skills

"I have improved my skills especially in English communication" (Student of FST, MUET Band 3)

"Know how to do mind map" (Student of FTSM, MUET Band) 2)

Enhance Self Esteem and Confident

"This course has given me higher level of self-esteem and confident to implement English language in my academic and life" (Student of FP, MUET Band 2)

Present Effectively

"Enhance my confident level when giving presentation" (Student of FST, MUET Band 3)

"The choice of doing presentation. I mean that, student can freely choose any topic for presentation, thus, it increase my interest in the presentation" (Student of FST, MUET Band 3)

How much has the course helped to enhance the required skills?
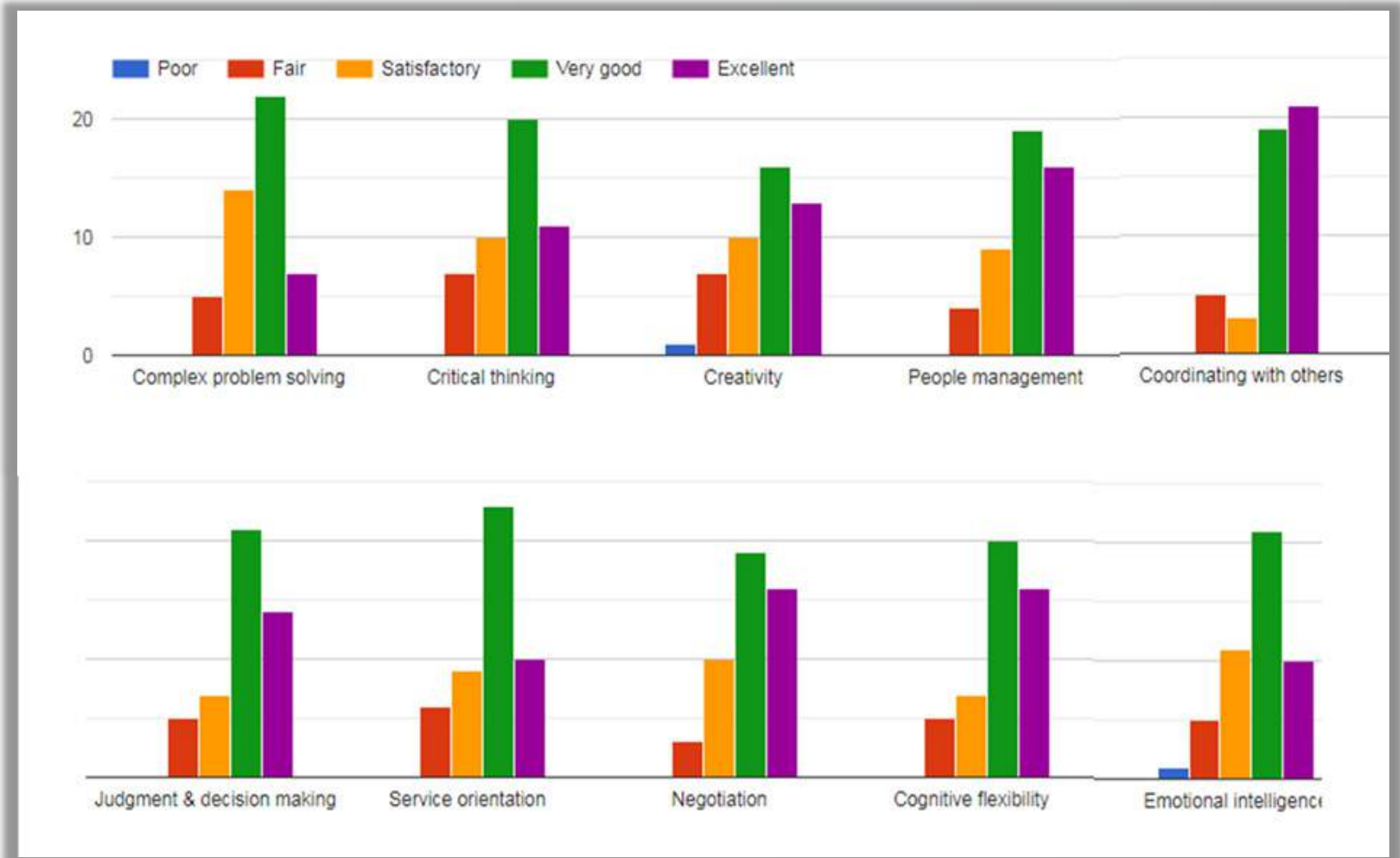
Majority of students agree that the course has helped them
enhance future job skills

This course adopts experiential learning approach. How much of the learning activities listed below contribute to your ability to carry out the progress meeting?

Legend: ■ 0 - 5% ■ 6 - 19% ■ 20 - 29% ■ 30 - 49% ■ 50 - 74% ■ 75 - 89% ■ 90% above

Chart categories: Lecture, Reading, Learning from youtube, Facilitation from instructor, Group discussion, Practice together, Teaching others
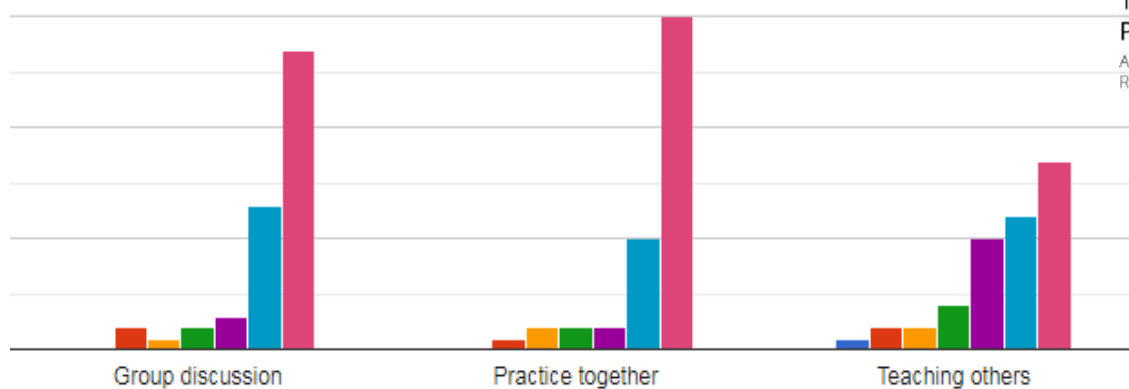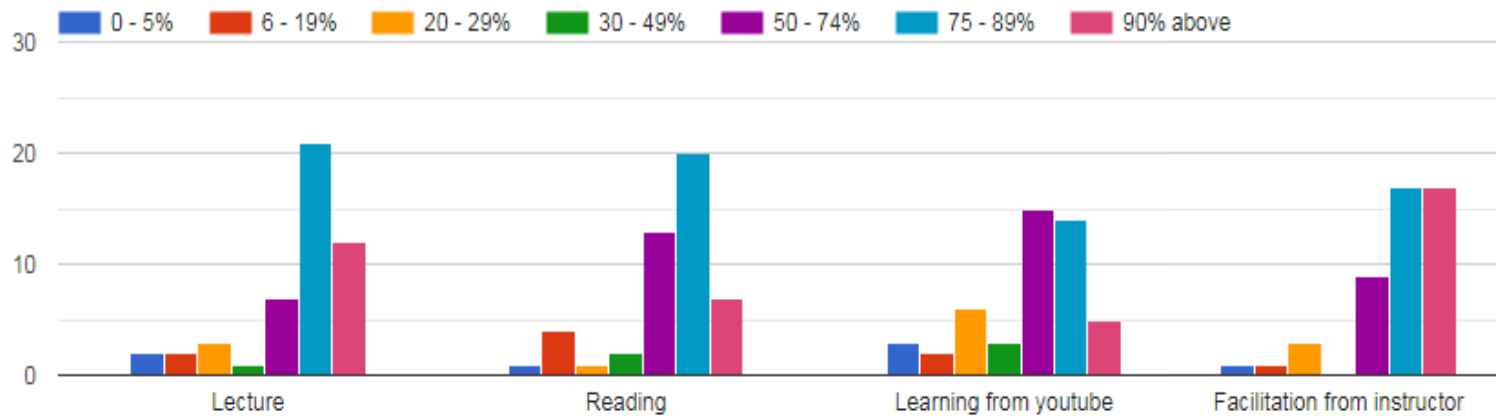
The Learning Pyramid
Average Learning Retention Rates

LECTURE 5%
READING 10%
AUDIO VISUAL 20%
DEMONSTRATION 30%
DISCUSSION GROUP 50%
PRACTICE BY DOING 75%
TEACHING OTHERS 90%
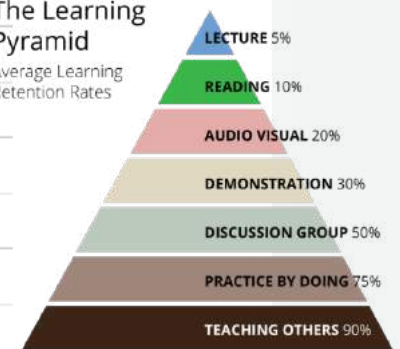
Adapted from NTL Institute for Applied Behavioral Science

Majority of students agree that practice the task together in group discussion have helped them to carry out progress meeting

This course adopts experiential learning approach. How much of the learning activities listed below contribute to your ability to carry out the poster presentation?
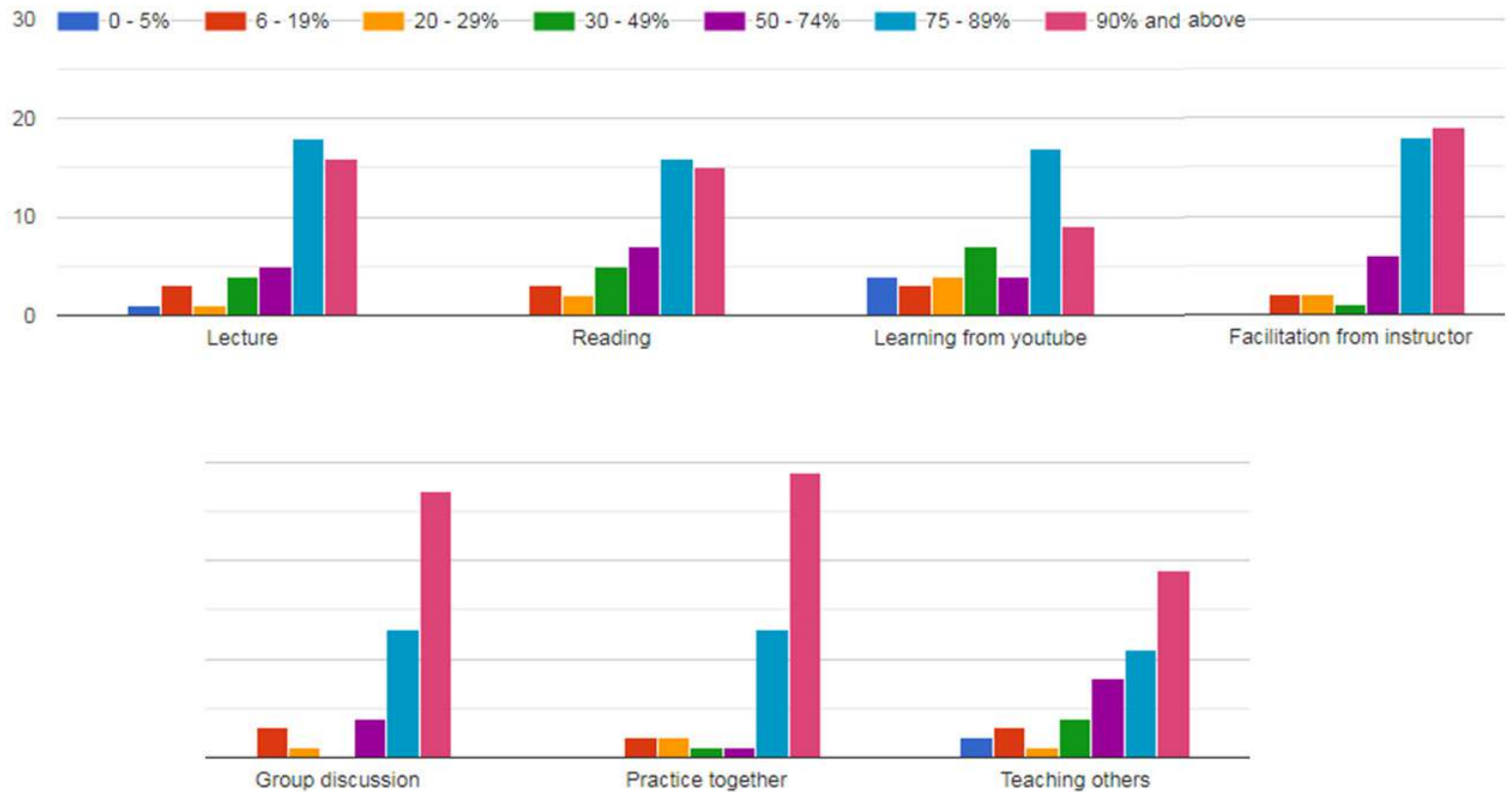
Legend: 0 - 5% | 6 - 19% | 20 - 29% | 30 - 49% | 50 - 74% | 75 - 89% | 90% and above

Charts: Lecture, Reading, Learning from youtube, Facilitation from instructor, Group discussion, Practice together, Teaching others

Majority of students agree that practice the task together in group discussion have helped them to carry out poster presentation

Future Directions

Increase fresh graduate marketability and new job creation

Towards transdisciplinary learning

Enhance soft skills and learning environment

Strengthen individual empowerment

Nurture nationhood spirit

Common Intellectual Experiences

Connecting Science to Arts to Enhance Learning

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35900 Tanjong Malim Perak, Malaysia

*Corresponding author: haniza@fsmt.upsi.edu.my

Introduction

The interdisciplinary approach is valued as an approach to nurture students interest. It is also the best way to reflect the importance of interconnectivity between fields of study. Especially in teaching anatomy and histology, interdisciplinary approach is the way to connect between the two.

Course Content

The course provides basic concepts and essentials of animal anatomy and histology, in association with their functions. At the end of the course, students will be able to identify the specialized cells involved in the formation of tissues and systems and their mode of actions. This includes the interactions involved and how cells and tissues are linked to form the anatomy.

Teaching and Learning Activities

Students were required to complete a mini project. Apart from that, they were also required to creatively role play selected parts of the course to further enhance their understanding of the course contents.

Assessment Methods

Students were assessed on their knowledge as well as the important skills such as ethics and values, teamwork and communication.

Mapping of CLOs, Delivery and Assessment

Learning Outcomes	Delivery	Assessment	Student Learning Time
CLO1 Analyse the structure, function and their relationship with cells, tissues and organs of vertebrates. (C4)	Interactive lecture Group discussion	40%	48
CLO2 Develop skills in solving problems related to the structure and function of organisms and their relationship at cellular level. (P3)	Laboratory Group discussion	20%	24
CLO3 Demonstrate the ability to access and use the information from various resources, media and technology related to animal anatomy and histology. (A3)	Mini Project-based learning Group discussion	30%	36
CLO4 Engage in lifelong learning and ability to show competency in producing teaching tools. (P4)	Teaching aid innovation Group discussion	10%	12
		100%	120 hours

Course Delivery Methods

Interactive Lecture
Lectures conducted in a more creative an active environment. Student-centered learning approach.

Project-based Learning
A project that will help to sharpen the skills and knowledge through active exploration and engaging experience.

Discussion with Peers
Allowing students to have open and free communication with their colleagues during discussion.

Coaching
Students are given opportunity to receive special coaching from the experts to develop their new skills.

Connecting Science to Arts to Enhance Learning

During the role play session, students are allowed to explore, develop, express and communicate ideas, concepts and express affection artistically. Integrating arts into teaching and learning of science provides an alternative approach to active learning. Through the coaching sessions, students are exposed to the unique principles, guide on the proper use of language and suitable techniques of emotional expressions.

Impact of Common Intellectual Experiences

1

Confidence

Increases students confidence level

2

Knowledge

Increases students understanding and ability to apply knowledge gained across discipline

3

Interest

Increases students interest in science through creative and engaging learning technique used

4

Experience

Provides valuable experience that enhances development of soft skills such as critical thinking and lifelong learning applicable for future use

5

Creativity

Enhances students creativity to synthesize ideas, think in different perspectives and strive to acquire knowledge and skills

Conclusion and Future Directions

Conclusion

Learning process is dynamic and involves incorporation of psychomotor, consciousness and interpersonal skill. Integration of knowledge of different fields have been proven to nurture interest and improves skills and performance of students.

Future Directions

01 Develop a systematic module for teaching and learning that incorporates science and arts.

02 Promotes interest in interdisciplinary approach in teaching and learning across fields of studies.

03 Encourage more joint activities and projects between lecturers, students and staff of various fields of studies.

Internships

CIT2901 Industrial Training

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

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

[2]Department of Aquaculture, Faculty of Agriculture,
Universiti Putra Malaysia,
UPM Serdang, Selangor Darul Ehsan

[3]Department of Biology, Faculty of Science,
Universiti Putra Malaysia,
UPM Serdang, Selangor Darul Ehsan

*Corresponding author: shiamala@upm.edu.my

CIT2901 Industrial Training is an internship programme for final year students in the Diploma in Agriculture programme.

Concept

Internships (i.e. Industrial Training) allow Crop Science students to gain working experience and apply their classroom learnings in real-world agricultural environments. Industrial training involves supervised practical training within a specified time frame at a government or private agency involved with agriculture.

Objectives

- Provide a comprehensive learning platform for students to enhance employability skills and become job ready through real-world agricultural industry exposure.
- Increase students' self-confidence and help students to develop their own competencies.
- Provide learners with hands-on practice in real workplace situation.

Duration

- The credit hours for internship is 12(0+12) with six months of training (24 weeks).
- 22 weeks training at agency + 2 weeks at university (Report completion and presentation).

Learning Outcomes

Communicate verbally and in writing and work with various stakeholders

CS, TS

Apply theoretical and practical aspects learnt with current practice in industry/organization

A3, EM, LS

Demonstrate commitment, ethics, current professionalism in performing tasks

P4, CTPS

C5

Complete tasks at work place in a critically-discerning manner
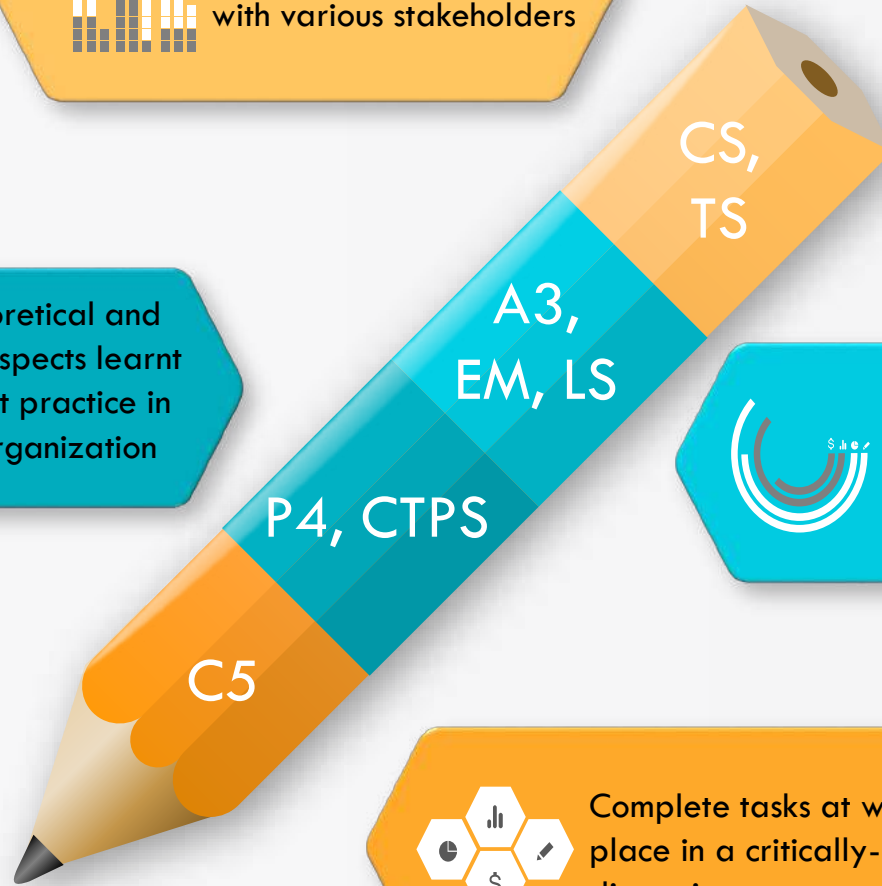
Implementation of Internships

Pre-internship

Coordinators

- Conduct briefing for students
- Disseminate information
- Submit application form to local and international agricultural agencies
- Follow-up with agency
- Conduct second briefing on safety
- Prepare internship kits

Students

- Identify agency for placement
- Attend internship briefing
- Start early preparation

During internship

Coordinators

- Ensure students have registered at their respective internship placement companies
- Communicate with students from time to time
- Prepare supervisory-visit schedule

Students

- Adhere to all safety precautions at the agency
- Document daily work activities
- Keep record of tasks in the logbook
- Participate in all the organization's activities
- Conduct a special project

Post-internship

Coordinators

- Remind students to submit log-book and report
- Organize seminar presentations for students
- Remind agency and university supervisors to return their evaluation forms
- Key in student marks
- Prepare final report

Students

- Submit logbook and report
- Do a presentation on their special agricultural project

65

Mapping of LOs, Delivery and Assessment

Learning outcomes	Delivery	Assessment	SLT
Complete tasks at work place in a critically-discerning manner. (C5)	• Briefing by the field supervisors on subject matters • Projects	Agency evaluation = 40% University evaluation = 20% Special project report = 20% Seminar presentation = 20%	488 credit hours
Apply theoretical and practical aspects learnt with current practice in industry/organization. (P4, CTPS)	• Daily activities • Special project		
Demonstrate commitment, ethics, current professionalism in performing tasks. (A3, EM, LS)	• Task based activities • Presentation on special projects		
Communicate verbally and in writing and work with various stakeholders. (CS, TS)	• Presentation on special projects • Report writing		

Impact on Student Performance

Seminar assessment (20%)

Report assessment (20%)

University assessment (20%)

Agency assessment (20%)

91% A+
8% A-
1% B+

Final grade of Internship Programme for Diploma in Agriculture students Sem 1 2018/2019 (93 students)

University (20%) — 18%
Agency (40%) — 36%
Seminar (20%) — 16%
Report (20%) — 16%

The average percentage scored by Diploma in Agriculture students for four individual assessment

Students' Special Project Seminar Presentation

Students' special project conducted on pest management at Zenxin Organic Park, Johor

Students' special project conducted on harvesting techniques of persimmon fruit at Dagam Farm, South Korea

Student Activities During Industrial Training
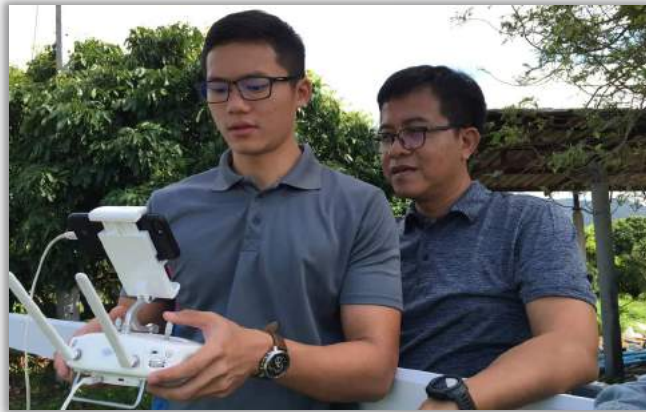
Student trained to do mapping using drone at Maejo University, Thailand

Student measuring planting distance of durian tree at Baba Farm

Student conducting analysis using AAS at MARDI

Students trained to plant paddy in Thailand

Student checking the survivability of grafted durian seedlings at DOA Pahang

Student practising marcotting technique at fruit farm

Internship Innovations

Transform UPM students and industrial training evaluators to be **AMBASSADORS** in promoting UPM nationally and internationally.

We have been continuously sending our students for industrial training programmes at various agencies locally, i.e., DOA, MARDI, MPOB, PPK, SOP, Sime Darby and etc. and internationally to Dagam Farm, South Korea; Bogor University, Indonesia; Meajo University, Thailand; Organic Farms, India and etc.

| To promote UPM R&D nationally and internationally | To promote UPM products and services | To promote UPM continuing-education programme | To promote UPM expertise | To promote UPM training and professional courses |

Impact of Internships Programme

01 Benefits to the University

- Close the gap between academia and agricultural industry
- Enhance R&D collaboration locally and internationally
- Feedback received used to improve the existing curriculum

02 Benefits to the Students

- Gain relevant work experience
- Training experience will further solidify the on-campus learning process
- Provide students with comprehensive learning platform to enhance their employability skills
- Increase students' self-confidence and help them recognize their own abilities
- Increasing leadership ability and responsibility to perform or execute given tasks
- Increases students' chances of employment after graduation

03 Benefits to the Industry

- Gain opportunity to assess the capabilities of potential employees
- Recognition of industry support for the education sector
- Facilitates and strengthens university-industry partnership and linkages
- Enhances participating agencies' reputation among graduates

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Students Feedback

Some of the Diploma in Agriculture students Sem 1 2018/2019 with their management staff

01 *Exposed to new and real working environment.*

02 *Gained more knowledge and experience from the successful farmers.*

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

04 *Improved our self-esteem and confidence level when facing the real working process.*

05 *Improved our communication skills with various kinds of people.*

06 *Developed our teamwork skills when doing the task given. Cooperation is important as a great team is made up of great individuals.*

Conclusion

The internship component can add value to all programmes, specifically it improves graduates' work skills and prepares them to face real challenges of the working world.

Thus, the internship programme should be taken seriously to ensure that maximum benefit is obtained by students in order to increase the marketability and employability of UPM graduates.

Future Directions

Student exchange programme

Promote UPM as a university of international repute

Expanding partnership with local and international agencies

Enhance linkage with countries practicing advanced agriculture technologies

Internships

Ruminant/Equine Internship ASH43304

Ras Azira Ramli[1,2], Mohd Nizam Haruni[3] & Asmad Kari[3*]

[1]Centre for Management of Academic Excellence and Innovation (COMAE-i), Universiti Sultan Zainal Abidin

[2]Faculty of Medicine, Universiti Sultan Zainal Abidin

[3]Faculty of Bioresources and Food Industry, Universiti Sultan Zainal Abidin

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Students in the Bachelor of Animal Health and Production programme can choose internships either in ruminant or equine health.
4-credit course run for 24 weeks.

Students gain experiential learning experience in the field of poultry and animal health sciences.

Students have the opportunity to experience a range of activities in the poultry-based industry, from working in the hatcheries, moving on to poultry production, all the way up to product development of processed-foods.

Course Mapping

CLO3 (MQF8, A2)
Provide feedback to university regarding animal care practical experience

CLO2 (MQF4, A1)
Identify their skills and relate experience in the animal farm

CLO1 (MQF3, A1)
Practice the knowledge and experience obtained at the animal farm

3

2

1

ASSESSMENT

60% Academic Supervisor

20% Student Report

20% Industrial Supervisor

Students apply their knowledge in animal health sciences and production at governmental or private farms. Prior to their experiential training, they will visit farms to learn more about agriculture care.

INTERNSHIPS ACTIVITIES

Cleaning up after livestock

Halal slaughtering and poultry production

✓ **Completed**

Livestock care learning session with agriculture officer

Performing animal pedicure

Performing animal vaccination

Housing and farm management

Impact of Internships

Students

Prepare UnisZA students for poultry industry

Build networking with professionals in the field of farming and poultry

Community/Industry

Build talent for local farming industry

Academicians

Gain a better sense of current market trends and employers' needs that allows them to improve curriculum and programme content

Create partnership and research opportunities
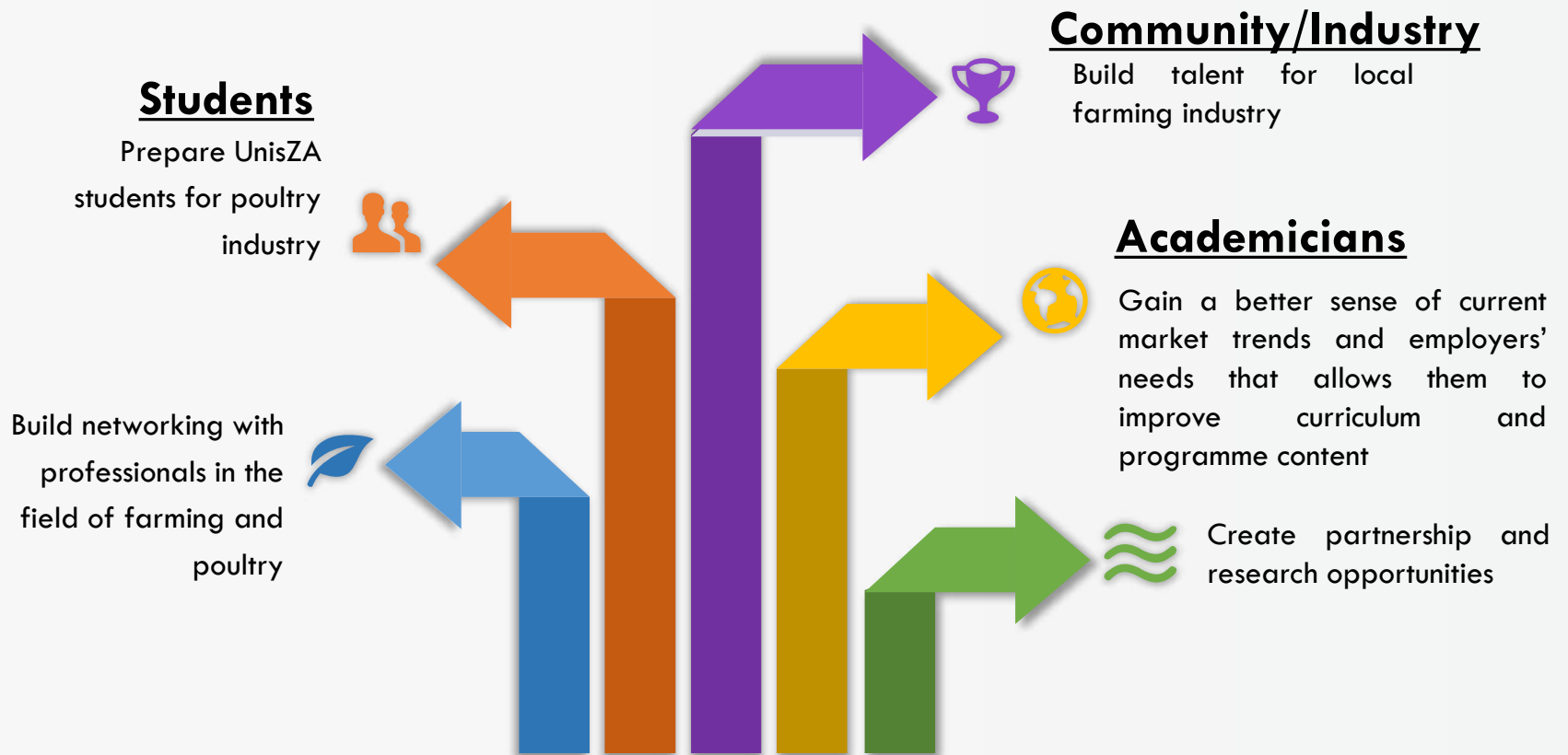
Conclusion

The Internships course provides experiential learning that integrates knowledge and theory learned in the classroom with practical application and skills development in a professional setting.

It also gives the opportunity for employers to identify and nurture talent among the interns.

"The expert in anything was once a BEGINNER"

Future Directions

OFFER TO FINAL YEAR STUDENTS

Equip final year students with sufficient knowledge and skills in animal health science.

CREATE MORE INDUSTRY PARTNERSHIP

Students gain practical experience in industrial environments to develop their interest.

Internships

Industrial Training (SKMM 3915/ SKMO 3915)

Tuty Asma Abu Bakar* & Nik Ahmad Ridhwan Nik Mohd

School of Mechanical Engineering,
Faculty of Engineering,
Universiti Teknologi Malaysia, 81310 UTM
Skudai, Johor

*Corresponding author: tuty@utm.my

- Industrial Training (SKMM 3915/SKMO 3915) is offered in the third year, during the long semester break (Semester 3).

- It is a compulsory course for students of all programmes undertaking the Bachelor of Mechanical Engineering (SKMM/SKMB/SKMP/SKMI/SKMV/SKMO/SKMT).

- Industrial Training is a 5-credit course that exposes students to real work settings in various industries for 12 weeks. The course utilizes 200-hours of Student Learning Time (SLT).

- Students are placed in organizations in industries best related to their area of studies.

- It is an experiential learning module that requires students to apply knowledge acquired in class in actual work and business settings.

- Skills acquired during practical training may be used later in their final year project and final year courses as well as to equip them for future work.

Mapping of CLOs, Delivery and Assessment

Course Learning Outcomes (CLO)	Delivery (Teaching Method)	Assessment	Key Performance Indicators (KPI)
Describe relevant processes in a company and write a formal technical report within a stipulated time	Lecture, class, discussion and participation	Project report	Students are able to apply professional engineering ethics in solving engineering problems.

KPI for CLO: Average mark of 65%.

100% of students pass the course.

Reports are clear, correct and well presented. |
Apply theory and skills acquired in class, workshop and labs in an actual industrial setting	Active learning	Project report	
Analyse and solve given technical problems during industrial training	Case study, active learning, class discussion and participation	Project report	
Demonstrate and execute assigned tasks in a company	Group project cooperative learning	Project report	
Sense opportunities for improvement and design acceptable engineering solutions	Individual report, final project	Project report	
Show respect/attentiveness to staff at different hierarchical levels in the organization, cooperate in a team and contribute to project outcome	Project presentation, class discussion	Project presentation, Q & A session	
Adopt professional practice and ethics at work. Obey company rules and regulations	Observation and project presentation	Observation and project presentation	

Industrial Training Implementation
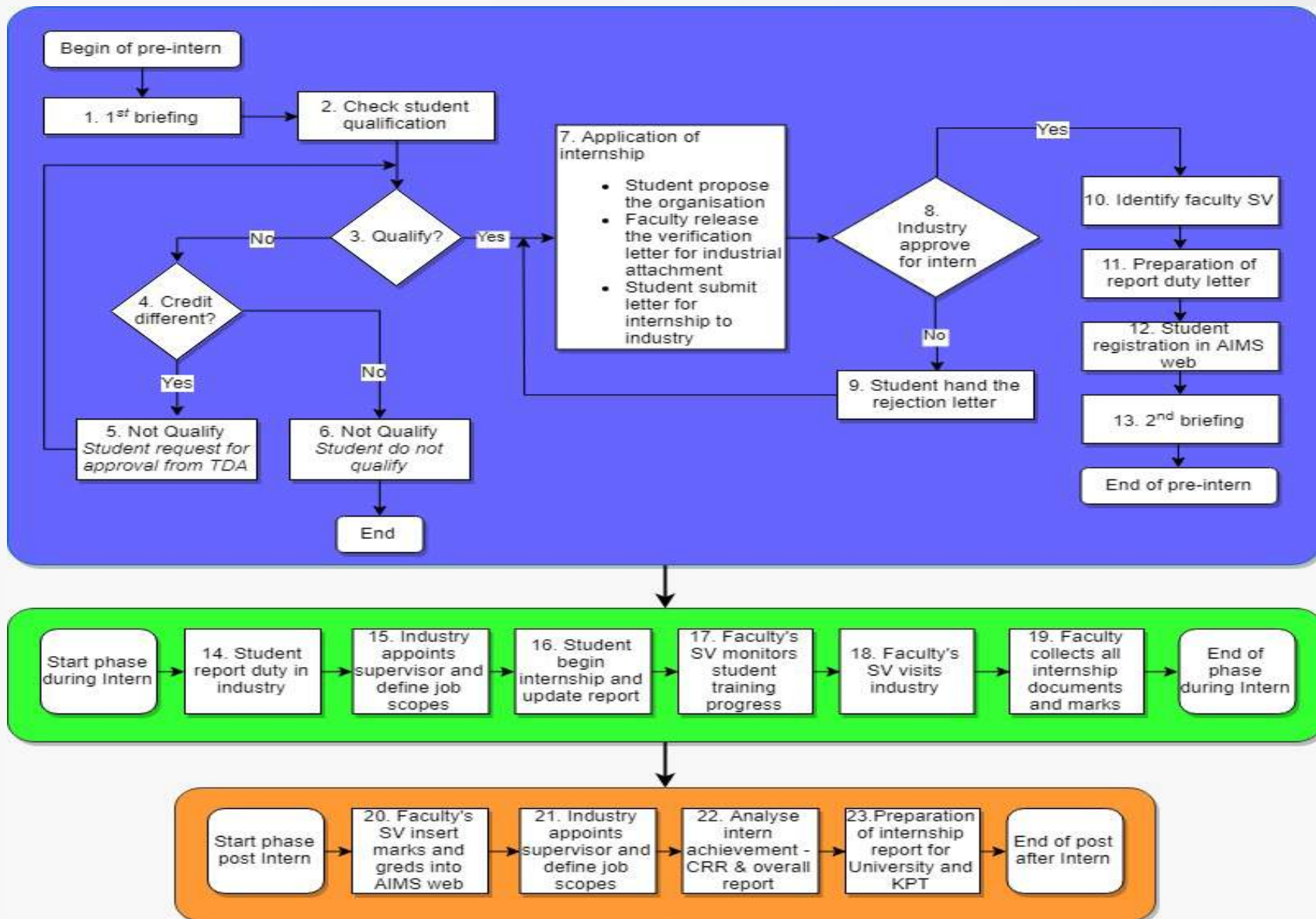
Industrial Training Experience

Site visit and official discussion at TLDM Lumut

Discussion with students on the internship progress at Enigma Technical Solution

Project presentation by the intern student
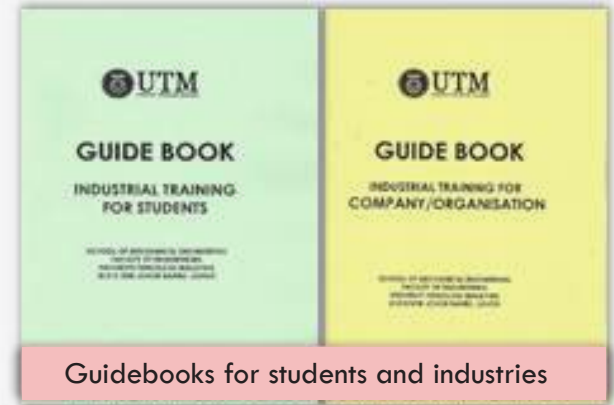
Guidebooks for students and industries

Supervision visit at TechnipFMC

Impact on Students and Academicians

Impact on students
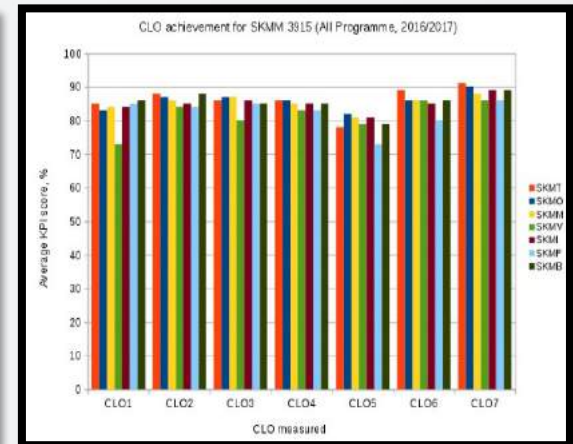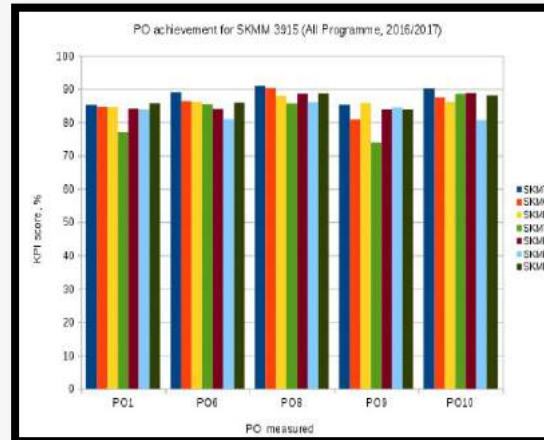
Programme Outcome and Course Learning Outcome Achievement
for the Academic Session of 2016/2017

Impact on academicians
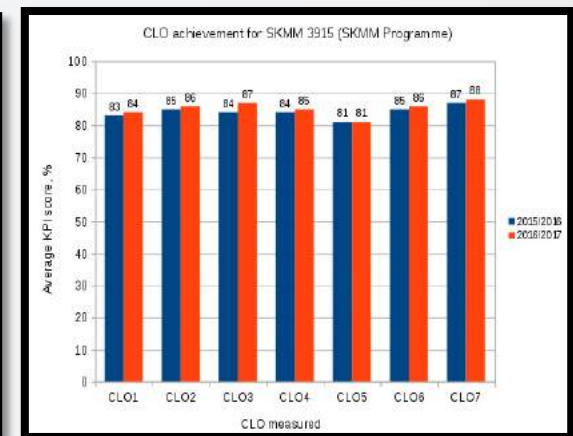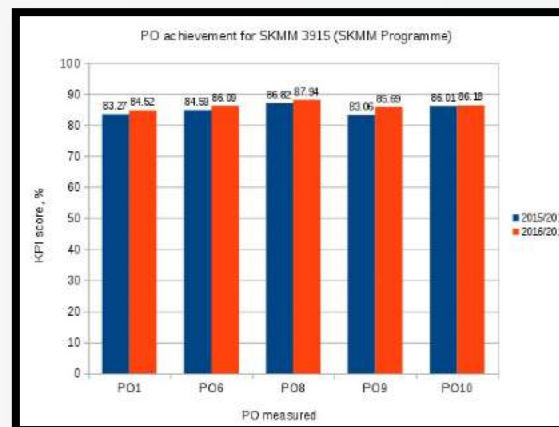
Achievement of Programme Outcomes and Course Learning Outcomes,
Academic Sessions 2015/2016 and 2016/2017

Industrial Training Innovation

Transform UTM students and UTM industrial training supervisors into **AMBASSADORS** and the **MARKETING ARM** for UTM

Why & How?

1. **To promote UTM R&D** - potential research contract projects, matching funds, PSM-LI, PhD and Master student topics, Case study for research projects
2. **To promote UTM Products & Services** - IR4.0 services, consultancy services, lab services, commercialised products and IPs
3. **To promote UTM continuing education programme** - SPACE, Industrial Master/PhD, Part time PG courses, UTM experts database, long distance learning
4. **To promote UTM as Engineering Education Leader** - Increase UTM students marketability
5. **To promote UTM trainings and professional courses**
6. **To get donation to improve UTM facilities and programmes** - Endowment, wakaf, gifts, scholarships, sponsors, sharing of lab resources
7. **To get CSR partner** - Projects with community, service learning, schools, sponsors
8. **To promote our Experts** - Professor Chair, Company advisor and consultants
9. **To get expert knowledge and feedback** - IAP, panels for design project, other projects
10. **To brand UTM as a University-Industry Leader**

Industrial training strengthens students' learning experience gained at university, provides an excellent stepping-stone for graduates in terms of job opportunities and also brings multiple benefits to the university.

Conclusion

Future Directions

➢ Industrial Training and best practices

➢ High academic achievement

➢ Ability to work independently

➢ Superior interpersonal and communication skills

➢ Outstanding time management skills

➢ Excellent research and analytical skills

➢ High quality recruitment pool

➢ Access to specialist R&D capability and innovation

➢ Industry-academia collaboration and participation

➢ Bringing more research grant funding and research collaboration to the university

Capstone Project

Intelligent Shopping Trolley

Lim Cheng Siong[1]*, Zulkarnain Ahmad Noorden[1], Suhana Mohamed Sultan[1], Rashidah @ Siti Saedah Bte Arsat[1], Fauzan Khairi Che Harun[1] & Hayati Abdullah[2]

[1]School of Electrical Engineering, Faculty of Engineering, Universiti Teknologi Malaysia, 81310 UTM Skudai, Johor

[2]UTM Academic Leadership (UTMLead), Universiti Teknologi Malaysia, 81310 UTM Skudai, Johor

*Corresponding author: lcsiong@utm.my

- Trolleys are important equipment for a stress-free weekend experience in the mall when you have a long shopping list.
- Through the implementation of existing as well as up-to-date technology, conventional trolleys can be modified accordingly to cater for customer comfort.

Project Overview

- SKEM3722 Capstone Project is offered to final year students of the Bachelor of Engineering (Electrical - Mechatronics), Universiti Teknologi Malaysia, to fulfil the Engineering Accreditation Council (EAC) Integrated Design Project requirement.
- Students are required to solve a complex engineering problem (industry or community based project) in this 2-credit course (80 hours SLT).
- Conceive-Design-Implement-Operate (CDIO) approach is adapted in solving the project.

Website of Capstone Project

Mapping of LOs, Delivery and Assessment

Learning Outcomes	Delivery	Assessment	SLT
Ability to independently recognize the needs of the end-user and apply latest and suitable technology to solve a complex engineering problem. (SC)	Lecture, project based	In-Lab Activities, Peer Review, Technical Report	80 hours
Use appropriate techniques, skills, and modern engineering tools, instrumentation, software and hardware necessary for solving a complex engineering problem with an understanding of their limitations. (SCMT)		Individual Report, In-Lab Activities, Technical Report, Interview	
Conduct a project within a specified budget and time frame using available resources for a complex engineering problem. (ES)		Minute, Technical Report	
Design solutions for complex systems, components, or processes with appropriate consideration for public health and safety, legal and cultural issues, and environmental considerations. (THDS)		Individual Report, In-Lab Activities, Conceptual Prototype, Final Product, Technical Report, Interview	
Function effectively as an individual, and as a member or leader in diverse teams. (TW)		In-Lab Activities, Minute, Individual Report, Peer Review	

CDIO Approach
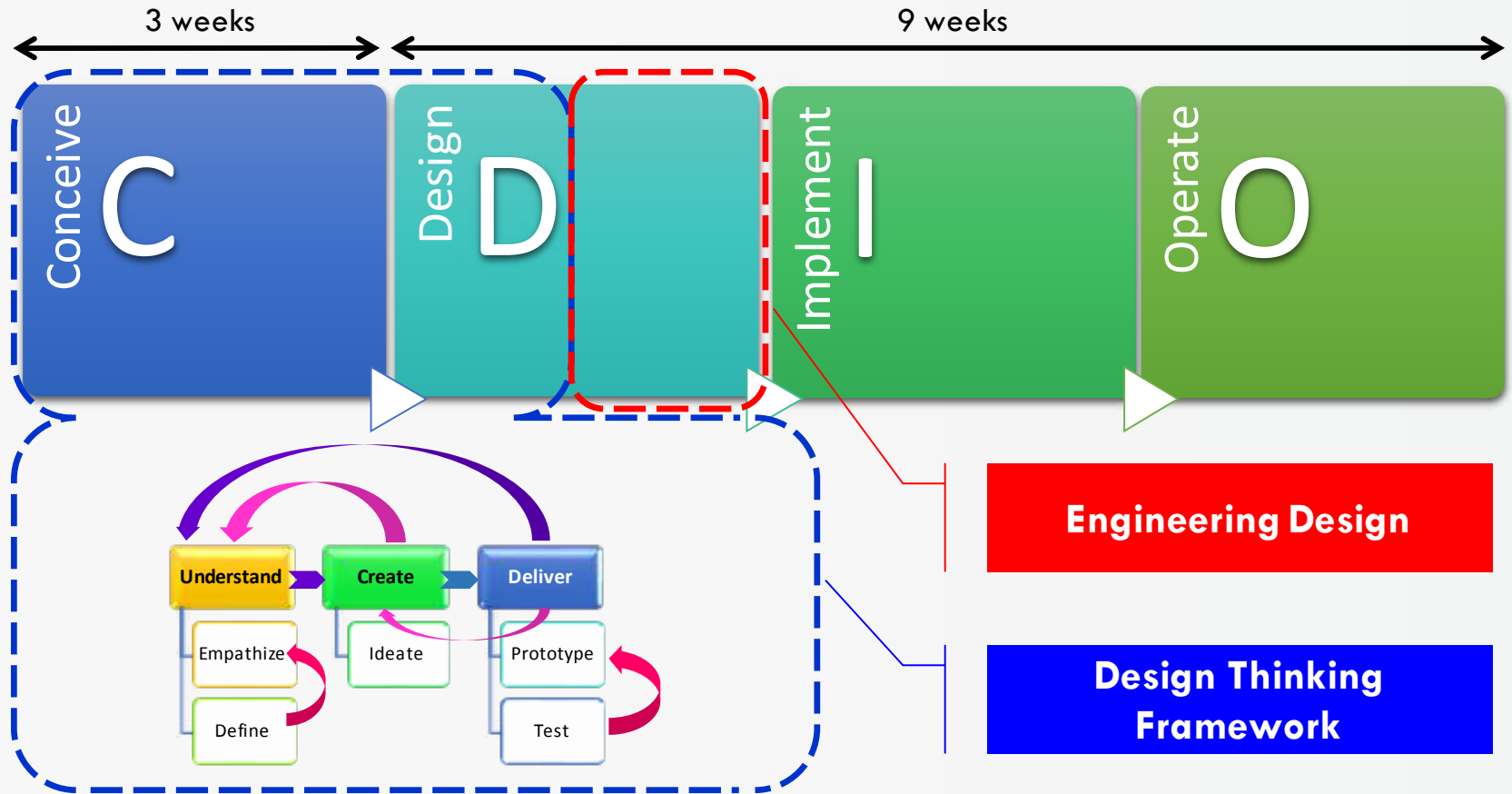
Conceive-Design-Implement-Operate (CDIO) Approach

CDIO Approach

03

Actual site visit and survey during conceiving phase

Discussion at designing phase

Implementation of the solution

01

Capstone Project Exhibition 2015

02

Operating the working prototype **04**

Impact on Students and Academicians

Commercialized app developed with funding
awarded by the CREST R&D Grant

EMAS | Electronic Meliponini Advanced System

Metatechne Enterprise   Productivity

3+

Offers in-app purchases

This app is compatible with all of your devices.
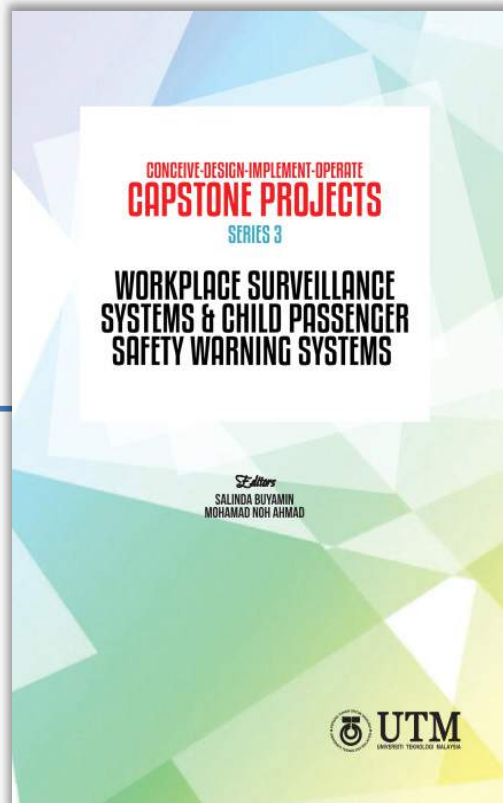
In 2018,
CREST R&D
Grant was offered
to projects
selected for
commercialiation

CONCEIVE-DESIGN-IMPLEMENT-OPERATE
CAPSTONE PROJECTS
SERIES 3

WORKPLACE SURVEILLANCE SYSTEMS & CHILD PASSENGER SAFETY WARNING SYSTEMS

Editors
SALINDA BUYAMIN
MOHAMAD NOH AHMAD

UTM
UNIVERSITI TEKNOLOGI MALAYSIA

■ 201516/1   ■ 201617/1   ■ 201718/1   ■ 201819/1

Published book
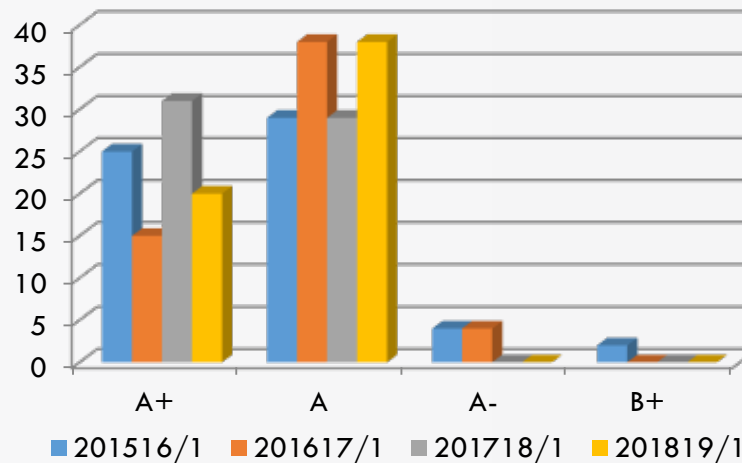
Improvement in student results

National runner-up in The
James Dyson Award

Conclusion

The capstone project strengthens the integrated learning experience, wherein students can apply multidisciplinary knowledge and skills attained in their earlier years of study.

Future Directions

- Enter more projects to university, national and international-level competitions, such as The James Dyson Award and Innovate Malaysia.

- Adoption by industry, commercialization and knowledge transfer to community.
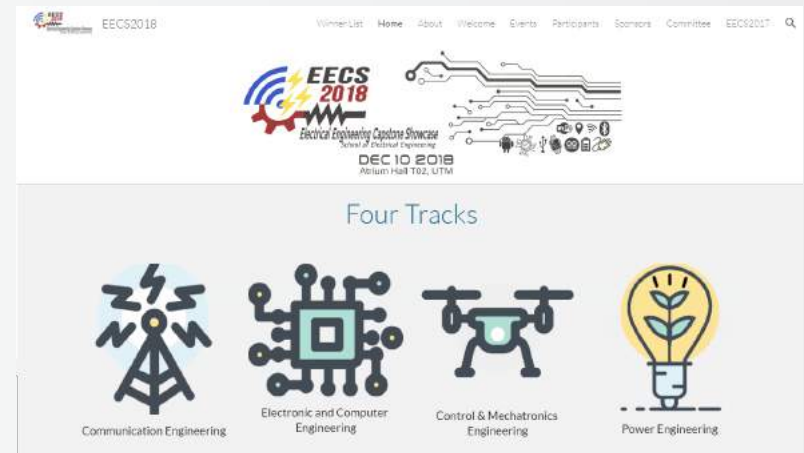
Capstone Project

Reach-out Project: Bridging Classroom and Society (R'Project)

Beh Cheng Siew[1]*, Mazlisa Mohd Isa[2],
Umi Kalthom Ramin[1], Hamidon Saniman[1],
Khatijah Md. Saad[1] & Prasana Kesavan[3]

[1]Department of Design and Visual Communication, Politeknik Ibrahim Sultan, KM10 Jalan Kong Kong, 81700 Pasir Gudang, Johor

[2]Creative Design Centre (CDeC), Politeknik Ibrahim Sultan, KM10 Jalan Kong Kong, 81700 Pasir Gudang, Johor

[3]Department of General Studies, Politeknik Ibrahim Sultan, KM10 Jalan Kong Kong, 81700 Pasir Gudang, Johor

*Corresponding author: siewbeh@gmail.com

Reach-out Project: Bridging Classroom and Society (R'Project) is a capstone project offered to the final year students of Bachelor of Design in Visual Communication and New Media with Honours (BVC), PIS Malaysia, undertaking research and final projects.

R'Project is accomplished by integrating 5 academic courses (3 to 5 Credits per course; approximately 200 hours of SLT) and engaging with several stakeholders.
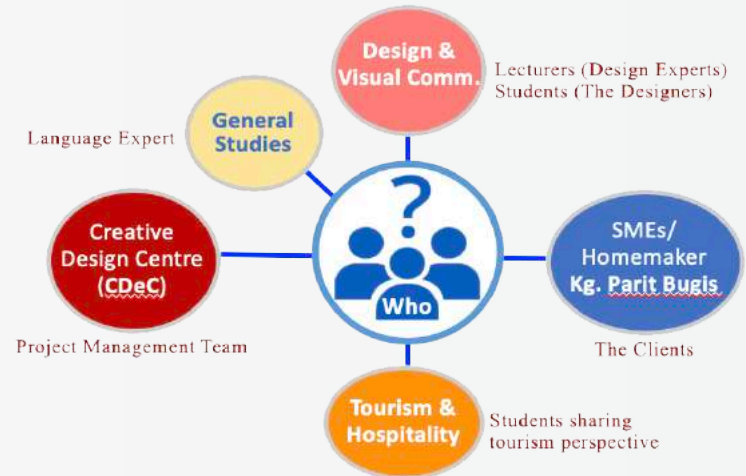
Students are actively involved in dynamic real-life problem-solving by employing the Conceive-Design-Implement-Operate (CDIO) approach together with P21: Learning and Innovation Skills, and societal-based projects (Society 5.0 & P21: Life & Career Skills).

Mapping of LOs, Delivery and Assessment

| Infuse CDIO Skills Set & P21 in Project		Mapping Learning Outcomes (LOs) of Each Courses		Delivery & Assessment		
Project Task: LOs	**Courses**	**Related CLOs**	**Delivery**	**Assessment**	**SLT**
At the end of the R'Project's Task-1, students will be able to: 1. Conduct visual research method in a diverse range of perspectives to gather important and relevant data for design problem-solving or effective writing purposes. *CDIO: Design Thinking (collecting the POEMS)* 2. Analyze visuals and descriptive data by categorizing the findings into various specific aspects so that to evaluate the important and necessity into relevant sources for either design problems or writing needs. *CDIO: System Thinking (analyzing the POEMS)* *P21: Critical Thinking & Problem-solving*	**V** BVC5143 VISUAL RESEARCH METHODOLOGY **C** BVC5125 CULTURE, IDENTITY & COMMUNICATION **B** BVC5135 BRAND COMMUNICATION & STRATEGY **E** ENGLISH FOR DESIGN ENGLISH FOR TOURISM & HOSPITALITY - Identify underlying concepts and ideas from various design-related materials using appropriate language.	**V** Demonstrate a critical understanding of several areas of Visual Culture that enable application of analysis, evaluation and reflection in any graphic design field. **C** Display the effectiveness of communication design in using the conceptual and theoretical communication tool. **B** Analyse the elements, types, functions, and branding strategies. **V** Demonstrate the ability to select visual research themes, analyse and professional initiative in a range of well-structured, coherent and creative forms. **C** Demonstrate an in-depth understanding towards the factors influencing visual elements and examine how aesthetic ideas travel across cultures.	Briefing and conceiving; Integrating and Collaborating real Societal-based Project: Homestay at the community, explore and socialize to do case study Consultation and feedbacks with lecturers and clients for progress development and checking – UX (User Experience)	* R'Project assessment covers: **Case Study 30%** + **Collaborative Review & Reflection 10%** * Plus 30% + 10% assessment as in R'Project Task-2 * Another 20% of the assessment tasks were carried out separately in other assignment/activity	80 hours (40%) out of the total 200
3. Recreate a brand name and develop its brand range for Kampung Parit Bugis products and services based on findings and analysis conducted. *CDIO: Design (proposing new things)* *P21: Creativity & innovation, collaboration, social culture & responsibility skills*	**C** **B** **D** BVC6156 DESIGN PROJECT	**B** Display the understanding of the impacts and importance of design in society. **C** Create brand communication and strategies to fit specific situations or problems. **D** Create meaningful and purposeful design projects through series of conceptual development via integration of new media techniques, design principles and practices to attain effective art direction.	Independent ideas developments	**Final Project Proposal/Project 30%** + **Collaborative Review & Reflection 10%** * Another 20% (for courses: B & C) and another 60% (course: D) of the assessment tasks were carried out separately in other assignment/activity	80 hours (40%) out of the total 200

P21: 21st Century Learning

Mapping of LOs, Delivery and Assessment

Infuse CDIO Skills Set & P21 in Project		Mapping Learning Outcomes (LOs) of Each Courses		Delivery & Assessment		
Project Task: LOs	**Courses**	**Related CLOs**		**Delivery**	**Assessment**	**SLT**
At the end of the R'Project's Task-2, students will be able to: 4. Generate brand promise e.g. taglines for the main brand and key words for all the sub-brands of those products and services which have been developed in Task-1, applying persuasive and illustrative language.	**E** ENGLISH FOR DESIGN	**E** Identify underlying concepts and ideas from various design-related materials using appropriate language.		Integrating and Collaborating real Societal-based Project: Lecture, real experience and UX testing	* The learning process was within the R'Project implementation, but the assessment task was carried out separately as in Quiz (20%)	24 hours (learning + Quiz 20%) out of the total 120
CDIO & P21: Conceive & Design for Communication 5. Write design proposal brief (or a piece of infographic for BVC5143) containing a media plan based on the findings, creations and experiences during the development process in Task-1, and to be presented to the client. *P21: Communication, Information, Media & Technology Skills* *CDIQ: Written & Oral Communication*	**V** BVC5143 VISUAL RESEARCH METHODOLOGY **C** BVC5125 CULTURE, IDENTITY & COMMUNICATION **B** BVC5135 BRAND COMMUNICATION & STRATEGY ENGLISH FOR DESIGN ENGLISH FOR TOURISM & HOSPITALITY	**V** Demonstrate the ability to select visual research themes, analyze and professional initiative in a range of well-structured, coherent and creative forms. **C** Display the understanding of the impacts and importance of design in society. **B** Create brand communication and strategies to fit specific situations or problems. Manage a brand concept and build an appropriate brand communication plan. Write design briefs pertaining to client needs and expectation. Explain and justify product designs using presentation skills in a convincing manner.		Consultation and feedbacks with lecturers and clients for progress development and checking – UX (User Experience)	* R'Project assessment covers: **Design Proposal 30%** + **Collaborative Review & Reflection 10%** * Plus 30% + 10% assessment as in R'Project Task-1 * Another 20% of the assessment tasks were carried out separately in other assignment/activity	80 hours (40%) out of the total 200
					Written Assignment 30% + Presentation 30% * Another 40% of assessment tasks were carried out separately	72 hours (60%) out of the total 120
6. Write promotional contents e.g. travelogues, brochures, articles, etc. describing available facilities and services, cultural performances, art crafts and food products, and to be presented to the client.	ENGLISH FOR TOURISM & HOSPITALITY	Describe tourism and hospitality products and services using appropriate language in commercial texts such as travelogues, brochures, articles, etc.		Lecture, real experience and UX testing	**Written Assignment 20%** * Another 80% of assessment tasks were carried out separately	24 hours (20%) out of the total 120

Approach – R'Project Framework
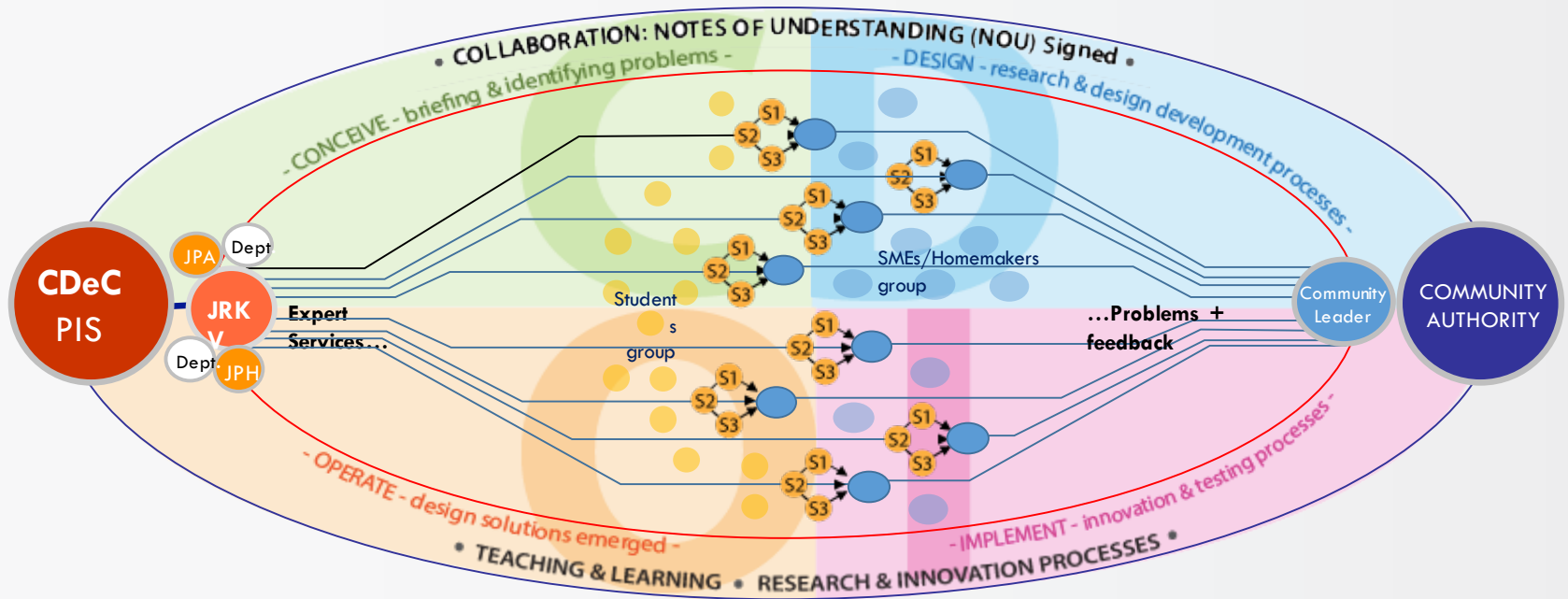
An adaptation of CDIO with compliance to 21th. Century Learning Framework

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Teaching Delivery Transformation

Conventional 1-way Instruction in Classroom

BVC5143 VISUAL RESEARCH METHODOLOGY

Lecture → Research → Project → Grade

BVC5125 CULTURE, IDENTITY & COMMUNICATION

Lecture Research → Project → Grade

5135 BRAND COMMUNICATION & STRATEGY

Lecture → Research → Project → Grade

BUE 3023 & 3053 ENGLISH

Lecture → Assignment → Presentation → Grade

BVC6156 DESIGN PROJECT

Design Development → Product Making → Pitching → Grade

VS
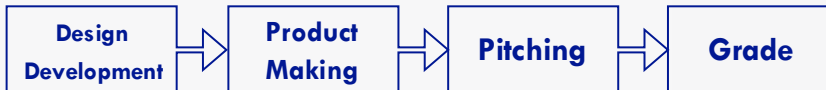
R'Project dynamic approach
— promote **Active Learning** in Societal Context

Collaboration

community

VISUAL RESEARCH

CULTURE

1 Project (Integrated)

ENGLISH

BRAND

Academia
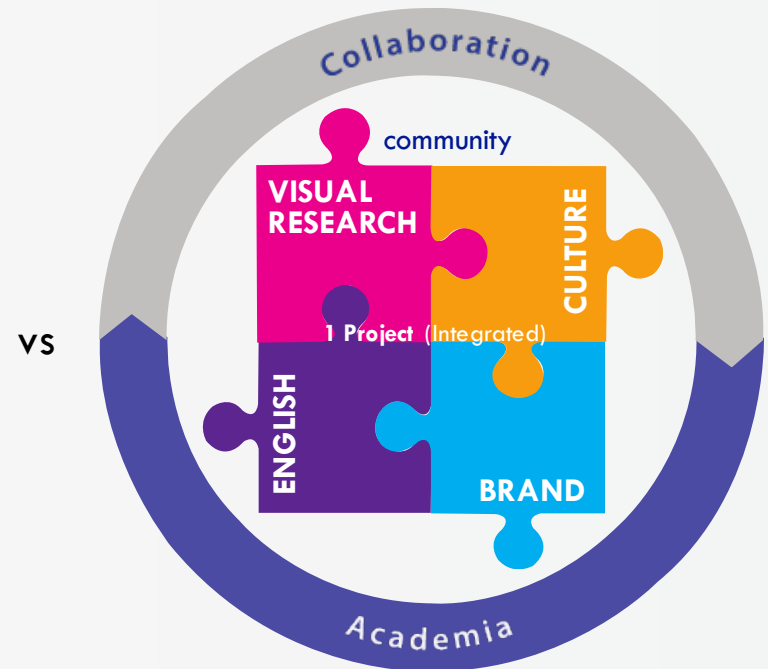
Student Involvement

R'Project Approach

Collaboration

Academia

community

VISUAL RESEARCH

CULTURE

1 Project (Integrated)

ENGLISH

BRAND

Reaching out...
- exploring
- experiencing
- identifying issues
- feedback

...about the R'Project PIS

Coloring Therapy Book
featuring Kg. Parit Bugis culture & lifestyles

DOKUMENTARI PENDEK
TARIAN BARONGAN

Short Video Documentary
about Barongan Dance

Samples of R'Project's outputs done by students and have successfully commercialized

Impact – Academic Achievement

**Conventional
1-way Instruction**
in Classroom

**R'Project dynamic
approach** – **Active
Learning**
in Societal Context

Conventional 1-way Instruction			vs	R'Project dynamic approach – Active Learning		
• Students work in silo without collaboration and clients. Missing: integration, teamwork communication and collaboration.				• Students work collaboratively in a Project Management team comprising 4 lecturers from different disciplines and real community-based clients.		
• Problem-solving mainly through **assumption** and **imagination, no real practice** (neither real-life project nor real-life experience).				• **Problem-solving** through real scenarios, engaging **communication** and **collaboration**, activating **critical-** and **creative-thinking** via active ideation and analysis, empathy and gathering User Experience (UX), project is well-planned and developed.		
Cognitive	**Behavioral**	**Affective**		**Cognitive**	**Behavioral**	**Affective**
√	√	x		√ actively	√ actively	√ actively
• Outcomes are for grading purpose only.				• Outcomes are ready for commercial use.		

Impact – Soft Skills

**Conventional
1-way Instruction**
in Classroom

**R'Project
dynamic approach
– Active Learning** in
Societal Context

Student Feedback			vs	Student Feedback		
• Feeling too shy to speak out • Afraid of making mistakes • Worried about entering the workplace				• Able to speak out and share ideas • Feeling confident • Excited to enter workplace		
Industry Feedback				**Industry Feedback**		
Cognitive	**Behavioral**	**Affective**		**Cognitive**	**Behavioral**	**Affective**
Students lack critical thinking and creativity	Students lack teamwork and communication	Students lack confidence and passion		• Students demonstrate problem-solving abilities • Students contribute valuable ideas during project development	• Students work well in teams • Students communicate well • Students able to participate well in discussions	• Students' confidence levels increase • Students do a good job integrating ideas into design development • Students love what they are doing

Impact – Cost, Time, Workload

COST per Semester

53%

RM3,420	
RM3,420	
RM3,420	RM4,820

12,000
10,000
8,000
6,000
4,000
2,000
0

VS.

Conventional Project Field-Study Costing

R'Project Project Field-Study Costing **(Integrated Model)**

Student-Learning-Time (SLT)

25%

350
300
250
200
150
100
50
0

301 Hrs.

219 Hrs.

215 Hrs.

177 Hrs.

VS.

Conventional Dependent SLT

Conventional Independent SLT

R'Project Dependent SLT **(Integrated Model)**

R'Project Independent SLT

Assignment Workload

52.6%

20
18
16
14
12
10
8
6
4
2
0

19

9

VS.

Conventional Assignments

R'Project Assignments **(Integrated Model)**

- ■ BVC5143 VISUAL RESEARCH METHODOLOGY
- ■ BVC5125 CULTURE, IDENTITY & COMMUNICATION
- ■ BVC5135 BRAND COMMUNICATION & STRATEGY

Conclusion

PACKAGING PROJECT
(Industrial and Graphic Design)

INDUSTRIAL PROJECT
(Industrial Design)

JOHOR CRAFT
(BVC)

MELAKA HERITAGE
(BVC)

WKBD
Rebranding Project
(BVC)

R'Project:
KPB Rebranding Project
(BVC)

Future Directions

- Scale to other projects/programmes
- Increase commercialization
- Knowledge transfer to community

Students who undertook those projects displayed **active participation, better problem solving** and **good communication skills,** as well as **higher self-confidence**

Capstone Project

Using Systematic Integrated Design to Scaffold Capstone Project in Chemical Engineering

Dayang Radiah Awang Biak*[1,2], Rozita Omar[1], Nur Syakina Jamali[1], Mohamad Syazarudin Md Said[1], Shafreeza Sobri[1], Zurina Zainal Abidin[1], Wan Azlina Wan Abdul Karim Ghani[1], Mohd Halim Shah Ismail[1], Hamdan Mohamed Yusoff[1], Shamsul Izhar Siajam[1], Mohd Razif Harun[1], Mohammad Heikal Ismail[1], Faizah Mohd Yasin[1], Salmiaton Ali[1], Mohd Zahirasri Mohd Tohir[1], Nordin Sabli[1], & Mohd Yusof Harun[1]

[1]Department of Chemical and Environmental Engineering, Faculty of Engineering, Universiti Putra Malaysia

[2]Engineering Education Interest Group, Faculty of Engineering, Universiti Putra Malaysia

*Corresponding author: dradiah@upm.edu.my

Project Overview

Emulating the systematic integrated design process used in the field of chemical engineering, students at UPM's Department of Chemical and Environmental Engineering work collaboratively over the course of four semesters to complete a group capstone project.

Using chemical engineering design thinking and design methods, students are required to provide possible solutions to an ill-defined open-ended project. The capstone project requires students to engage with and apply knowledge and information from various dsiciplines including mathematics and science, chemical, mechanical and control engineering, safety, sustainability, economics and professional standards.

Assessments include interim outputs e.g. progress presentations, technical reports and etc are submitted per course basis. Some assessments are included as part of the respective courses' assessment.

The philosophy underpinning this capstone project is collaborative teamwork in which students make use of, and make sense of, knowledge for the benefit of humanity. To achieve these aims, students engage in purposeful activities via a constructive, iterative and incremental approach to knowledge.
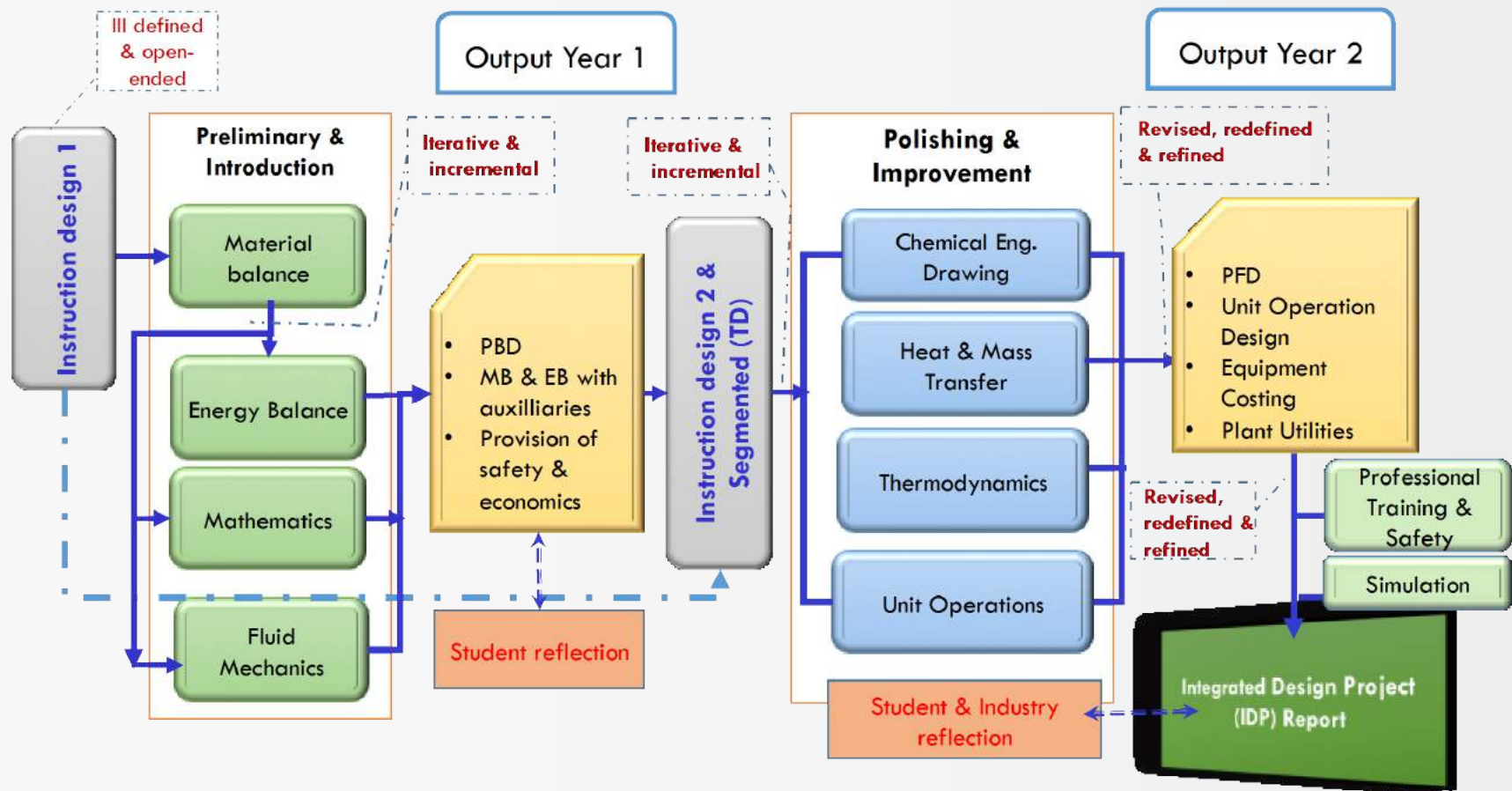
Process Flow of Integrated Design Project Implementation

Philosophy

Collaborative purposeful activities via a constructive, iterative and incremental approach to knowledge for the benefit of humanity

Students who can

Analyze situations, make decisions, assess information

Synthesis and Analysis

Deliverables are segmented and delivered at different rates and time, integration of deliverables and iterative and incremental

Open ended, Ill defined problems

Floating facilitators, coaching and empowering

Students' knowledge benefits humanity

Constructivism

Iterative and Incremental

Team

Purposeful Activity

Collaborative Learning

Long term team work with designed purposeful activities and willingness to invest time and energy

Local or Global context scenario

Identified needs and requirements, matching professional standard, constraints and scenario

Constructive Alignment

DURATION AND STUDENT LEARNING TIME

The duration of each project per cohort is about four semesters which cover First and Second Years. The distribution of the student learning time is as follows:

No.	Course	SLT
	First Year	
1	Material Balance	42
2	Energy Balance	42
3	Mathematics	4
4	Fluid Mechanics	4
	Second Year	
5	Chemical Engineering Drawing	60
6	Mass and Heat Transfer	8
7	Thermodynamics	6
8	Integrated Design Project	44
	Total	210

Task

➢ Each group member is given tasks as part of their responsibilities
➢ The tasks of the lecturers are as facilitators. Lecturers'/Facilitators' guidance is tailored to the specific needs of each group
➢ Open sessions for discussion, design query, technical guidance and software training are conducted as part of SLT
➢ Most sessions are conducted in the classroom, except for technical visits

Learning Outcomes

The following learning outcomes are the consolidation of outcomes from the courses with the highest SLT.

1. To solve material balance calculations for reactive and non-reactive processes (C4)
2. To explain calculation process using unit conversion techniques (A3, LL)
3. To solve energy balance calculations for non-reactive processes (C4)
4. To solve energy balance for reactive processes (C4, CTPS)
5. To prepare chemical engineering drawings using computer aided techniques (C3)
6. To identify and sketch important components in process, piping and instrumentations (C3)
7. To utilize computer software in producing process flow diagrams in a group (P4, TS)
8. To design chemical engineering unit operations for a specific system in a group (C6)
9. To analyse the material and energy balances of a specific system (C4, CTPS)
10. To manipulate process parameters using suitable tools and simulation software (P5)
11. To demonstrate skills to collect data and information of a process (P4, TS)
12. To present oral and/or written technical report (A3, LS)

Design Instruction - Preliminary

Implementation

INTRODUCTION TO INTEGRATED DESIGN
MATERIAL BALANCE

Tasks & Report

The tasks that you will perform will complement some of the required elements in the design work. Due to the infancy nature of the material balance performed, only partial requirements are outlined. As you progressed, these requirements will be expanded to cater for other fundamental concepts that had been covered in various courses throughout the academic years.

It is important for you to clearly identify key assumptions before performing your material balance calculations. You can use any available data from literature to support or justify your assumptions.

The process requirement is:

330 days plant operation

24 hours a day

For record purposes we will require you to have:

Personal Design Log Book (PDL) – hard cover book

This book can be used to note down all design related work that had been assigned to you by your group. It shall include notes from reading, bibliographies of your resources, any data or information from interview, all technical calculations that you had done, and any related sketches.

All activities **should be dated and initialized**. The lecturer will endorse it from time to time.

PRODUCTION OF METHANOL

You are required to design a process and to develop a material balance for the production of methanol. The design need is provided in **Appendix A**.

Intent

The intent of this project-based learning is to introduce you to the application of material balance concept in a real process. You will be guided on technique to develop a complete process from individual process via integrated design approach. The concept of material balance will be the emphasis of this project. **At the end of this project, you will be able to specify process parameters, evaluate an integrated material balance and prepare rough economics of a process**.

Methanol Production

Methanol is a commodity that is commonly used to produce fuels and other traditional chemicals. Current demands for methanol had increased especially in China to produce olefins. By 2021, Methanol to olefins (MTO) process will utilize about 1/5 of global production. In 2010, global methanol demand reached 49 MMmt. By 2021, market analysis predicts that the demand will increase to more than 95 MMmt. Methanol is also utilized in fuel blending or as derivatives for MTBE, MTG and DME. The chemical formula for methanol is CH_3OH. The reaction occurs in gas phase in which Carbon Monoxide (CO) and hydrogen are the main reactants. The raw materials used to produce methanol include biomass, agriculture waste, coal, natural gas, solid municipal waste and *etc*.
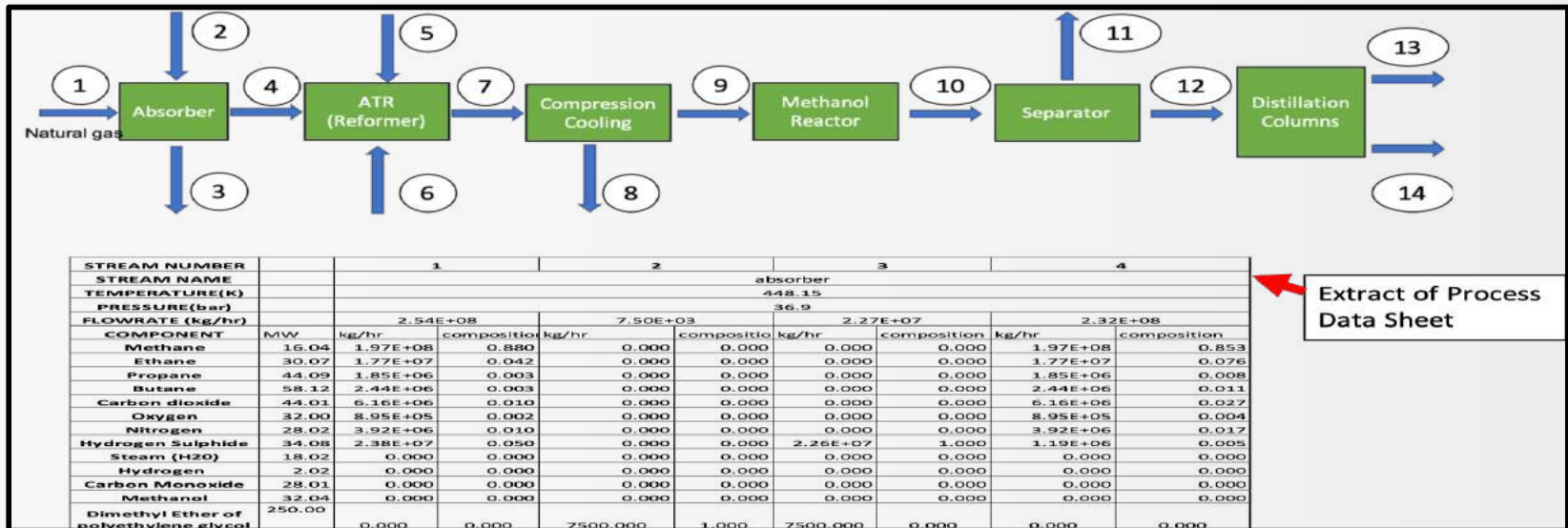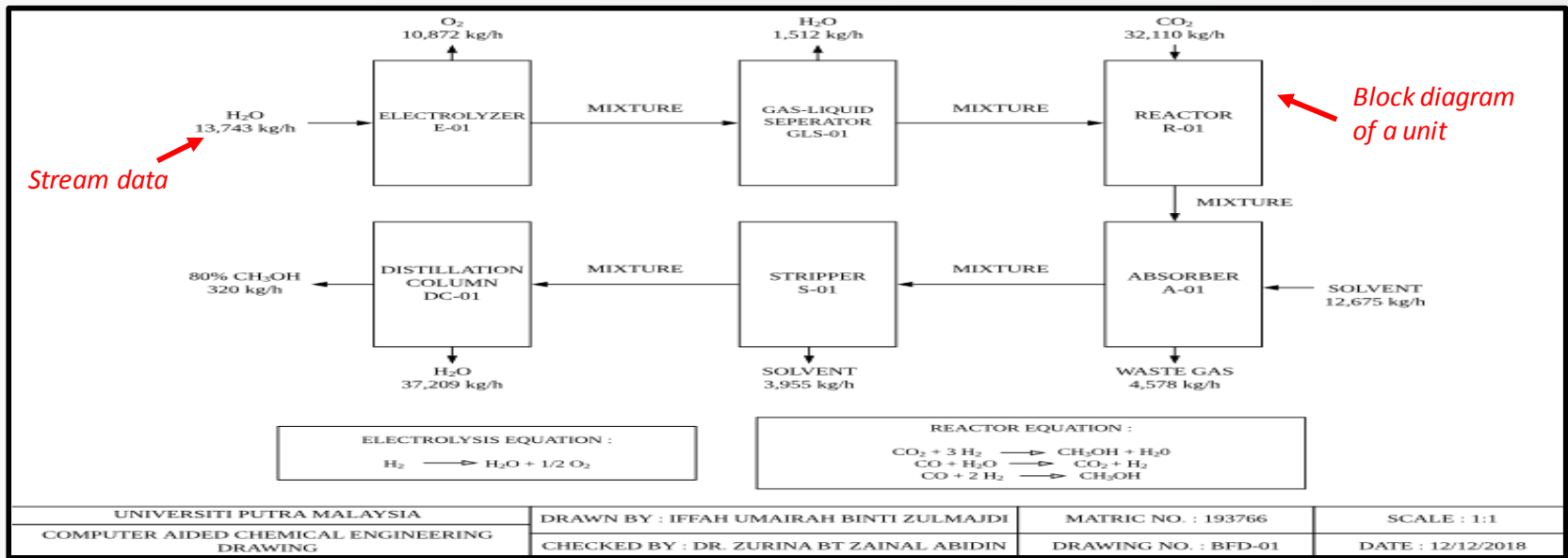

Block diagram and process data sheet representing material balance

First Iterative and Incremental Process (Year 1)
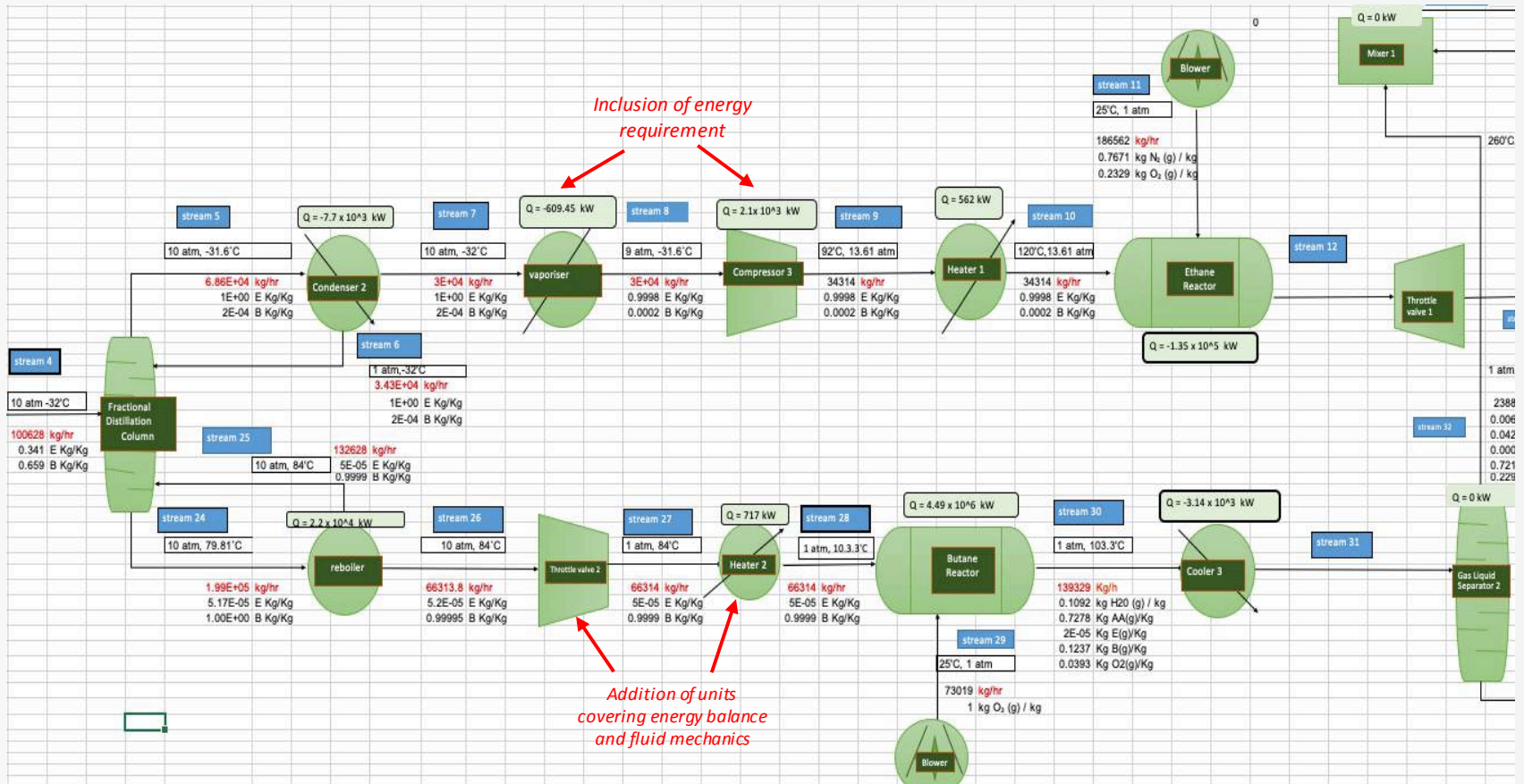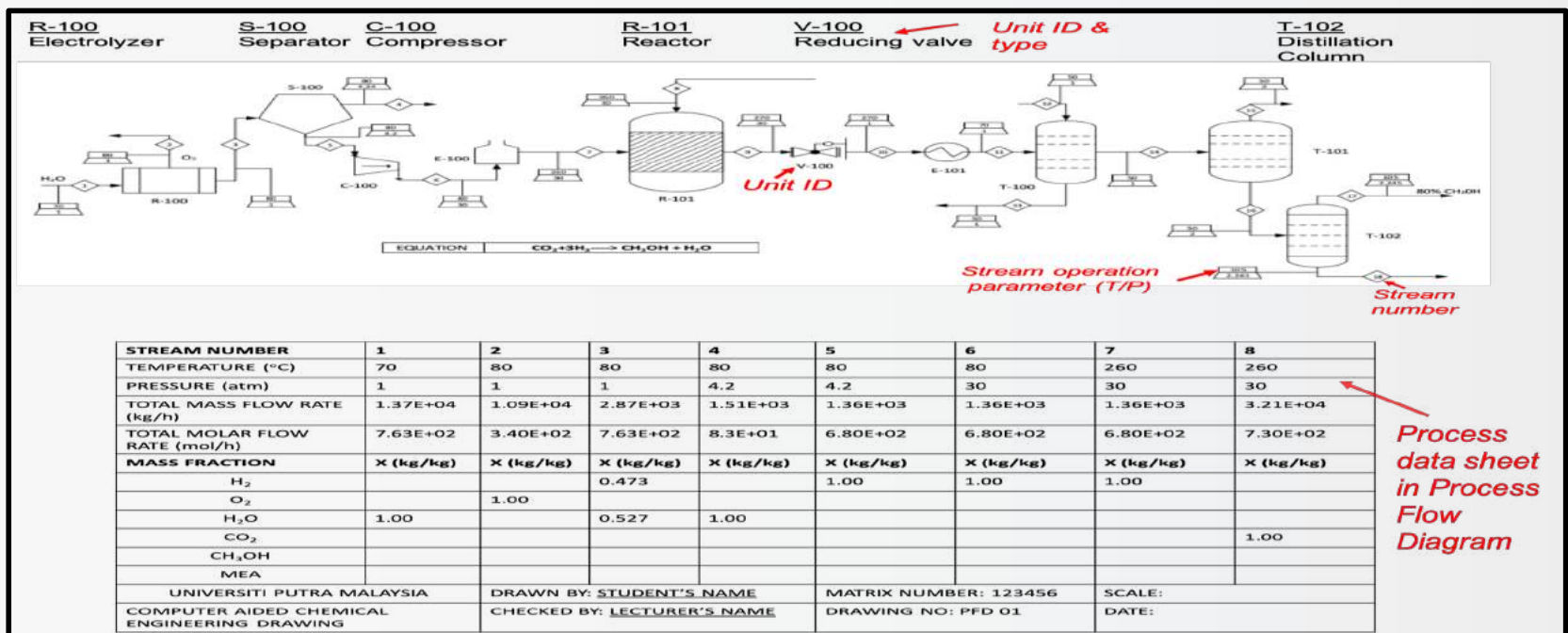

First Iterative and incremental process: Some sections of revised process flow diagram to include energy requirements, auxiliaries and utilities

Second and Third Iterative and Incremental Process (Year 2)

Block diagram with process units drawn using Engineering Drawing Software

Transformation of block diagram to process flow diagram with provision of instrumentation and line ID

Impact of Iterative and Incremental Approach

Detail Process and Instrumentation Diagram

Heat exchanger unit that is designed with provision for inherent safety with required control and instrumentation unit. A common drawing for a unit in an engineering design practice.
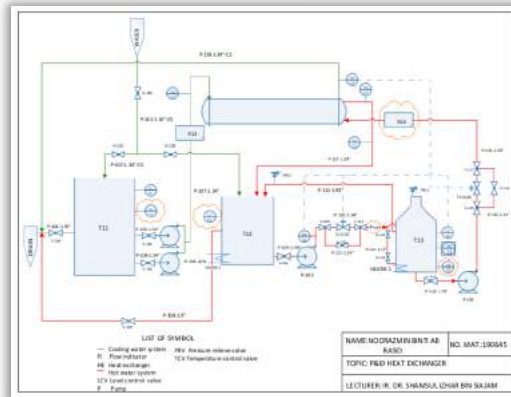
Simple Process Diagram

Stream is labelled to identify the inlet and outlet stream. Provisions and full utilities requirement is also performed.
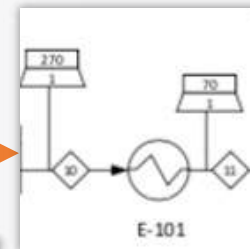
Simple Process Diagram

Block diagram of heat exchanger unit is transformed into a technically understood as heat exchanger unit. Utilities required to perform heating or cooling processes are calculated.
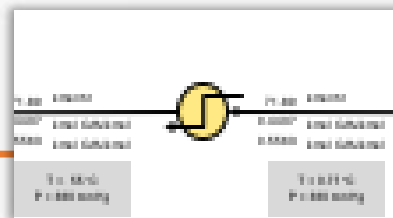
Unit Block Diagram

A single unit with an inlet and outlet block of a heat exchanger to identify that there is a need for temperature change in the process.
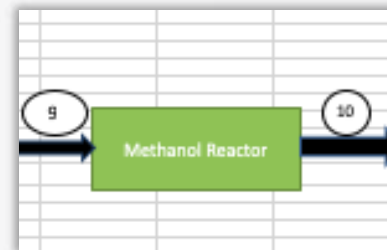
Transformation of a single unit block diagram into a single unit diagram in the process and instrumentation diagram with details as expected from a Professional Engineering drawing

Capstone Activities
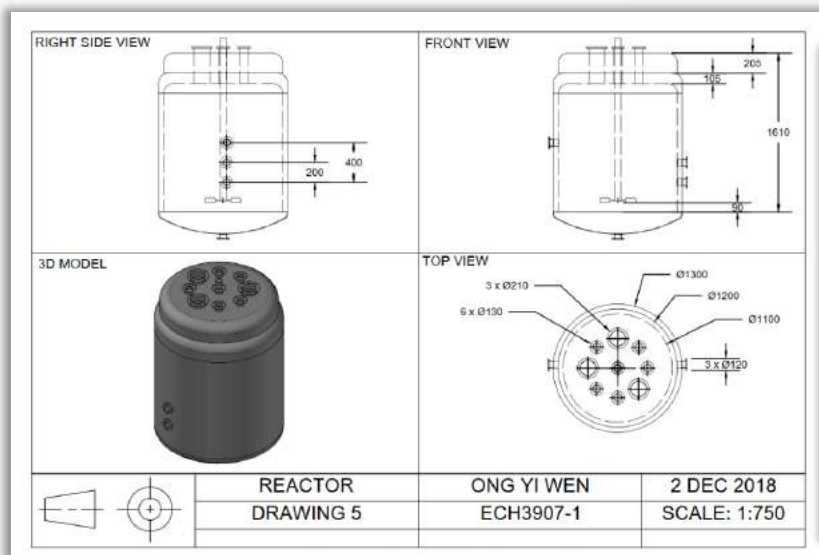
An example of a 2D and 3D detail drawing of a unit operation

Library tour, data collection and brainstorming sessions

Hands-on activity as part of Chemical Engineering drawing assessment

Professional training as part of our enrichment programme

Student Testimonials

Prior learning of all of the different subjects helps in the execution of Final Year Design Project. Especially that we had done design project in first year and IDP in second year, I am able to see that our understanding on the fundamentals of chemical engineering knowledge had improved compared to the design project done during the first and second year. CAD helps give us a clear idea on how the drawing is normally done in the industry while Unit Operation knowledge helps us in the execution of ASPEN simulation which is widely used in the industry. Thermodynamics gives us a sense of reality in designing the process which makes the design feasible and not overly ambitious. as for example, we know that it is almost impossible to cool a stream from 450 degrees Celcius to 40 degrees Celcius using just one heat exchanger due to application of thermodynamics and heat transfer knowledge.

In my opinion, the time spent on the final year design project is shorten as we were trained throughout the 3 years about the procedure of doing design project. This is because we have applied the theories that we learned and experienced doing design project in Integrated design project (IDP). Therefore, we got exposed to the design project work flow and learnt to manage well for final year design project.

All those courses really help is to find a way to solve problem final year design project and guided the right path. We were able to conduct the feasibility study and front end engineering design with the help of those courses.

It is a platform where we learn about the design project and get to experience by doing it. We get to know all the pathways, proper process of feasibility study and front end engineering design. This enable us to do the Final year design project in much greater momentum and without getting lost in the middle of the project. It also makes us more independent for the final year design project.

Outcomes

Cognitive Domain

Psychomotor Domain

Affective Domain
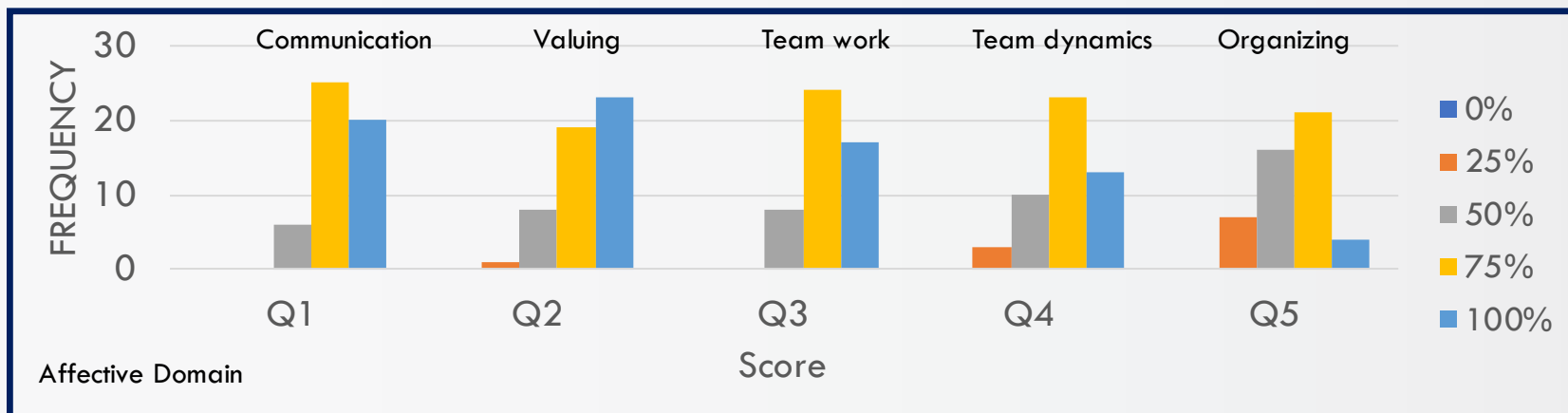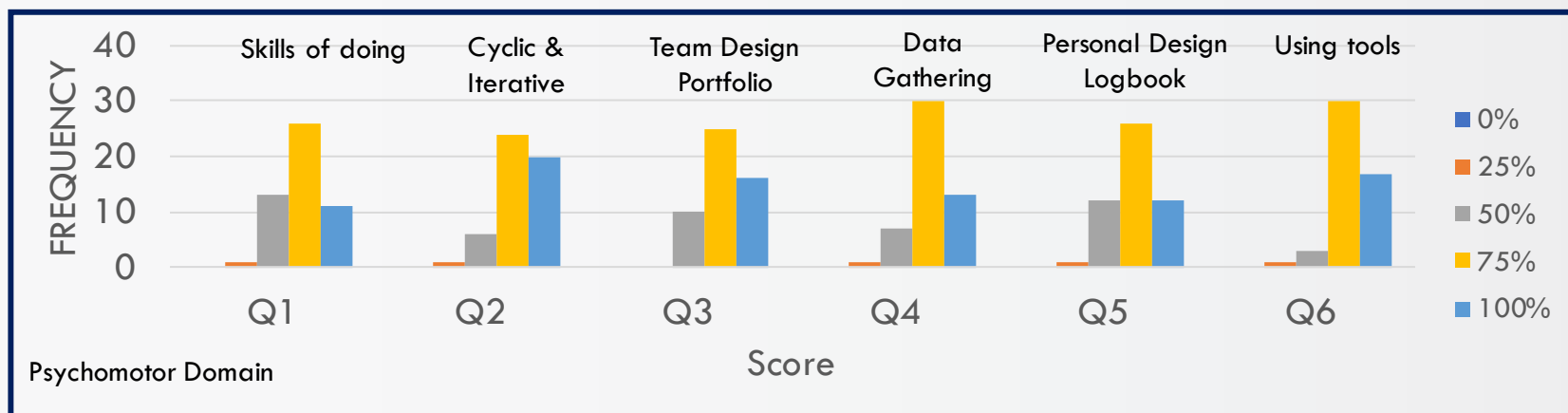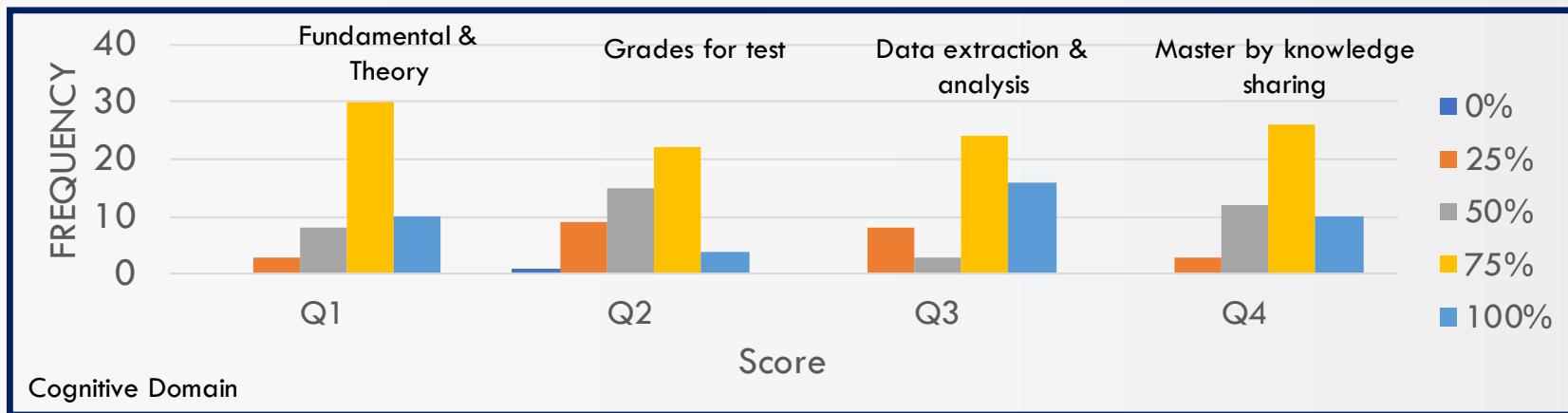
Student Perspectives

"We have a bird's eye view and prior knowledge, thus we can engage in new problems faster"

"We are able to apply theoretical knowledge directly (in situ) and this lead to deep learning"

"We are able to critically reflect and rectify as the project progresses"

"We can refine our professional recording and documenting practices"

"We observed that working together on similar projects and at times taking a leading role had instilled team spirit and commitment among us"

"We are able to see how our work grows and see improvements that we had done"

Lecturers provided minimal but more focused instructions

Faculty Perspectives

More time can be spent on focused design or emerging issues which leads to critical and creative thinking

Student learning time spent on completing projects was consolidated since one project fits all technical domains

Synergistic approach among lecturers reduced students' workload and showed connectivity and continuity within the curriculum structure which emulate industrial practice

Better synergy across courses involving People, Environment, Assets and Reputation

Consolidation and working together with other programmes can create a better learning environment that emulates the industrial environment which is our future direction

A more holistic graduate who is able to communicate in inter- and intradisciplinary settings can be nurtured from such environments

It is our vision that consolidation, integration and infusion of this approach will soon be integrated with other programmes, starting with the Faculty of Engineering. Scaffolding a capstone project by emulating existing processes in industry can contribute to cross-disciplinary student engagement and learning, e.g. mechanical students performing mechanical design of the relevant equipment, civil engineering students designing structures and foundations and electrical engineering students designing the controls. Financial and economic aspects of the project can be looked after by students from relevant faculties outside of the field of engineering. In this way, capstone project findings can be communicated to much larger and varied audience. Students will be challenged on how to communicate their ideas, thinking and technical capabilities to others from different fields. This can develop students into more adept, agile and empathetic individuals.

Conclusion

After using integrated design to scaffold the chemical engineering capstone project three times, we observed that commitment from lecturers is the most important criteria to ensure success of the capstone project. Extensive preparation has to be done much earlier. Instructions and project requirements must be communicated clearly and early to students. Instructions can be refined to fit into a specific body of knowledge or courses to ensure continuity and integration and importance of the course in the curriculum. Impact from the capstone project has been very positive on our student and commended by future employers. Still, there is room for improvement and collaborating with other disciplines will be our next mission.

Future Directions

First Phase	Second Phase	Third Phase	Fourth Phase	Future Directions
2016	2017	2018	2019	2020 onwards
Scaffold System	**Scaffold System**	**Scaffold System**	**Scaffold System**	**Scaffold System**
Two Year 1 Course Two Year 2 Courses	Three Year 1 Course Four Year 2 Courses	Three Year 1 Course Five Year 2 Courses Prototyping Professional Training	Five Year 1 Course Six Year 2 Courses Prototyping with 3D printing, Professional Training	Multidisciplinary Integration

ePortfolio

Electronic Circuit Design

Madihah Md Rasid*, Nurzal Effiyana Ghazali & Amirjan Nawabjan

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*Corresponding author: madihahmdrasid@utm.my

Students are given a list of projects. Each group will select one project as their group assignment. The list of the projects are listed below:

- Traffic Light Control System
- Binary to Grey Code Converter with 7 Segment Display
- Water Level Indicator
- 2-bit Adder with 7 Segment Display
- Security System with 4 Digit Entry Code
- Elevator Controller

01

INTRODUCTION

ePortfolio is implemented in SKEE1223 Digital Electronics course offered to second year students at the School of Electrical Engineering, Universiti Teknologi Malaysia (UTM).

02

DELIVERY

The students are required to reflect on the planning and the progress of the circuit design project in their own ePortfolio.

03

A rubric is provided to serve as a guideline for students in writing their reflections.

ASSESSMENT

Mapping of LOs, Delivery and Assessment

No.	CLO	PLO (ICGPA CODE)	Weight (%)	*Taxonomies and **generic skills*	T&L methods	***Assessment methods
CLO1	Apply the basic digital signal concept, various number systems, codes, logic gates and basic digital circuit's concepts.	PLO1 (KW)	20	C2	Lecture, Active learning	T (10%) F (10%)
CLO2	Demonstrate number systems conversion, formulate logic circuit simplification and identify or construct logic digital circuit using gates and MSI circuits (both sequential and combinational).	PLO3 (THPA)	50	C4	Lecture, Active learning	Q (5%) T (20%) F (25%)
CLO3	Combinational and sequential MSI circuits design solutions for complex digital systems.	PLO5 (THDS)	30	C5, P1 CTPS1-3	Project based learning	A (10%) E (5%) F (15%)

Marks Distribution and Rubric

No	Items	Marks (%)
1	Weekly Reflection & Final Product Video (ePortfolio)	5
2	Peer Evaluation	3
3	Final Report-Softcopy (eLearning)	7

Exemplary (4 points)	Proficient (3 points)	Partially Proficient (2 points)	Incomplete (1 point)	None (0 point)
(A) Criterion: Selection of artifacts				
All artifacts and work samples are clearly and directly related to the purpose of the assignment.	Most artifacts and work samples are directly related to the purpose of the assignment.	Few artifacts and work samples are directly related to the purpose of the assignment.	Most artifacts and work samples are unrelated to the purpose of the assignment.	None
(B) Criterion: Reflection				
More than 6 reflections reported.	6 reflections reported.	5 reflections reported.	Less than 5 reflections reported.	None
(C) Criterion: Final Product Video				
It is an original and interesting video that summarize the works in 3 minutes. All the contents clearly explain on the design.	It is an original and interesting video that summarize the works in 3 minutes. Most of the contents clearly explain on the design.	It is an original and interesting video that summarize the works in 3 minutes. Few contents clearly explain on the design.	The photograph, graphics, sounds and/or video are inappropriate. They are distracting.	None or/and not an original video.
Total: (/12)*5%				

ePortfolio Approach

Each group is required to write their reflections regarding the group project.

List of student groups with different projects in ePortfolio

ePortfolio Approach

Student's reflection on Traffic Light Control System Project

GROUP 2

by SKEE1223 SEM201720182
Tags: G2

PROJECT TITLE : Traffic Light Control System

GROUP MEMBERS : 1. IQBAL
2. HILMI
3. AFIQ
4. FATIHAH

IQBAL'S REFLECTION ︿

Tags: G2

REFLECTION 7

Posted by MOHAMAD IQBAL IZZUDDIN BIN SALLEH on 26 May 2018, 12:20 AM
Tags: G2

Assalamualaikum to everyone. We started our last meeting on 25 May 2018 to finish all the works especially final project report. We gathered at Pak Lah Cafe and started to write some essays on topic divided to each of us. Everyone opened up the laptop and started doing some research on the components, circuit design and prototype. Afiq which was in charge for the final product video continued editing while the others help

Traffic Light Control System Final Product Video ︿

This is the traffic light control system that we designed

This is two way traffic light system

Car will be at A and B only

12My Movie.mp4 [30.8MB]

HILMI'S REFLECTIONS ︿

Tags: G2

REFLECTION 7

Posted by MOHAMAD HILMI BIN MOHD ITHNIN on 26 May 2018, 1:11 AM
Last updated Saturday, 26 May 2018, 1:16 AM
Tags: G2

On 25 May 2018, we had done the last meeting for our project at Pak Lah Cafe. The four of us gathered together on a table and we focused on finishing the final report. Everyone use their own laptop and search some information based on their part that had been given in past meeting. Afiq who is in charge of the final product video, he make the video with all of his heart and the other

(reflection 7)

Posted by MUHAMMAD ISMAIL BIN AHMAD ROSDI on 25 May 2018, 10:32 PM
Tags: G3

After class, we asked our lecture about problem for our project. She said it probably caused by the component expecially IC. She asked us to check wheter the IC still function or not at the electronic laboratory. Then, we went to the laboratory and tested the IC7447 and IC7483. The result was pass. So, both IC was not the problem. We continue think the solution.
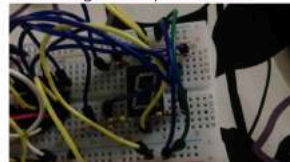
Reflection 8 kamalin

Posted by NUR KAMALIN MASTURA BINTI RIZAN on 25 May 2018, 11:32 AM

The breadboard was buy by Ismail and we start to reconnect the connection of the circuit on the breadboard and alhamdulillah it is work. We try to record the video for our project unfortunately, the circuit got some problem then

Add comment

Reflection 7 kamalin

Posted by NUR KAMALIN MASTURA BINTI RIZAN on 25 May 2018, 11:17 AM

Add comment

Group3 MUHAMMAD ISMAIL

understand better on how adder functions and how to connect it with 7 segment display.

Tags: intro of adder

Last Reflection Rabbani

Posted by MUHAMAD RABBANI BIN RAZALI on 27 May 2018, 12:53 PM
Tags: task accomplished

After watching the same Youtube video and scheming the data sheet of IC, we finally made it to complete the circuit. The 7-segment display emitted a number when connected to power supply. We were very glad that we could see the output. The number of '0' showed when we set the switches to 0000. Therefore, we proceeded to record a video for our hardware circuit. Unfortunately, a problem came all of a sudden when the 7-segment display showed the number of '1' when the switches were at 0000. It was not similar to the number we had got earlier. We immediately rechecked the circuit and made the connections for several times but there were no use. The 7-segment still showed the number of '1'. We did not know what we have to do. Thus, we just continued to record the video although there were some fault with the circuit. After that, we completed the project report and submitted it to E-Learning.

Posted by MOHAMAD SYAHMI AZFAR BIN ZULKIFLEE on 25 May 2018, 2:12 PM

Yesterday which fall on 24th May was our last group meeting for this project assignment. We have done recording the video of operation of the 2-bit adder with 7-segment display successfully .The video will later upload by one of our group member. Hope you guys can watch and see how it operates.Thats all for this last reflection as our group already succeed to finish this project before due date which is today (25th May). THANK YOU
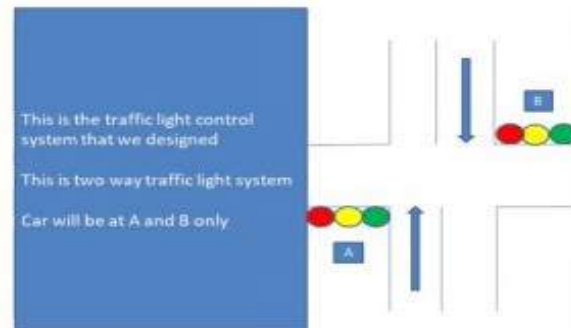
Add comment

6th reflection (syahmi) g3

Posted by MOHAMAD SYAHMI AZFAR BIN ZULKIFLEE on 22 May 2018, 1:06 AM

Our 6th meeting was being held at S01 at about 12.30am during midnight. As we are done buying hardware needed to build up the 2-bit adder, we immediately planning together to build up this logic circuit as soon as possible to finish our project. During that night, we finally finished with that tiny things, but when it come to get it operates, we had some problem. And we realized that we are missing the most important things which is triple A battery.This looks like funny things to hear but really annoying as we forgot tu buy battery.Thats all for this meeting.

Student Feedback

Pada pandangan saya, penggunaan eportfolio dapat review back apa yg kita dah buat dengan menaip kembali segala yg telah kita lakukan. Selain itu, kita juga dapat melihat perkembangan daripada group lain ada. kesimpulan eportfolio ini memang sesuai digunakan dalam pembelajaran.
5:45 PM

1

Student feedback

1

+60 10-667 9175 ~Rafiq Azmi
Impact die kite boleh nampak banyak mane progress yg kite dh capai dlm nk siap kn assigment tu
10:50 PM

+60 12-374 6863 ~adninnamran
Eportfolio bertindak sebagai kesimpulan untuk segala perkara yang kita belajar dalam kuliah. Daripada situ kita dapat menilai kadar perolehan input dan output yang mereka capai berdasarkan pengajaran dalam kelas.
10:54 PM

+60 19-901 0690 ~luqmanzayn
Eportfolio ni bukan semata mata untuk hantar report atau hasil kerja sahaja, malah boleh digunakan sebagai platform untuk memudahkan permohonan untuk mencari kerja. Senang cerita, macam macam perkara yang kita boleh masukkan dalam eportfolio tu seperti resume, iklan, blog dan sebagainya.
11:10 PM

1

+60 12-270 3411 ~Kaka
Mengikut pengalaman lepas, eportfolio ini amat bersesuaian digunakan dalam sesuatu projek kerana bukan sahaja kita dapat mengambil inspirasi dari projek kumpulan lain malah kita juga dapat mengetahui perkembangan sesuatu projek itu dari mula sehingga habis. Secara tidak langsung ianya menggalakkan pelajar merangka perjalanan projek dengan lebih sistematik. Tambahan, penggunaan eportfolio amat mudah kerana saya bukan sahaja dapat memuat naik laporan dan ulasan malah video dan juga gambar.
12:03 AM

In general, ePortfolio serves as a great platform for students to showcase, reflect and improve their work.

Impact on Students

Student's ePortfolio

Employability – ePortfolio helps students to successfully secure placement for industrial training and dream job.

1
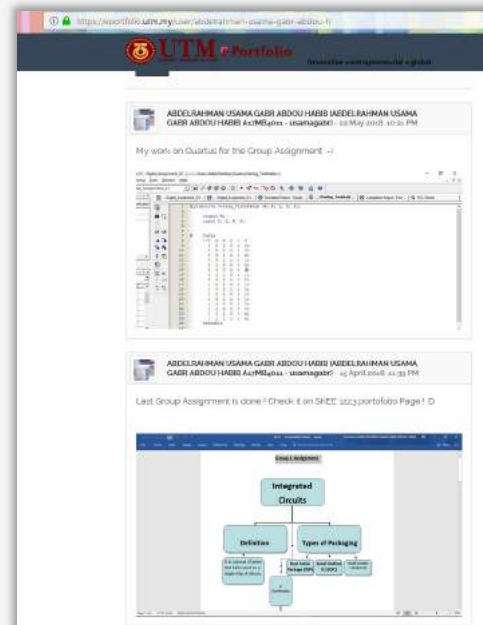
Marketable – ePortfolio as an easy and attractive replacement for CV to help students apply for a job.

2

Student using ePortfolio to apply for a job

3

Paperless – ePortfolio can save the environment by reducing the printed report. All the reports and assignments are submitted online through the ePortfolio platform.

Students using ePortfolio to reflect and showcase project assignments

Conclusion

- The ePortfolio is already being expanded to more courses including Capstone courses and Final Year Projects.

- Encourage students to use ePortfolio as a tool for more interactive, creative and advanced way of presenting their skills and qualifications to potential employers instead of conventional paper CV. This will in turn increase students' chances of securing employment.
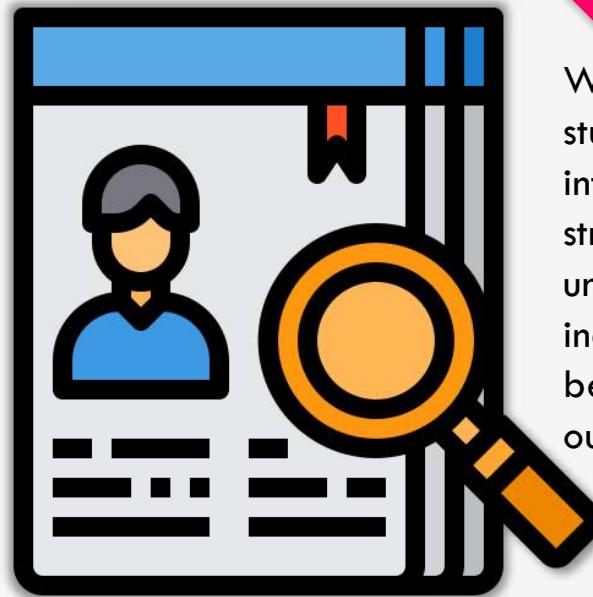
Writing the reflection helps students to examine and interpret their learnings, to strengthen their understanding, and indirectly lead them to better experiences and outcomes.

Future Directions

ePortfolio

Nationhood Project ePortfolio

Burhan Che Daud*

Centre for Language Studies and Generic Development,
Universiti Malaysia Kelantan

*Corresponding author: burhan@umk.edu.my

The course exposes students to the reality of a unique multiracial, multicultural and multi-religious society in Malaysia within its sociopolitical, socioeconomic and sociocultural settings.

Students are required to embark upon selected community engagement projects which they PLAN, PREPARE, PERFORM, PONDER and PUBLISH in their ePortfolios.

The ultimate aim of the project is to enhance leadership skills, autonomy and responsibility (PO8) as well as to enliven the spirit of patriotism and nationalism among the students.

Webinar
'Using ePortfolio for Assessment'

Mapping of CLO, PLO, Delivery and Assessment

COURSE MAPPING

CLO	PLO	Delivery Method	Assessment
Demonstrate characteristics of patriotism and nationalism towards inculcating the spirit of nationality and loyalty to the country.	PO8 – Leadership, Autonomy and Responsibility	Group fieldwork	Project ePortfolio

Step by Step Instruction

PROJECT GUIDELINE

Assessment	Guideline
Project ePortfolio (Group work)	In order to complete the task, students need to: 1. Form a group comprising of 7 to 8 members. Choose your group leader, group secretary and a suitable name for your group. 2. Discuss and choose a workable project in order to achieve PO8 (Leadership, Autonomy and Responsibility). 3. Create an ePortfolio to document all activities executed for the project using Web 2.0 platform (wix.com/blogspot.com/wordpress.com etc.). 4. Record management of the project from the beginning (planning stage) until the end (execution stage) in the ePortfolio. 5. Prepare and complete the ePortfolio based on the format and assessment rubric provided. 6. Submit the completed ePortfolio for evaluation.

Assessment Rubric

Item/Marks	0-1	2-3	4	Marks
a. Background of Project	Student describes a very brief background of the project.	Student describes an adequate background of the project.	Student put forward a well-written and detailed description of project background.	/ 4
Item/Marks	0-2	3-4	5-6	
b. Management of Project	Student documented 30% of the project management and execution.	Student documented 60% of the project management and execution.	Student documented a complete documentation of the project management and execution.	/ 6
c. Main Issues	Student analyses ONE relevant issue.	Student analyses TWO relevant issues.	Student analyses THREE relevant issues.	/ 6
d. Set of Skills Acquired	Student analyses ONE to TWO skills acquired.	Student analyses THREE to FOUR skills acquired.	Student analyses FIVE to SIX skills acquired.	/ 6
Item/Marks	1	2	3	
e. Conclusion	Student put forward ONE relevant conclusion.	Student put forward TWO relevant conclusion.	Student put forward THREE relevant conclusion.	/ 3
Total marks				/ 25

Impact of the Project

Experiential Learning

Students gain first-hand experience through engagement and exposure.

Leadership, Autonomy and Responsibility

Students plan and execute the project with minimal supervision towards enhancing social skills and responsibility.

Service/ Community-based Learning

Students serve the community through PBL approach based on real situation.

Volunteerism

Students develop spirit of volunteerism and awareness to contribute effectively to the community.
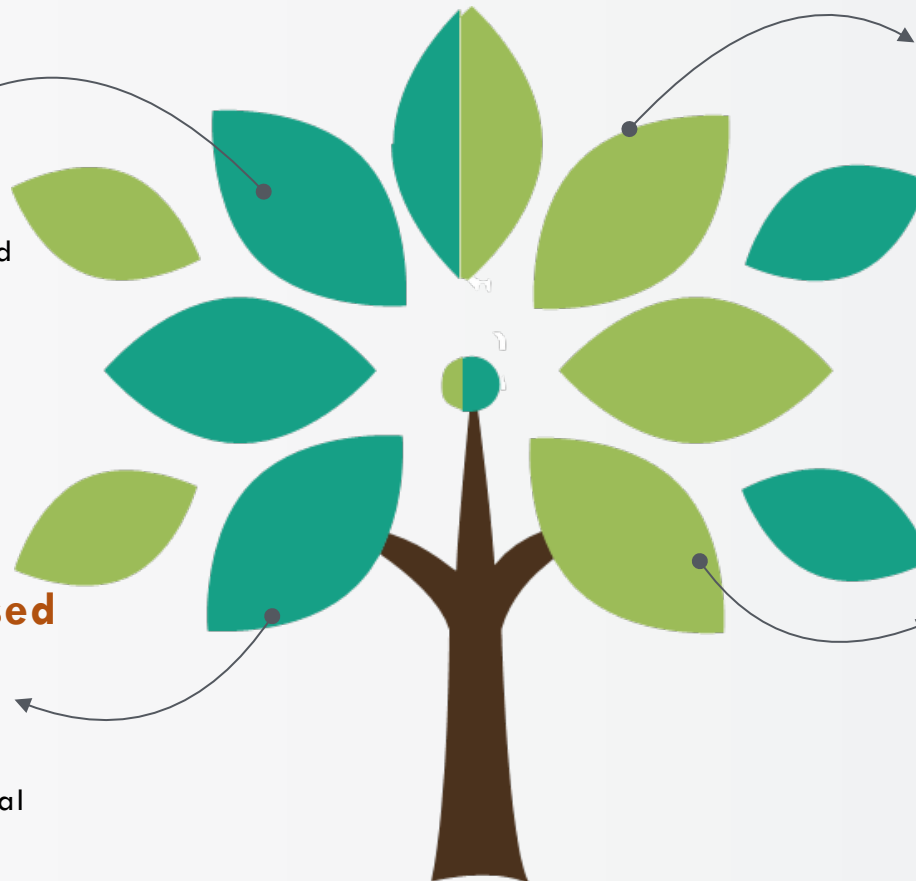
List of Projects

Group	Project Title	E-Portfolio Platform	QR Code
1	End The Poverty	https://taufiq710.wixsite.com/endthepoverty	
2	Projek Haiwan Jalanan	http://groupkenegaraan6.blogspot.my	
3	Projek Kelestarian Alam Sekitar	https://letsdogreen.blogspot.my/	
4	Kebajikan Haiwan	https://aravinrez7.wixsite.com/kebajikanhaiwan	
5	Trap, Neuter and Release Project	https://angelynmsw.wixsite.com/tnrproject	
6	Trouvaille	https://fatehmie.wixsite.com/mysite	
7	Rintangan Antibiotik	https://kirthekkad18a0012.wixsite.com/mysite	
8	Selamatkan Pantai Senok	https://projekkenegaraan.wixsite.com/dvm2-201819	
9	Vet Prihatin	http://veterinarprihatin.blogspot.com/	

Sample 1

Trap, Neuter and Release Project
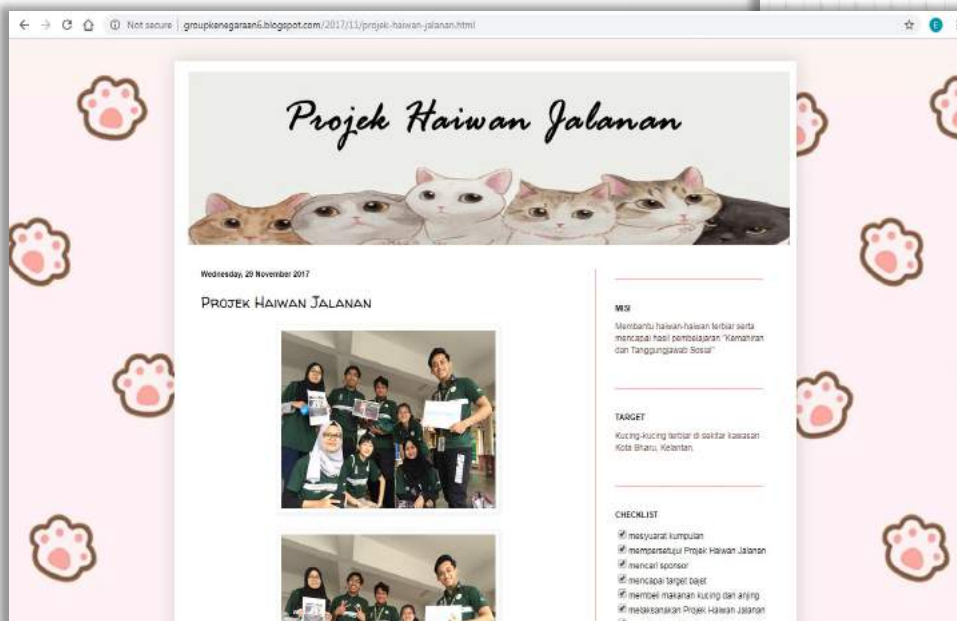
Sample 2

Projek Haiwan Jalanan
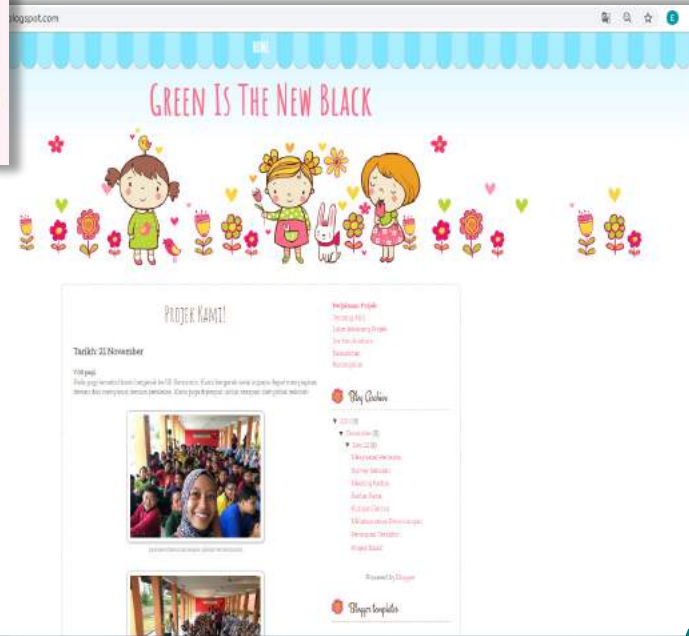
Sample 3

Projek Kelestarian Alam Sekitar

Plant-for-the-Planet: Planting trees for a better world at Sekolah Kebangsaan Kemumin, Kota Bharu, Kelantan

1

2 Human-animal relationship awareness: Pupils of SK Kemumin looking at python, gecko, hamster and hedgehog

3 'Feeding the needy' at Pasar Siti Khadijah, Kota Bharu

4 'Strays lives matter'

5 'Let's have some milk and Friskies®'

Conclusion

Students acquire a set of skills at the end of the course related to leadership, autonomy and responsibility linked to the students' field of study.

Students have opportunity to showcase their work to their peers, lecturer and the public.

The community benefits abundantly from active engagement and exposure through project based learning initiatives.

Lecturers able to easily provide immediate and real time feedback to the students' work-in-progress as their milestone progress.

Enhancing student-academia-community active participation and dynamic networking.

Future Directions

Preparing a dynamic database of ePortfolio (individual or group) that can be easily accessed by the public.

Screening potential projects that could bring about high impact values to the students, academia and community.

Establishing personalised individual and group ePortfolio linked to industries and agencies' databases.

Engagement with related industries and agencies to providing students with practical insights of community development processes.

Linking nationhood project ePortfolio to other HIEPs so as to optimize materials produced by students in different ways such as Intensive Academic Writing.

Technology for Learning: Teaching Strategies and Tools

Blends of Augmented Reality and Infographics in VET Laboratory Practical Experience

Tan Li Peng[1]*, Ruhil Hayati Hamdan[1] & Tan Tse Guan[2]

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Universiti Malaysia Kelantan

[2]Faculty of Creative Technology & Heritage,
Universiti Malaysia Kelantan

*Corresponding author: li.peng@umk.edu.my

A. Augmented/Virtual Reality

Overview

Classical way of conducting a practical session by distributing a manual with lengthy description on the procedures often lead to disengagement of the students on following the correct protocol in performing a specific laboratory test.

The blend of augmented reality and infographic is expected to become a motivational method in enhancing students' attention in going through the manual.

Delivery

1 The blend of **augmented reality and infographic** is a motivational method in enhancing students' attention in going through the manual.

2 Student can access the procedure (video through personal hand-held device) and able to accept and **retain knowledge** easier and for a longer time.
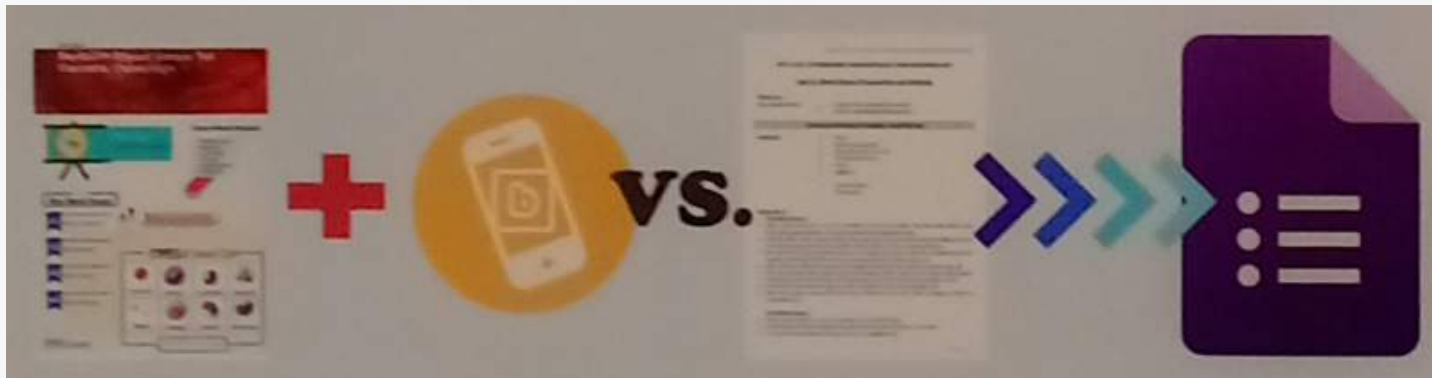
Impact

Majority of the staffs and students have **positive perceptions** of the use of AR-embedded infographic as a manual practical class for better engagement, fun laboratory SOP practice, rapid information acceptance and enhanced quality of teaching.

◆ **Better engagement**

◆ **Fun Laboratory SOP Practice**

◆ **Rapid information acceptance**

◆ **Enjoyable learner experience**

◆ **Enhanced quality of teaching**

Technology for Learning: Teaching Strategies and Tools

Body Travel App: An Interactive Ear Anatomy Virtual Reality (VR) Mobile Application for Medical Students

Khadijah Mohd Nor[1]*, Puteri Suhaiza Sulaiman[2] & Nurul Asma Che Ab Rahim[3]

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[2]Multimedia Department, Faculty of Computer Science and Information Technology, Universiti Putra Malaysia

[3]Hospital Serdang

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A. Augmented/Virtual Reality

Overview

We develop the Body Travel App, an interactive anatomy of the human body mobile-app which utilizes Visual Reality (VR) as a platform to make the learning process more interactive and engaging for medical students.

Body Travel App provides a real-life journey through all the orifices of the body, for example through the ears, mouth and nose.

139

Objectives

1 To design an **interactive** anatomy of human body mobile app using virtual reality activities through experiential learning among UPM undergraduate medical students.

2 To develop an **Experiential Learning** Modules and engage with students in classroom activities.

3 To evaluate the **effectiveness** of Body Travel App by using student's performance indicator.

Delivery

This app **provides interactive response** where student can virtually click the labelled anatomy structures which lead to brief explanation and justification regarding those structures.

Our study comprises of 3 phases; developing and designing mobile app focusing on anatomical structures of head and neck, evaluate effectiveness of app and analysis of study. For phase 1 of our study, we have developed and designed a module focusing on the anatomy of the ear.

Impact

VR shows **advanced stimulation** and **virtual practical**, usable in many medical fields, attract concentration, sparks imagination, increase learning experience and improve knowledge retention rate.

Technology for Learning: Teaching Strategies and Tools

Synchronous Classroom for *MPU* Students

Serit Anak Banyan[1]*, Nur Ainif Omar[1],
Puteh Noraihan A Rahman[1] & Haniffa Beevi Abdul Jaleel[2]

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Faculty of Social Sciences and Leisure Management,
Taylor's University

[2]e-Learing Academy, Taylor's University

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B. Sync Classroom

Overview

Synchronous classroom via YouTube live session is a part of the social learning activity for U1 module at Taylor's University under the Participatory Online Course (POC) framework.

This initiative helps students to increase the level of motivation to participate in online learning activity and increase students' involvements in the social learning activity.

Objectives

To create a platform for live lecture session with flexible mode of learning.

To prove a enjoyable students' learning experience.

To increase students' online engagement while taking fully online modules.

Delivery

STEP 1 : Grainne Conole 7Cs Learning Design

Vision → **Activities** → **Synthesis** → **Implementation**
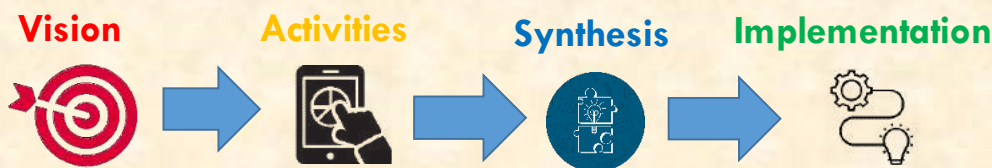
STEP 2 : SOP

Scheduled Flexible Mode

↓

User friendly with one click

↓

Connect with lecturer from the chosen place

Impact

Helps students to increase the level of **motivation** to participate in online learning activity.

Increases students' **involvements** in the social learning activity.

Improves module instructors to be at **presence** in online teaching that empowered students' learning experience.

Better learning experience where students have the opportunity to **revisit** the lessons at their own convenience time.

Enables the educators and the learners to highly **engage** in intellectual discourse trough online interactive platforms.

Technology for Learning: Teaching Strategies and Tools

Zoom Video Conferencing

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[3]Faculty of Computer,
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B. Sync Classroom

Overview

Global Classroom is a contemporary teaching paradigm which is beyond classroom boundary. Instructors and learners are actively engaged in and simultaneously create multi directional learning environment from various classes, cultural background, authentic resources.

It focuses on using the internet to allow students in different countries to work together on common projects or tasks.

Objectives

To expand the matrix beyond the conventional physical classroom.

To connect students in different countries regardless of time zone, geographical constraint or language barrier.

Delivery

Find a partner
Make a profile of partnered and initiate discussion and team planning.

Design a course
Identify ICT Tools, Plan the collaborative project scopes, share document, make social communication and schedule live or Video Recording/Sharing.

Coordination
Pre-Global Classroom for connection verification, time management according to planning.

Impact

Cognitive: a platform for knowledge exchange, stimulates higher order thinking skills.

Affective: Learners' tasks as alternative assessment and promotes interpersonal skills.

Psychomotor: It enhances physical appearance virtually.

Promotes Internationalization on campus, student's mobility and expanding international institutional partnerships and flexible learning.

Enhances student diversity in world perspectives authentic knowledge exchange, digital literacy skills (Communication, Collaboration, Critical thinking, Creativity.

Boosts student understanding of various fields, adapt cross cultural team-working and to help them acquire specific skills in different perspective.

Technology for Learning: Teaching Strategies and Tools

Micro + Puzzle-learning

Jamalsafri Saibon* & Syamsol Azhar B Zulkafil

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C. Gamification/ Game-based Learning

Overview

The issue of bullying is a serious national issue. Previous studies have shown that students have a low level of knowledge about bullying behavior.

Hati Buddy is one the station activities in Programme 2Bs: I'm a buddy not a Bully. It aims to address the issue of bullying in schools by improving the knowledge of bullying among students especially on the types of bullying.

Objective

To **address** the **issue** of **bullying** in school by improving the knowledge of bullying among students especially on the types of bullying.

Delivery

- Applies a combination **of game-based learning** approaches with video-based of **micro learning**. The combination of these approaches is implemented using **QR code technology.**

- This game requires students to **match the puzzle cubes** based on the picture of the bullying.

- Then students **obtain a QR code** for **video micro learning** for a brief description of knowledge on types of bullying.

Impact

- The game **increases** students' **knowledge** related to the types of bullying behavior effectively.

- This game enables to sustain students' knowledge and **engagement** in refraining bullying and serves as a guide for counsellors, teachers and wardens.

- This game also serves as a **teaching module** for teachers and the education ministry in developing a comprehensive programme addressing the bullying behavior among students.

Technology for Learning: Teaching Strategies and Tools

Gamification Approach in Teaching Precision Agriculture

Owen Yeo Thian Seng[1]*, Shiamala Devi Ramaiya[1], Shafinah Kamrudin[2], Johan Ismail[3] & Mohammad Azizi Hj. Jamil[1]

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Faculty of Humanities, Management and Science,
UPM Bintulu Sarawak Campus, Bintulu, Sarawak

[3]Department of Animal Science and Fishery,
Faculty of Agriculture Science and Forestry,
UPM Bintulu Sarawak Campus, Bintulu, Sarawak

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C. Gamification/ Game-based Learning

Overview

Agriculture sectors in Malaysia play a crucial part in food security. Our demand for food increases every year due to population increment. In recent years, the use of technology in agriculture have become a trend as the demand for agricultural products increases. One such technology is precision agriculture. However, the application of this technology is still underutilized.

Objectives

This gamification (treasure hunt) is to enhance student's active learning skill.

Promotes interest, motivation and learning on agricultural subjects.

Delivery

Students are required to choose six to eight identification pit stops (using handheld GPS) with appropriate location on the campus. Each station will use Precision Agriculture or other subjects lecture notes as challenges. The teams which finish the fastest won the game.

The lecturer roles are to advise the students about their pit stops as well as the type of tasks and questions assigned in the Precision Agriculture treasure hunt.

Engagement	Learning	Challenges	Teamwork	Reward & Motivation

Impact

From the student response on the effectiveness of gamification approach shows **40% strongly agree** this approach is better learning, easy, replicable, save cost, promote active learning and motivation of learning.

Technology for Learning: Teaching Strategies and Tools

QR Dice: Toss, Scan, Answer, Score!

Mohamad Firdaus Che Abdul Rani*, Vinothini Kasinathan & Nor Azlina Abd Rahman

Asia Pacific University of Technology & Innovation, APU

*Corresponding author: firdaus@apu.edu.my
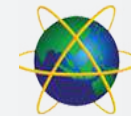
D. QR Code Technology

Overview

QRdice allows educators to quickly create learning quizzes for any learning module and level of students. Imitating the dice games concept, during the learning activity, students will toss the QRdice, scan the QR Code on the dice by using smart phone and answer the random quiz question appeared on the phone screen. Live scoreboard is available to motivate student to achieve high score during the quiz games session.

Objectives

1 To provide an assistive tool for educator to create an interactive QR-based teaching and learning material.

2 To assist educator to plan the educational QR-based class activity systematically by using web application rather than on paper.

3 To varietize and provide different methods in teaching and learning especially to "Digital Native" students.

Delivery

- Perfect for techno-literate educator to varietize teaching and learning activities
- Can be used at any type of learning event with different level of audience.

Students join the game session by scanning the code. Minimum 2 player per game. Students will take turns tossing QRdice.

Students scan the QRdice to get the question. Each QR on the dice representing random questions.

Students need to solve the question appeared on mobile phone. Score will be awarded based on correct answers.

The most point scored player wins!.

Impact

Instantly accessible to users via web browser across a range of devices and operating system.

Technology for Learning: Teaching Strategies and Tools

Knowledge Clips To Enhance Student Learning Experience

Nurdiyana Ahmad Denil[1]*, Johan Ismail[1],
Rozihan Mohamed[2], Sheena Bidin[2],
Ahmad Nasir Mohd Yusoff[2], Yusmadi Yah Jusoh[2],
Nur Eliza Abdul Rahman[1] & Audrey Grace Anak Intai[3]

[1]Department of Animal Science and Fishery,
Faculty of Agriculture Science and Forestry,
UPM Bintulu Sarawak Campus, Bintulu, Sarawak

[2]Universiti Putra Malaysia, Serdang Campus

[3]Universiti Malaysia Sarawak

*Corresponding author: nurdiyana@upm.edu.my

D. QR Code Technology

Overview

A prototype learning module, integrated with knowledge clips covering various topics on Fish Biology was designed and created.

Objectives

To enhance students **learning experience** by using knowledge clips embedded in learning module.

Delivery

The Module became a **go-to resource** that can be watched anytime and anywhere with an internet connection.

Through QR codes, these knowledge clips are accessible on a multitude of devices.

Impact

It creates a more **engaging sensory experience** than just using print materials alone.

The knowledge clips enables them to process the information in a way that is natural to them, as each student prefers a **different learning style and techniques.**

The module becomes a go-to resource that can be watched **anytime and anywhere** with an internet connection.

Through QR codes, these knowledge clips **are accessible on a multitude of devices**, such as tablets and smartphones.

Technology for Learning: Teaching Strategies and Tools

Use of H5P Interactive Video to Support Action Learning of Plant Tissue Culture Techniques

Adyati Putriekasari Handayani*, Lee Sau Har & Nallammai Singaram

School of Biosciences, Taylor's University

*Corresponding author: adyatiputriekasari.handayani@taylors.edu.my

E. Mobile and Interaction

Overview

Plant tissue culture encompasses a variety of laboratory techniques used to grow plant cells or tissues on a nutrient culture medium, strictly under sterile conditions. Due to its demanding growth conditions, it is crucial for students to be well-informed and well-prepared on the techniques to overcome risks of contamination.

Objectives

1 To improve the **efficiency** of regular instructional videos.

2 To support action learning by **deepening** the level of understanding among students.

3 To enhance the students' **core competency** in terms of practical skills.

Delivery

From conventional instructional video to **interactive** instructional video.

From passive to **active** learning.

From limited to enhanced understanding of **practical** skills.

Impact

Provided intermittent tests of quizzes enhances long term **retention of information.**

Cost effective practical session with minimal repetition.

The application of this concept can be extended to other modules/programmes which incorporate **skill development** such as clinical/laboratory work and field work.

Usage of H5P interactive videos were proven to **support action learning** deepening the level of understanding among students on the techniques as shown by reduced contamination incidents during the practical session.

Leads to an improved **learning efficiency** and cost-effective practical sessions with minimal repetition in executing plant tissue culture experiment.

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]

[1]Academic Enhancement and Leadership Development Centre (ADeC), Universiti Malaya

[2]Department of Media and Communication Studies, Faculty of Arts and Social Sciences, Universiti Malaya

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

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

[5]Department of Biology, Faculty of Science and Mathematics, Universiti Pendidikan Sultan Idris

[6]Research Centre for Quran and Sunnah, Faculty of Islamic Studies, Universiti Kebangsaan Malaysia

[7]Centre for Quality Assurance, Policy and Academic Excellence, Universiti Sains Islam Malaysia (USIM)

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

*Corresponding author: amira_firdaus@um.edu.my

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.
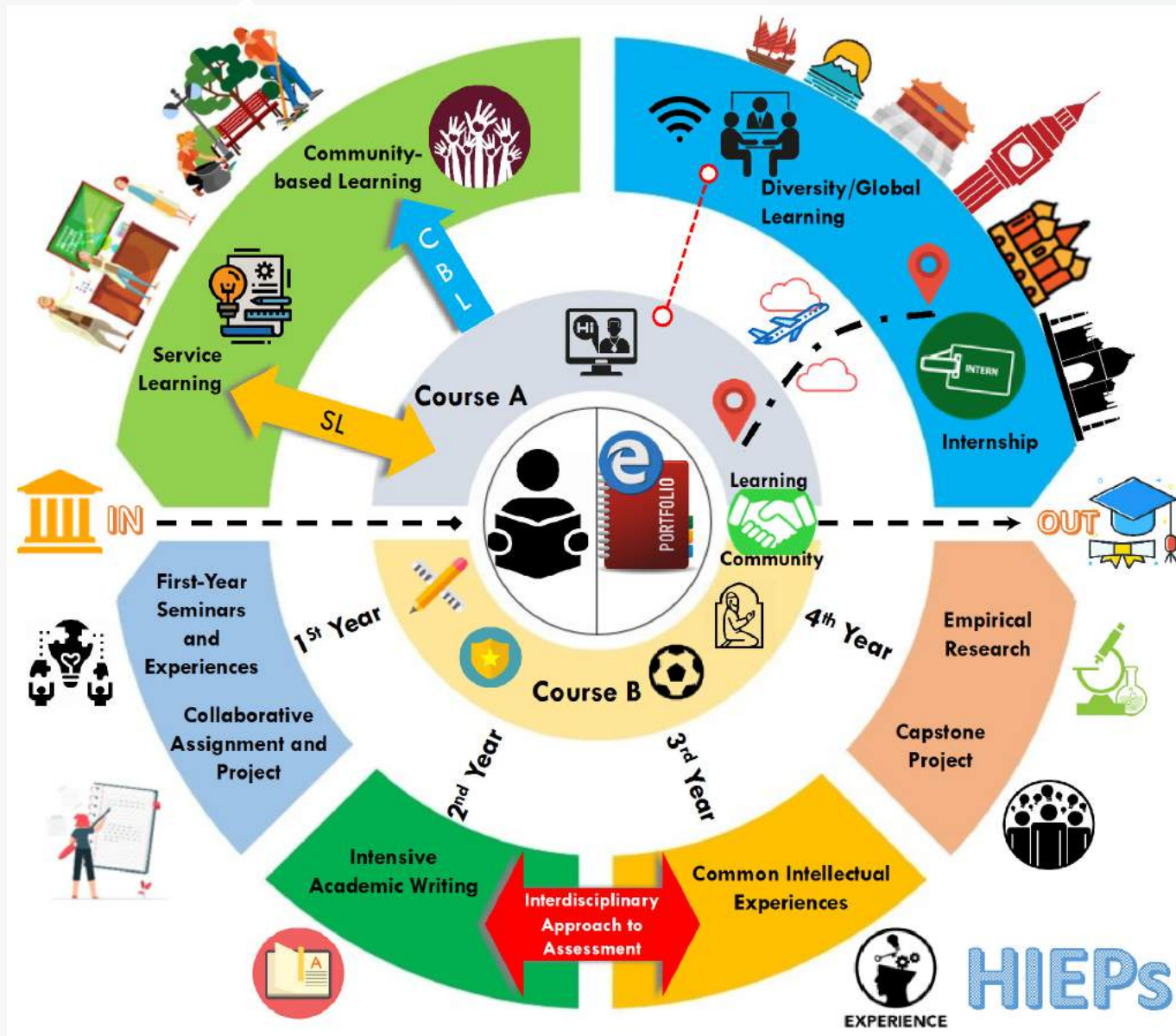
One of the primary objectives of the book has been to provide readers with ideas for designing engaging and impactful learning experiences for your own students. The 13 High-Impact Educational Practices (HIEPs) and 27 case study examples will hopefully inspire HIEPs across many more courses and academic 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.
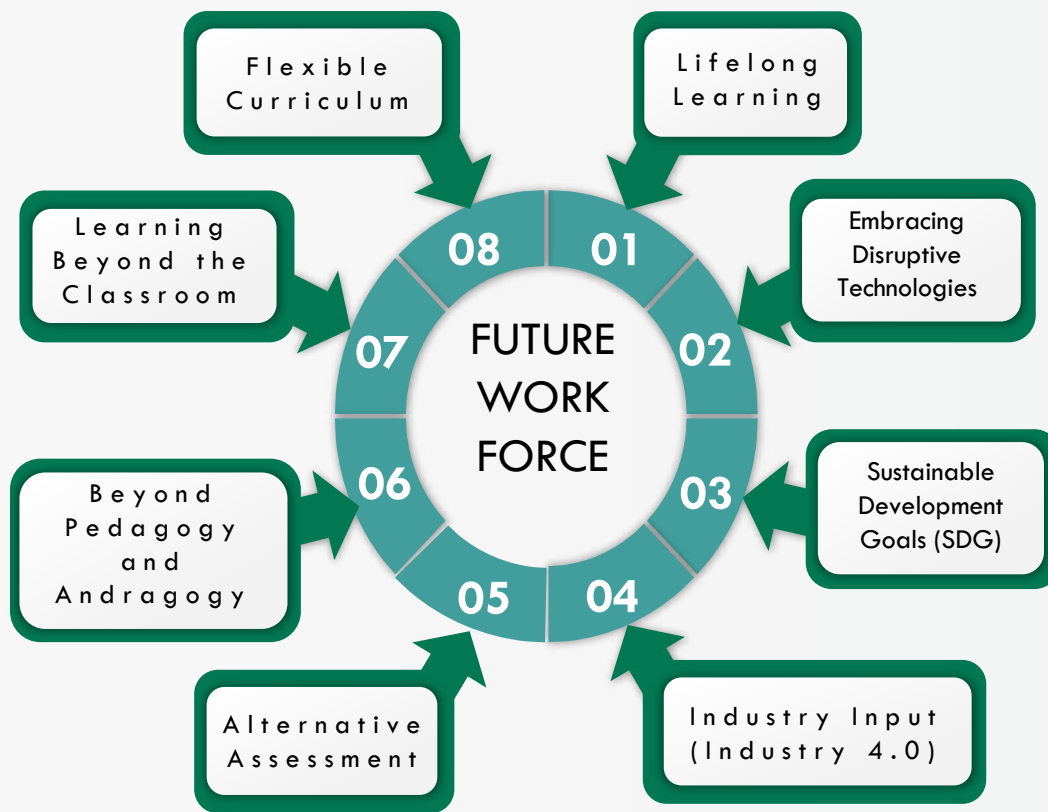

In educating the future workforce, our roles and responsibilities include seeking industry input, and where applicable, using this input to prepare our students for Industry 4.0. HIEPs offers us impactful pedagogical and andragogical alternatives assessments, pedagogy and andragogy to create flexible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

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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