MINISTRY OF HIGHER EDUCATION

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EXCEL

EXPERIENTIAL LEARNING AND COMPETENCY-BASED EDUCATION LANDSCAPE

REAL - IDEAL - CARE - POISE

Resilient and Change-Ready Talent

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Experiential Learning And Competency-Based Education Landscape (EXCEL) : Resilient and Change-Ready Talent

Perpustakaan Negara Malaysia.

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This playbook is prepared as a guide for HEI curriculum developers and academics. It provides an introduction to the EXCEL framework and ways to embed research, industry and community based elements as well as personalization in curriculum delivery. The playbook illustrates how experiential and competency based learning may be designed successfully into the academic programs as a means to produce resilient and Change-ready talent.

YB DATUK SERI
DR. NORAINI AHMAD
Minister of Higher Education

Foreword

In the continuous pursuit for excellence in higher education, the Ministry of Higher Education (MoHE) is pleased to present the Experiential Learning and Competency-Based Education Landscape (EXCEL) playbook – an earnest effort by the Division of Academic Excellence under the Department of Higher Education. Given the current global COVID-19 pandemic and the vast technological advances as we step into the Fourth Industrial Revolution, the higher education sector has been pushed to go beyond normalcy and employ strategic as well as innovative methods of providing education.

To address the needs of our ever changing times, a framework on EXCEL has been designed to thrust our academic programmes into a higher level of quality and effectiveness. As one of the steps taken by MoHE to improve graduate employability, EXCEL aims to address the imminent issues of graduates' skill mismatch and skill gaps. It is focused on providing learning experiences that are nested in the community and immersions in the industry. Through the implementation of this framework, students of higher education institutions will be given the opportunity to indulge in meaningful research and pave their own learning pathways.

As providers of higher education, we need to embrace the value of experience and use it to develop resilient and adaptable talent who will be able to thrive in our ever changing world. MOHE looks forward to having an even more vibrant and progressive higher education sector; One that keeps abreast with market and industry developments.

Once again, I would like to thank the Strategic Committee in developing this playbook and I seek their continued commitment in driving the Malaysian higher education sector to greater heights.

DATUK SERI DR. MAZLAN YUSOFF

Secretary General
Ministry of Higher Education

If we teach today's students as we taught yesterday's,
we rob them of tomorrow – John Dewey

In today's changing world, higher education is confronted with new and unprecedented crisis requiring adept and nimble solutions.

Higher education in this country is undoubtedly affected by the global, social, economic and technological developments. Hence, producing graduates with good grades alone is not enough. They must strive to make an impact on society, and on the global front.

Experiential Learning and Competency-Based Education Landscape (EXCEL) reaffirms our commitment to quality higher education. It is an instrument for the improvement of higher education academic programs that would allow us to advance not only towards the objective of graduate employability, but also towards a sustainable future for higher education. I believe with the existence of EXCEL our higher education institutions would be able to produce graduates who are resilient and change-ready, and are able to effectively contribute to the nation.

Congratulations to the taskforce, spearheaded by the Academic Excellence Division, Department of Higher Education, in making EXCEL available for the Higher Learning Institutions. The efforts by the task force members from various institutions have made this possible.

Wassalam.

DATO' PROF. DR. HUSAINI B. OMAR

Director General
Department of Higher Education
Ministry of Higher Education

Assalamualaikum WBT. and Greetings to all.

Experiential Learning and Competency-Based Education Landscape (EXCEL) is a new higher education landscape aiming at transforming the conventional academic programs to new programs that produce lifelong innovators, adept entrepreneurs, creative practitioners and change-makers. EXCEL comes about as the Malaysian Higher Education navigates a swift turn away from the brick and mortar study program offerings that take three or four years to complete on campus grounds. The tangential thrust is necessary.

Apart from the VUCA world, emerging technologies are being relentlessly generated, opening up to immense opportunities for improved educational practices. The learner experience requires continuous designing; learners must be seamlessly connected to the industry, community, society as a whole.

I applaud the team who have diligently worked on this initiative. These are people who are forward thinkers and who relentlessly find ways to create a brighter future for our youngsters. Introducing a fresh framework takes a lot of convincing. I thus, implore Malaysian academics to take this step with us and pave promising pathways for our students.

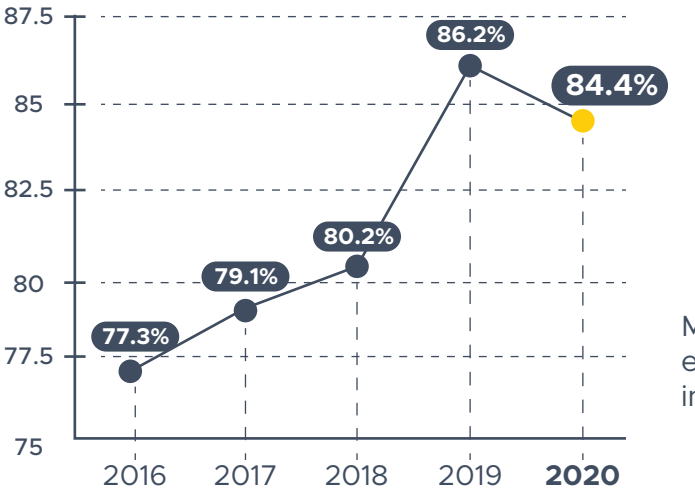
Wassalam.

Preamble:

Change is Inevitable

The year is 2021. The fifth prime minister of Malaysia crafted Vision 2020, with an emphasis on the development of an all-round individual, the acquisition of basic skills, the inculcation of moral values, and the abolishment of early specialisation. The private sector was then encouraged to play an active role in providing higher education.

The Malaysian higher education system has moved forward, albeit at a pace slower than that anticipated in Vision 2020. With the vast advancement in technology and global changes, the current higher education leaders need to rethink the graduates they are producing. The Industrial Revolution 4.0 is not a passing thing; it has tremendously affected work and lives. The career pathways of many university graduates are no longer regimented by a single, sure path. Globalisation and the ability to move beyond borders despite not traveling with a visa has significantly changed how one curates one's life and progresses in his or her career. The disruption to the traditional employment stems from (i) big data analytics, (ii) blockchain, (iii) artificial intelligence, AI and (iv) Internet of Things (IOT). The four as they improve work, decision-making and cross-border partnerships.



Malaysian graduate employability drops in % in the year 2020

Graduate Employability has been influenced by many looming changes

- Technology drives change and innovation in almost all aspects of life.
- The world is highly connected; it changes the way we collaborate be it with the industry, community or globally.
- Talent and work are being reshaped and restructured continuously; trends emerging in the coming years will definitely affect the economy, the future of work and career paths.
- University graduates must be resilient and ready to handle change.

Impending Mismatch

Skills mismatch and skill gap among university graduates are becoming more apparent in recent years.

- Greater industry role in curriculum designs to spur innovation in teaching and learning and ensure the application and relevancy of the subjects taught in tertiary institutions. A demand-driven education model is necessary.

- It is insufficient to focus on just the hard skills and digital skills, there is a need to cultivate deeply human skills; agility, relationships and leadership, ability to influence and resilience.

The World Economic Forum put forward the top 10 skills of 2025. Most of which are intra and interpersonal skills. The current mismatch and gap issues will certainly be further aggravated should no measures are taken to address them. We will not be able to catch up and be a player in the job market should educational institutions remain disconnected.

- *We need to create a workforce that leverages technology to create sustainable economic development and contribute to nation-building. Investing in people can transform them from passive observers of disruption to active leaders of positive change in their local, regional and global communities. (The Edge, 2020).*

When skill gaps abound, a competency based education is seen as more apt and relevant as this identifies the behaviors, abilities, skills, knowledge, and traits that are necessary for high performance and it empowers learners to take control of their own learning paths.

TOP 10 Skills of 2025

- Analytical thinking and innovation
- Active learning and learning strategies
- Complex problem-solving
- Critical thinking and analysis
- Creativity, originality and initiative
- Leadership and social influence
- Technology use, monitoring and control
- Technology design and programming
- Resilience, stress tolerance and flexibility
- Reasoning, problem-solving and ideation

Type of skill

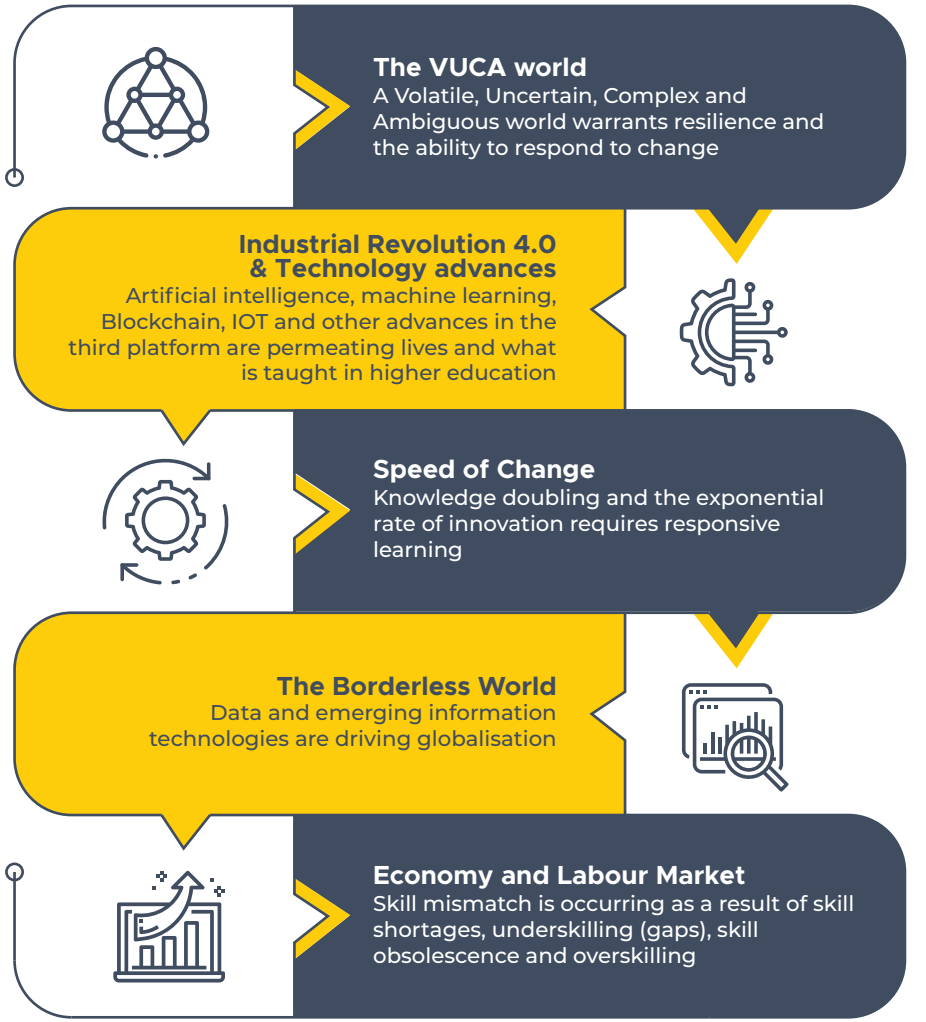
- **Problem-solving**
- **Self-management**
- **Working with people**
- **Technology use and development**

> **We need to be preparing our graduates for jobs that aren't there yet..**

YB Datuk Seri Dr. Noraini Ahmad, 2021

The Premise for EXCEL

There are numerous reasons why EXCEL is needed. Change is indeed inevitable; it has to be managed. Technology changes has actually improved work, decision-making and cross-border partnerships. Multiple competencies and skills are required. The students must not only stay abreast; they must be resilient and ready for change.

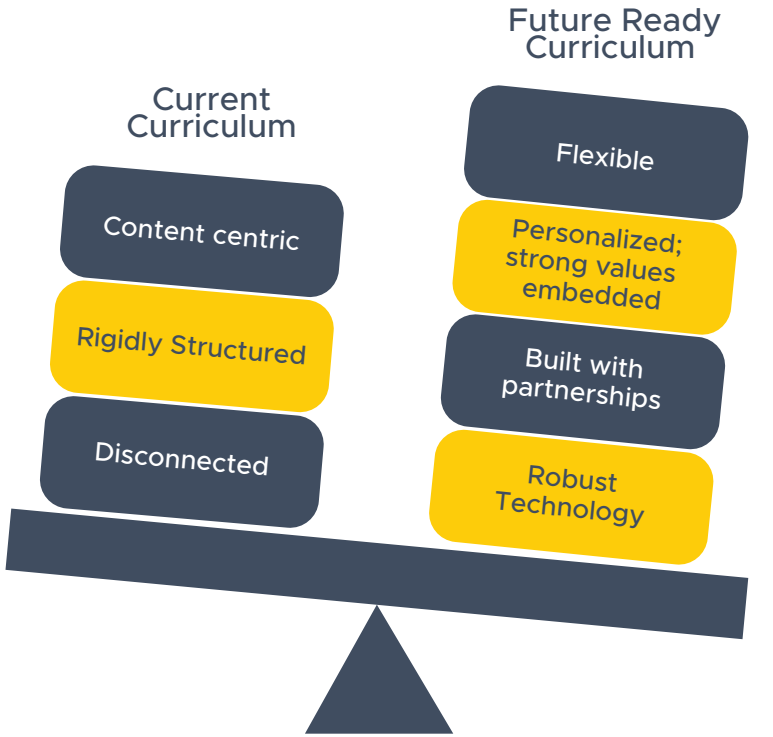


In Favour of a Flexible Future Ready Curriculum

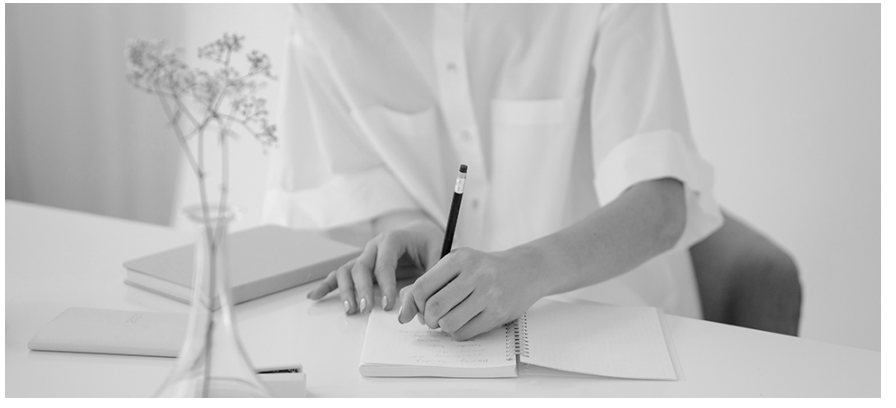
The Malaysian Higher Education institutions run the risk of inertia and even failure when eventually the changing jobs and expectations, or emerging technologies render the current teaching and learning practices irrelevant or obsolete.

In order to stay productive and relevant, higher education institutions (HEIs) must constantly be mindful of future needs and opportunities. It is critical that HEIs work toward building new industry-community academic network and facilitate the development of responsive academic programs and future ready graduates.

Future ready graduates are change ready graduates. They have the content knowledge, the competencies, the transversal skills and have undergone learning experiences beyond the four walls of the lecture halls to include stints in industry and community involvement.



Embedding experiences in competency-based learning should be enhanced at the higher education level to instigate change-ready graduates who are responsive to industry and society needs.



Moving from Knowledge Based to Competency-Based Education

Competencies

Having competence is the process of governing the application of knowledge to a set of tasks and is typically acquired by practice and reflection. The unique characteristic of competence is the effective and creative demonstration and deployment of knowledge and skill in human situations (HETAC, Ireland).

The UNESCO four pillars of learning offer a broad framework of cross-curricular competencies which should be required of all learners to acquire, including, but are not confined to, the following:

- competence in collecting, selecting, processing and managing information
- competence in mastering instruments of knowing and understanding
- competence in effectively communicating with others
- competence in adapting oneself to changes in life
- competence in cooperatively working in teams
- competence in resolving conflict through peaceful dialogue and negotiation

In competency-based education, learning outcomes emphasize competencies that include application and creation of knowledge, along with development of skills and dispositions.

Engendering Experiential Learning

Experiential learning is learning by going through a concrete experience. It can be accomplished by doing something or by working with a person in the field. The experience is customarily authentic rather than a simulated one.

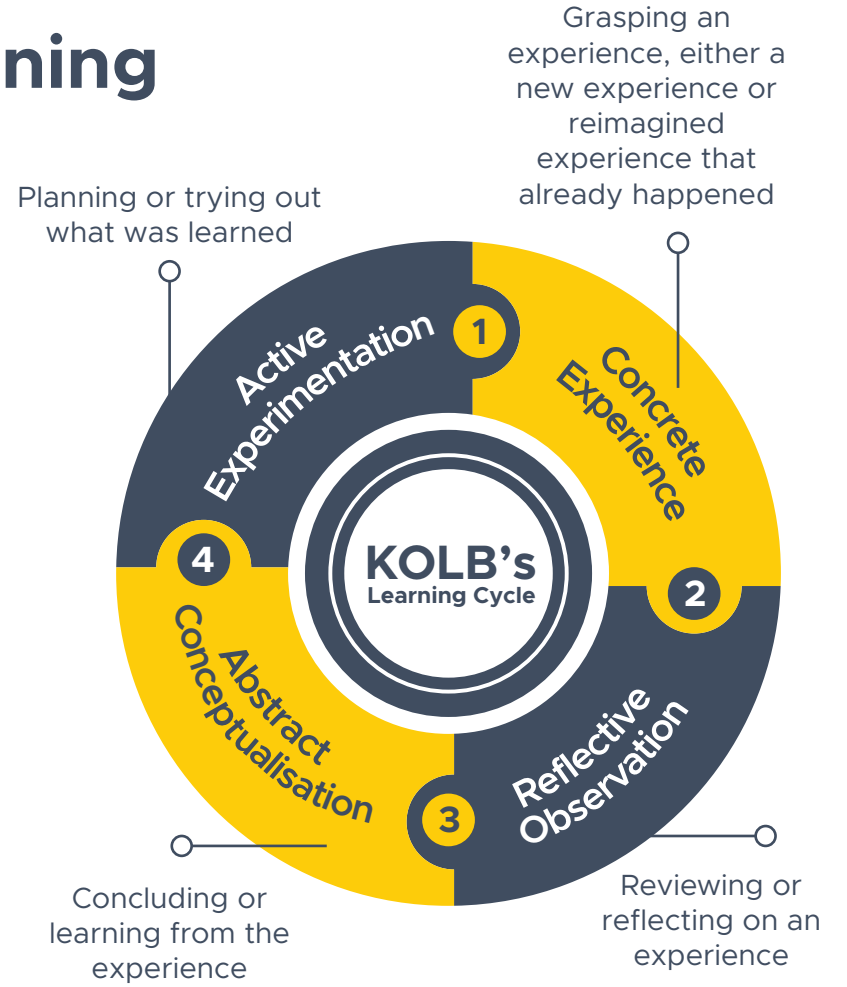
Such learning process demands reflection and thinking about the meaning of the experience.

David A. Kolb's Experiential Learning Theory (1984, revised in 2000) is an established theory for performance improvement, learning, development and change. In his theory, there are four stages-concrete learning, reflective observation, abstract conceptualisation, and active experimentation. The first two stages of the cycle involve grasping an experience, the second two focus on transforming an experience. Kolb's learning cycle espouses reflection, leading to a decision to act, or trying out what has been learned.

Kolb's learning cycle forms the basis for experiential learning in EXCEL.

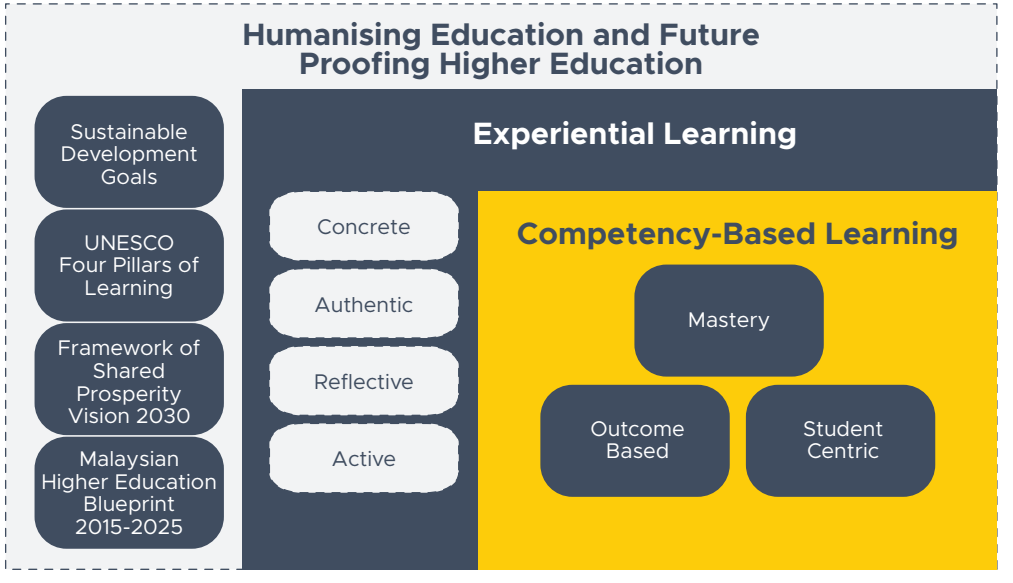
Learning is the process whereby knowledge is created through the transformation of experience

- Kolb -



The Building Blocks of EXCEL

EXCEL seeks to produce resilient and change-ready graduates. The framework encompasses experiential and competency-based learning; it is built upon the UNESCO Four Pillars of Learning, Sustainable Development Goals, the Framework of Shared Prosperity Vision 2030 and the 10 shifts in Malaysian Higher Education (Higher Education) Blueprint 2015-2025.



Acquisition of 10 C-SKILLS for RESILIENT and CHANGE-READY Graduates

- Communication
- Collaboration and Leadership
- Critical Thinking
- Creative, Innovative, Entrepreneurial Skills
- Computational Thinking & ICT Literacy
- Complex Problem Solving
- Cognitive and Affective Flexibility
- Cross-cultural and Global Learning Skills
- Career and Learning Self–Reliance
- Coping and Well-being Skills

Experiential Learning and Competency-Based Education Landscape (EXCEL)

The Framework

The EXCEL Framework

What is EXCEL?

Experiential Learning and Competency-Based Education Landscape (EXCEL) is a framework aimed at transforming academic programs to produce lifelong learners, innovative adept entrepreneurs, creative practitioners and change-makers.

EXCEL is formulated based on The Malaysian Higher Education Blueprint, and an extension of The Future Focused Curriculum and MyHE 4.0

The purpose of introducing EXCEL is to project an inventive framework and to structure experiential learning and competency-based learning in Malaysian Higher Education in a systemic and systematic way. This is critical to ensure initiatives taken to design the students learning experience are concerted and in tandem, in order to achieve the objective of producing resilient and change-ready graduates.

EXCEL AIMS TO NURTURE RESILIENT AND CHANGE-READY TALENTS

EXCEL IS FORMULATED BASED ON THE MALAYSIAN HIGHER EDUCATION BLUEPRINT, AND AN EXTENSION OF THE FUTURE FOCUSED CURRICULUM AND MyHE 4.0.

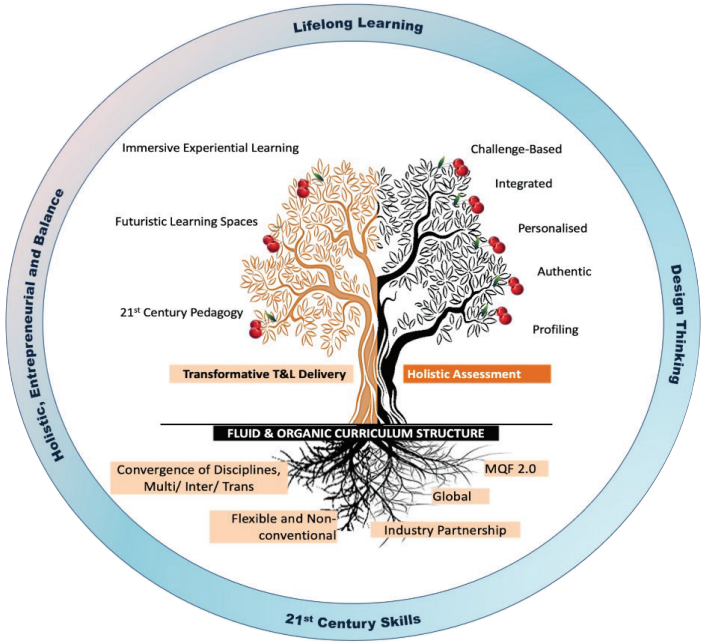


Figure 1.0

EXCEL is grounded on the elements of fluid and organic curriculum and immersive experiential learning as shown in the Figure 1.0

EXCEL is exemplified through four thrusts of experiential learning which are industry-based, community-based, research-based and personalised learning. These are termed as:

RESEARCH INFUSED EXPERIENTIAL LEARNING	**REAL**
INDUSTRY DRIVEN EXPERIENTIAL LEARNING	**IDEAL**
COMMUNITY RESILIENCE EXPERIENTIAL LEARNING	**CARE**
PERSONALISED EXPERIENTIAL LEARNING	**POISE**

The Framework

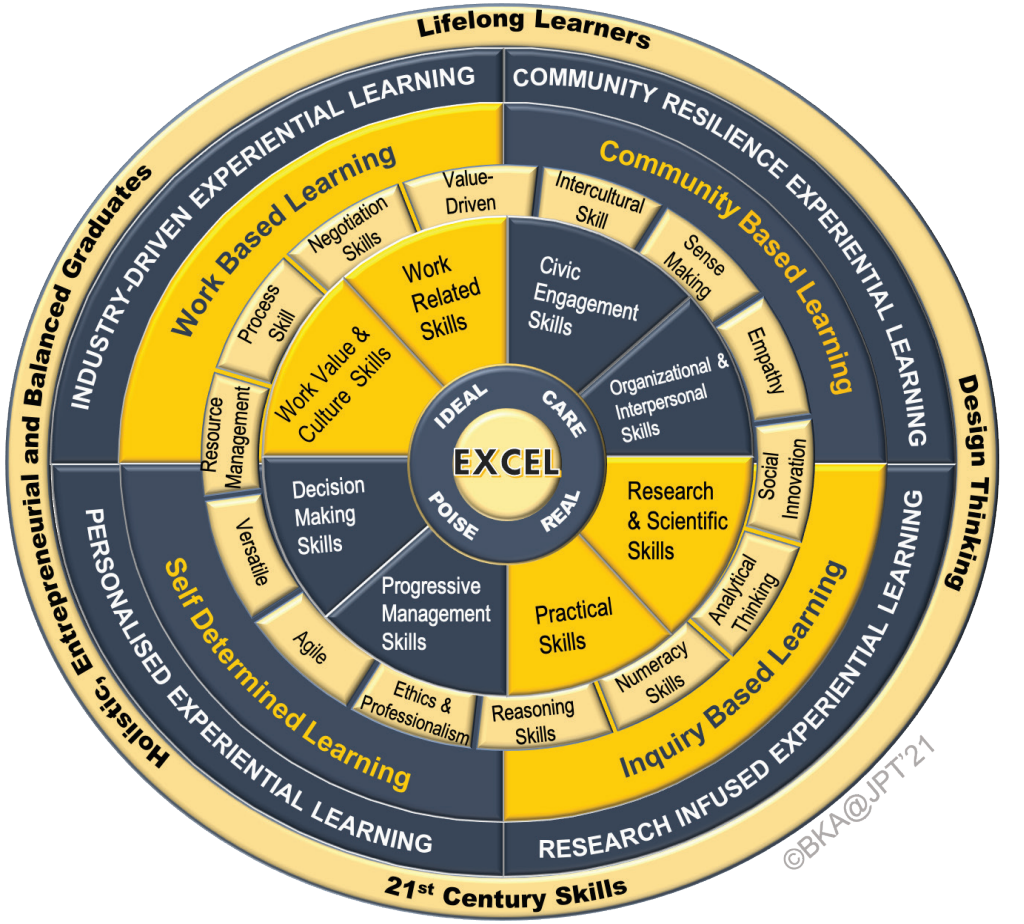
EXCEL is best illustrated by a dartboard with the three outer rings signalling output of EXCEL and significant learning based on the core EXCEL program thrusts (IDEAL, CARE, POISE and REAL).

The (1) dominant skills projected by each thrust and (2) transversal/generic skills that cut across all are explicated accordingly in the two inner rings.

REAL, for instance, projects two nuclear skills that are practical and research skills and 10 C-skills to be acquired through a dominantly inquiry based learning approach.

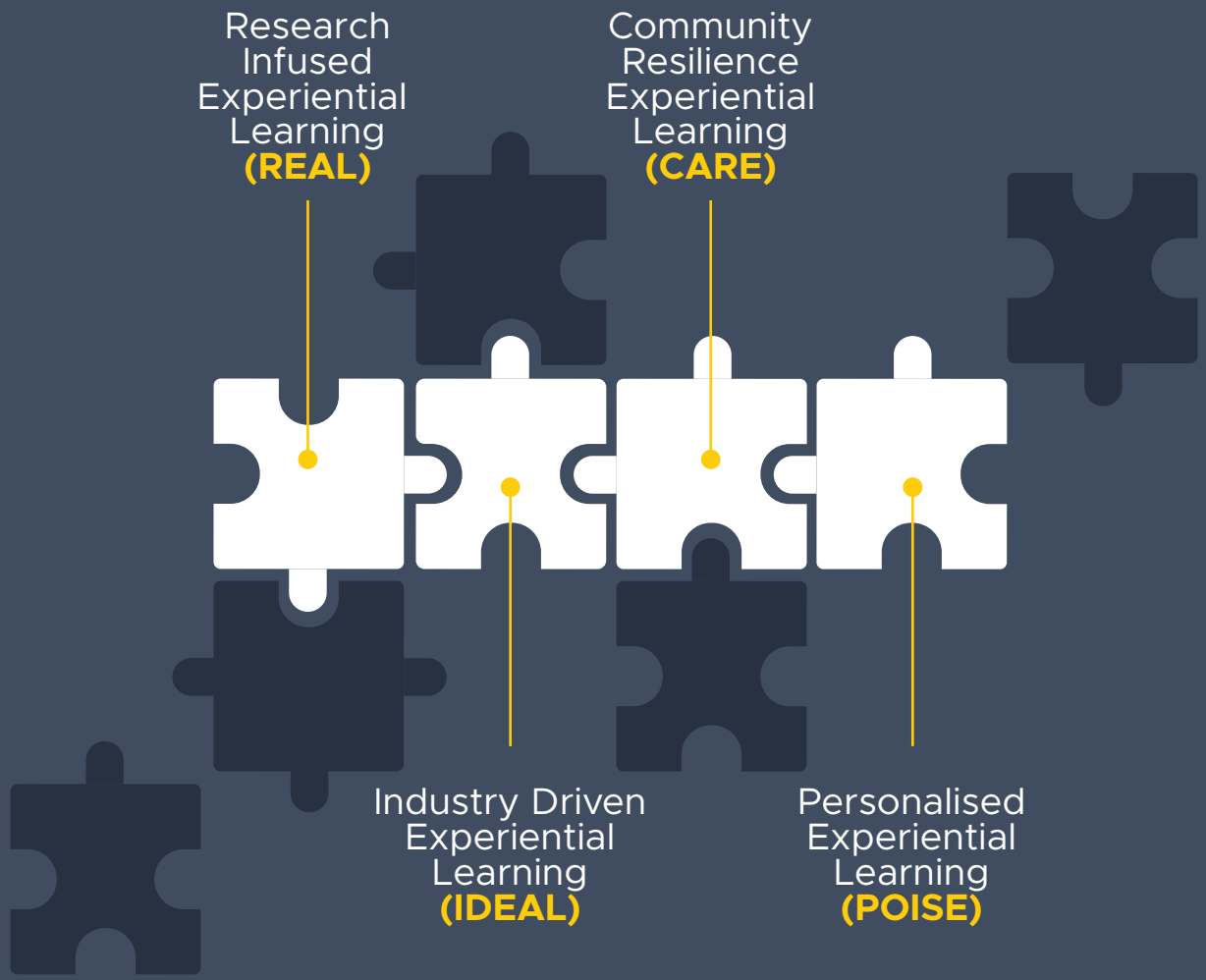
Reasoning skills, numeracy skills, analytical thinking and social innovation form the REAL core skills. Other skills such as process skills, sense making and agility cut across all thrusts including REAL.

POISE's dominant skills are decision making and progressive management skills. Versatility, agility, ethics and professionalism are undoubtedly paramount to POISE since its basis is about choice and flexibility. Other skills such as reasoning skills and resource management are not less important.



THE FOUR EXCEL THRUSTS

The next sections will describe the four thrusts; explicating the What, Why and How each of the thrust may be exemplified and implemented. Criteria of REAL, IDEAL, CARE and POISE along with each thrust's graduate attributes are explained as well.



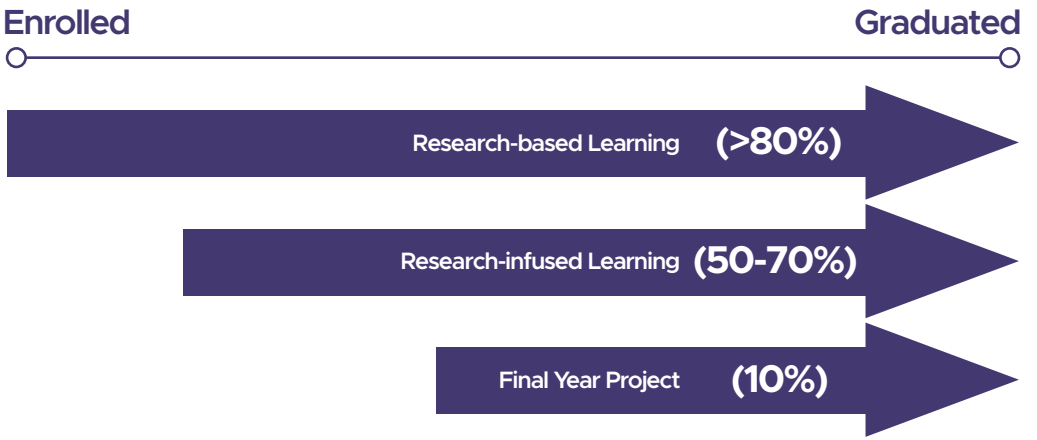
“Knowledge gained through experience is far superior and many times more useful than bookish knowledge”

- Mahatma Gandhi -

Research Infused Experiential Learning (REAL)

WHAT IS REAL?

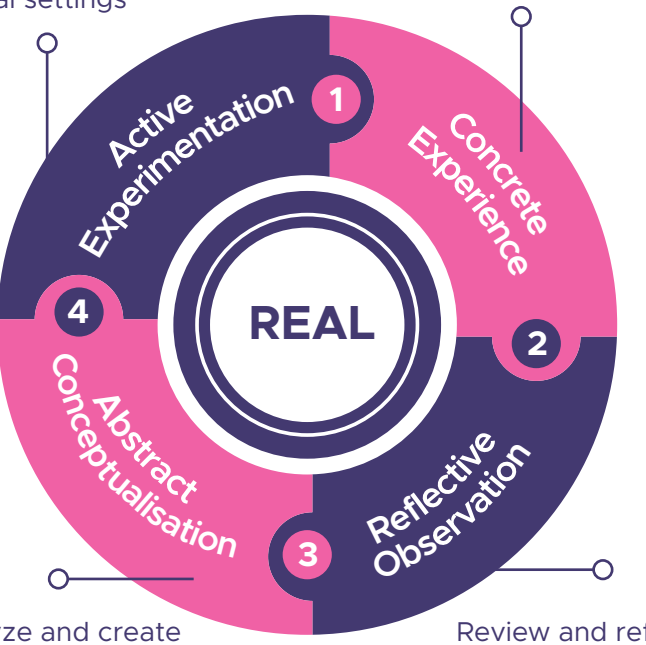
REAL is a curricular thrust structure that promotes meaningful research learning experiences. REAL allows students to identify problems, to pursue interests, to learn something new, to hone and challenge themselves in new ways. It is an experiential learning process leading to the development of inquisitive and exploratory learning mindset and culture. REAL cultivates research skills and inspires learning through research and enquiry through an innovative research-informed curriculum. Students will engage in inquiry-based, evidence-based, and challenge-based learning.



RESEARCH INFUSED EXPERIENTIAL LEARNING

Opportunity to perform research in real settings

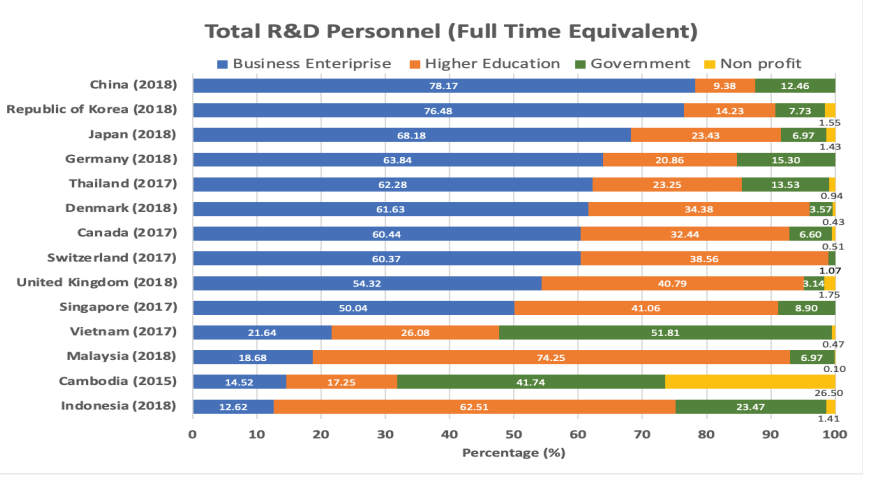
Curated based on actual research through inquiry-based learning



Analyze and create meaning from research findings to modify and form new ideas

Review and reflect on the research experience and activities

WHY REAL?



In Malaysia, there is a lower percentage of R&D personnel in business enterprises compared to other developed countries. Thus, higher education providers must nurture the research skills of future graduates to improve the percentage of R&D personnel in business enterprises through the research-infused curriculum. The research aligns with and supports 17 Sustainable Development Goals (SDGs).

Malaysian graduates must be equipped with necessary skills to meet the future work-force expectations. Emphasis should be placed on the future skills that prepare them for the volatile, uncertain, complex and ambiguous world. These skills could be augmented by engaging them in research early in their study.

HOW:
REAL Model

The REAL strategic goals cut across a continuum of a research spectrum and are rooted in a desire to expose and promote research among university students, stimulate discoveries in local or global issues (SDGs), enable the translation of discoveries from basic research into practice, and foster the training of future scientists/researchers.

The REAL spectrum framework that begins from the research-oriented to becoming a research mentor based on several competence parameters for designing and developing a REAL-infused curriculum that are linked to the student learning outcomes based on MQF 2.0 framework.

The REAL spectrum is incremental that allows learners to grow research competency differently at a different phase.

It allows higher education providers to design and develop a REAL-infused curriculum according to the appropriate level that they aim for.

Mapping of REAL spectrums to MQF program outcomes

CLUSTER MQF 2.0		Knowledge & Understanding	Cognitive Skills	Practical Skills	Interpersonal Skills	Communication Skills	Digital Skills	Numeracy Skills	Leadership, Autonomy & Responsibility	Personal Skills	Entrepreneurial Skills	Ethics & Professionalism
REAL SPECTRUM		1	2	3(a)	3(b)	3(c)	3(d)	3(e)	3(f)	4(a)	4(b)	5
Level 1	Students are provided with research knowledge and scientific methodological skills to progress from awareness to understanding of research	√										
Level 2	It focuses on the development of research and inquiry skills and techniques through research practical sessions or attachment with scientists/researchers on an on-going research project; students may become observers/assistants		√	√								
Level 3	Students are assigned to work with scientists/researchers on an on-going research project. They will be guided on how to perform research tasks and have the opportunity to collaborate with other researchers			√	√		√	√				
Level 4	Students become active participants, rather than passive recipients, to develop research ideas and contribute to the production of knowledge under closed guidance by experienced researchers/scientists. Students are personally and professionally supported to develop their research skills		√	√				√				√
Level 5	Students become active participants, rather than passive recipients, to develop research ideas and contribute to the production of knowledge under minimal guidance. Students are personally and professionally supported to develop their research skills		√	√					√	√	√	√
Level 6	Students demonstrate capability to disseminate research output through publications (in respective fields) and communicate the research findings at various platforms					√	√	√	√	√		√
Level 7	Students become mentors to guide, coach or train the inexperienced juniors to pursue their interests and goals in research. They provide supports and opportunities to the inexperienced juniors to find their research interests and areas				√	√			√			√

RESEARCH

EXPERIENCE

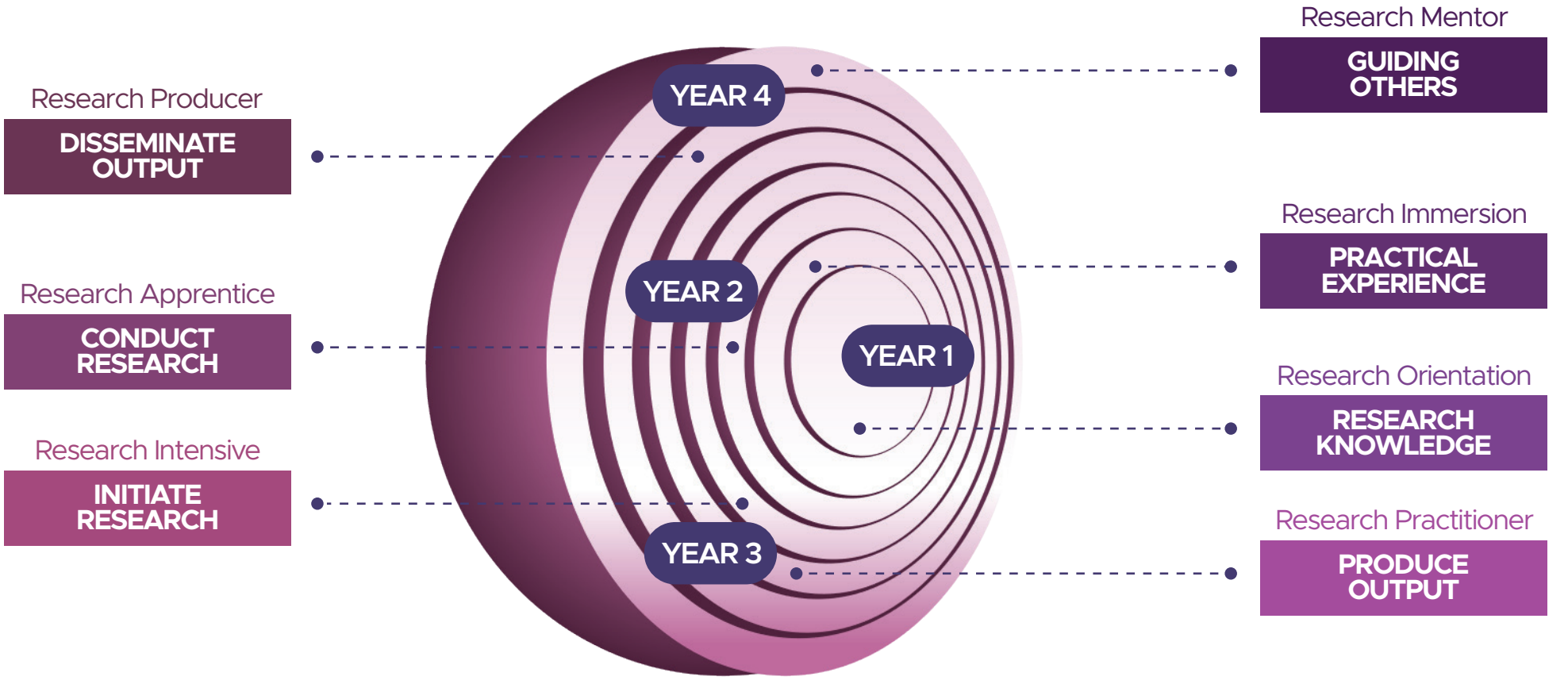
INFUSED

LEARNING

REAL Spectrum	Research Competency							
	Familiarity	Have knowledge	Practical experience	Conduct research	Initiate research	Produce research output	Disseminate research result	Guiding others on research
Research Oriented	√	√						
Research immersion	√	√	√					
Research Apprentice	√	√	√	√				
Research Intensive	√	√	√	√	√	√ (guided)		
Research Practitioner	√	√	√	√	√	√ (independent)		
Research Producer	√	√	√	√	√	√	√	
Research Mentor	√	√	√	√	√	√	√	√

Study Phase	Semester	REAL Level	Criteria	Remark
1st year	1 2	1 Research Oriented 2 Research Immersion	A REAL program is achieved whenever 50-70% of programme learning outcomes (based on the core discipline) mapped to the REAL taxonomy.	
2nd year	3 4	3 Research Apprentice		It is recommended to allow students have a research placement at industrial/company/collaborator.
3rd year	5 6	4 Research Intensive 5 Research Practitioner		This is the minimum REAL level for a REAL programme.
4th year	7 8	6 Research Producer 7 Research Mentor		Typically, this is the final year for the most of undergraduate programme.
5th year	9 10	The REAL level should be adjusted to suit the programme structure.		This is the final year for the 5-year programme, for instance, the undergraduate medical programme.

REAL COMPETENCY



MODEL - DESCRIPTORS

RESEARCH

EXPERIENCE

INFUSED

LEARNING

REAL Spectrum	Research Competency	Description	COMPETENCY								TAXONOMY
			Familiarity	Have knowledge	Practical experience	Conduct research	Initiate research	Produce research output	Disseminate research result	Guiding others on research	INDICATORS
Level 1: Research Oriented	**Have research knowledge Familiar with research**	Students are provided with research knowledge and scientific methodological skills to progress from awareness to understanding of research	√	√							Students must be exposed to the knowledge and scientific skills through formal courses
Level 2: Research Immersion	**Practical experience**	It focuses on the development of research and inquiry skills and techniques through research practical sessions or attachment with scientists/researchers on an on-going research project; students may become observers/assistants	√	√	√						Students must be involved (assist or observe) in the research activities
Level 3: Research Apprentice	**Conduct research**	Students are assigned to work with supervisors an on-going research project. They will be guided on how to perform research tasks and have the opportunity to collaborate with other researchers	√	√	√	√					Supervisors provide students with the research proposal/ideas/title to be conducted
Level 4: Research Intensive	**Produce research output (guided) initiate research**	Students become active participants, rather than passive recipients, to develop research ideas and contribute to the production of knowledge under closed guidance by experienced researchers/scientists. Students are personally and professionally supported to develop their research skills	√	√	√	√	√	√			Students generate their own ideas but closely guided (more than 70% of efforts) by supervisor to refine it
Level 5: Research Practitioner	**Produce research output (independent)**	Students become active participants, rather than passive recipients, to develop research ideas and contribute to the production of knowledge under minimal guidance. Students are personally and professionally supported to develop their research skills	√	√	√	√	√	√			Students generate their own ideas but minimally guided (less than 30% of efforts) by supervisor to refine it
Level 6: Research Producer	**Disseminate research output**	Students demonstrate individual capability to disseminate research output through publications (in respective fields) and communicate the research findings at various platforms	√	√	√	√	√	√	√		Students MUST publish research findings independently OR Students MUST exhibit research findings independently at national level
Level 6: Research Mentor	**Guiding others on research**	Students become mentors to guide, coach or train the inexperienced juniors to pursue their interests and goals in research. They provide supports and opportunities to the inexperienced juniors to find their research interests and areas	√	√	√	√	√	√	√	√	Guide level 3 REAL juniors to perform research

REAL

Graduate Attributes

REAL graduates are:

- Who are able to perform scientific research professionally and ethically.
- Who are able to demonstrate analytical thinking, reasoning, and numeracy skills for scientific research.
- Who are able to translate ideas into research activities for practical solutions to local and global issues.

“All genuine learning comes through experience”

- John Dewey -

Industry Driven Experiential Learning (IDEAL)

WHAT IS IDEAL?

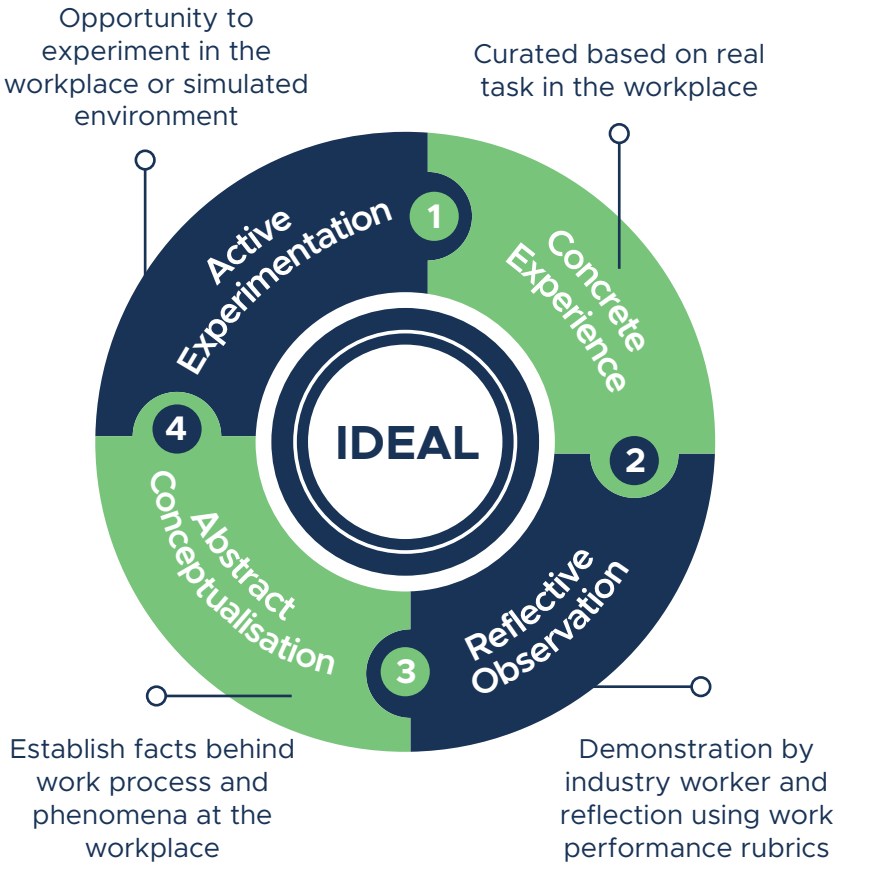
IDEAL ‘Industry driven experiential learning’ is a curricular thrust that is dominantly characterized by the requirements of industry and involves a significant amount of experiential learning.

INDUSTRY

Industry comes from Latin word industria, which means “diligence, hard work”. In the context of IDEAL, ‘industry’ is economic activity concerned with the production of goods and the offering of services.

Experiential Learning requires learners to be actively involved in the experience, able to reflect on the experience, able to conceptualize the experience and able to experiment on the new ideas gained from the experience in order to gain genuine knowledge from an experience.

INDUSTRY DRIVEN EXPERIENTAL LEARNING



WHAT IS IDEAL?

Characteristics

Curriculum

- Involves job, task and competency analysis
- Includes technical, business, legal, finance, communication as well as thinking skills and knowledge at the workplace.

Delivery and Assessment

- Delivery requires learners to immerse in workplace activity
- Assessment is competency-based to test whether learners can perform work related task successfully.

Program Management

- Involves high degree of responsibilities from industrial partner.

WHY IDEAL?

The skill mismatch and skill gaps among graduates occur when the graduates do not have the knowledge, skills and attitudes required by employers. Common cause for this includes having different expectations in HEP/Industry responsibilities and different expectations in graduate attributes. Different expectation is caused by a lack of communications and proper methodology that is responsive to the dynamic needs of the industry. Costly upskilling and reskilling to match the industry expectation must be avoided and addressed earlier i.e when students are at the higher education institutions.

1

IDEAL serves

IDEAL serves as a conduit between HEP and the industry.

2

IDEAL supports

IDEAL supports immersive student learning experience in industries, enhances the performance of students from cognitive, affective, and psychomotor attributes which helps them to meet career objectives.

3

IDEAL provides

IDEAL provides sufficient fundamental and generic knowledge on top of industrial experience to ensure graduates are resilient in facing any unforeseen circumstances in the future.

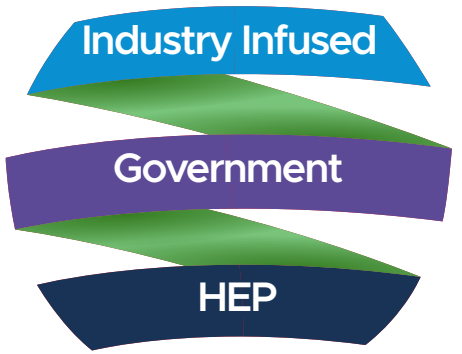
4

IDEAL frames

IDEAL framework provides detailed guidelines on the consideration and methodology in developing academic program with Industry driven experiential learning.

Elements of IDEAL

Triple Helix Platform



Triple Helix Co-creation of Academic Program with IDEAL is facilitated by supporting structures, policies, procedures, infrastructures such as online platforms.

Approaches

Program with IDEAL could be implemented through conventional, cooperative and apprenticeship approaches, with varying degree of industry involvement, flexibility in curriculum structure and ease in implementation.

Characteristics

Program with IDEAL will have its curriculum, delivery, assessment and management be highly involved by the industry.

IDEAL

Program ensures learners follows experiential learning principles to fully benefit from industrial practice and experience.

HOW: Approaches to IDEAL

There are three main approaches to implementing IDEAL

HEP

Industry

- Infuse work-based experience through POPBL/WBL, Elective courses, Clinical course, Industrial Training course, Final Project and others.
- 15% - 20% time spend for WBL.

Coop Education

- Work term every other semester.
- Requires extension depending on level of cooperation.
- 2u2i is an example of coop edu.
- 30% - 50% time spend for WBL at workplace.

Apprenticeship

- Recruitment and mentorship by industry.
- 70% - 80% time spend for WBL at workplace (on the job training).

Industry

MQF2.0 Outcomes Mapping

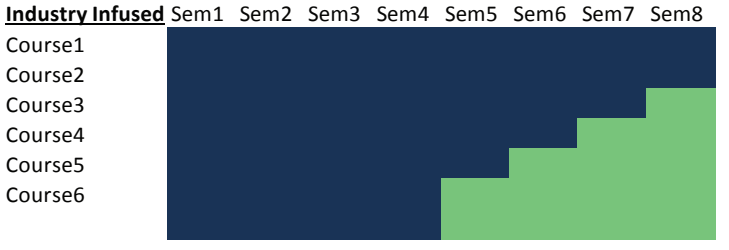
IDEAL Spectrum	MQF Cluster 2.0	Knowledge & Understanding	Cognitive Skills	Practical Skills	Interpersonal Skills	Communication Skills	Digital Skills	Numeracy Skills	Leadership, Autonomy & Responsibility	Personal Skills	Entrepreneurial Skills	Ethics & Professionalism
		1	2	3(a)	3(b)	3(c)	3(d)	3(e)	3(f)	4(a)	4(b)	5
Type 1	Industry Infused	✓	✓	✓	✓							
Type 2	Cooperative Education	✓	✓	✓	✓	✓						
Type 3	Apprenticeship	✓	✓	✓	✓	✓			✓			✓

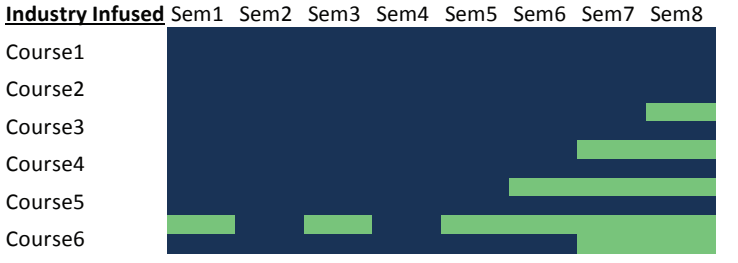
Competency

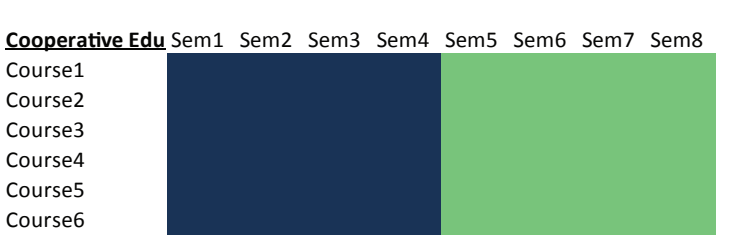
Note: Although personal and organisational competency could be thought, immersive experience with coop edu and apprenticeship ensure its attainment.

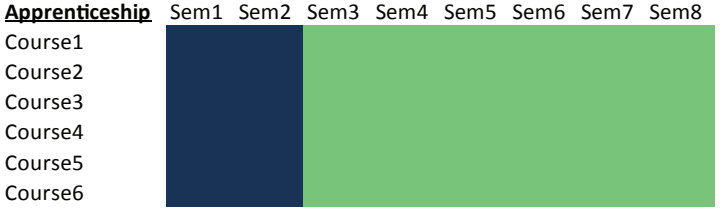
Experiential Learning	Description	Competency Acquired		
		Technical	Personal	Organisational
Industry Infused	1. Infuse work-based experience through POPBL/WBL delivery, elective courses, Clinical course, Industrial Training course, Final Project and others. 2. 15% - 20% time spend for WBL, mostly at HEP.	√		
Cooperative Edu	1. Work term every other semester. 2. Requires extension depending on level of cooperation. 3. 2u2i is an example of coop edu. 4. 30% - 50% time spend for WBL at workplace.	√	√	
Apprenticeship	1. Recruitment and mentorship by industry. 2. 70% - 80% time spend for WBL at workplace (on the job training).	√	√	√

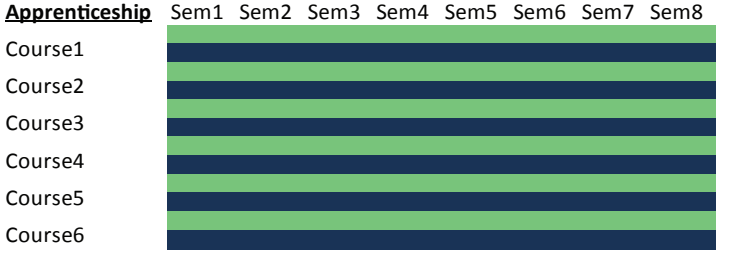
Curriculum Structure (example)











1 YEAR 1

Core - Math and computer programming

Competition – Hackathon 1.0

2 YEAR 2

Workshop – Python and Javascript

Competition – Hackathon 2.0

3 YEAR 3

Electives - Computer vision and Artificial Intelligence (with Industry).

Competition – IDP Exhibition.

4 YEAR 4

Project – Final year project in Computer vision and Artificial Intelligence.

Competition – FYP Exhibition, Grant proposal, Business Model.

GRAD

Industry Computer vision and Artificial Intelligence Professional Examination.

Master/PhD project.

Example: An AI-CV Learning Ecosystem

On transformative Educational approach – e.g. Student Extracurricular activity

Co Op Education Models

Duration	Model	Semester							
		1	2	3	4	5	6	7	8
4 years	2u2i								
	3u1i								
3 years	2u1i								
2 1/2 years	1 1/2u1i								

University

Industry

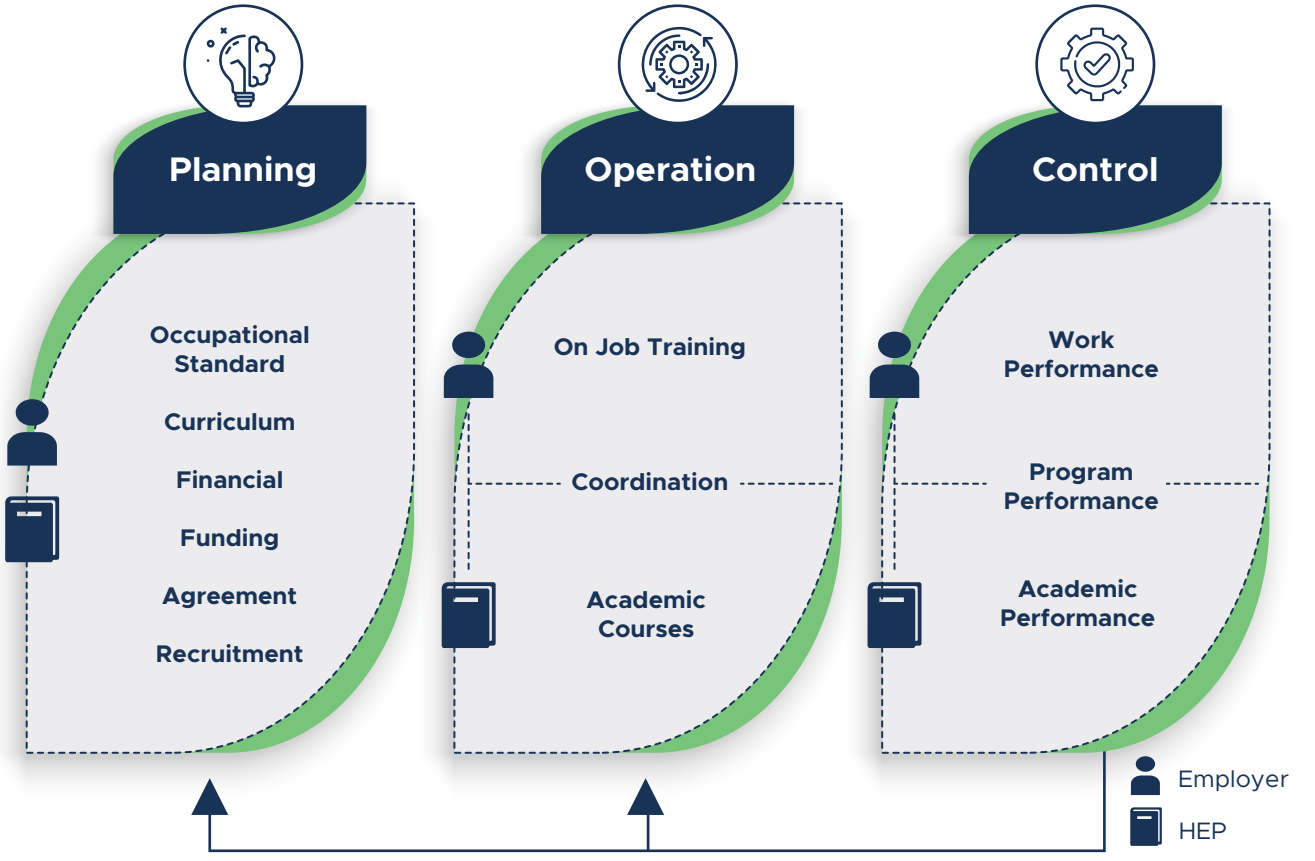
Apprenticeship Proposed Model

Preparation
- Organisational readiness to deliver apprenticeships
- Staff readiness to deliver apprenticeships
- Working with employers
- Finding and taking on an apprentice

Planning
- Induction
- Initial assessment
- Individual learning plan

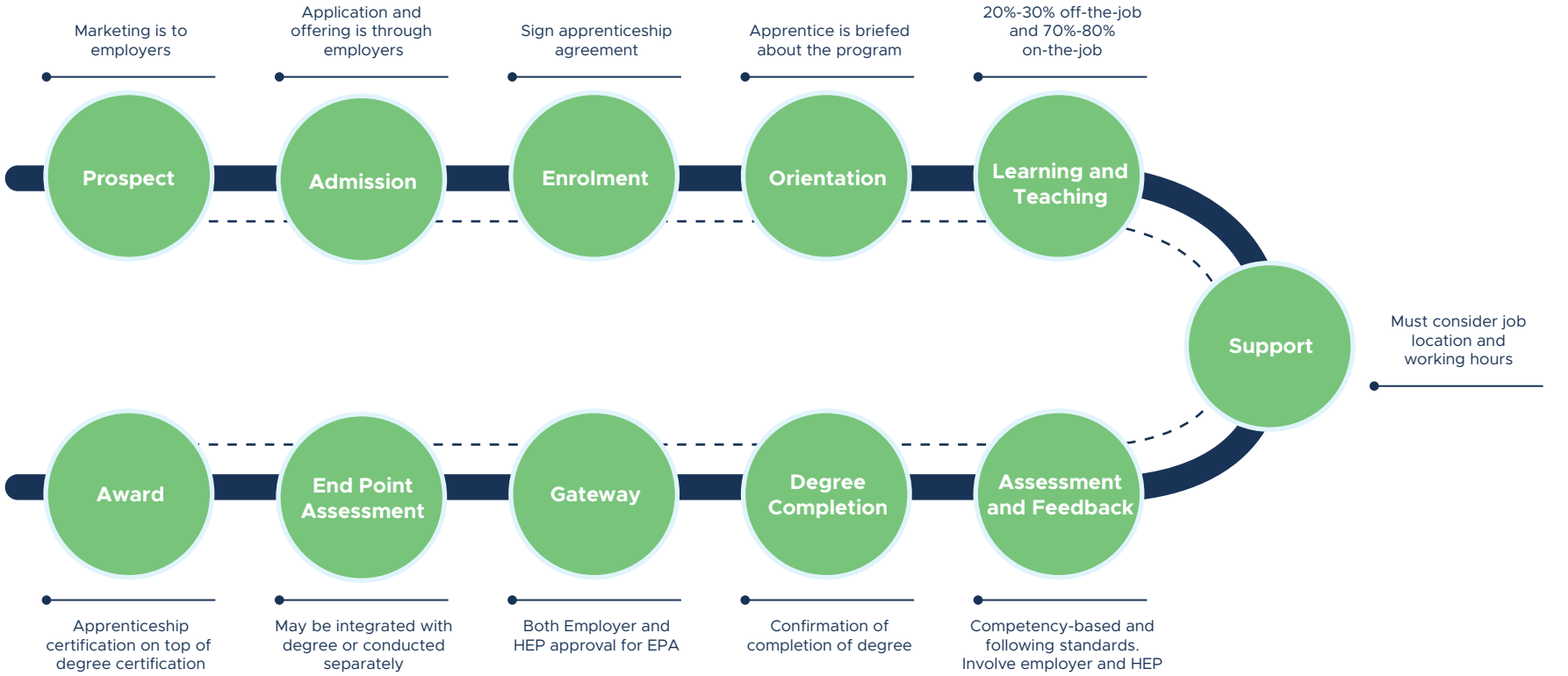
Delivery
- Designing blended learning
- Setting objectives and giving feedback
- Learner support
- Evidencing learning

Preparation
- Progress checking, monitoring and review
- Gateway to end point assessment (EPA)
- End point assessment
- Framework assessment



Proposed Malaysia Level 6 Apprenticeship Framework

Degree Apprenticeship Life Cycle



Core Work-Related Skills

Abilities

Cognitive Abilities
- Cognitive Flexibility
- Creativity
- Logical Reasoning
- Problem Sensitivity
- Mathematical Reasoning
- Visualization

Physical Abilities
- Physical Strength
- Manual Dexterity and Precision

Basic Skills

Content Skills
- Active Learning
- Oral Expression
- Reading Comprehension
- Written Expression
- ICT Literacy

Process Skills
- Active Listening
- Crtitical Thinking
- Monitoring Self and Others

Cross-functional Skills

Social Skills
- Coordinating with Others
- Emotional Intelligence
- Negotiation
- Persuasion
- Service Orientation Training and Teaching Others

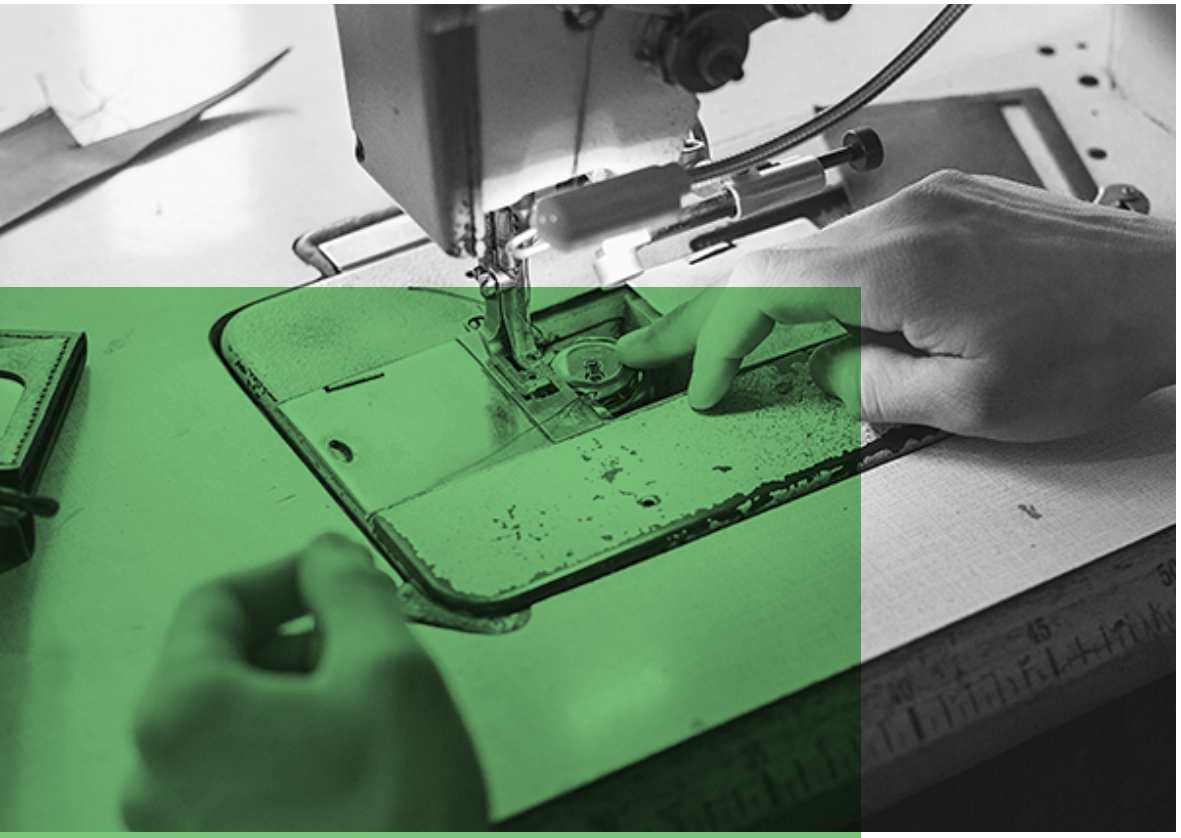
Systems Skills
- Judgement and
- Decision-making
- Systems Analysis

Complex Problem Solving Skills
- Complex Problem Solving

Resource Management Skills
- Management of Financial Resources
- Management of Material Resources
- People Management
- Time Management

Technical Skills
- Equipment Maintenance and Repair
- Equipment Operation and Control
- Programming
- Quality Control
- Technology and User Experience Design
- Troubleshooting

Source: World Economic Forum based on O'NET Content Model



IDEAL

Graduate Attributes

IDEAL graduates are highly sought, work-ready graduates:

- Who are ready for work and able to apply technical knowledge and work-related skills to solve tasks at work.
- Whose knowledge and skills match industrial needs.
- Whose values and characters are aligned with the workplace culture and increase value to the organisation.

“You may learn to imitate a birdcall, but do you experience what the nightingale feels for the rose?”

- Rumi -

Community Resilience Experiential Learning (CARE)

WHAT IS CARE?

CARE is a curriculum thrust that promotes student learning by addressing community needs and ultimately create positive social change through immersive community-based learning and Service Learning Malaysia (SULAM), University for Society. It serves to enhance student learning of course content, teach civic responsibility, and strengthen communities.

In the context of EXCEL, communities are local residents, non-profit organisations, government and community-based organisations, where community services rendered are to improve the quality of life for community residents, particularly low-income individuals or to solve/address particular problems related to their needs.

In terms of experience, the learning cycle is explicated in the diagram.

COMMUNITY RESILIENCE EXPERIENTIAL LEARNING

Curated based on real problem exist in the community

Applying their knowledge and ideas to create positive social change and building community resilience

Revisiting, refreshing and building their knowledge and ideas for social innovation in community

Deep understanding and appreciation of their roles and functions in their field/domain towards building community resilience

WHY CARE?

CARE is in line with several national policies and initiatives related to community engagement. These include the National Community Policy and the Rural Development Policy. The Ministry of Higher Education has also identified Service Learning as the High Impact Educational Practices (HIEPs) strategy, and introduced the University for Society (U4S) initiative to enhance student learning experience through community engagement.

SERVICE LEARNING MALAYSIA
SULAM
UNIVERSITY FOR SOCIETY

Redesign University Higher Education: University, Industry and Community Engagement (MoHE, 2017)

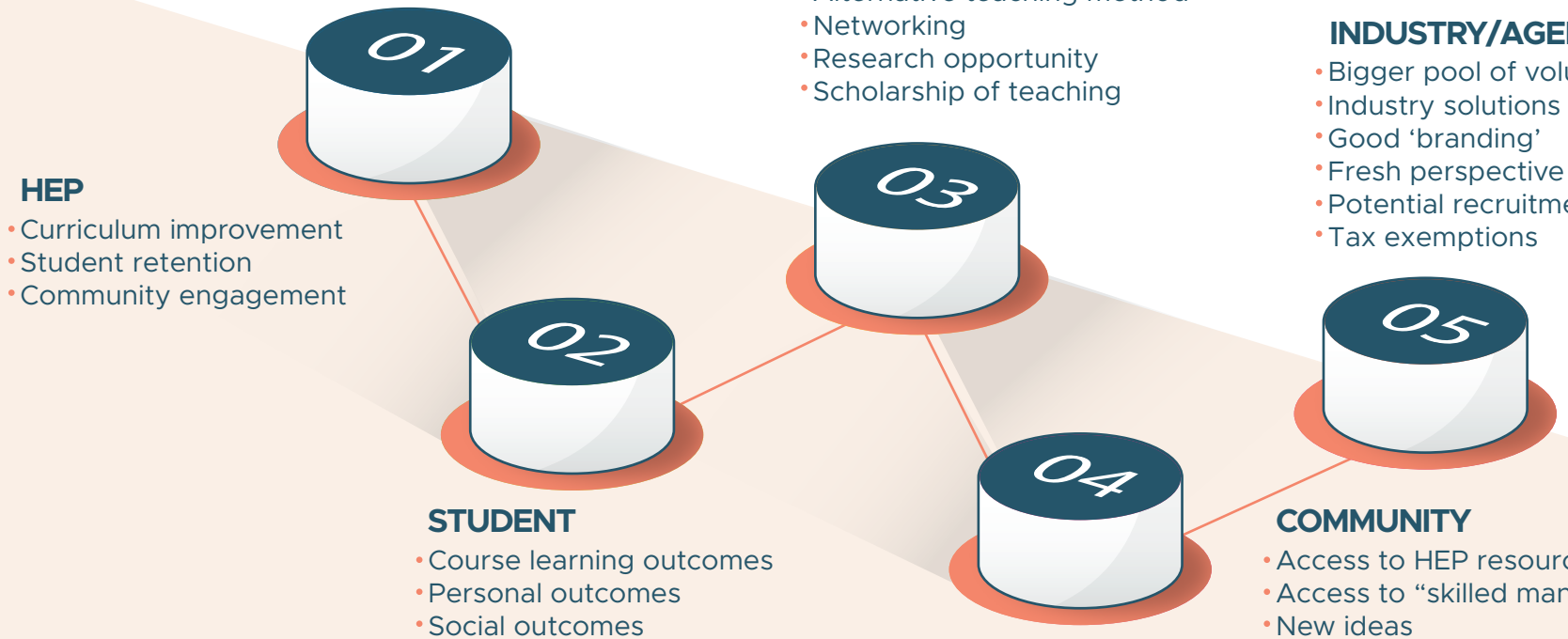
HIEPs – Service Learning
Malaysian Education Blueprint (HE) 2015-2025 (MoHE, 2015)

National Community Policy (MHLG, 2019)

Rural Development Policy (KPLB, 2019)

BENEFITS OF CARE

CARE not only enhances the student learning experience but also brings about reciprocal benefits to the Higher Education Providers (HEP), the industry and the community.



HEP
- Curriculum improvement
- Student retention
- Community engagement

INSTRUCTOR
- Alternative teaching method
- Networking
- Research opportunity
- Scholarship of teaching

INDUSTRY/AGENCY/NGO
- Bigger pool of volunteers
- Industry solutions in community
- Good 'branding'
- Fresh perspective of volunteers
- Potential recruitment
- Tax exemptions

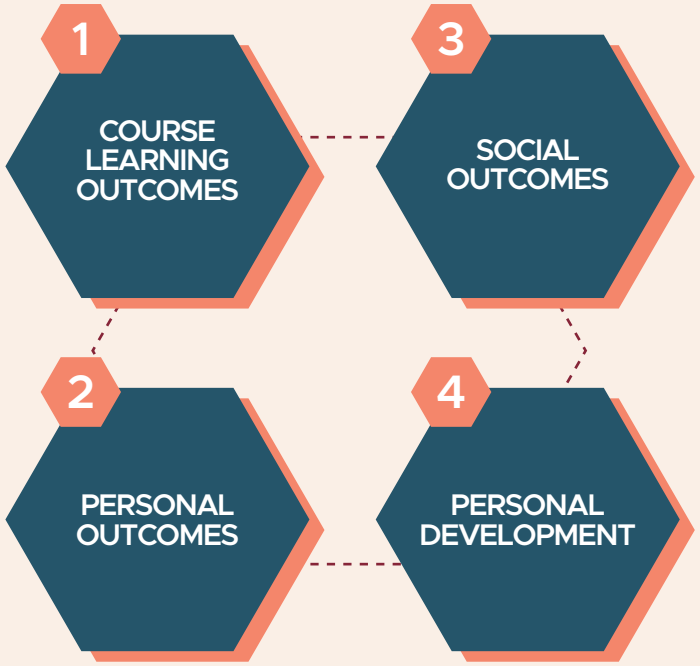
STUDENT
- Course learning outcomes
- Personal outcomes
- Social outcomes
- Career development

COMMUNITY
- Access to HEP resources
- Access to "skilled manpower"
- New ideas
- Improve relations with HEP

BENEFITS OF CARE : WHAT STUDENTS GAIN

- Hands-on use of skills and knowledge
- Apply what they have learned in “the real world”
- Impact on problem-solving, critical thinking, and cognitive development
- Ability to understand complexity and ambiguity

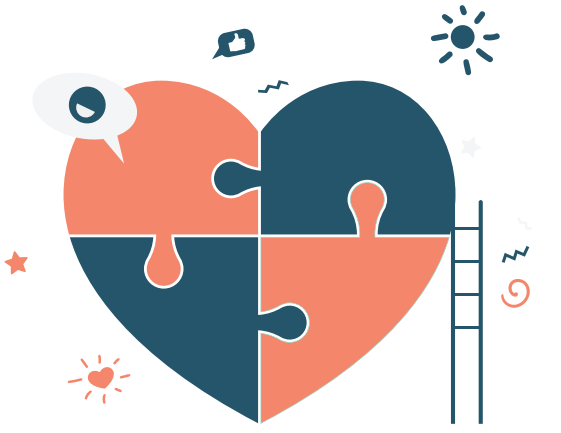
- Greater interpersonal development, particularly the ability to work well with others, and build leadership and communication skills



- Interaction with people of diverse cultures and lifestyles
- Improve social responsibility and citizenship skills
- Greater involvement in community service after graduation

- Connections with professionals and community members for learning and career opportunities
- Valuable and competitive career guidance and experience

SULAM	CARE
Definition	**Definition**
TnL method	Curriculum Structure
Duration	**Duration**
Minimum 20 hours with the community throughout 1 semester	Whole academic program Depending on spectrum (Level 1-4)
Intensity of implementation	**Intensity of implementation**
Low	High (Covers multiple approaches)
Networking	**Networking**
Limited	Broad/wide
Curriculum	**Curriculum**
Subject based (one at time)	Nested suite, Multiple subjects during study periods, multi-and trans-disciplinary



Differentiating CARE from SULAM

It is best to differentiate CARE from SULAM project that brings students and instructors alike to the community. While SULAM is course – based, CARE-defined programs are full academic programs with a community orientation.

Mapping of CARE Spectrums to MQF Program Outcomes

MQF 2.0 CLUSTERS		Knowledge & Understanding	Cognitive Skills	Practical Skills	Interpersonal Skills	Communication Skills	Digital Skills	Numeracy Skills	Leadership, Autonomy & Responsibility	Personal Skills	Entrepreneurial Skills	Ethics & Professionalism
CARE SPECTRUM (Applying SULAM Approaches-Direct/Indirect/Advocacy/Research)		1	2	3(a)	3(b)	3(c)	3(d)	3(e)	3(f)	4(a)	4(b)	5
Level 1	Students are exposed to the SULAM concept and able to interact with the community while conducting the community service	√	√	√	√	√	√	√	√	√	√	√
Level 2	Students are assigned to collaborate with at least one external stakeholder (i.e. industry/government agency/NGO-Quadruple Helix concept) and one international partner in carrying out SULAM projects which are embedded in the courses embedded in the courses (minimum three SULAM projects using any of the four approaches)	√	√	√	√	√	√	√	√	√	√	√
Level 3	Students actively involve in SULAM projects and work closely with various stakeholders (industry/government agency/NGO-Quadruple Helix) in conducting final year research in community	√	√	√	√	√	√	√	√	√	√	√
Level 4	Students undergo Work-based Learning (WBL) by spending a minimum period of one semester at industry/government agency/NGO before conducting final year research in community focussing on Social Innovation Project	√	√	√	√	√	√	√	√	√	√	√

√ MORE WEIGHT √ LESS WEIGHT

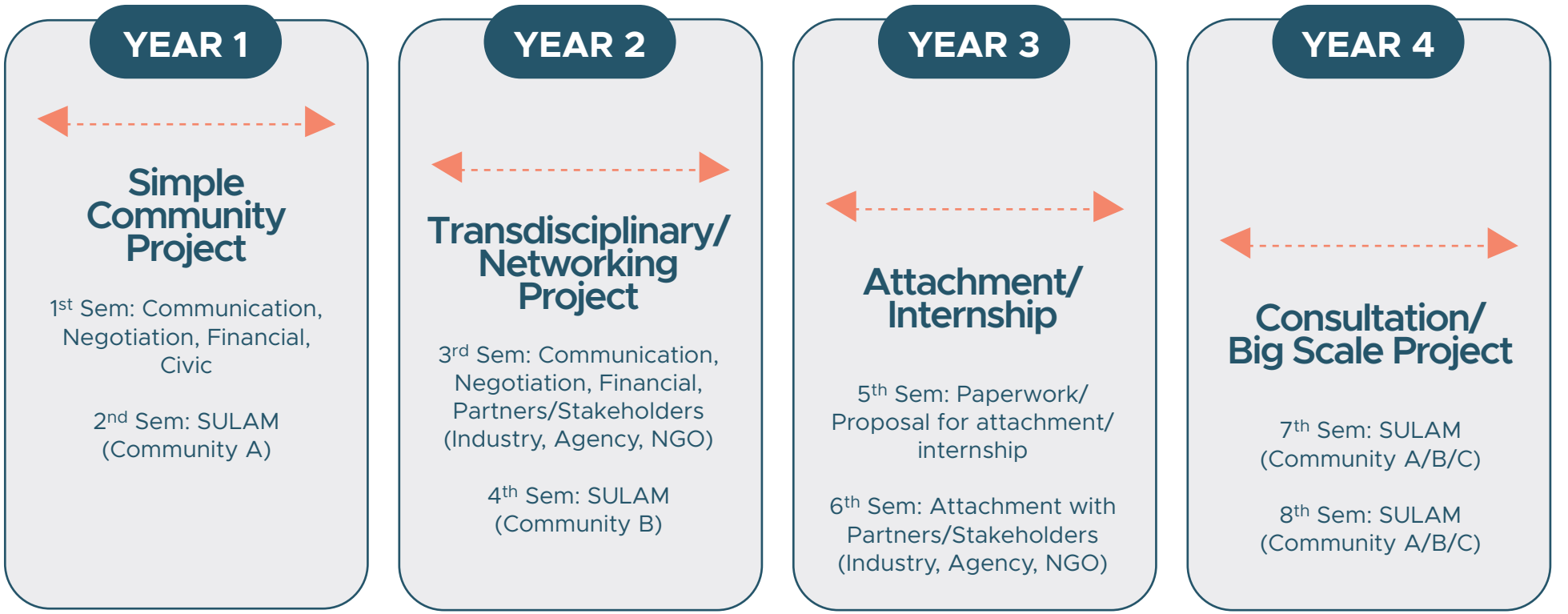
CARE Criteria and Competency

CARE Level	Description	Criteria				Identified Competency
		Two SULAM embedded courses using two different SULAM approaches	Minimum three SULAM embedded courses using any of the four approaches and one with international partner	Minimum four SULAM embedded courses inclusive of minimum of 1 semester of research in community - CARE + REAL). Example: 3u1c or 2u1c model	Minimum four SULAM embedded courses inclusive of minimum of 1 semester of research in community and 1 semester of placement in industry/ agency - CARE + REAL + IDEAL/POISE). Example: 2u1i1c model	
Level 1 (Community Infused)	Students are exposed to the SULAM concept and able to interact with the community while conducting the community service	√				Ability to develop inter- and Intrapersonal skills in civic engagement
Level 2 (Community Immersion)	Students are assigned to collaborate with at least one external stakeholder (i.e. industry/ government agency/NGO - Quadruple Helix concept) and one international partner in carrying out SULAM projects which are embedded in the courses	√	√			Ability to work collaboratively within Quadruple Helix framework and may include International partner
Level 3 (Community Practice)	Students actively involve in SULAM projects and work closely with various stakeholders (industry/government agency/ NGO - Quadruple Helix) in conducting final year research in community focussing on Social Innovation Project	√	√	√		Ability to conduct research in community focussing on SDG
Level 4 (Community Innovation)	Students undergo Work-based Learning (WBL) by spending a minimum period of one semester at industry/government agency/ NGO before conducting final year research in community focussing on Social Innovation Project	√	√	√	√	Ability to provide research-based industry solutions in community

* ONLY Undergraduate program fulfilling the Level 3 or 4 requirements can be considered as using CARE curriculum.

SUGGESTION OF CARE PROGRAM MODE OF STUDY

– Structured Community Programme (SCoPe) - Level 3 or 4 of the Spectrum



Criteria: Transdisciplinary/Various Communities

POSSIBLE CARE MODELS

Model	Semester										
	1	2	Break	3	4	Break	5	6	Break	7	8
SCoPe			-			-			-		
3u1c			-			-			-		
2u1i1c			-			-			-		
2u1c			-			-			-	-	-
Coop			Off (Planning)								

Community services could use multi or transdisciplinary framework and carried out in a single or different community through out the curriculum.

University

Industry

CARE

Graduate Attributes

Care Graduates

- Graduates who are not only technically competent but also creative, innovative, adaptive, possess good leadership skills, and responsive to social issues.
- Graduates who are able to practice theories learnt to solve community issues & problems.
- Graduates who can relate well with community, aware of cultural differences and actively involved in civic engagement.

> **“Education is the kindling of a flame, not the filling of a vessel”**
>
> - Socrates -

Personalised Experiential Learning (POISE)

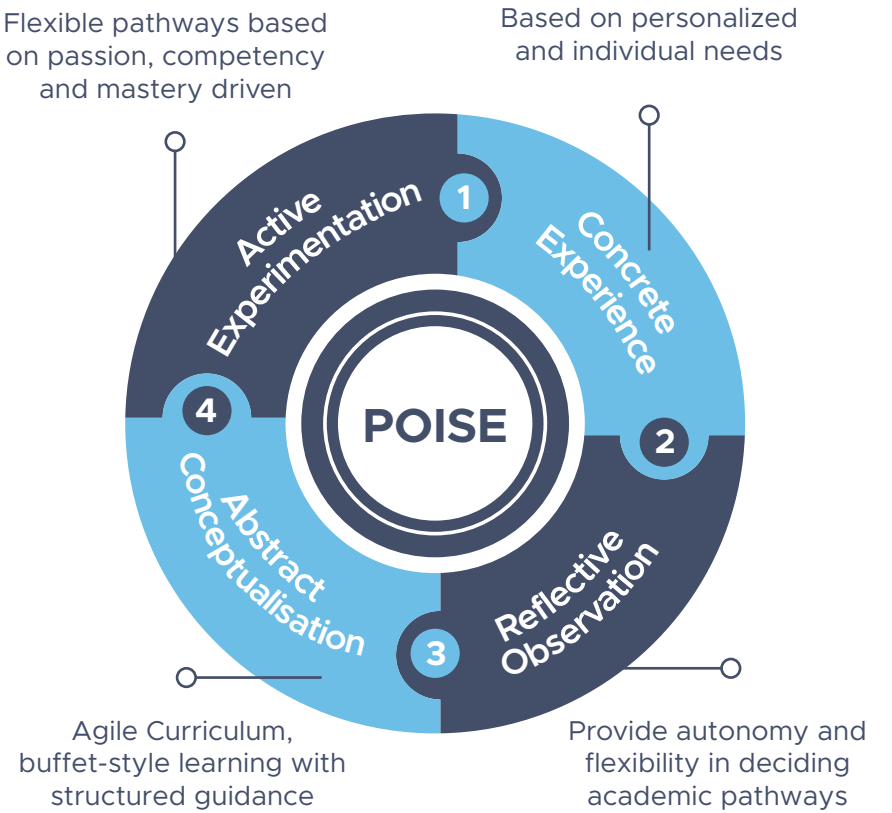
WHAT IS POISE?

POISE is a curriculum structure that expands access to a range of high-quality higher education options.

POISE provides students with diverse interests in obtaining academic qualifications with opportunities for lifelong learning.

POISE provides learners in HEIs with industry-driven learning materials, agile curriculum material, and buffet-style learning with standardised guidance.

PERSONALISED EXPERIENTIAL LEARNING



WHY POISE?

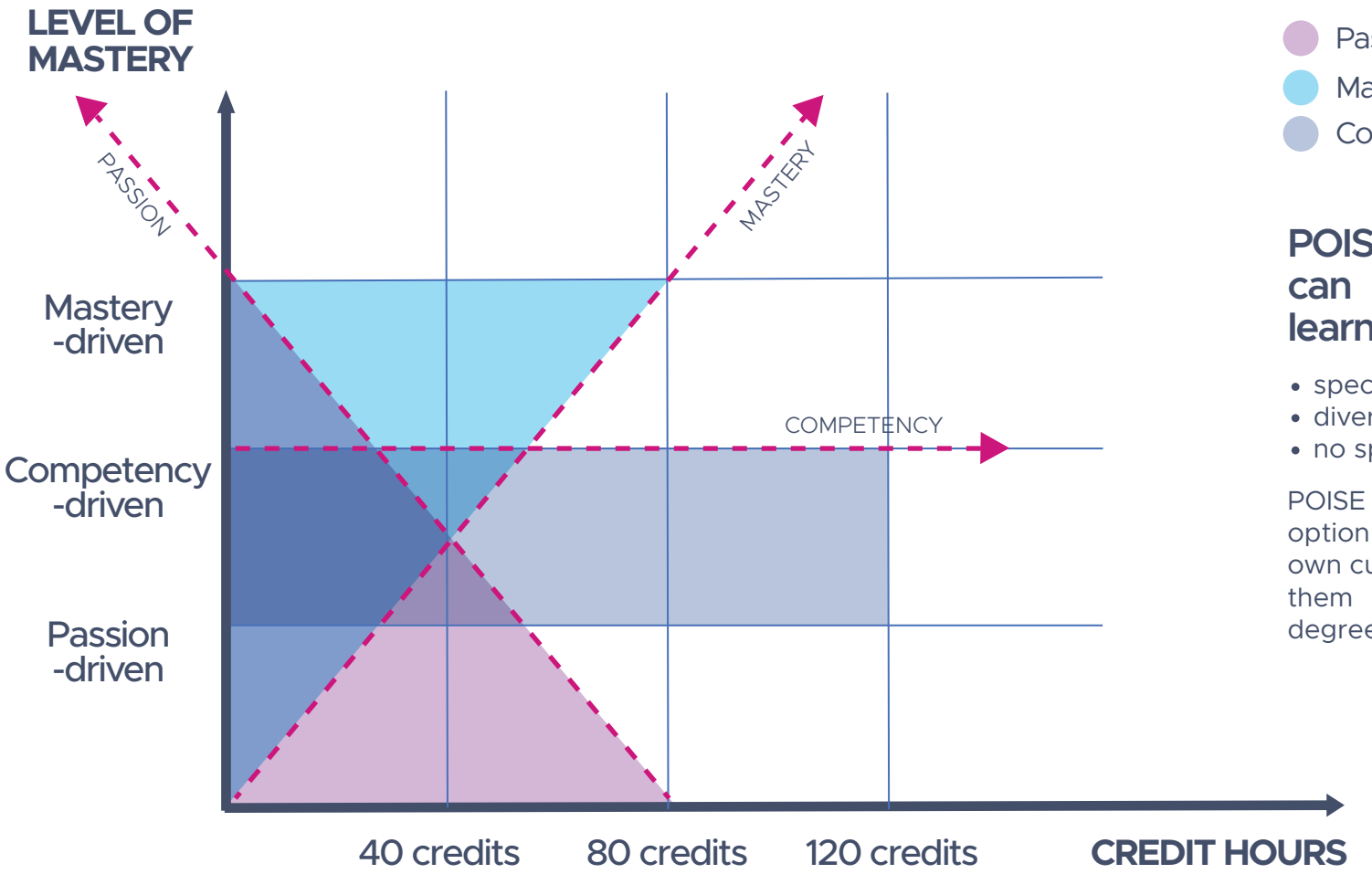
POISE offers new redesigned academic pathways to ensure Malaysian Higher Education systems remain relevant and within reach for all.

It aims to provide autonomy and flexibility to students in deciding their most preferred pathway in line with their passion, interest or career needs.

The redesigned curriculum structure is poised to transform how Malaysians gain access to higher education without being confined to the traditional pathway.

POISE is about CHOICE

POISE: GENERAL MODEL



- Passion-driven
- Mastery-driven
- Competency-driven

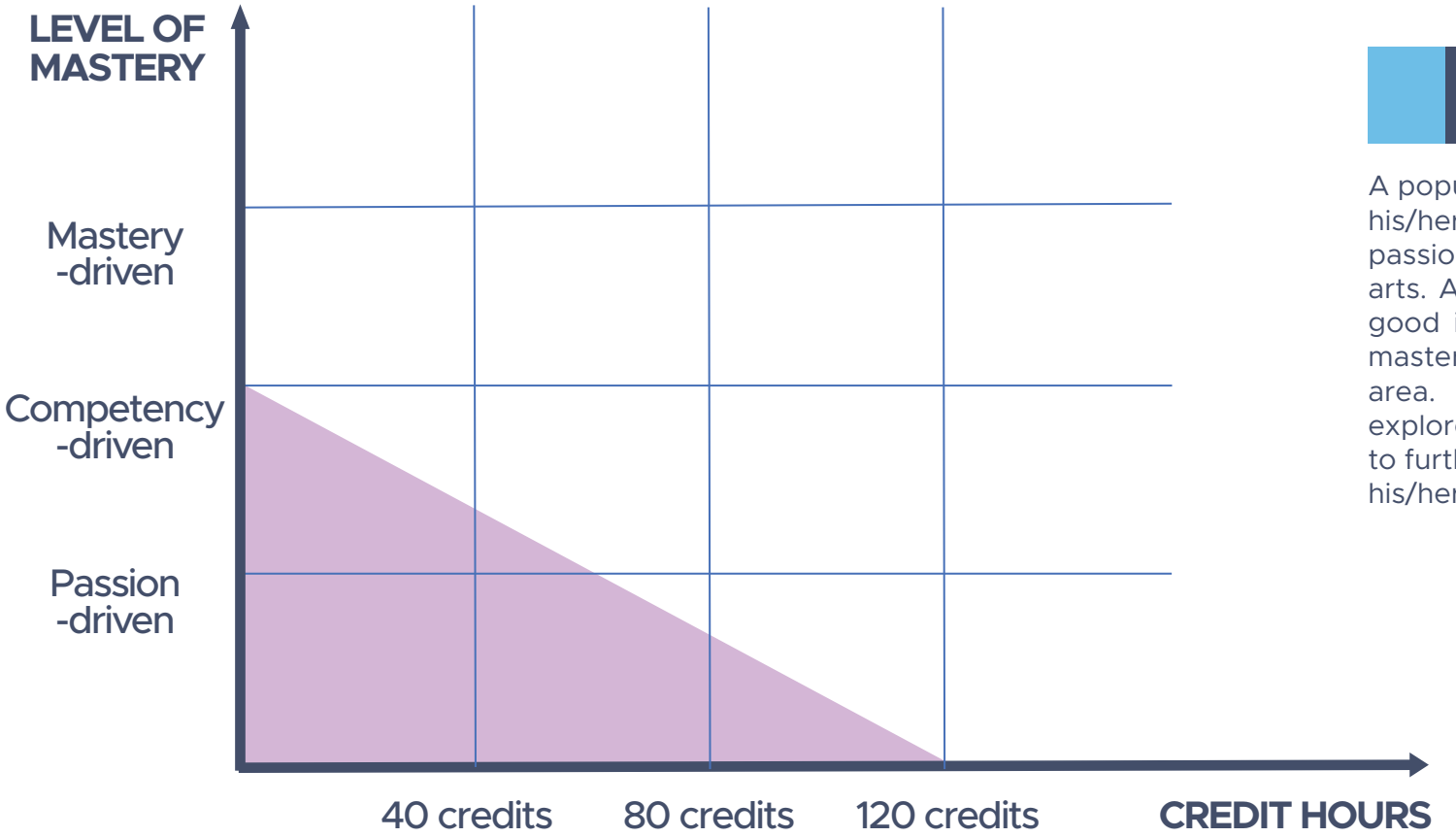
POISE curriculum structure can fulfil the demand of learners with:

- specific interest/goals/passions or;
- diverse interest/goals/passions or;
- no specific interest/goals/passions

POISE curriculum structure gives option for learners to design their own curriculum based on what drives them towards achieving their degree/certification.

POISE: PASSION-DRIVEN MODEL

A Passion-driven - A learner can spend up to 120 credit hours learning various subjects that they are passionate about.

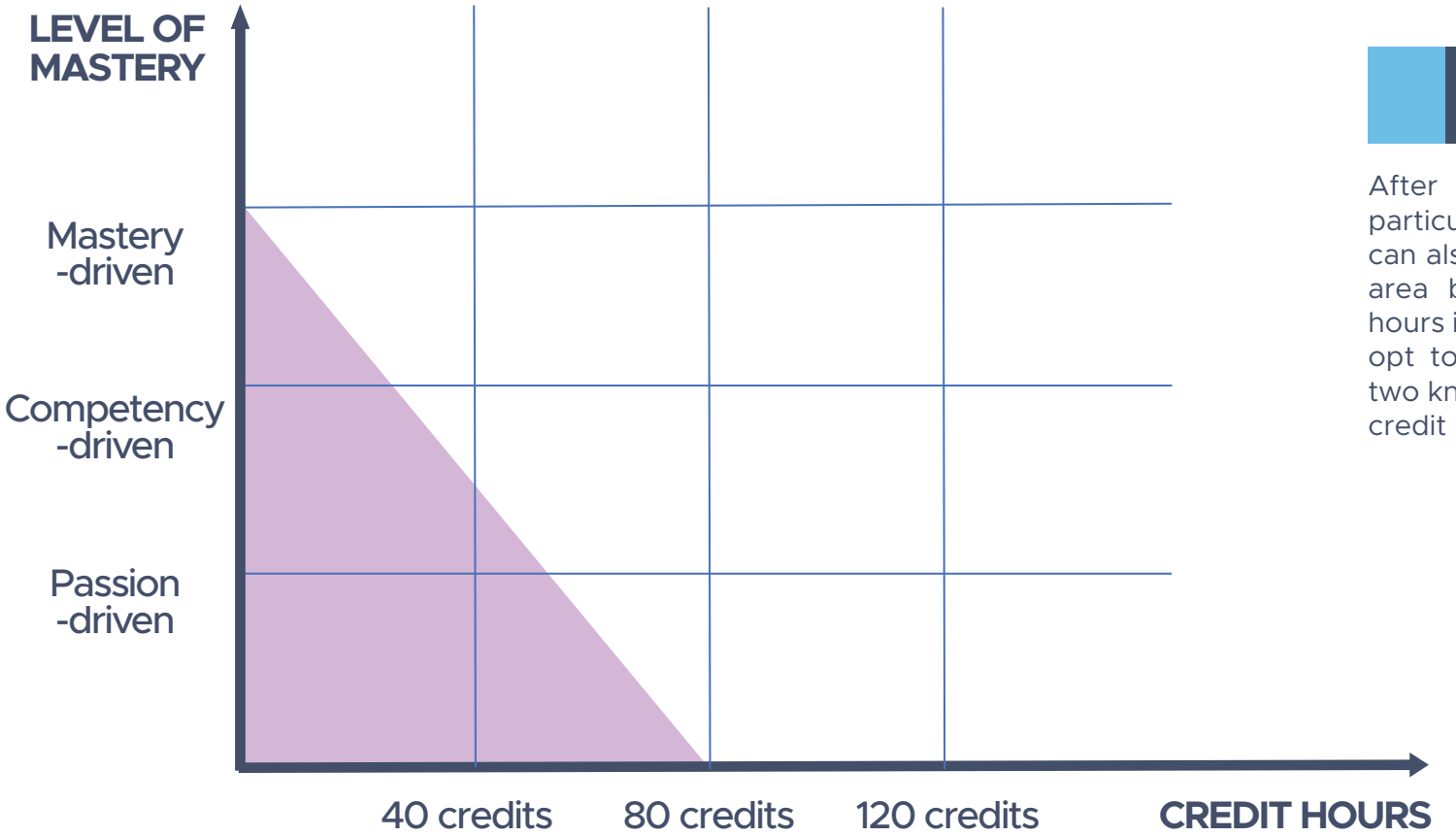


SCENARIO

A popular singer would like to pursue his/her study based on his/her passion in business, management or arts. As a popular singer he/she has good income and is not looking for mastery or competency in a specific area. Rather he/she would like to explore the potential area for him/her to further expose to various areas for his/her future focus or lifestyle.

POISE: PASSION-DRIVEN MODEL

Alternatively, learners can also design their curriculum where they will spend up to 80 credits hours being competent or up to 40 credit hours in the knowledge areas.

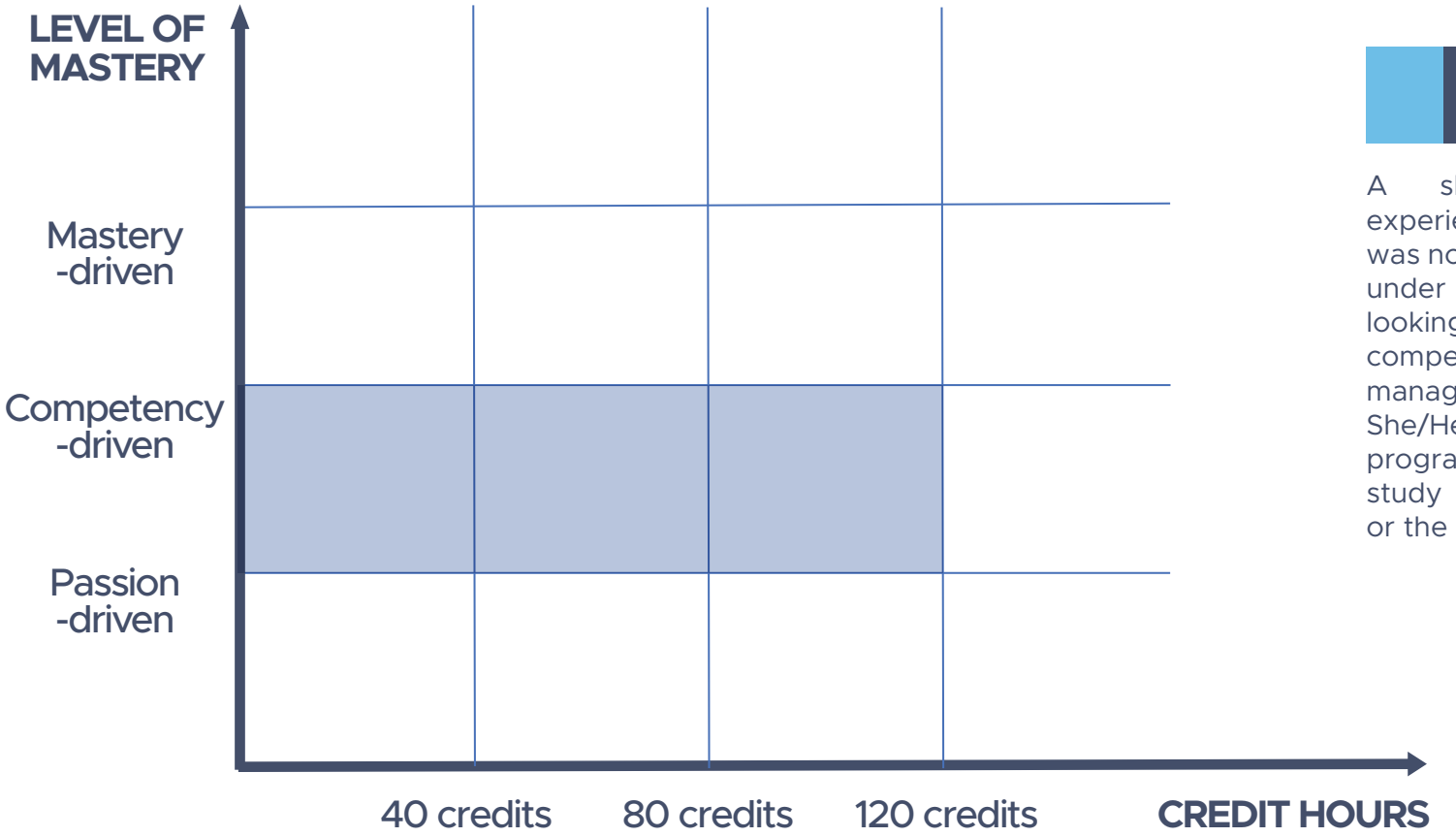


SCENARIO

After taking 40 credit hours in a particular knowledge area, the singer can also decide to be competent the area by adding another 40 credit hours in the same area, or she/he can opt to explore other areas (one or two knowledge areas) for another 80 credit hours.

POISE: COMPETENCY-DRIVEN MODEL

Competency-driven models give opportunity for learner spend all of their learning hours to be competent at one knowledge area or/and many knowledge areas.

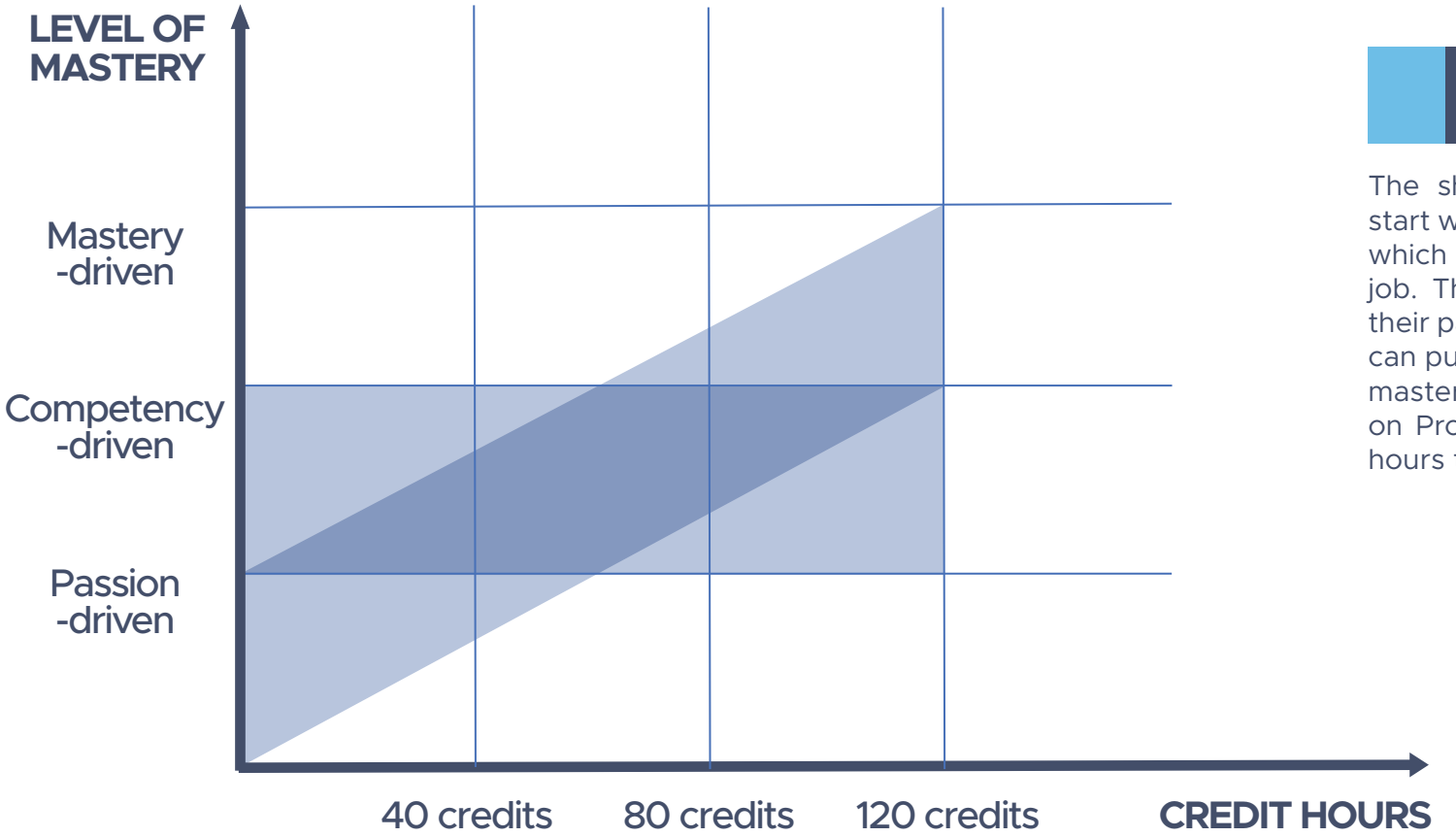


SCENARIO

A shop assistant/waiter has experience in food/beverage etc. and was not able to pursue formal studies under certain circumstances and looking at some degree of competency in food production or management of service/company. She/He has two choices in the POISE program, whereby she can pursue study under the competency-driven or the mastery-driven levels.

POISE: COMPETENCY-DRIVEN MODEL

Alternatively, learners can also design their curriculum where all 120 credit hours are spent driven by the niche area that they want to be competent with.

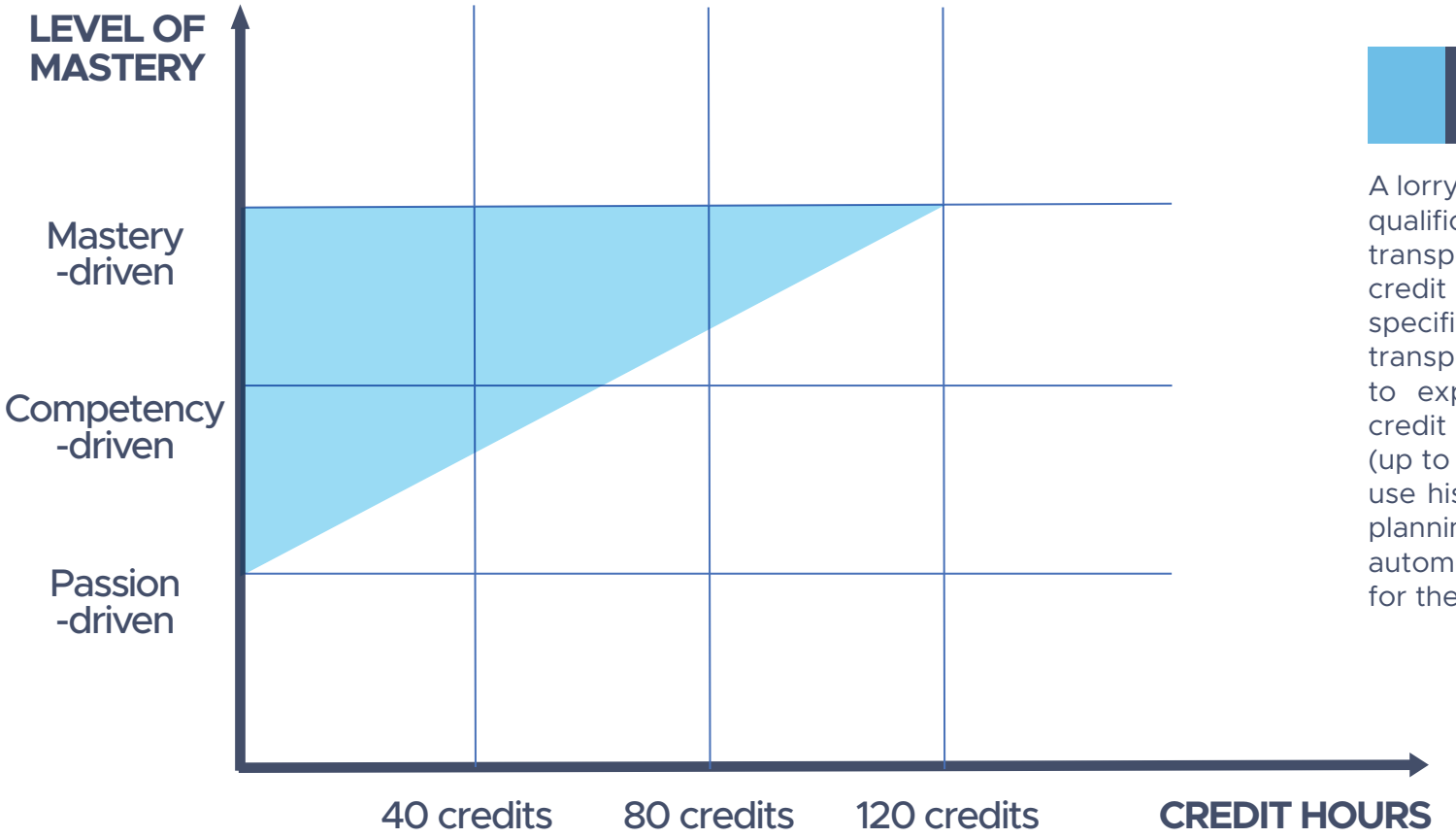


SCENARIO

The shop assistant/waiter can also start with his/her study within an area which is not related to his/her current job. They can start with an area of their passion (e.g. Arts) and then they can pursue for competency-driven or mastery-driven in Arts (e.g focusing on Product Design) based on credit hours taken in the selected area.

POISE: MASTERY-DRIVEN MODEL

Mastery-driven models - A learner spends up to 120 credit hours learning various to master a specific area but spends little time or **NO time** to explore their passion (up to 40 credit hours) and to be competent (up to 80 credit hours).

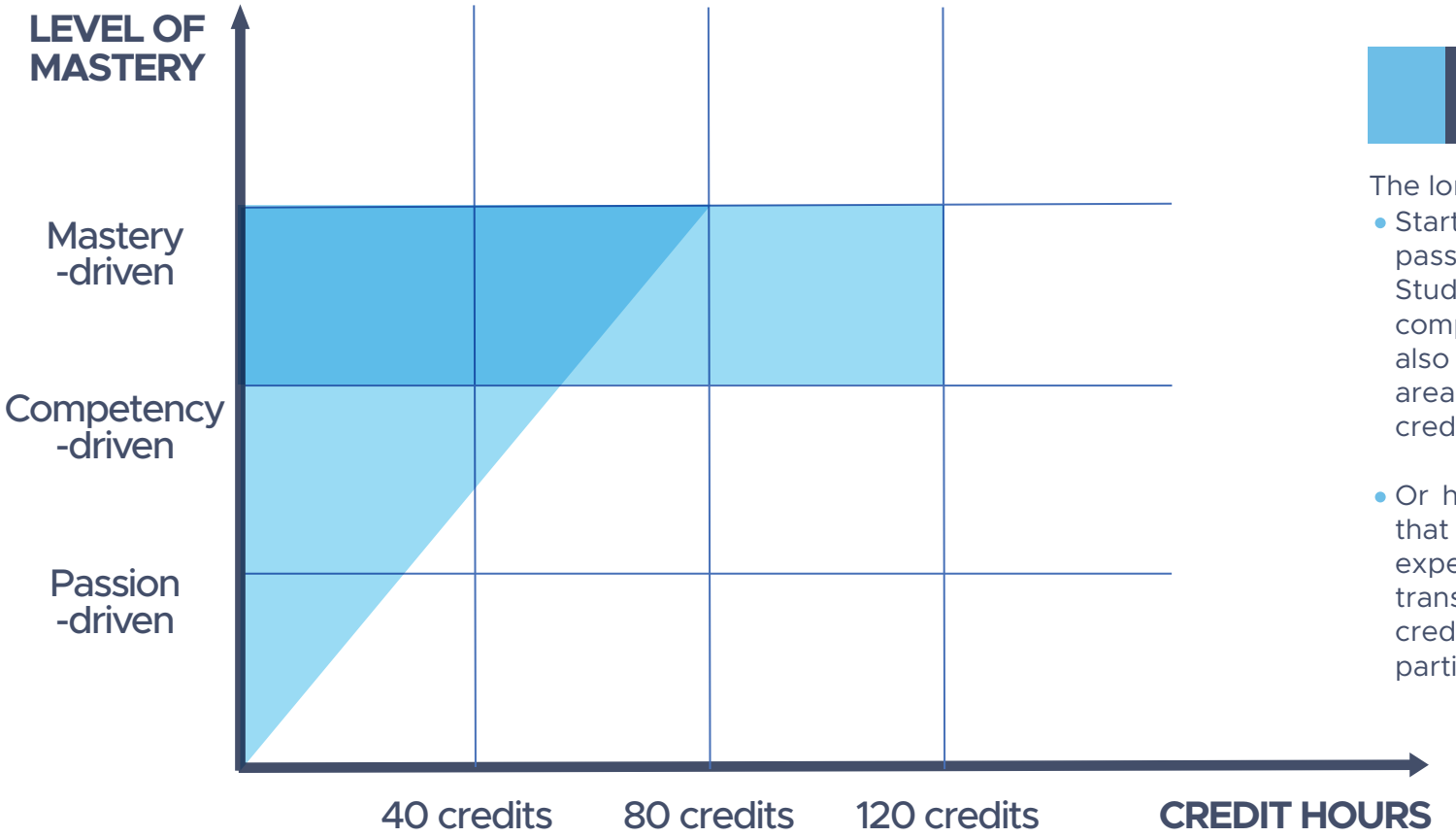


SCENARIO

A lorry driver who would like to gain a qualification in logistic and transportation will spend up to 120 credit hours learning to master a specific area on logistics and transportation but spends little time to explore his passion (up to 40 credit hours) and to be competent (up to 80 credit hours). He could also use his skills in driving lorry, delivery planning, project management, automotive, etc. to gain Mastery level for the qualification needed.

POISE: MASTERY-DRIVEN MODEL

Alternatively, learners can also design their curriculum where all 120 credit hours are spent driven by the niche area that they want to master.



SCENARIO

The lorry driver can alternatively:

- Start with area that he/she passionate about (e.g. Business Study) and spent his/her time being competent in the area. He/she can also decide to master in specific area in Business Study (up to 80 credits).

- Or he/she can start with the area that he/she is competent (from experience - e.g. logistic and transportation) and spend all 120 credit hours to master that particular area.

POISE CRITERIA

NO	GENERAL CRITERIA	PASSION-DRIVEN	COMPETENCY-DRIVEN	MASTERY-DRIVEN
1	Multiple entries - SPM, STPM, Apel A,C & Q	√	√	√
2	Compulsory Entry Assessment	X	√	√
3	Compulsory Courses - HEP decides the percentage and courses	√	√	√
4	Program Area - HEP will decide on the percentage and courses	√	√	√
5	Professional Program/Course	X	X	X
6	Package provided by HEP	√	√	√
7	Based on credits only	√	√	√
8	Flexible Time and Semesterless	√	√	√
9	Self learning mode via Microcredential	√	√	√
10	Competency based assessment - Band (rubric, based on programs)	√	√	√
11	Dedicated Academic Coach - Training will be provided	√	√	√
12	A special unit that look at POISE is recommended	√	√	√

POISE COMPETENCY

Experiential Learning	Description	COMPETENCY						
		Versatility	Adaptive	Decision Making	Agility	Skillful	Market Driven	Specialist
PASSION -DRIVEN	1 to 80 credits in more than 2 fields	√	√	√	√		√	
COMPETENCY -DRIVEN	1 to 80 credit in 2 fields	√	√	√	√	√	√	
MASTERY -DRIVEN	1 to 80 credits in 1 field	√			√	√		√

- Flexible time – No full time or part time with maximum 7 years of study duration
- Percentage Credits – based on % of major approved by MQA
- General curriculum structure need to be designed before-hand – mix-matched existing courses to form academic programs
- Passion-driven – Bachelor of General Studies (Higher % of BOK of the program)
- Competency/Mastery Driven – Bachelor with Honours – naming based on major

POISE

Graduate Attributes

POISE graduates are developed from inter-connected models, where they start from Zero and be somewhere at the end (Hero).

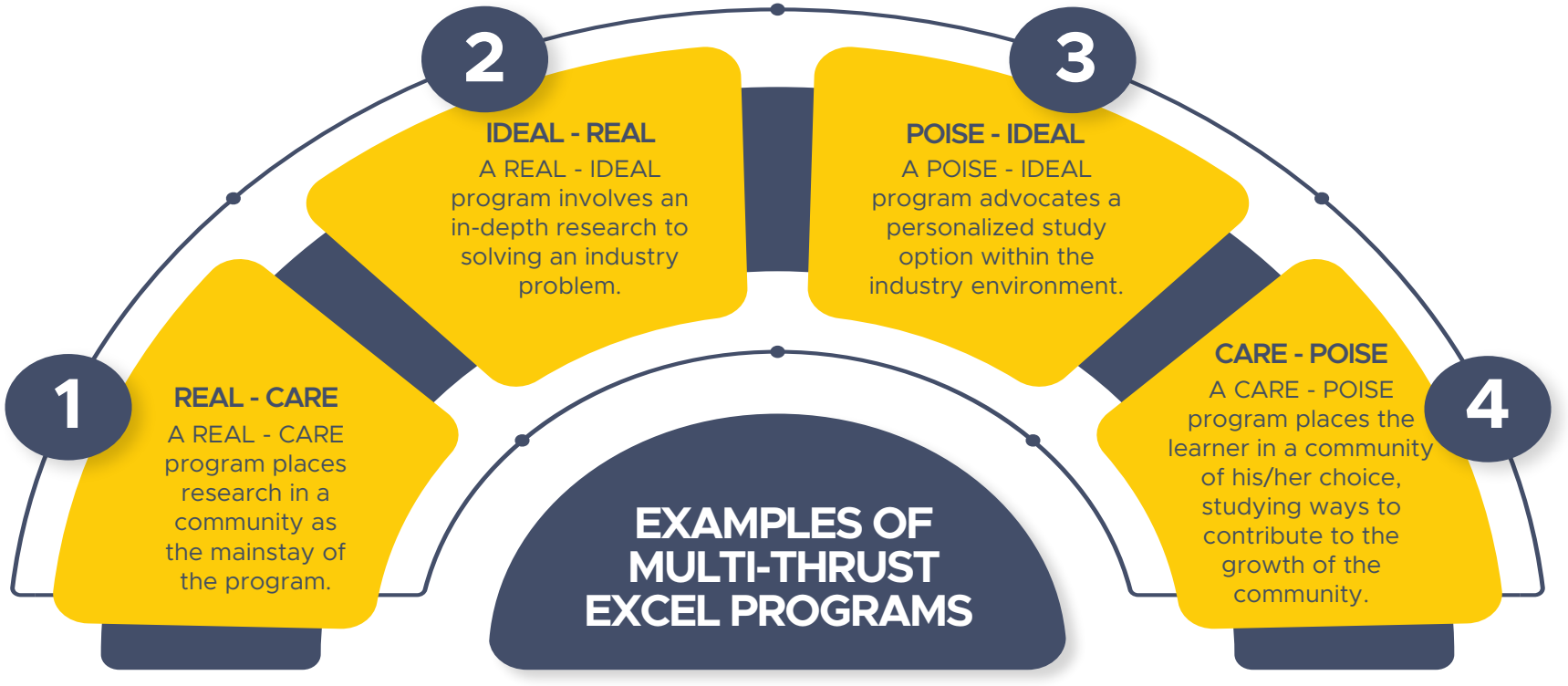
POISE graduates are versatile, adaptive, self-directed, self-empowered and self-regulated, whereby they will be:

- Decision makers
- Life-long learners
- Progressive thinker

PASSION-DRIVEN	COMPETENCY-DRIVEN	MASTERY-DRIVEN
Adaptive, Agile, Resilient, Versatile Bridge towards competency & mastery	Skillful, Competent, Market-driven,	Subject Matter Expert, Specialist, Professional, Authority

MULTI-THRUST EXCEL

Since the nature of academic program delivery is often dynamic and multi-faceted involving industry based learning and involvement in community projects, a multi-thrust approach may be taken to provide a more enriching EXCEL program.



EXCEL in a Nutshell

Experiential Learning and Competency-Based Education Landscape (EXCEL) is a framework built to transform academic programs with the aim of producing lifelong learners, innovative entrepreneurs, creative practitioners and change-makers.

- Experiential Learning
- Competency-Based Education

EXCEL in a Nutshell

Rich learning experience is gained through involvement in research, industry, community and through personalised pathways. Each EXCEL thrust will nurture the holistic person with distinctive talent and strength built from unique learning experience.

REAL
(RESEARCH INFUSED EXPERIENTIAL LEARNING)

REAL is about research and enquiry

- Research based
- Research infused
- Research Project

CARE
(COMMUNITY RESILIENCE EXPERIENTIAL LEARNING)

CARE is about community needs and positive social change

- SCOPE model
- University Community – Industry model
- Co-Op

IDEAL
(INDUSTRY DRIVEN EXPERIENTIAL LEARNING)

IDEAL is about experiencing the workplace and the industry

- Industry Infused
- CO-OP
- Apprenticeship

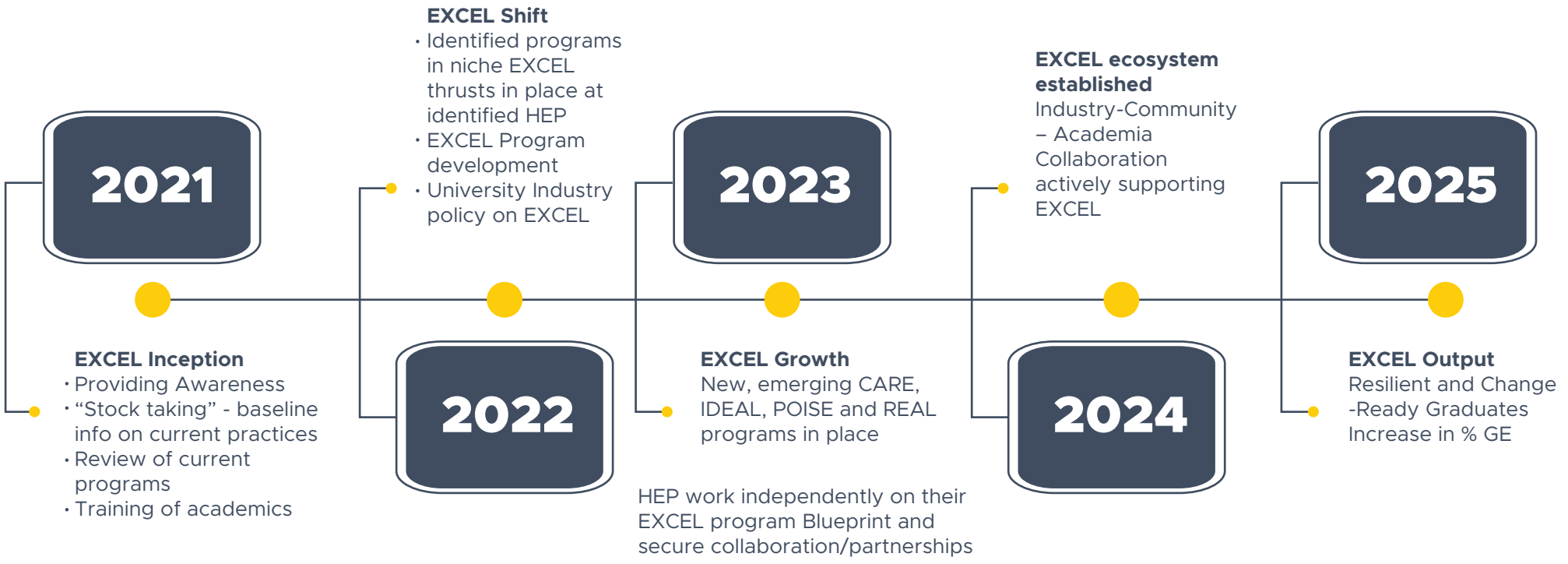
POISE
(PERSONALISED EXPERIENTIAL LEARNING)

POISE is about choice and flexibility

- Passion-Driven
- Competency-Driven
- Mastery-Driven

Putting EXCEL in Action

EXCEL Roadmap 2022 - 2025



Roadmap to Action :
Options, Support and Enablers

Provision of Program Design Options

- Review of Curriculum – Embedding the four thrusts in current programs
- Developing new REAL, IDEAL, CARE and POISE programs
- Designing hybrid EXCEL Programs
  - REAL – CARE
  - IDEAL – REAL
  - POISE – CARE
  - IDEAL – CARE
  - etc

Provision of guidelines and support for HEP

- EXCEL Playbook
- EXCEL Roadshow
- Video based Training
- Training of Trainers Sessions
- Supporting Policy and Guidelines

Stakeholder Involvement and Partnerships

- Financial
- Technology and Infrastructure
- Support from Academics
- Industry support
- Community support

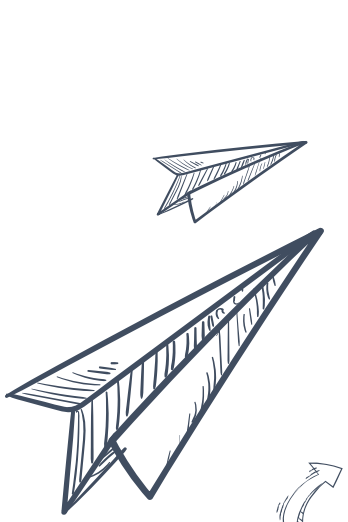
Potential and Challenges

EXCEL Potentials

The four EXCEL thrusts are expected to bring about changes and new opportunities in the provision of academic programs.

1	Provide industry and community experience early
2	Allow theories learnt to solve community and industry issues and problems
3	Give choice and options to students
4	Provide real world experience
5	Provide new learning and teaching environment
6	Build awareness to the environment and current scenarios
7	Shift from single & multiple discipline to interdiscipline and transdisciplinary approach
8	Address community needs and create a solution using industry solutions
9	Spur nation growth via R & D based education
10	Potential to develop holistic graduates who are independent and have necessary living skills and prepare themselves when they come in to the industry
11	Potential to produce graduates who can survive in the outside world
12	Potential to build resilience which is something that students should be equipped with in the 21st century
13	Potential to develop holistic graduates who have interest and passion in their career

Challenges



Stakeholder Acceptance

- Convincing the stakeholders
- Readiness of universities
- Readiness of students
- Ensuring comprehension and internationalisation of EXCEL philosophy

Implementation

- Minimizing resistance
- Eradicating silos
- Measurement of outcomes

Funding and Costs

- Securing funding
- Escalating cost to run industry based courses and conduct research in industry

Commitments

- Establishing partnerships and ensuring commitments of industry and community partners to run EXCEL

Standards/Policies

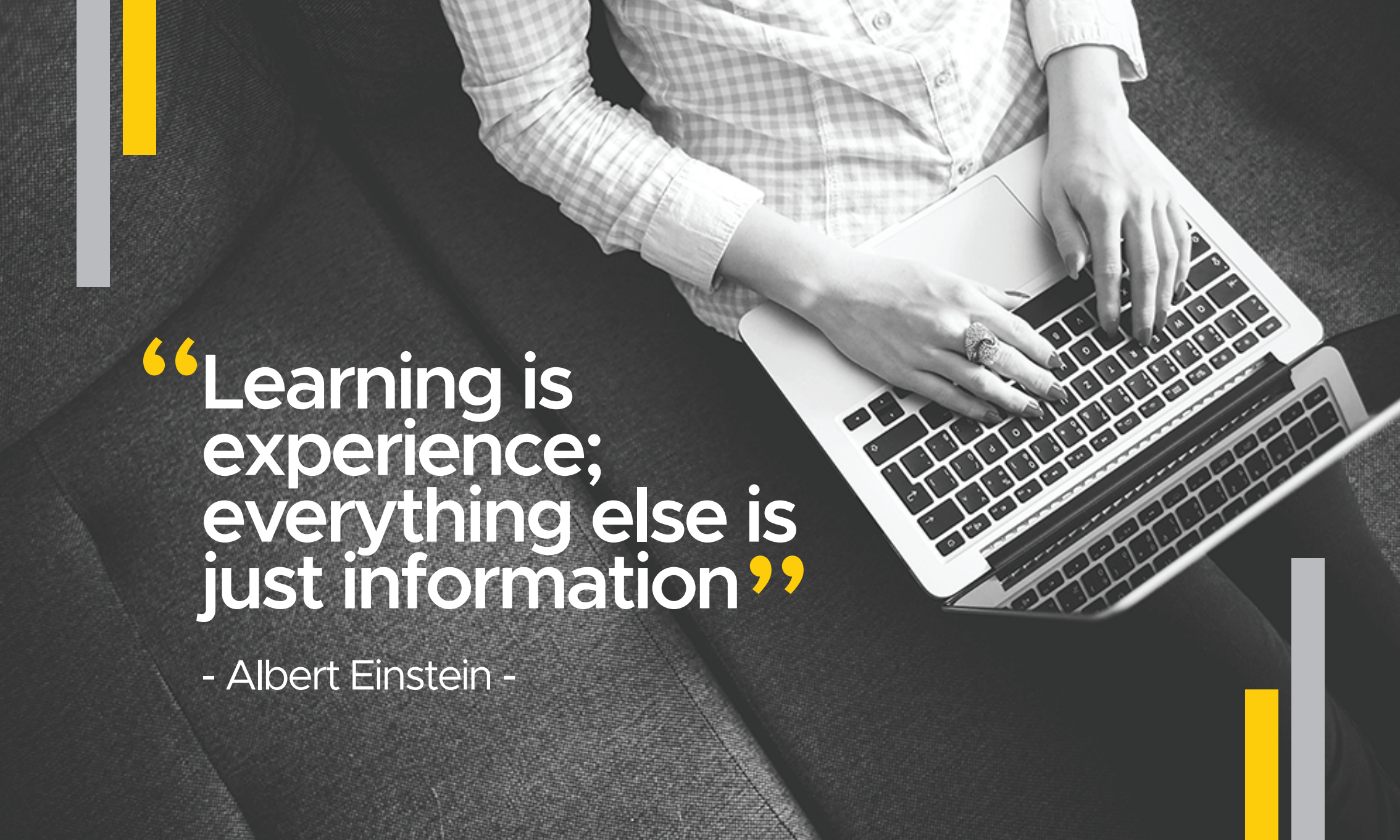
- Reviewing the MQA Standards, MOHE Policies & Requirements of professional bodies

Re-Designing Curiculum

- Time and resources to review academic program and /or develop new EXCEL programs

Sustainability

- Economic factors
- Saturation
- Stakeholder interest
- Upholding CSR


“Learning is experience; everything else is just information”
- Albert Einstein -

Reimagineering Learning

> **Today the non-traditional is the new norm.**

Wide-ranging and thought-provoking conversations with higher education, industry experts, technology providers, business leaders and education policymakers led to intriguing insights on the needs of innovations and reform and what all of these innovations could mean for the future of higher education. Collectively, these insights provide a glimpse into the changing landscape of higher education in Malaysia, and obviously, we need to work on developing transferable skills and competencies throughout the higher education experience. Instead of undergraduate education organized around disciplinary topics, students learn through interdisciplinary competency hubs.

A hyflex learning – hybrid and flexible learning. A non-traditional setting that uses the cloud, social networks and big data to create digital learning ecosystems that serve entrepreneurial learners, allowing them to design their own educational path based on the goals they want to achieve. It may or may not involve four years of study. Rather perhaps, students can set their own pace, progressing not through semesters but as they master various competencies in favour of personalized phases. To arrive at these insights, we need the drivers of change, help us build the pathways to the trends that are influencing the future of education, informing design opportunities.

Reimagineering Learning

> **Lifelong learning in the reimagined university**

This emerging higher education landscape is one that is befitting of the digital era and of today's tech-savvy students. EXCEL will create tools In capturing a more comprehensive narrative about a student's accomplishments and experiences, both curricular and co-curricular. Making sense of this fast-changing landscape is essential. Now there would be a combination of academic requirements and 'impact' requirements for students' learning. We all have a stake in making higher education more accessible, affordable, and relevant.

Will there be risks in these changes? Of course, there are risks with every bold change but, you cannot run an innovative culture without taking risks, without giving flexibility, opportunity and empowering the change agents.

The urgency to evolve, to deploy radical imagination, to make that change, is here.

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