MINISTRY OF EDUCATION MALAYSIA

JPT | DEPARTMENT OF HIGHER EDUCATION

GUIDELINES FOR THE IMPLEMENTATION OF THE

2u2i

STUDY MODE

ACKNOWLEDGEMENT

Peace and Allah's mercy and blessings be upon you.

With God's blessings, the Department of Higher Education of the Ministry of Education Malaysia has succeeded in preparing the Guidelines for the Implementation of the 2u2i Study Mode (GP 2u2i). It is a general guide for all parties involved in ensuring the success of the 2u2i Study Mode.

Thus, I wish to express my deepest appreciation and gratitude to all the parties that provided their undivided commitment for the realisation of the GP 2u2i. Without this commitment and the cooperation of all the parties concerned, it would not have been possible to produce the GP 2u2i.

Hopefully, the GP 2u2i will be of benefit to ensure the successful implementation of the 2u2i Study Mode, apart from being the catalyst to produce holistic, entrepreneurial and balanced graduates, in line with the intent of the Malaysia Education Blueprint 2015-2025 (Higher Education).

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FOREWORD

Peace and Allah's mercy and blessings be upon you.

First of all, I wish to express my deepest gratitude to all members of the Committee for the Guidelines for the Implementation of the 2u2i Study Mode (GP 2u2i), who collectively developed the guidelines. The publication of this guide is significant for the development as well as implementation of the 2u2i Study Mode as it will help realise the aspiration for curriculum consolidation, which is aligned with the inspiration of Shift 1 of the Malaysia Education Blueprint 2015-2025 (Higher Education), that is producing holistic, entrepreneurial and balanced graduates.

This book contains six (6) chapters which cover all aspects of the 2u2i implementation, including introduction to the 2u2i concept, curriculum design, delivery methods, assessment of the industry component, 2u2i Study Mode management and quality assurance. The guidelines should be the main reference to benefit all parties involved in the development and implementation of the 2u2i Study Mode.

I would like to take this opportunity to once again express my heartfelt appreciation and gratitude to all the members of the GP 2u2i Committee, representatives of the public and private higher learning institutions, industry representatives as well as all the parties that were collectively involved in making the publication of this guidebook a success.

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PREFACE

Since its inception in 2015, 2u2i has been one of the Ministry's signature initiatives in promoting efforts to redesign the Malaysian higher education landscape. The ever-evolving needs of the industry as well as the challenges brought forward by Industrial Revolution 4.0 (IR4.0) demands for the curriculum of academic programmes to be more fluid and flexible. With a total of 58 programmes offered to date, 2u2i creates a productive platform which allows students' early exposure to real work environment.

On top of curriculum design, a greater emphasis is placed on the importance of academia-industry collaboration. Input from industry practitioners can help academicians in assuring the relevance of curriculum, thus ensuring graduates are fully prepared to go into the workforce.

Moving forward, more close-knit relations is expected to prosper between academia and the industry. Initiatives such as apprenticeship programmes and teaching staff placement programmes in the industry, proves to be a golden opportunity to serve a mutual interest between the two parties, with the noble intent in producing holistic and future-ready graduates.

CONTENTS

The Guidelines for the Implementation of the 2u2i Study Mode (GP 2u2i) provides a general guide for HLIs that wish to develop and implement an academic programme in the 2u2i Study Mode, which involves industries, students, academic staff, Industry Coaches and other stakeholders. This guidebook is divided into six (6) chapters.

CHAPTER 1   INTRODUCTION

The chapter introduces in general the background of the GP 2u2i. It discusses the concept and attributes of the 2u2i Study Mode, definition of the term industry, the learning outcomes as well as the benefits of the 2u2i Study Mode.

CHAPTER 2   CURRICULUM DESIGN

The chapter outlines the curriculum design encompassing the structure and model of the 2u2i Study Mode, which can be flexibly adapted by HLIs, the role of the industry in curriculum development as well as explanation on the flexibility given to HLIs and the industry in developing a suitable 2u2i Study Mode programme.

CHAPTER 3   DELIVERY METHODS

The chapter specifically discusses the delivery methods in HLIs and the industry as well as the teaching and learning (T&L) approaches in the 2u2i Study Mode.

CHAPTER 4   ASSESSMENT OF THE INDUSTRY COMPONENT

The chapter presents relevant assessment methods in the 2u2i Study Mode. It introduces the purpose of assessment and explains its main elements as well as the assessment scheme for the industry component.

CHAPTER 5   MANAGEMENT OF THE 2u2i STUDY MODE

The chapter aims to help HLIs and the industry to achieve the minimum standard of administration to ensure that the sustainability and goals of the 2u2i Study Mode are realised. It covers roles and responsibilities as well as the mechanisms for the management of the 2u2i Study Mode in HLIs, roles and responsibilities of the industry and students, as well as the mechanisms for the implementation of HLI-industry collaboration.

CHAPTER 6   QUALITY ASSURANCE

The chapter explains the requirements and aspects of the quality assurance for the 2u2i Study Mode programme for the purpose of obtaining approval and accreditation from relevant authorities.

Chapter 1
Introduction

CONCEPT

- On and off campus learning
- Systematic learning in the industry
- Structured and credited work experiences
- Industry collaboration

ATTRIBUTES

2u2i

- Final semester in the industry
- A minimum period of one (1) year in the industry
- Credit hours in the industry accounted for graduation
- Block release
- Full immersion

BENEFITS TO STUDENTS

- Experience gained directly from industry practitioners
- Comprehensive and holistic education for students on and off campus
- Networking opportunities between students and industry practitioners

BENEFITS TO HLIs

- Culture of collaboration
- Quality enhancement of HLI academic programmes
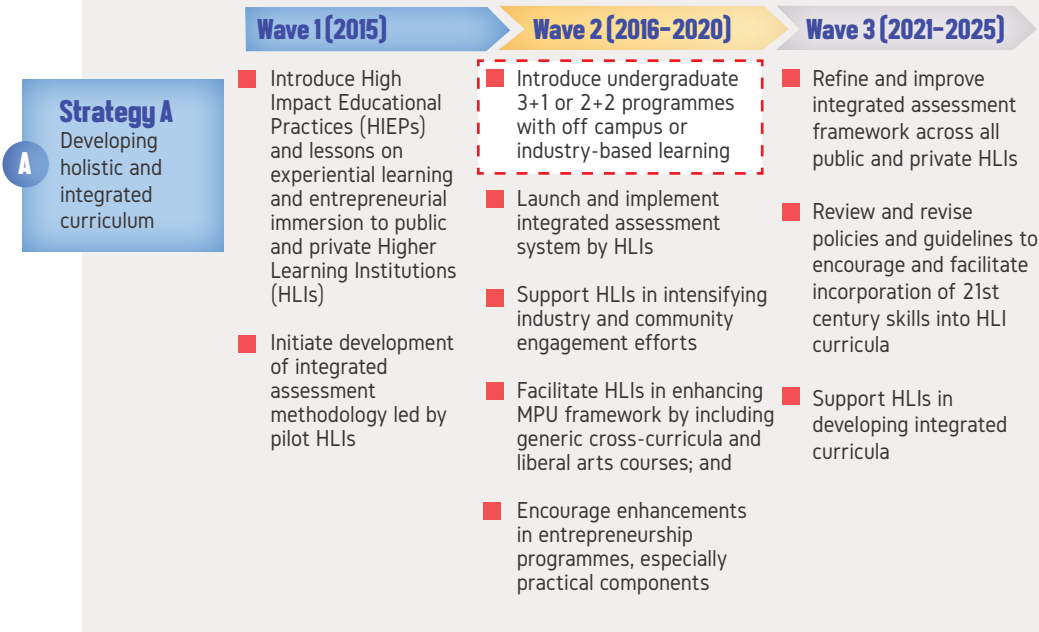- Opportunities for research and development (R&D) in the industry

BENEFITS TO THE INDUSTRY

- Minimise the need for internal training
- Minimise recruitment costs
- Inculcate corporate work culture

1.0 INTRODUCTION

INITIATIVE IMPLEMENTATION ROADMAP

The strategies and initiatives within this shift have been carefully sequenced across three waves to avoid overtaxing the system, and to ensure each successive wave builds on the foundations laid previously. The planning, execution and monitoring of the implementation process will be conducted according to the proposed roadmap shown in the following exhibit.

Wave 1 (2015)	Wave 2 (2016–2020)	Wave 3 (2021–2025)
Introduce High Impact Educational Practices (HIEPs) and lessons on experiential learning and entrepreneurial immersion to public and private Higher Learning Institutions (HLIs)	Introduce undergraduate 3+1 or 2+2 programmes with off campus or industry-based learning	Refine and improve integrated assessment framework across all public and private HLIs
Initiate development of integrated assessment methodology led by pilot HLIs	Launch and implement integrated assessment system by HLIs	Review and revise policies and guidelines to encourage and facilitate incorporation of 21st century skills into HLI curricula
	Support HLIs in intensifying industry and community engagement efforts	Support HLIs in developing integrated curricula
	Facilitate HLIs in enhancing MPU framework by including generic cross-curricula and liberal arts courses; and	
	Encourage enhancements in entrepreneurship programmes, especially practical components	

Strategy A
A Developing holistic and integrated curriculum

The Malaysia Education Blueprint 2015-2025 (Higher Education) (MEB (HE)) was designed to produce talented, skilled and knowledgeable graduates, who are prepared to face the challenges of the 21st century. In line with the intent of Shift 1 of the MEB (HE) to produce holistic, entrepreneurial and balanced graduates, flexible education is introduced through the 3 +1 or 2 + 2 programmes by taking into account off campus or industry-based learning.

The 2u2i academic programme combines academic learning and the application of real workplace learning. It enhances experiential learning which can be effectively explored off campus or in the industry where the relevant parties can provide authentic work experience. In addition, the 2u2i academic programme provides opportunities for students to earn an income whilst learning (learn and earn).

Through the 2u2i academic programme, students gain relevant industry experiences in their field of study, thus narrowing the gap between industry needs and graduates produced by HLIs. Active and constructive experience could enhance the attributes of the desired graduates, especially their self-confidence, innovativeness and creativity, professionalism and

communication skills. Moreover, their functional skills such as critical thinking, problem-solving, teamwork, social skills, emotional intelligence and negotiation skills are also strengthened. On the whole, the 2u2i academic programme is able to empower their cognitive, psychomotor and affective domains. All these characteristics will produce graduates who are industry aware and industry ready which in turn will increase their employability and marketability. This aspiration can be achieved through collaboration between HLIs and the industry in the design and delivery of the 2u2i academic programmes that are structured, formal and direct. In so doing, these academic programmes remain relevant, competitive and industry-driven.

1.1 Concept of the 2u2i Study Mode

The study mode refers to the design and delivery of the academic programmes, which are implemented throughout the duration of study. The current conventional undergraduate academic programmes are essentially a coursework study mode where teaching and learning (T&L) occurs throughout the duration of on campus study.

The 2u2i academic programme is essentially an industrial programme introduced as an addition to the existing coursework mode. It combines on and off campus T&L throughout the duration of study involving HLIs and the industry in the development and delivery of the curriculum.

The 2u2i brand is used to depict the study mode where T&L occurs on and off campus in various combinations such as 3u1i, 2u2i, 2u1i and 1½u1i. The letter 'u' in 2u2i stands for 'university,' representing universities, colleges, polytechnics and community colleges. The letter 'i' stands for 'industry' where the learning occurs in the workplace. Learning can be implemented on and off campus in various combinations such as 3 +1 (3u1i), 2+2 (2u2i), 2 +1 (2u1i), and 1½ + 1 (1½u1i).

The 2u2i Study Mode combines elements of work-integrated education (WIE), work-based learning (WBL) and work-integrated learning (WIL).

The 2u2i Study Mode has three (3) distinct characteristics namely,

a. systematic education in which the work place is the central place of learning;

b. structured work experience whereby students gain familiarity with the working world during their educational programme; and

c. University-industry collaboration in curriculum development and delivery is to achieve the desired Programme Learning Outcomes (PLOs).
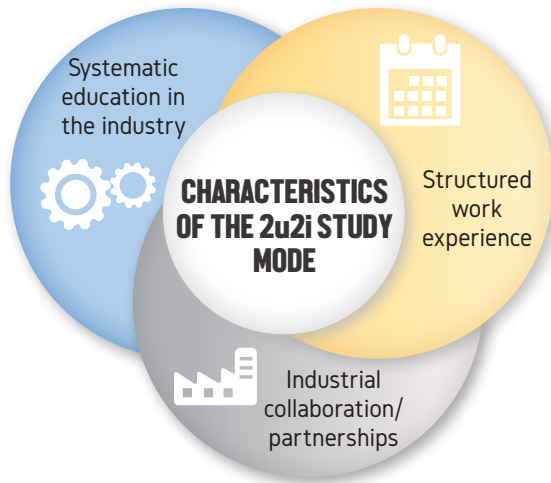
1.2 Attributes of the 2u2i Study Mode

The key attribute of the 2u2i Study Mode is exposure to meaningful and significant hands-on experience that is directly related to the curriculum. The 2u2i Study Mode must have clear learning outcomes and the assessment is conducted by both the industry and HLIs. Students have to spend a minimum period of 40 hours a week working in the industry, and the employers are encouraged to provide the students some form of allowance.

The industry component in the curriculum must achieve at least 40% (2i) or 20% (1i) of the total graduation credits.

Figure 1.1 shows the attributes that are required in the 2u2i Study Mode, which encompass integrated curriculum, curriculum structure, structured work experience, delivery methods and assessment methods.

Integrated Curriculum
- Integrated Learning Outcomes
- Programme Study Plan
- Total credit hours

Assessment Methods
- Workplace assessment
- Practical component (60%-70%)
- Attracts a grade point
- Assessments conducted according to the academic calendar

THE 2u2i STUDY MODE

Curriculum Structure
- Jointly designed by HLIs and the industry
- Industry minimum credit – 40% (2i), 20% (1i)
- A minimum placement time in the industry – one (1) year
- The final semester in the industry/Industrial Training
- Full-time students

Delivery Methods
- Full immersion
- Block release
- Industry Coaches
- Blended learning

Structured Work Experience
- Direct hands-on experience
- Meaningful and significant
- Curriculum related
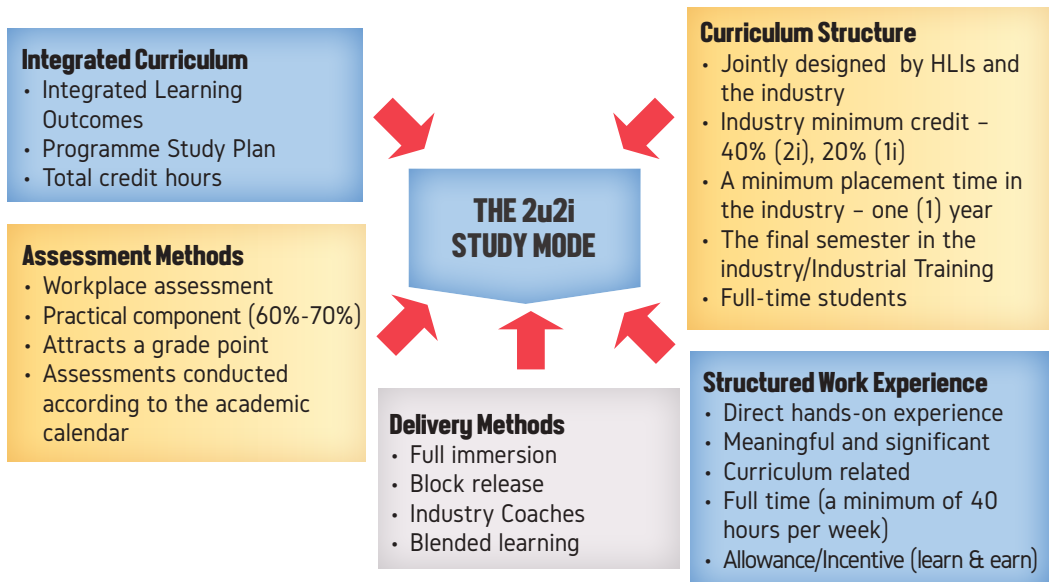- Full time (a minimum of 40 hours per week)
- Allowance/Incentive (learn & earn)

Figure 1.1: Attributes of the 2u2i Study Mode
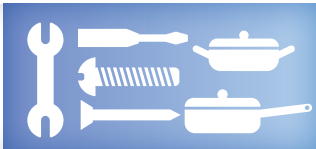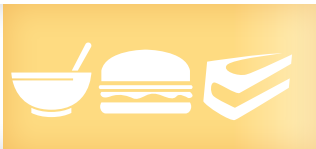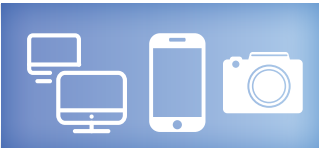
1.3 Definition of the Industry

An industry is a constellation of organisations or firms that are involved in economic or social activities, whilst the industry encompasses individuals or firms that are involved in the production of goods and services.

A firm is an industrial unit involved in economic or social activities that are either profit- or non-profit-oriented.

An organisation or firm in an industry enables students to undertake work activities so that they learn and practise the core principles of the educational programme of the HLI.

The industry has the role of improving students' knowledge and practical skills in order to narrow the gap between theory and practice. The industry can be located within or outside the country.

Automotive	Chemical and Petrochemical
Medical and Pharmaceutical Equipment	Iron and Steel
Agriculture	Food
Electrical and Electronic	Textile and Clothing
Machineries and Equipment	Services

1.4 Specific Learning Outcomes of the 2u2i Study Mode

Apply knowledge and skills acquired on campus in a new context in organisations

Integrate knowledge and skills learned on and off campus

Demonstrate intellectual and soft skill capabilities necessary to accomplish assigned tasks

Acquire new knowledge and skills to successfully engage in unfamiliar tasks in a new work environment
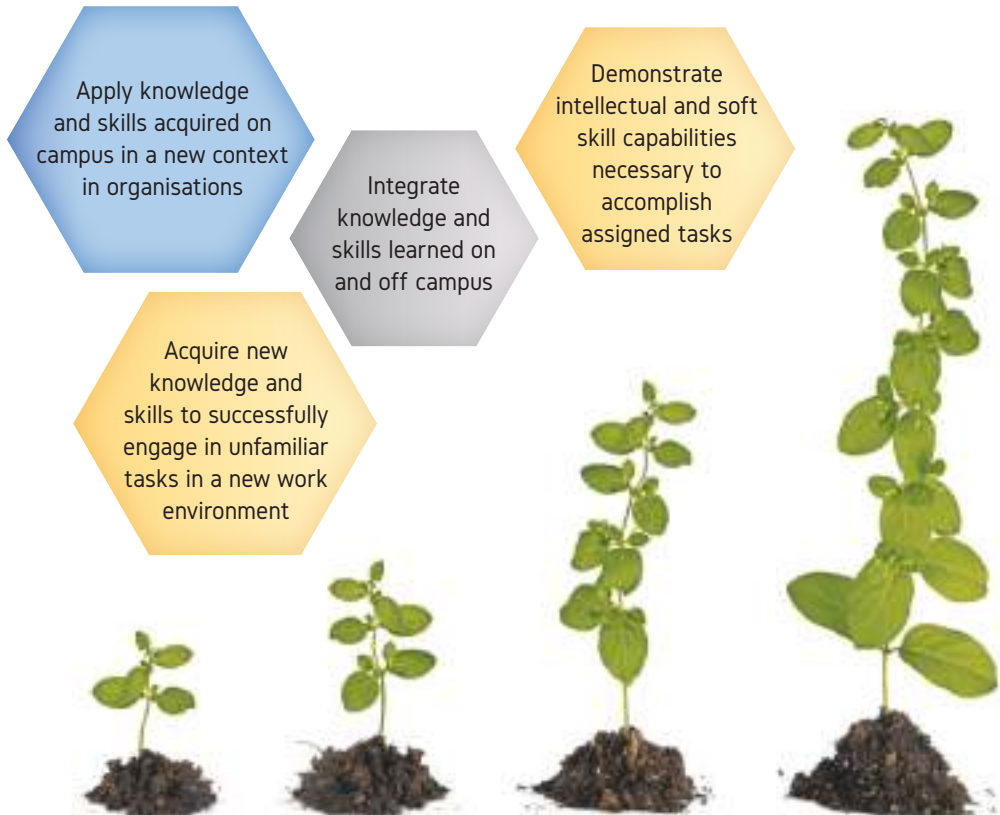
By the end of the 2u2i Study Mode, students should be able to,

a. apply knowledge and skills acquired on campus in a new context in organisations for the purpose of gaining deeper understanding;

b. acquire new knowledge and skills to successfully engage in unfamiliar tasks in a new work environment;

c. integrate knowledge and skills learned on and off campus in order to accomplish tasks, enhance work quality and encourage continuous life-long learning;

d. demonstrate intellectual and soft skill capabilities necessary to accomplish assigned tasks;

e. reflect on the application of theory into practice in a work environment in a structured manner;

f. adapt themselves to various situations whilst interacting with different levels in the organisation;

g. develop teamwork skills, particularly with industry practitioners; and

h. develop professional behaviours that adhere to ethical standards on and off campus.

1.5 Benefits of the 2u2i Study Mode

1.5.1 Benefits to Students

Among the benefits of the 2u2i Study Mode to students are as follows,

a. gaining experiences directly from industry practitioners in a real work environment;

b. integrating theory and practice on and off campus;

c. gaining opportunities to improve practical and soft skills in a real work environment;

d. gaining access to comprehensive and holistic education through experiential learning on and off campus;

e. gaining opportunities to network with industry practitioners; and

f. gaining opportunities to earn during studies and improving chances of employment.

1.5.2 Benefits to HLIs

Among the benefits of offering the 2u2i academic programme to HLIs are as follows,

a. creating synergy through collaboration with the industry;

b. attracting more highly qualified and motivated students to enrol in competitive academic programmes such as 2u2i;

c. offering academic programmes that are capable of providing value added through certification programmes required by professional and industrial bodies;

d. improving the quality, design and delivery of the curriculum to ensure that the programmes on offer are relevant, up-to-date, competitive and industry-driven, thus narrowing the gap of mismatch between HLIs and the industry; and

e. enhancing collaboration in R&D with the industry.

1.5.3 Benefits to the Industry

Among the benefits of 2u2i to the industry are,

a. reducing on-the-job training for new recruits because the 2u2i Study Mode produces graduates, who are work aware and work ready thus reducing time to productivity;

b. gaining access to graduates with enhanced skills and strong motivation, who have been trained by the industry;

c. reducing recruitment costs such as for advertisements, interviews, and the like since the industry has access to these students, who have been with the industry during their studies;

d. inculcating corporate work culture to students before graduation;

e. gaining opportunities to be an inclusive partner with HLIs;

f. obtaining academic input to reinforce current industrial practices;

g. opportunity to gain access to expertise and research facilities available in HLIs;

h. opportunity to obtain tax incentives and funds; and

i. opportunity to increase Corporate Social Responsibility (CSR) efforts with HLIs and society.
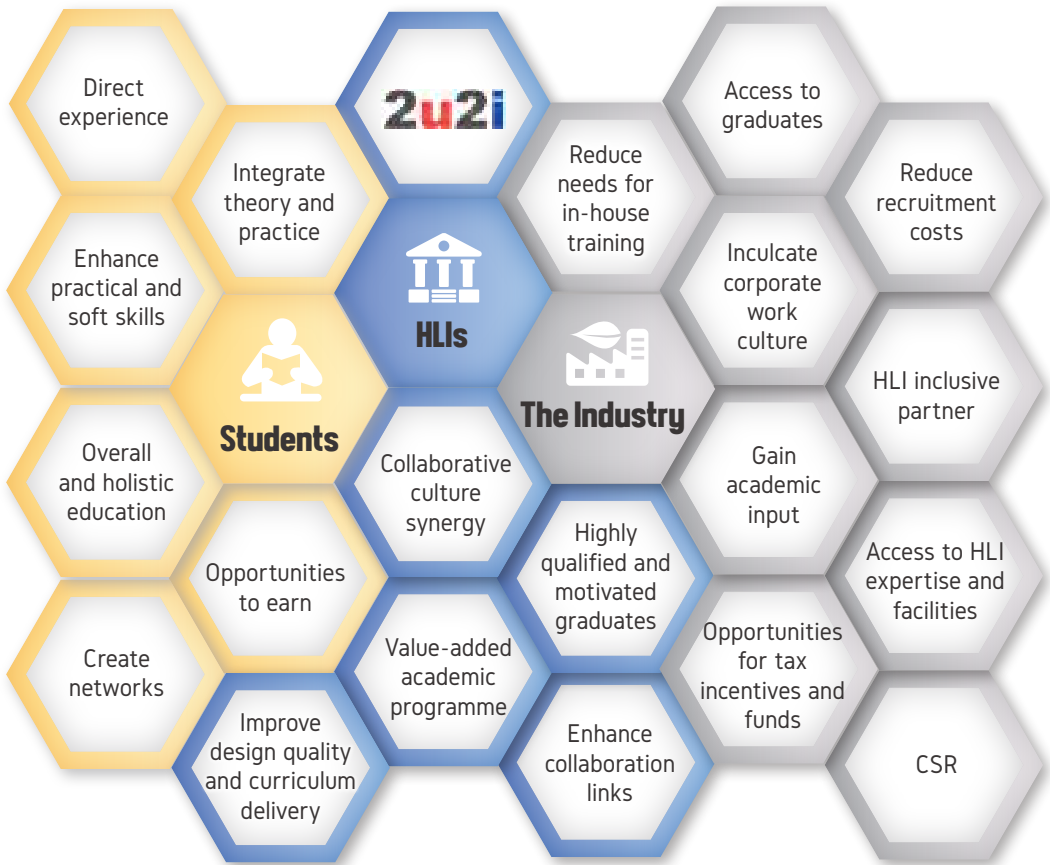
2u2i

Students
- Direct experience
- Integrate theory and practice
- Enhance practical and soft skills
- Overall and holistic education
- Opportunities to earn
- Create networks

HLIs
- Collaborative culture synergy
- Highly qualified and motivated graduates
- Value-added academic programme
- Improve design quality and curriculum delivery
- Enhance collaboration links

The Industry
- Reduce needs for in-house training
- Access to graduates
- Reduce recruitment costs
- Inculcate corporate work culture
- HLI inclusive partner
- Gain academic input
- Access to HLI expertise and facilities
- Opportunities for tax incentives and funds
- CSR

Chapter 2
Curriculum Design

STRUCTURE OF THE 2u2i STUDY MODE

- 4-year programme (2u2i or 3u1i)
- 3-year programme (2u1i)
- 2½-year programme (1½ u1i)

CURRICULUM DEVELOPMENT

- Compliance with the learning outcome domains
- Compliance with programme standards, and the requirements of professional and accreditation authorities
- Suitable courses and skills for the industry component
- Involvement of the industry

THE ROLES OF THE INDUSTRY IN CURRICULUM DEVELOPMENT

- Involvement in rubric development
- Involvement in curriculum monitoring and review

EMPHASIS IN DIFFERENT INDUSTRIES

- Flexibility to HLIs and industry partners in curriculum design in order to fulfil the objectives of the 2u2i Study Mode and achieve the learning outcomes.

2.0 Introduction

The 2u2i Study Mode comprises two (2) components, namely the HLI learning component and the industry learning component. The HLI learning component focuses on the aspects of basic principles and skills in the field of study.

Whereas the industry learning component emphasises the aspects of knowledge and skill application in a real work environment relevant to the field of study.
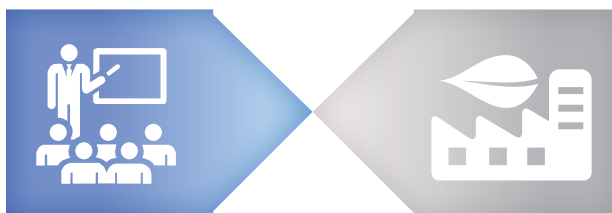
HLI:
basic principles and skills in the field of study

The Industry:
knowledge and skill application in a real work environment relevant to the field of study

2.1 Structure of the 2u2i Study Mode

The structure of the 2u2i Study Mode can be designed as follows,

a. 4-year programme
  • Two (2) years in HLIs and two (2) years in the industry – (2u2i)
  • Three (3) years in HLIs and one (1) year in the industry – (3u1i)

b. 3-year programme
  • Two (2) years in HLIs and one (1) year in the industry – (2u1i)

c. 2½-year programme
  • One and a half (1½) years in HLIs and one (1) year in the industry – (1½ u1i)

For the duration of study other than those stated above, the structure of the 2u2i Study Mode can be developed by fulfilling the requirements stated in Section 2.2.3.

2.2 Model of the 2u2i Study Mode

The model of the 2u2i Study Mode may encompass a various combination of studies in the HLI and placement in the industry. Table 2.1 shows several examples of combinations of the HLI and the industry components according to the duration of study.

Table 2.1: Model of the 2u2i Study Mode according to duration of study

Duration of Study	Structure	Model of the 2u2i Study Mode							
		Semester							
		1	2	3	4	5	6	7	8
4 years	2u2i	HLI	HLI	HLI	HLI	Industry	Industry	Industry	Industry
		HLI	HLI	Industry	Industry	HLI	HLI	Industry	Industry
		Industry	Industry	HLI	HLI	HLI	HLI	Industry	Industry
	3u1i	HLI	HLI	HLI	HLI	HLI	HLI	Industry	Industry
3 tahun	2u1i	HLI	HLI	HLI	HLI	Industry	Industry		
		HLI	HLI	Industry	HLI	HLI	Industry		
		Industry	HLI	HLI	HLI	HLI	Industry		
2½ years	1½u1i	HLI	HLI	HLI	Industry	Industry			
		HLI	HLI	Industry	HLI	Industry			
		Industry	HLI	HLI	HLI	HLI			

Note:

1. ![HLI icon] represents learning at the HLI

2. ![Industry icon] represents learning at the industry

3. Duration for student placement in the industry component is based on the calendar year (12 months). For assessment purposes, HLIs' academic calendar (semester) applies.

2.2.1 Industry Component Credit Hours

The allocation of credit hours of the industry component is shown in Table 2.2.

Table 2.2: Credit Hours Allocation of the Industry Component for the 2u2i Study Mode

Industry Component	Allocation of credit hours for the industry component			
	Credit Units		Credit	
	Minimum	Maximum	Minimum	Maximum
2i	48	60	40	50
1i	24	40	20	30

Note:
- Based on 120 graduation credit hours requirement.
- For any programmes with more than 120 graduation credit hours, the calculation based on the percentage of the total credit hours is recommended.
- Credit hours are calculated based on the effective learning time (ELT) in the industry, student learning time (SLT) in HLIs or according to the programme standards.

2.2.2 Relationship between Credit and Learning Time

The relationship between credits and learning time is as follows,

a. the calculation of course credits delivered conventionally at HLIs is based on the standard calculation of SLT, whilst the calculation of course credits for the industry component is based on the ELT;

b. minimum credits and programme learning workload must comply with the Malaysian Qualifications Framework (MQF) levels and qualification is calculated based on the total of SLT and ELT for all courses;

c. total credits allocated in the 2u2i Study Mode are dependent on design and delivery methods. Credits allocated must comply with MQF, programme standards and SLT for each specific programme/course; and

d. the calculation of learning time and course credits for the industry component, which is, ELT, can be referred to the *Guidelines to Good Practices: Work-based Learning* (GGP: WBL).

2.2.3 2u2i Study Mode Criteria

The 2u2i Study Mode curriculum should fulfil the following criteria,

a.   comply with both national and institutional policies;

b.   meet the specific programme standards and professional bodies requirements;

c.   a minimum of one (1) year and a maximum of two (2) years of study duration for the industry component;

d.   the final semester of study must be at the industry;

e.   the industrial training course should be conducted in the final semester;

f.   the industry component should consist of discipline core and/or elective core courses;

g.   the industry component courses must be part of the study programme curriculum;

h.   the industry component courses must be allocated a grade point which contributes to the Grade Point Average (GPA) and Cumulative Grade Point Average (CGPA); and

i.   credit hours of the industry component courses must be calculated as total graduation credit hours.

2.3 Curriculum Development

The curriculum development of the 2u2i Study Mode should involve a committee represented by stakeholders, consisting of academics, industry representatives, relevant professional bodies, employers and other relevant parties.

The curriculum development of the 2u2i Study Mode should undergo a formal and structured curriculum design process.

The 2u2i Study Mode curriculum must,

a.   comply with MQF and/or PLOs

b.   comply with the relevant Malaysian Qualifications Agency (MQA)

programme standards and/or the requirements of professional and accreditation bodies;

c.   identify the courses and skills that are suitable for implementation in the industry component; and

d.   involve the industry partners in curriculum development.

Comply with relevant MQA programme standards and/or requirements of professional and accreditation bodies

Involve industry partners in curriculum development

Comply with MQF and/or PLOs

THE 2u2i STUDY MODE CURRICULUM DEVELOPMENT REQUIREMENTS

Identify suitable courses and skills for implementation in the industry component
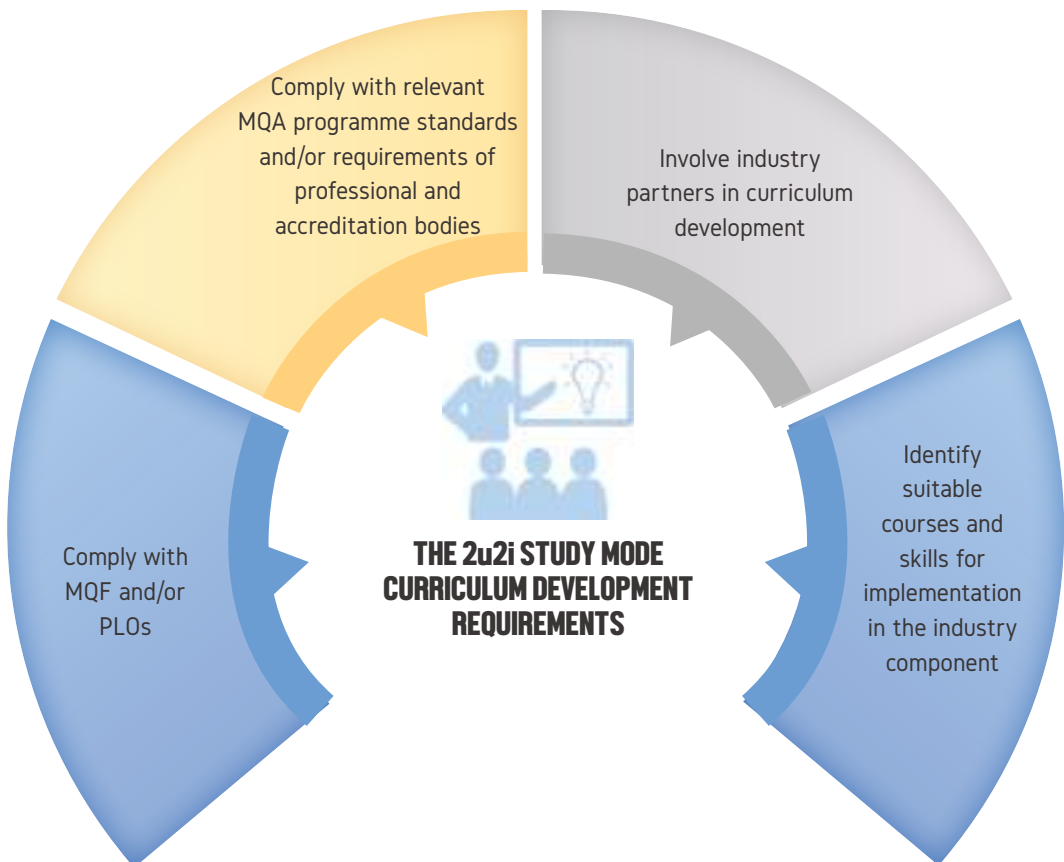
2.4 The Roles of the Industry in Curriculum Development

The roles of the industry in curriculum development of the industry component are as follows,

a. nominating industry advisors for curriculum design;

b. collaboratively developing syllabi with the HLI and ensuring their relevance to the industry needs;

c. collaboratively developing course rubrics for the purpose of assessment at the industry;

d. providing resources and capacity for the delivery and assessment of the industry component courses;

e. ensuring the learning outcomes are understood and accepted; and

f. jointly monitoring and reviewing the programme curriculum.

The curriculum development of the industry component should emphasise the aspects of knowledge transfer, skill transfer and relevant industrial work competencies as shown in Figure 2.1.

```
Learning   →  Knowledge  →  Skill     →  Work         →  Learning
focus         transfer      transfer     competencies     outcomes

                          FEEDBACK
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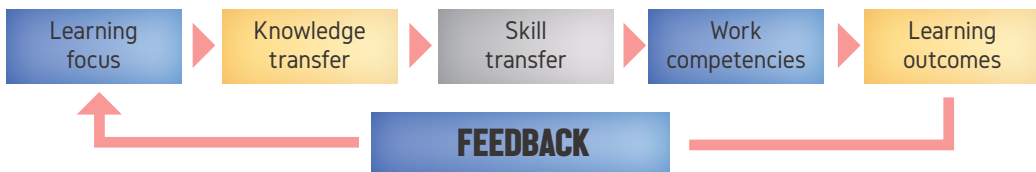
Figure 2.1: Curriculum Design Process of the 2u2i Study Mode for the industry component

2.5 Emphasis in Different Industries

The requirements of the curriculum and structure of the 2u2i Study Mode may differ from one industry to another. Thus, HLIs and the industry partners are given the flexibility to design a suitable curriculum in order to fulfil the objectives of the specific 2u2i Study Mode and achieve the learning outcomes.

Chapter 3
Delivery Methods

DELIVERY METHODS

Lectures/
tutorials

Practical

Laboratories/
studios

Early industrial
exposure

Blended learning

Work-directed theoretical
learning (WDTL)

Problem-based
learning

Project-based
learning

Final Year Project

3.0 Introduction

One of the important elements in the context of the 2u2i Study Mode is how to conduct an effective T&L session. The learni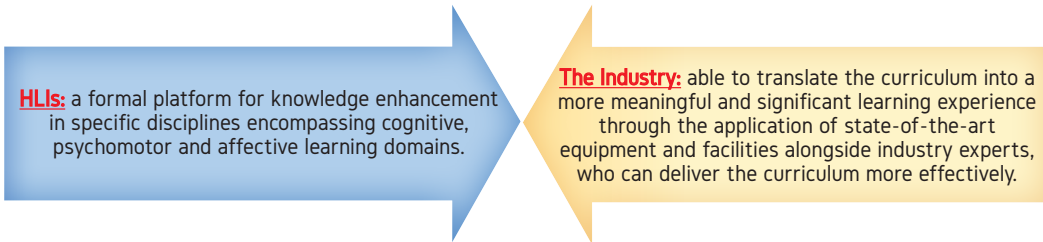ng activities undertaken by the students through the 2u2i Study Mode should help them enhance knowledge in their discipline as well as develop specific skills required by a profession.

HLIs serve as a formal platform for knowledge enhancement in specific disciplines encompassing cognitive, psychomotor and affective learning domains. The 2u2i curriculum designed allows students to function effectively in the industry. Given this, the industry must be able to translate the curriculum into a more meaningful and significant learning experience through the application of state-of-the-art equipment and facilities alongside industry experts, who can deliver the curriculum more effectively.

HLIs: a formal platform for knowledge enhancement in specific disciplines encompassing cognitive, psychomotor and affective learning domains.

The Industry: able to translate the curriculum into a more meaningful and significant learning experience through the application of state-of-the-art equipment and facilities alongside industry experts, who can deliver the curriculum more effectively.

3.1 Framework for Delivery Methods

The learning process in the 2u2i Study Mode must be in line with the curriculum structure based on guidelines for best practices, standards and qualification frameworks.

The synergy between HLIs and the industry would help students strengthen their knowledge in basic principles and skills to meet industrial requirements. In addition, the industry could help transfer its expertise so that students and academic staff could keep up with current technological changes.

There are three (3) important entities to ensure the success of 2u2i Study Mode, namely HLIs, the industry and students, which must be synchronised effectively as shown in Figure 3.1.
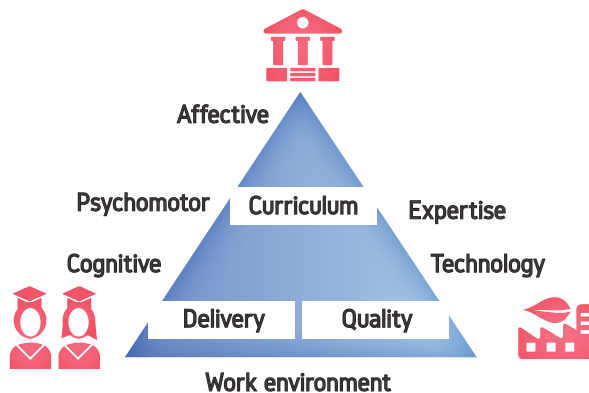

Figure 3.1: Delivery method framework for the 2u2i Study Mode

T&L activities are implemented to achieve the PLOs and must be supported by the syllabus and course learning outcomes (CLOs). Since the 2u2i Study Mode is conducted at two (2) different locations (on campus and at the industry), T&L activities differ at both locations. Learning activities at the industry must be designed in such a way that students are able to relate and apply theories learned on campus. In addition, these activities should be able to reflect on knowledge enhancement and personal development.

3.2 Delivery Methods/Techniques at HLIs

Delivery methods/techniques at HLIs are usually face-to-face in a lecture hall or laboratory/studio facilitated by an academic staff. With a shorter learning time on campus, it is necessary to have more effective methods which are capable of producing industry aware and industry ready students. Blended learning should be introduced at the early stage of their studies to enable students to continue their learning using this method when they are placed in the industry.

Therefore, it is recommended that learning using HIEPs should be adopted as early as the first year in the 2u2i Study Mode.

HIEPs include,

a. field work that is industry-driven in a related field;

b. problem-based learning developed together with industry partners;

c. case studies developed jointly with the relevant industry;

d. experiential learning implemented cumulatively with the day release method in the industry;

e. community-based learning (service learning);

f. first year seminars;

g. course work and team projects implemented collaboratively; and

h. empirical studies.

3.3 Delivery Methods/Techniques at the Industry

Structured delivery methods/techniques at the industry must be conducted using the block release approach, where students spend the whole semester in the industry (refer to GGP: WBL). Learning at the industry is based on the Kolb Cycle (1984), which involves students to plan and implement activities, reflect and evaluate activities, and take necessary actions for subsequent learning. Students apply reflection process to determine important knowledge required for future activities.

SOME DELIVERY METHOD/TECHNIQUES IN THE INDUSTRY

Capstone Project · FYP · Blended learning · Industrial training · WDTL · PBL · PjBL
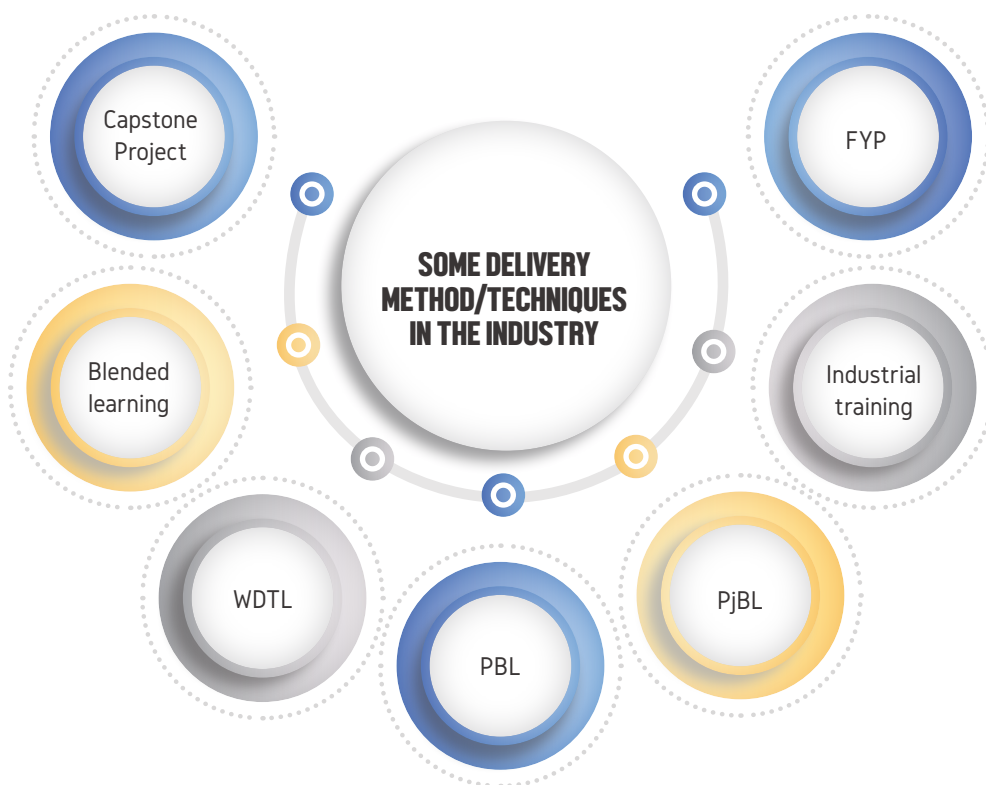
Examples of delivery methods/techniques that can be implemented at the industry are shown in Table 3.2.

Table 3.2: Examples of delivery methods/techniques at the industry

No.	Delivery Methods/ Techniques	Description
1.	Blended learning	This method is necessary whilst the students are in the industry to ensure that the course contents, activities and assessment can be accessed through e-learning platforms on and off campus at any time.
2.	Work-directed theoretical learning (WDTL)	This method refers to academic or theoretical learning which is structured by focusing on what the students need to know to be able to function sufficiently in the workplace (Du Plessis, 2015).

No.	Delivery Methods/ Techniques	Description
3.	Problem-based learning (PBL)	This method is an approach to learning using industrial problems assigned by academic staff/Industry Coaches to the students. The identified problems must be formulated and planned beforehand so that each strategy taken by the students could point them to problem solving.
4.	Project-based learning (PjBL)	This method involves learning through conducting real world projects in the industry. Such projects usually involve the elements of research, and would be supervised by academic staff/Industry Coaches. It can be used to enhance basic skills and knowledge for analysis and problem solving.
5.	Industrial training/ practicums/ clinicals	These methods are the final components of training which provide opportunities for students to undergo apprenticeships in the industry.
6.	Final Year Project (FYP)	The method is an academic research and/or product development conducted by final year students individually or in groups. Although involvement in a project in the industry is usually implemented as group work, it is possible to adapt an individual focus for individual projects. The primary goal of FYP is to give experience and enhance the knowledge and skills of the students in solving problems through projects in the industry. Through FYP, students should be capable of managing and using academic knowledge as well as practical experience to conduct research/develop products.
7.	Capstone Project	The method is the culminating course of any programme of study. Learning experience throughout the studies is manifested in the form of an academic project that is usually implemented collaboratively, in which dissertation and the final project is usually conducted in the industry. The Capstone Project is designed to encourage and test the capability of students in demonstrating various skills such as planning, problem solving, decision making, critical thinking, research expertise, media and technological literacies, which will prepare them for the future workplace.

Chapter 4
Assessment of the Industry Component

FOCUS OF ASSESSMENT

Theory	Practical
30-40%	**60-70%**

ASSESSMENT CRITERIA

- Knowledge
- Practical skills
- Functional skills
- Personal and ethical skills

TYPES OF ASSESSMENT

- Reflection/Post Module Assessment
- Dissertation
- Observation
- Demonstration
- Presentation
- Practical evaluation
- Written tests
- Portfolio/Log book
- Laboratory work
- Reports
- Self-assessment
- Peer assessment
- Interviews
  * Refer to GGP: WBL

RECOMMENDED ASSESSORS

- Industry Coaches
- Academic staff
- Professional bodies
- Licensing bodies
- Students
- Student Peers
- Community representatives

4.0 Introduction

The specific aim of the chapter is to explain the assessment of the industry component because the 2u2i Study Mode has become an additional study mode to the existing conventional coursework mode. The 2u2i Study Mode involves HLIs and the industry whereby the students are exposed to a different and varied learning experience due to differences in the industry background and environment in which it operates. Therefore, the overall assessment is more challenging and complex. A detailed assessment plan is absolutely necessary to ensure that expectations in offering the academic programme under the 2u2i Study Mode can be realised.

Assessment is the most important element of a curriculum because the information obtained is then used to support student learning and also to measure students' performance.

Under the 2u2i Study Mode, students undergo experiential learning, and are placed in a real work environment in the industry. This situation allows for assessments to be done objectively using various assessment methods that are industry-driven and focus on practical and affective aspects that are usually not effectively implemented in HLIs.

Therefore, assessment methods that are appropriate and effective in assuring quality need to be emphasised to ensure validity and reliability of the assessment as well as fulfil the programme standards.
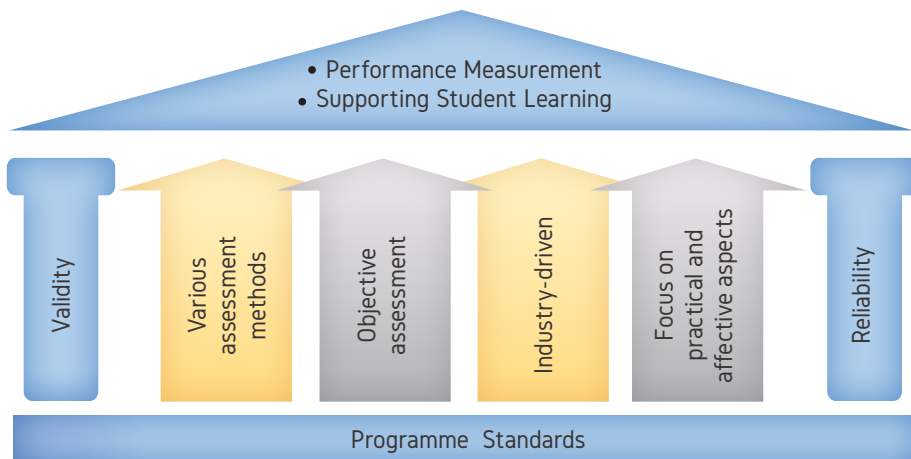
ASSESSMENT OF THE INDUSTRY COMPONENT

4.1 Assessment of the Industry Component

In implementing experiential learning, it is essential to assess student performance in the workplace by aligning CLOs with T&L activities through employing methods that are capable of relating the theories learned in classroom with real work practices in the industry. Therefore, formative assessment must be emphasised and extensively used to improve students' practical skills, inculcate affective domain, particularly ethical and moral values, as well as develop other skills. Thus it is recommended that the industry and HLIs develop effective feedback mechanisms for students to ensure that formative assessment is carried out effectively.

Experiential Learning

Improve practical skills | Inculcate affective domain | Develop skills | Develop effective feedback mechanisms

Formative assessment is emphasised and used extensively

Relationship

Theories learned in HLIs ✚ Real work practices in the industry
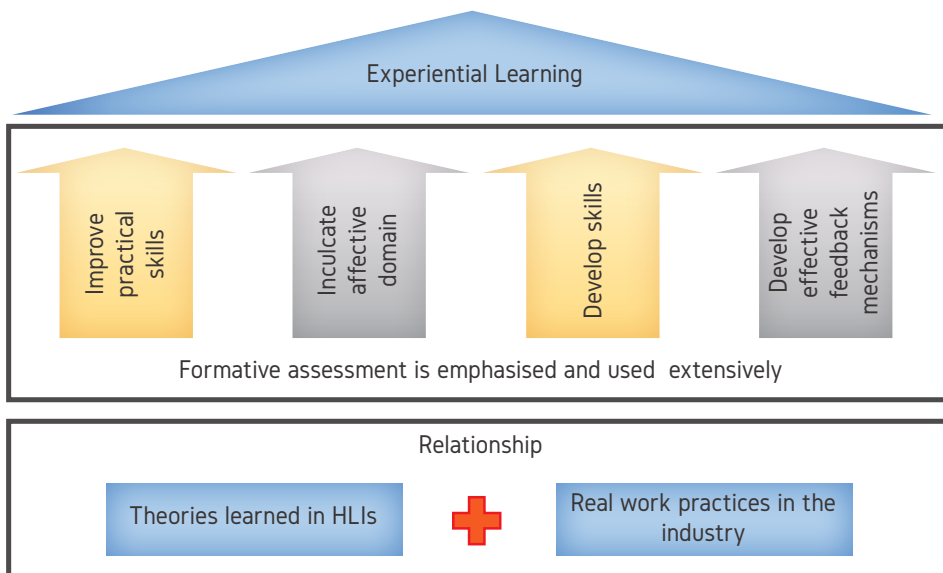
The effectiveness of the implementation of 2u2i curriculum depends on the cooperation and understanding between HLIs and the industry in ensuring that student assessments can be executed properly.

In the curriculum development phase, both HLIs and the industry must collaboratively plan and develop an assessment framework that is clear, concise and can be implemented effectively.

During the planning phase, consent documents between HLIs and the industry must be crafted; evaluation rubrics, evaluation forms and marking schemes must be developed and aligned with CLOs. This is to ensure that both parties are well-prepared to assess the students at the workplace. Briefings/training between HLIs and industry representatives should be held so that both parties understand and are clear about their respective roles and responsibilities.

JOINT DEVELOPMENT OF ASSESSMENT PLAN

Assessment Rubrics

Agreement documents between HLIs and the industry

Evaluation Form

Marking Scheme

HLI and industry briefings/trainings

HLI + The Industry

CLOs
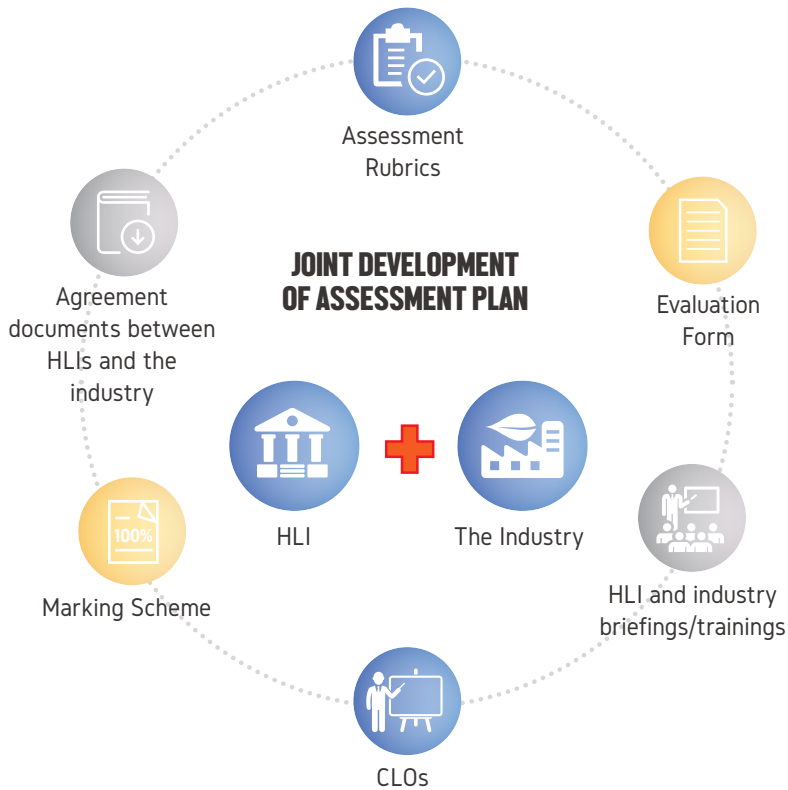
Generally, based on the prescribed curriculum, the fundamental issues that must be agreed upon by both HLIs and the industry are the aspects to be evaluated *and* the assessors. In addition, the assessment methods for the industry component need to be discussed together with the Industry Coaches (refer to Chapter 4 of *Buku Panduan* 'Work-based Learning: *Pelaksanaan di Politeknik Malaysia*, 2014).

Formative and summative assessments in the industry demand methods that are authentic and innovative. Formative assessment places emphasis on effective feedback. This ensures that students receive help in improving their knowledge and skills, and enables them to re-late theory to practice. Students can then be better informed about their performance in relation to the prescribed learning outcomes.

Industry Coaches can also benefit from the formative assessment feedback to improve teaching delivery, course curriculum and pro-gramme.

Feedback from assessments undertaken in the industry must be conveyed to the students to motivate self-learning. Student learning must also be driven by the Industry Coaches. This requires both HLIs and the industry to provide continuous and timely feedback, preferably within one (1) to two (2) weeks upon comple-tion of the assignment.

In addition, feedback should provide positive encouragement so that students can improve their assignments on a given task which is aligned with CLOs and assessment criteria (refer to *Garis Panduan Amalan: Reka Bentuk dan Penyampaian*, 2011).

![2u2i]

HLI

➕

The Industry

Feedback provides positive encouragement →

Continuous feedback →

Timely feedback (one (1) to two (2) weeks after completion of assignment) →

Feedback aligned with CLOs →

Feedback aligned with assessment methods →
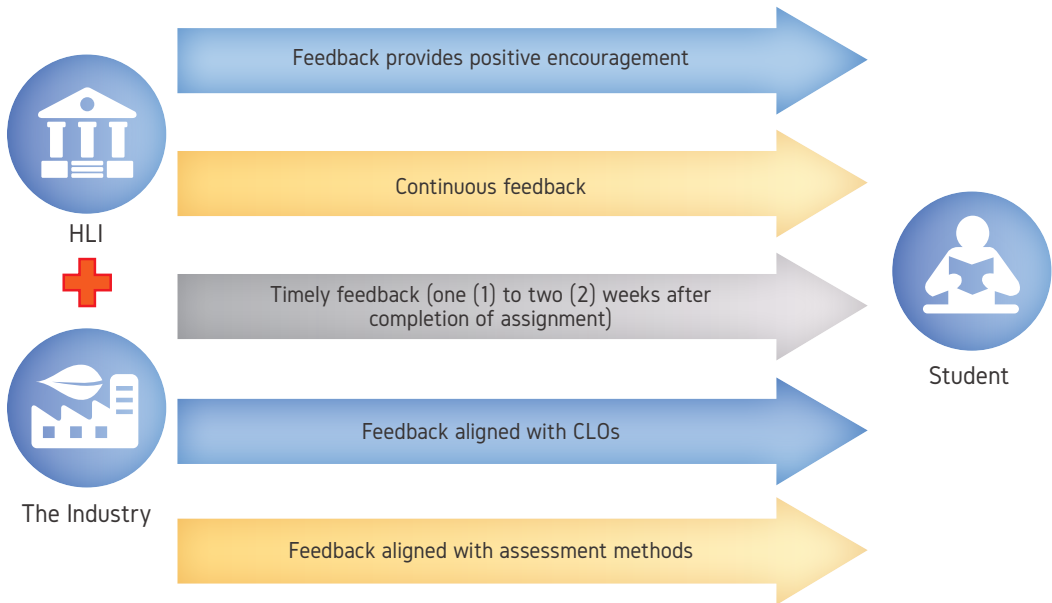
Student

The aim of summative assessment is to evaluate students in order to benchmark their achievements against prescribed indicators. Summative assessment can be implemented at the end of a course of study or at an appropriate time based on the field of study and the industry. The industry, with the agreement of the HLI, can formulate a flexible summative assessment plan that is appropriate to the achievement level of the student whilst he/she is at the industry.

Information from the formative and summative assessments should be used to improve the teaching and learning plan for courses subsequently enrolled by students.

Assessment undertaken in the industry has its own strengths that are difficult to achieve during on campus studies or conventional learning. Assessment based on experiential learning is capable to develop and measure the overall cognitive, psychomotor and affective learning domains. Assessment that is executed by Industry Coaches can provide a comprehensive picture of students' true competencies in the workplace environment, especially on their psychomotor and affective skills. Professionalism, problem solving skills, ethics and morals can be inculcated more effectively through formative assessment and evaluations that are more realistic.

| STRENGTHS OF THE INDUSTRY COMPONENT ASSESSMENT | Develops and measures overall cognitive, psychomotor and affective learning domains | Provides an overall picture of students' true competencies in the workplace environment | Inculcates professionalism, problem solving skills, ethics and morals more effectively |
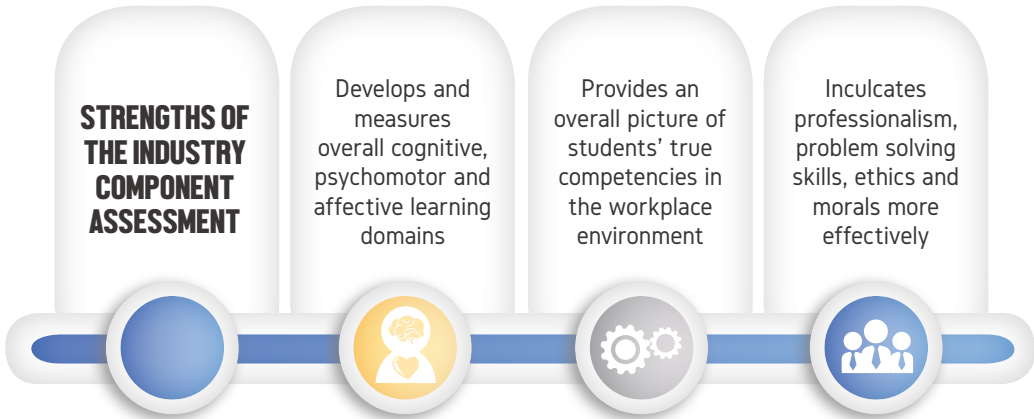
Whilst at the industry, the students are exposed directly to learning and experiences that enable them to be assessed in various domains. As a result, the industry assessment in the 2u2i Study Mode is superior as it enables the implementation of an integrated assessment. The superiority of the industry assessment allows for a higher level of assessment by passing over level 2 of Bloom's taxonomy (that are to memorise and understand). As such, students are trained to be *more* capable to apply, analyse, evaluate and create within the context of their field of study.

The results, from the formative and summative assessment that depict the true competency achievements of a student, can be mapped more precisely to learning outcomes.

The information from the summative assessment is recorded, stored and updated as empirical evidence of the student's academic record. HLIs and the industry can use the information from the record to determine the student's level of mastery of the learning outcomes of the 2u2i Study Mode, and thereby take remedial action. Assessment best practices should be implemented to ensure each student masters the learning outcomes of the 2u2i Study Mode.

4.2 Key Elements in Assessment of the Industry Component

Several important issues which need to be attended to in assessing the industry component in the 2u2i Study Mode programme are as follows,

a. assessment needs to be designed to evaluate students on their capability to integrate theoretical and practical aspects effectively in their studies;

b. the reflective assessment method needs to be extensively used in T&L processes in the industry. Feedback from reflective assessment must be supported by summative assessment;

c. assessment of the industry component should be aligned with the CLOs as well as in line with performance evaluation practices in HLIs and the industry;

d. formative and summative assessments of the industry component need to be adequate and complete to measure a student's learning performance

as well as to provide a clear and comprehensive picture of the student's competencies;

e. assessment of the industry component should emphasise HIEPs that encompass elements such as 1st year seminar/experience, service/community based learning (service learning), collaborative assignment and projects (CAS) and Capstone Projects;

f. assessment in the industry should be conducted in an environment that is free from duress, threats and prejudices, and must be in line with the guidelines, regulations and practices in HLIs;

g. assessment methods should be appropriate for the industry component; and

h. assessment should be implemented according to the academic calendar, and the students' grades must be finalised according to the deadline set for the semester.

KEY ELEMENTS IN ASSESSMENT OF THE INDUSTRY COMPONENT

Evaluate students' capability to integrate theoretical and practical aspects effectively

Measure adequately and comprehensively a student's learning performance to provide a clear picture of his/her competencies

Use suitable assessment methods for the industry component

Use extensively the reflective assessment method, supported by summative assessment

Emphasise HIEPs

Align with CLOs and in line with performance evaluation practices

Conduct assessment in an environment that is free from duress, threats and prejudices

Conduct assessment according to the academic calendar and follow deadlines set for the semester.

4.3 Assessment Methods for the Industry Component

The assessment methods for the industry component need to encompass all three (3) cognitive, psychomotor and affective learning domains. Various methods need to be used to measure each domain to ensure reliability of the assessment. Table 4.1 shows the list of recommended assessment methods for the industry component.

Table 4.1: The 2u2i Study Mode Suggested Assessment Scheme for the Industry Component

Assessment Method		Focus of Assessment		Assessment Criteria	Example of Assessment Method	Recommended Assessors
Formative/ Continuous	Summative	Theory	Practical			
50-100	0-50	30-40	60-70	• Knowledge • Practical skills • Functional skills • Personal skills and ethics	• Reflection/ Post module assessment • Observation* • Portfolio • Log Book* • Oral and/ or written presentation • Project/ Product in the industry* • Field work • Interview • Dissertation* • Demonstration • Presentation* • Practical evaluation • Written test • Laboratory work • Industry Coach report* • Project plan • Self-assessment • Peer assessment • Industry evaluation • Practical assignment* • Simulation • Employer's survey *refer to GGP: WBL	• Industry Coaches • Academic staff • Professional bodies • Licensing bodies • Students • Student Peers • Community Representatives

Chapter 5
Management of the 2u2i Study Mode

ROLES & RESPONSIBILITIES OF HLIs
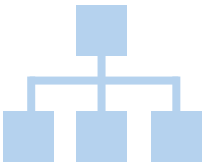
Create a 2u2i Committee or use an existing committee

Appoint a Coordinator and Industry Coaches
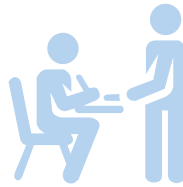
Conduct Briefing/ Training for Industry Coaches

Ensure safety and welfare of students

ROLES & RESPONSIBILITIES OF THE INDUSTRY
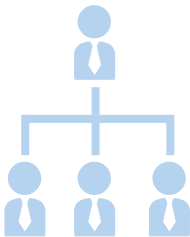
Be a member of the 2u2i Committee

Match the industry training policy

Appoint a Coordinator and Industry Coaches

Provide certification of apprenticeship for students

ROLES & RESPONSIBILITIES OF STUDENTS

Comply with policies and regulations

Provide feedback to HLIs and the industry

Create positive relationships

Complete assignments and reports within the specified time frame

5.0 Introduction

The management of the 2u2i Study Mode is important to ensure smoothness, success and sustainability of the implementation of the academic programme. This implementation involves three (3) main parties, including HLIs, the industry and students. Commitment from all these parties is necessary to guarantee effective delivery of the 2u2i Study Mode is achieved.

5.1 Roles and Responsibilities of HLIs

5.1.1 Management

HLIs have the roles and responsibilities to ensure that the Curriculum Committee is committed to good governance principles, and functions as stipulated by the Code of Practice for Programme Accreditation (COPPA) and MQA. The Curriculum Committee can consist of other committees at the HLI, faculty and programme levels.

To ensure that the management of the 2u2i Study Mode runs smoothly, HLIs need to,

a. create a 2u2i Study Mode Committee or use an existing committee, which includes members of the industry relevant to the programme of study. Members of this committee should be constituted proportionately. For the purpose of this document, the committee will be named as the 2u2i Study Mode Committee;

b. appoint a 2u2i Study Mode Coordinator and Industry Coaches at the faculty level;

c. conduct briefings/training on teaching and assessment for the appointed Industry Coaches to enhance T&L processes; and

d. ensure the safety and welfare of the students participating in the 2u2i Study Mode.

01 Create a 2u2i Study Mode Committee

02 Appoint a 2u2i Study Mode Coordinator and Industry Coaches

03 Conduct briefings/ training on teaching and assessment for Industry Coaches

04 Ensure safety and welfare of students

MANAGEMENT OF HLIS MUST:
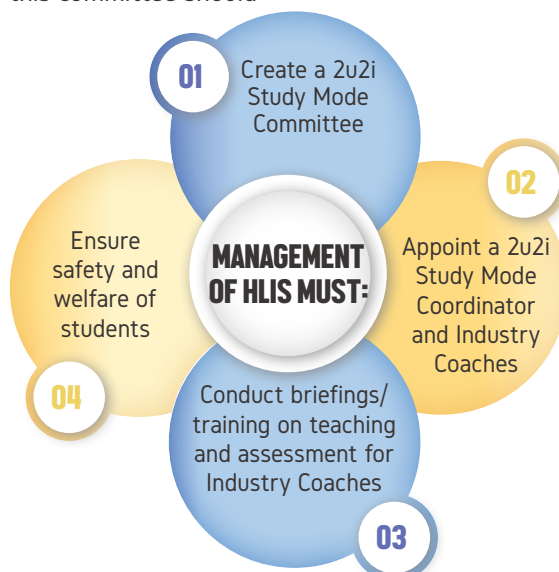
5.1.2 Roles of the 2u2i Study Mode Committee

The roles of the committee as stated in Section 5.1.1 (a) are as follows,

a. designing and reviewing the curriculum for the 2u2i Study Mode programme;

b. planning, monitoring and evaluating the implementation of the programme;

c. identifying suitable industries;

d. identifying resources, facilities and expertise requirements;

e. recommending improvements for the implementation of the programme;

f. ensuring students are in a conducive learning environment; and

g. managing collaborative relationships between HLIs and the industry through a Letter of Collaboration/ Letter of Understanding/Letter of Intent/Memorandum of Understanding/ Memorandum of Agreement.

ROLES OF THE COMMITTEE

Identify the industry

Ensure that students are in a conducive learning environment

Plan, monitor and evaluate

Recommend improvements

Design and review curriculum

Identify resources, facilities and requirements

Manage collaborative ties between HLIs and the industry

5.1.3 Roles of the 2u2i Study Mode HLI Coordinator

The roles of the 2u2i Study Mode HLI Coordinator as stated in Section 5.1.1 (a) are as follows,

a. carrying out duties as a Programme Liaison Officer between the HLI and the industry;

b. coordinating the dates for the implementation and monitoring of the 2u2i Study Mode;

c. coordinating T&L activities to fulfil the industry requirements, which are guided by the 2u2i Study Mode curriculum;

d. coordinating the management of student academic records;

e. coordinating the preparation of implementation, monitoring and evaluation reports; and

f. conducting briefings/training for students, academic staff of the HLI and Industry Coaches on the implementation of the 2u2i Study Mode.

ROLES OF THE COORDINATOR

- Act as a Programme communications/ Liaison Officer
- Coordinate T&L activities
- Coordinate preparation for implementation, monitoring and assessment reports
- Coordinate the calendar for implementation and monitoring
- Coordinate the management of student academic records
- Conduct briefings/ training on the implementation of the 2u2i Study Mode
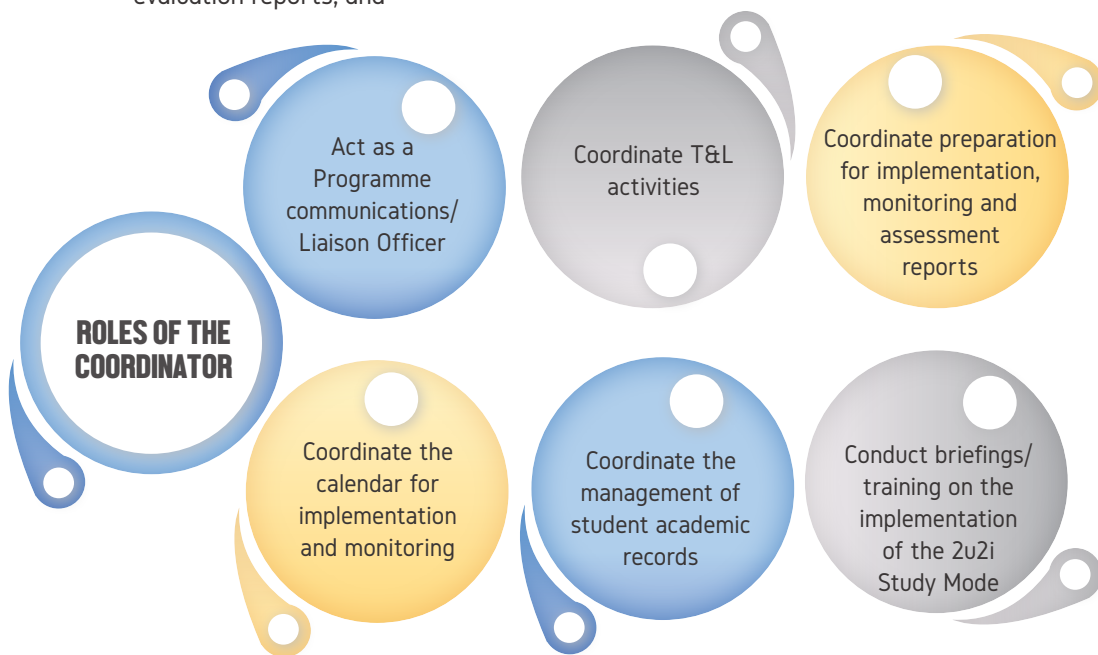
5.2 Roles and Responsibilities of the Industry

5.2.1 Management

The industry needs to play its role to ensure the effectiveness of the 2u2i Study Mode programme so that students can benefit, and PLOs can be achieved.

Among the main roles of the management from the industry in the 2u2i Study Mode are to,

a. play an active role in the 2u2i Study Mode Committee as stated in Section 5.1.1 (a);

b. match the organisation's training policy and fulfil the intent and requirements of the 2u2i Study Mode;

c. plan the implementation strategies of the T&L component at the industry;

d. provide appropriate resources, facilities and expertise;

e. monitor the effectiveness of the programme implementation;

f. recommend improvements for the programme implementation;

g. appoint a 2u2i Industry Coordinator and Industry Coaches;

h. allow academic staff to visit students whilst they are on placement at the industry;

i. consider providing allowance/ incentives to students;

j. ensure the safety and welfare of students whilst on placement at the industry; and

k. issue a letter or certificate to certify completion of apprenticeship to students.

5.2.2 The Industry Coordinator

The 2u2i Industry Coordinator acts as the Liaison Officer between the HLI, students, academic staff and Industry Coaches. Among the roles of a 2u2i Industry Coordinator are to,

a. assist students in planning their placement at the industry;

b. work closely with all interested parties;

c. maintain regular and effective communication between all interested parties;

d. coordinate student files;

e. coordinate the implementation of T&L at the industry; and

f. coordinate the student evaluation process and submit the reports to the HLI within the stipulated time frame.

5.2.3 Industry Coaches

The Industry Coaches are to,

a. provide training and guidance to students according to the course requirements;

b. conduct course assessment and monitor students' progress;

c. guide students in their preparation for reports/assignments;

d. ensure that assessment reports are submitted to the Industry Coordinator within the stipulated time frame; and

e. ensure that students fully comply with the safety and health regulations in the workplace at all times.

5.2.4 Qualifications of an Industry Coach

To qualify as an Industry Coach, one must,

a. meet the minimum academic qualifications such as those required by the programme standards and/or professional bodies for the level that one is to teach; AND/OR

b. possess the minimum relevant work experience such as stated in the programme standards and/or by professional bodies; and

c. have supervision experience in the relevant field.

03 Bachelor's degree with three (3) years of experience in the relevant field; OR

04 Advanced diploma with five (5) years of experience in the relevant field; OR

02 Master's degree in the relevant field; OR

05 Any certificates or qualifications recognised by the company with seven (7) years of experience in the relevant field; OR

01 Doctoral degree in the relevant field; OR

06 A five (5)-year work experience or more with special skills/field of specialisation recognised professionally/recognised internationally/of high commercial value.

*If the Industry Coach teaches a theory component in the industry, then he/she must have an academic qualification that is at least one (1) level higher than the programme taught.

Industry Coaches must be appointed with the agreement of both the industry and HLIs.
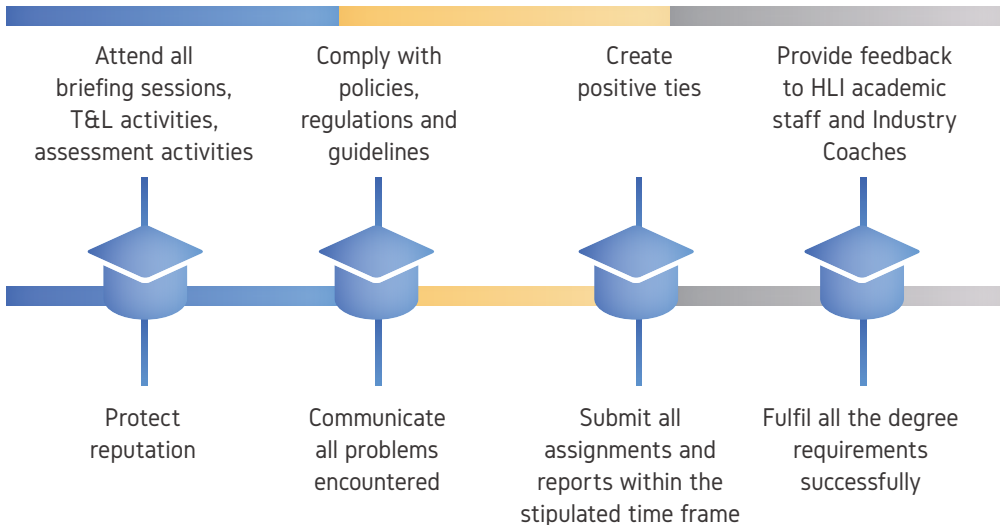
Industry Coaches must attend briefings/ training on teaching and assessment conducted by HLIs.

5.3 Roles and Responsibilities of Students

The roles and responsibilities of students are to,

a. attend all briefing sessions, T&L activities and assessment activities conducted by the HLI and industry;

b. comply with the policies, regulations and guidelines specified by the HLI;

c. comply with all industry regulations;

d. forge positive ties with co-workers and superiors in the workplace;

e. provide feedback to the HLI academic staff and Industry Coaches for the purpose of continual quality improvement (CQI);

f. protect the reputation of the HLI and industry;

g. inform the HLI and industry about any problems faced during their placement and throughout the training period;

h. submit all assignments and reports within the stipulated time frame; and

i. fulfil all the prescribed requirements of the degree.

ROLES AND RESPONSIBILITIES OF STUDENTS

Attend all briefing sessions, T&L activities, assessment activities

Comply with policies, regulations and guidelines

Create positive ties

Provide feedback to HLI academic staff and Industry Coaches

Protect reputation

Communicate all problems encountered

Submit all assignments and reports within the stipulated time frame

Fulfil all the degree requirements successfully

5.4 Mechanisms for Implementation of HLI-Industry Collaboration

Any formalised collaborative relationships between HLIs and the industry are expected to benefit both parties, namely to ensure the continuous provision of quality education.
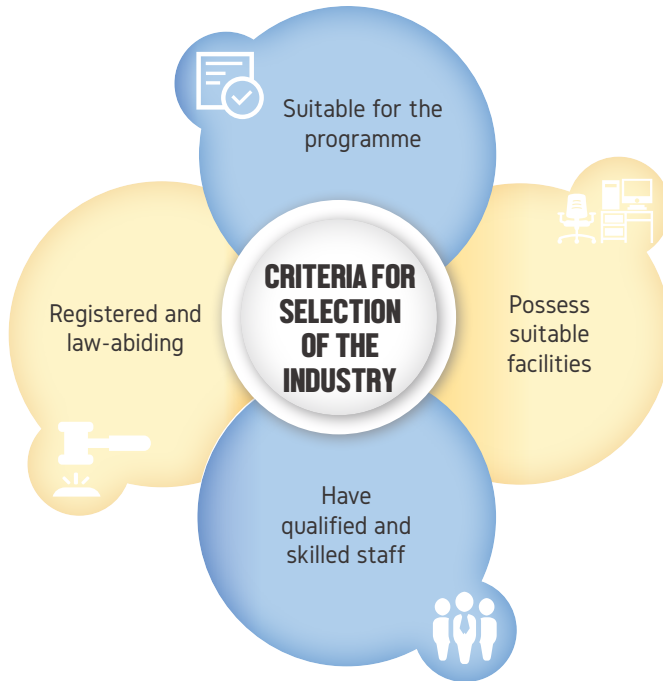
The documents that underpin the commitment of both parties towards their collaborative efforts are,

- a. A Letter of Cooperation/Letter of Understanding/Letter of Intent

- b. A Memorandum of Understanding (MoU)

- c. A Memorandum of Agreement (MoA)

To bind both parties in a collaborative relationship, it is recommended that a Memorandum of Agreement (MoA) be signed and sealed by both parties. Prior to the MoU and MoA, a Letter of Cooperation/ Letter of Understanding/Letter of Intent must be prepared and signed. An example of a Letter of Cooperation is provided in Appendix 1.

When choosing an industry collaborative partner, the HLI must consider certain criteria that will determine the effectiveness of the implementation of the 2u2i Study Mode. Among the criteria are,

- a. the industry should be relevant to the programme of study;

- b. the industry should have suitable learning facilities for the students whilst they are enrolled in the 2u2i Study Mode;

- c. the industry has to be registered and must abide by Malaysian laws or laws of the country in which it operates; and

- d. the industry must have staff who possess qualifications and skills relevant to the field of study.

CRITERIA FOR SELECTION OF THE INDUSTRY

- Suitable for the programme
- Possess suitable facilities
- Have qualified and skilled staff
- Registered and law-abiding

Any company registered with TalentCorp under the Structured Internship Programme (SIP) is qualified to enjoy the double taxation incentives.

Chapter 6
Quality Assurance

REQUIREMENTS FOR QUALITY ASSURANCE, APPROVAL, AND ACCREDITATION OF THE PROGRAMME

Programme nomenclature, aims and learning outcomes
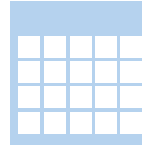
Curriculum design

Programme delivery

Student assessment

Student selection and support services

Academic staff and Industry Coaches

Educational resource facilities
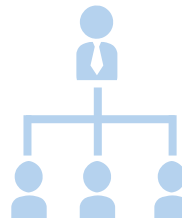
Programme management

Programme monitoring

Programme review and CQI

Approval by the Department of Higher Education

Accreditation agencies and professional bodies

6.0 Introduction

The uniqueness, strength and complexity of programme development and implementation of the 2u2i Study Mode are materialised due to the equal importance of two (2) entities, namely HLIs and the industry, collaborating in curriculum development and delivery process. Thus, quality assurance becomes a key requirement in ensuring that both entities are equally important in achieving the programme aims, in order to produce desired graduates. This chapter explains the requirements and aspects of quality assurance in the 2u2i Study Mode which serves as the basis for obtaining approval and accreditation from the authorities.

6.1 Requirements for Quality Assurance

The process of developing and implementing the 2u2i Study Mode programme has to be planned in a systematic manner, so that its quality is consistently practised, maintained, achieved and enhanced, thereby fulfilling the stakeholders' expectations. The requirements for quality assurance have to be given attention by all stakeholders in the development and implementation of the 2u2i Study Mode.

In assuring the quality of the 2u2i Study Mode programme, HLIs should take into account the following requirements,

a.   compliance with the national laws and policies, HLIs and the industry, national and international programme standards, and/or requirements of the accreditation authorities, professional bodies, the industry and letter of HLI incorporation, in curriculum development, programme implementation and curriculum review for quality assurance of the programme;

b.   compliance with COPPA, GGP: WBL, curriculum guidelines or any other circulars issued by MQA from time to time for course assessment and student achievement; and

c.   compliance with related programme standards.

6.2 Aspects of Quality Assurance

Quality assurance of 2u2i programmes comprises 10 aspects as stated in Sections 6.2.1 to 6.2.10.

6.2.1 Programme Nomenclature, Aims Goals and Learning Outcomes

A programme nomenclature and the awards have to comply with MQF requirements and related programme standards. These include the components of programme nomenclature such as level of qualifications, general discipline indicators and field of specialisations.
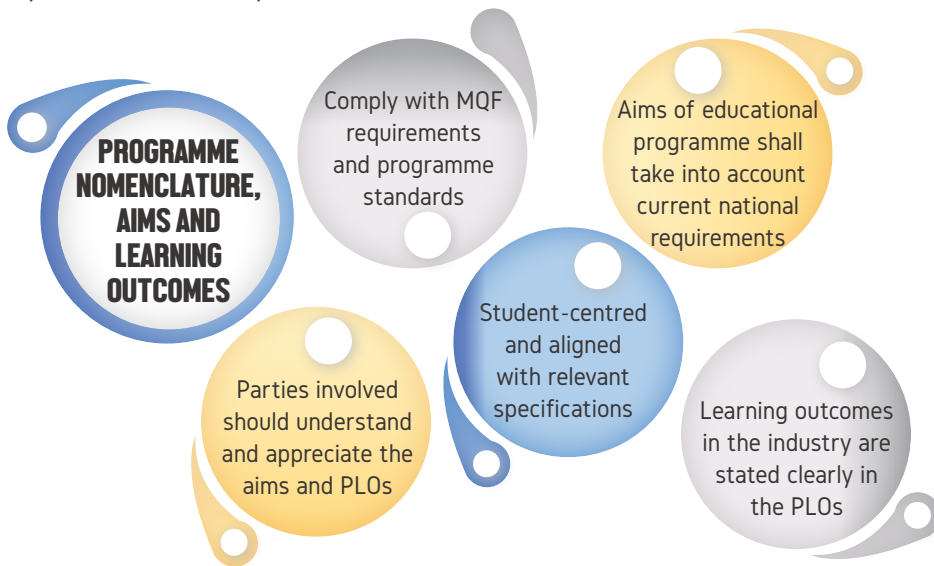
The aims of educational programme shall take into account current national requirements such as the National Key Economic Areas (NKEAs), HLIs niche areas and departmental focus. PLOs should be able to produce holistic, entrepreneurial and balanced graduates. The PLOs should

be student-centred and aligned with MQF requirements, programme standards and/ or requirements of relevant professional bodies.

Learning outcomes in the industry need to be stated clearly in the PLOs so that the 2u2i Study Mode programme can be distinguished from the conventional study mode. For example, the PLOs for the Bachelor's degree in Entrepreneurship should relate to a real work environment, and need to be stated as: *at the end of the programme, students should be able to manage a business successfully.*

All stakeholders involved need to understand and collaboratively realise the aims and PLOs of the 2u2i Study Mode programmes.

PROGRAMME NOMENCLATURE, AIMS AND LEARNING OUTCOMES

Comply with MQF requirements and programme standards

Aims of educational programme shall take into account current national requirements

Student-centred and aligned with relevant specifications

Parties involved should understand and appreciate the aims and PLOs

Learning outcomes in the industry are stated clearly in the PLOs

6.2.2 Curriculum Design

The curriculum must be developed by a committee who has autonomy and is represented by stakeholders from academia, the industry, professional bodies, employers, government departments and other relevant parties.

Besides the curriculum that needs to be aligned with the PLOs and the required programme standards, the curriculum developer has to identify courses that are suitable for implementation on campus and at the industry.

All the courses, either implemented on campus or at the industry, must have CLOs that are aligned constructively with the PLOs.

The calculation of credits for the courses delivered conventionally at the HLI is based on the SLT calculation standard, whilst course credit calculation that involves the industry, either through day release or block release, is based on ELT and programme standards.

The total minimum credit and programme learning load must fulfil MQF requirements (calculated as the total of notional SLT and ELT).

The curriculum structure of the 2u2i Study Mode must include the university component and the industry component. Allocation of credits for the two (2) components has to follow the structure of the 2u2i Study Mode curriculum.

Hexagon diagram: CURRICULUM DESIGN with surrounding hexagons:
- Developed by a committee who has autonomy and is represented by various stakeholders
- Aligned with PLOs and required programme standards
- A total minimum credit and programme learning load must fulfil MQF requirements
- CLOs constructively aligned with PLOs
- Calculation of credits at HLIs based on SLT. Calculation of credits at the industry based on ELT
- Consisting of the university and industry component

6.2.3 Programme Delivery

HLIs and the industry must be jointly responsible for programme delivery.

The implementation of conventional T&L and the day release are considered the HLI study, whilst the block release for one (1) semester is regarded as the industry study.

Programme delivery, industrial guidance and real work training should be based on the spirit of commonality, collegiality, and accountability among the head, programme coordinator, academic staff and Industry Coaches.

Programme delivery through conventional methods at HLIs involves both academic staff and invited industry experts, or at the industry through the day release method.

Programme delivery at the industry should involve both HLIs and the industry through the block release method or full immersion.

Venn diagram: PROGRAMME DELIVERY with:
- HLIs and the industry must be jointly responsible
- Day release method is considered the HLI study, whilst block release is regarded as the industry study
- Programme delivery, industrial guidance and real work training based on the spirit of commonality, collegiality and accountability
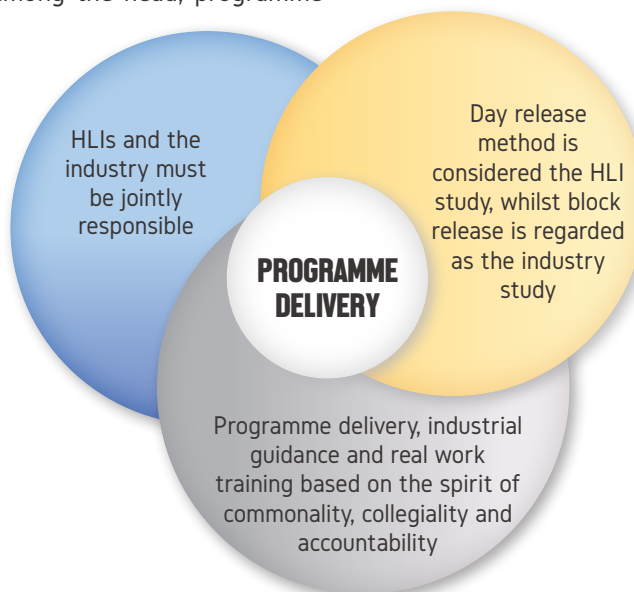
6.2.4 Student Assessment

Student assessment has to be consistent with the level set out in MQF, PLO domains, programme standards and/or requirements of professional bodies.

Student assessment should be based on assessment of the courses taken by students for a particular programme.

The principles, methods and practices of assessment of the courses taken by students at HLIs and the industry should be credible, reliable, trustworthy and fair.

The course assessment at the industry whether formative and/or summative should have higher weight and be accounted for students' academic achievements.

Students' course assessment and achievement for every semester should be made known to the students and all stakeholders.

Based on assessment of the courses taken by students for a particular programme

Higher weight for industry assessment

Principles, methods and practices of assessment should be credible, reliable, trustworthy and fair

Course assessment and achievement for every semester should be made known to students and stakeholders

Student assessment to be consistent with the level set out

STUDENT ASSESSMENT

6.2.5 Student Selection and Support Services

The 2u2i Study Mode is recommended to have a clear policy and mechanism. The selection process and criteria, and student appeals with regard to the 2u2i Study Mode programme, as well as student transfer from the original programme (2u2i) to other programmes, should be well-disseminated.
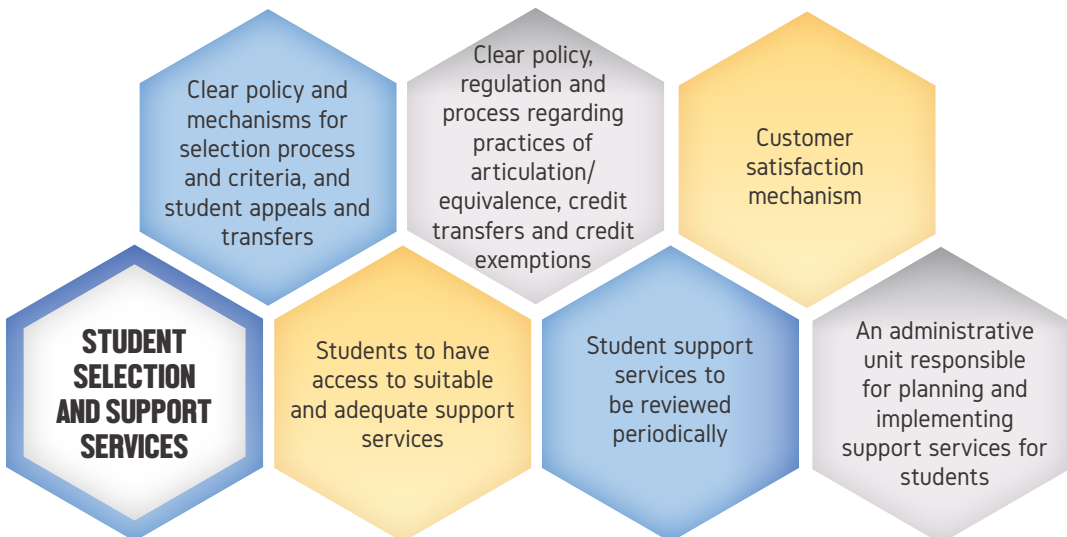
HLIs should also have a clear policy, regulation and process regarding the practices of articulation/equivalence, credit transfers and credit exemptions for referencing. Courses for the industry component in the curriculum are compulsory; they cannot be replaced with equivalent courses that have been taken by students, and be given exemption or credit transfer (for example, a student admitted directly from a relevant Diploma programme must take all courses in the industry component).

Students should have access to suitable and adequate support services such as physical and recreational facilities, and counselling and health services throughout their studies on campus and at the industry.

Student support services need to be reviewed periodically to ensure their adequacy, effectiveness and safety.

A customer satisfaction mechanism in which students can channel their feedback or recommendations needs to be established.

It is recommended that an administrative unit responsible for planning and implementing support services for students be set up and staffed with qualified and experienced personnel.

STUDENT SELECTION AND SUPPORT SERVICES

- Clear policy and mechanisms for selection process and criteria, and student appeals and transfers
- Clear policy, regulation and process regarding practices of articulation/ equivalence, credit transfers and credit exemptions
- Customer satisfaction mechanism
- Students to have access to suitable and adequate support services
- Student support services to be reviewed periodically
- An administrative unit responsible for planning and implementing support services for students

6.2.6 Academic Staff and Industry Coaches

Qualified and competent Industry Coaches for the industry component courses need to be identified and appointed by HLIs in accordance with the specified procedures.
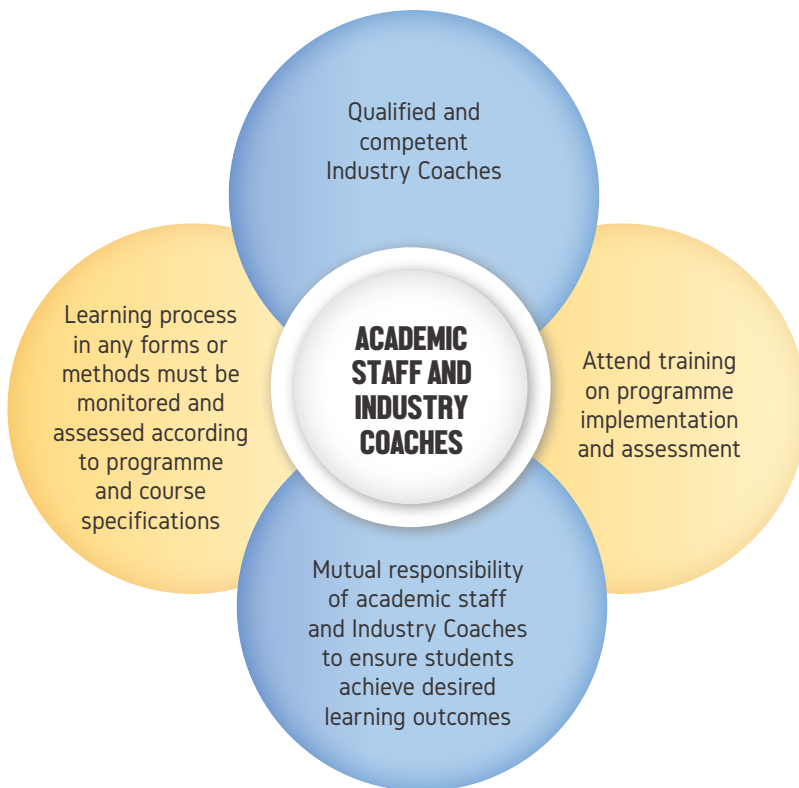
The appointed Industry Coaches are required to attend training on programme implementation and assessment held by HLIs.

Academic staff and Industry Coaches need to have mutual responsibility to ensure students achieve the desired learning outcomes.

The student learning process in any forms or methods must be monitored and assessed by HLI academic staff and Industry Coaches according to the programme and course specifications.

However, Industry Coaches are allowed to use suitable delivery methods and technologies geared towards PLO achievement.

Qualified and competent Industry Coaches

Learning process in any forms or methods must be monitored and assessed according to programme and course specifications

ACADEMIC STAFF AND INDUSTRY COACHES

Attend training on programme implementation and assessment

Mutual responsibility of academic staff and Industry Coaches to ensure students achieve desired learning outcomes

6.2.7 Educational Resource Facilities

HLIs have to ensure that their selected industry partners are able to provide adequate and suitable physical facilities such as space, tools and equipment for the programme T&L needs. HLIs and the industry need to comply with all the laws and regulations especially those related to occupational health and safety.

They also need to have a R&D policy, including adequate support facilities so that students can be involved in academic R&D activities effectively.

A policy on the use of educational expertise, including that from the industry, educational programme planning, and development of new teaching methods and evaluation needs to be formulated and complied with.

Adequate and suitable physical facilities	Compliance with laws and regulations especially those related to occupational health and safety	A R&D policy	A policy on the use of educational expertise needs to be formulated and complied with

EDUCATIONAL RESOURCE FACILITIES

6.2.8 Programme Management

It is recommended that HLIs provide documents that are updated periodically to the students regarding the aims, framework, PLOs and delivery and assessment methods either on campus or at the industry.

Every programme must have a qualified Coordinator and 2u2i Curriculum Committee consisting of academic staff and industry representatives (with the composition based on the ratio of the HLI and industry component courses), who are responsible for the planning, implementation, review and improvement of the quality of the programme.

The programme committee should be granted adequate authority and resources, and provided with procedures to plan, implement and monitor the programme.

HLIs also need to evaluate and review the implementation of the programme periodically to guarantee the quality of the programme.
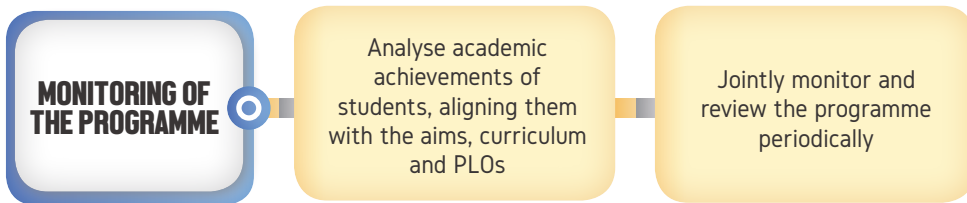
PROGRAMME MANAGEMENT	Provide documents that are updated periodically to students	Have a qualified Coordinator and 2u2i Curriculum Committee	Evaluate and review the programme implementation periodically
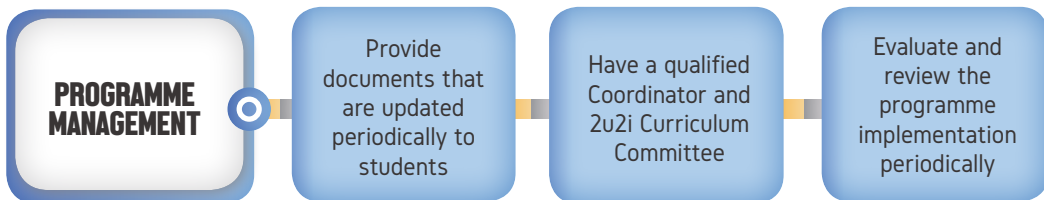
6.2.9 Monitoring of the Programme

HLIs need to analyse the academic achievements of students, aligning them with the aims, curriculum and PLOs.

HLIs and the industry must also jointly monitor and review the programme periodically by using proper resources and mechanisms, including benchmarking data, T&L methods and technology, relevant administration and educational services, in addition to feedback from stakeholders.

| MONITORING OF THE PROGRAMME | Analyse academic achievements of students, aligning them with the aims, curriculum and PLOs | Jointly monitor and review the programme periodically |

6.2.10 Programme Review and CQI

The HLI, through its 2u2i Curriculum Committee, should support and complement policy, procedures and mechanisms to review and update the structure, functions, strategies and core activities periodically for CQI.

Through the committee, the HLI needs to develop a system to periodically revise the programme. The committee should also implement the recommendations and record achievements for quality improvement of the programme.

| PROGRAMME REVIEW AND CQI | Review and update the structure, functions, strategies and core activities periodically | Develop a system to revise the programme periodically |
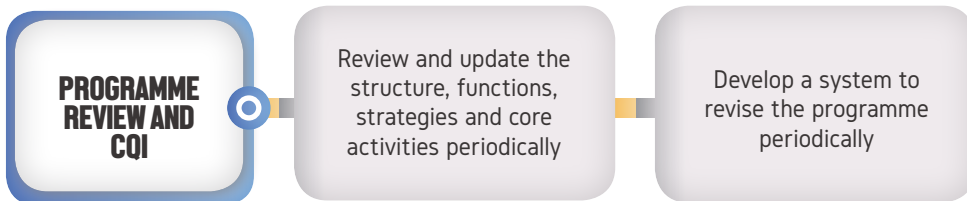
6.3 Approval and Accreditation of the Programme

HLIs which intend to offer and implement the 2u2i Study Mode programme either as a new programme or existing programme need to comply with the current policies and regulations of the Ministry of Education Malaysia (Higher Education).

HLIs need to identify the authorities involved in the accreditation of the 2u2i Study Mode programmes in order to comply with the requirements of professional or certification bodies.

Appendix 1: An example of a Letter of Collaboration.

LETTER OF COLLABORATION

BETWEEN

HIGHER LEARNING INSTITUTION

AND

THE INDUSTRY

To outline the intention of both parties to foster more effective collaborative efforts in the development of human capital in the industry _____, **both parties agree to the following:**

1. Both parties to foster cooperation in the development and implementation of the 2u2i Study Mode in relevant fields.

2. **THE INDUSTRY** to provide space and assistance in the implementation of the 2u2i Study Mode in relevant fields, in accordance with existing and future industry requirements, in line with Malaysia Education Blueprint (Higher Education).

3. **THE HIGHER LEARNING INSTITUTION** to provide students, and suitable academic staff, if required by **THE INDUSTRY** at a mutually-agreed period of time.

4. Both parties to set up a Joint Working Group chaired by Senior Officials of both parties to coordinate and monitor cooperative efforts and activities.

Signed by and on behalf of   Signed by and on behalf of

HIGHER LEARNING INSTITUTION   **THE INDUSTRY**

....

XXXXXXXXXXXXXXXXXXXX   **XXXXXXXXXXXXXXXXXXXX**

VICE CHANCELLOR   **MANAGING DIRECTOR**

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Glossary

The 2u2i Study Mode Programme	A structured academic programme involving academic and industry components.
Academic calendar	The calendar used by the HLIs to set the duration of study such as semester, trimester or any other system.
Calendar year	Gregorian Calendar (12 months).
Block release	A plan whereby students are released from a registered HLI for a fixed duration (block) to earn credits through WBL-experience in the workplace.
Course learning outcome (CLO)	Knowledge, skills and attitudes that students must master at the end of a course as a result of going through a particular process of learning.
Day release	The number of hours or days assigned in a course for students to go out from classroom to the industry to practise the knowledge learned in the class. This allows students to gain WBL-experience, and in the process, earn credits.
Formative assessment	Formative assessment is a form of low-level assessment of learning through data acquisition during the process of learning, and the assessment is an integral part of the learning process. When this assessment is combined with practice during classroom learning, it can provide useful information that can be used to change or adapt T&L as learning progresses. Formative assessment provides useful information to students and lecturers about students' understanding and performance, when changes are made on a timely basis. Changes made ensure that the intended learning outcomes can be achieved within a specific period of time.
Full accreditation	Recognition that a programme has met the standards of quality assurance and complied with MQF.
Higher Learning Institution (HLI)	A corporate body, organisation or group of persons conducting a higher education programme or training that leads to the award of a higher education qualification or that awards higher education qualifications, including public and private HLIs, examination or certification bodies or their representatives.

HLI academic staff	Individuals who are qualified to teach a course, and possess the required field of knowledge, skill and the like. For examples lecturers/tutors in HLIs.
The industry	A group of firms or organisations involved in an economic or social activity in which students can obtain real life work experience and practise the core principles of the programme of study at the HLI. The location of the industry can be inside or outside the country.
Industry Coach	The instructor from the industry appointed by HLIs with the industry's agreement, who possesses recognised minimum qualifications.
Learning outcome	A statement on what a student needs to know, understand, do and appreciate upon completion of a period of study.
Letter of Collaboration / Letter of Understanding/ Letter of Intent:	A Letter of Collaboration /Letter of Understanding/ Letter of Intent is a concise document and usually made as a preliminary step before a MoU or MoA is created. It enables the undertaking of a more active effort to enhance collaboration before the MoU or MoA is entered into. The Letter of Collaboration /Letter of Understanding/Letter of Intent also states the intent of both parties to strengthen and enhance more effective collaborative activities in the areas agreed upon by both parties that are of benefit to both parties. It cannot legally bind the parties involved and remains as a wish or intent.
Malaysian Qualifications Framework (MQF)	An instrument that classifies qualifications based on a set of criteria that is certified at the national level and benchmarked against international best practices (refer to COPPA).
Malaysian Qualifications Framework Level	An award level described using generic indicators or qualifying descriptors that characterise typical qualifications.

MoA	A Memorandum of Agreement (MoA) refers to the document in which the parties involved agree to establish a mutual legal relationship based on the consideration of one or more promises made by the other party. The parties concerned are bound by the responsibilities, obligations and liabilities mutually agreed upon. The MoA aims to implement the collaboration specified through the MoU (if any) and the parties involved agree to comply with all the provisions stated in the MoA and also agree to be bound by law.
MoU	A Memorandum of Understanding (MoU) refers to a statement of understanding and intent of the parties involved to collaborate with each other in certain areas without establishing a mutual legal relationship. The parties involved are not bound by any obligations, responsibilities or liabilities by law.
Programme goals	A comprehensive statement of the purpose, philosophy and rationale in offering a programme.
Programme learning outcome (PLO)	Knowledge, skills and attitudes that students must master upon graduation after having gone through a particular process of learning.
Programme objective	A statement about what a student should learn to achieve the programme goals.
Provisional accreditation	Recognition that a programme meets the minimum standards of quality assurance before it is awarded a full accreditation.
Student	A full-time student who enrols in and attends the 2u2i Study Mode programme.
Summative assessment	The goal of summative assessment or high-level examination is to measure the quality of performance, level of achievement, level of competency of the student/course/module/programme for each learning outcome after the completion of the course/module/programme. The quality of achievement is determined by benchmarking it to specific indicators for each learning outcome. The aim of summative assessment is to enable a determination to be made on a student's grade and the student's progression in the course/programme.

Quality assurance	Systematic and planned action (policies, strategies, attitudes, procedures and activities) intended to show as clearly as possible that quality is achieved, maintained and enhanced, in line with the specific standards of teaching, scholarship and research as well as student learning experience.
Work Integrated Education (WIE)	An education process that integrates work experience into the curriculum. The WIE programme is characterised by experience that is substantive and meaningful and related to the curriculum, learning objectives, assessments, learning outcomes and reflection.
Work Integrated Learning (WIL)	A form of experiential learning whereby learning takes place either in the workplace or at a location where learning is associated with the workplace. It is learning that results from immersion in a work environment.

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20 | Setempat

UMT perkenal program 2u2i

2u2i : Latihan pegawai kadet juruterbang hanya empat tahun

Lima UA laksana program 2U2i mulai September

- Program bantu universiti perkukuh hubungan

Program 2U2i perkasa kualiti graduan

2u2i diperkenal di universiti

UiTM perintis program 2u1i

Shah Alam Universiti Teknologi Mara UiTM meneruskan usaha bag meningkatkan keboleh pasaran peratusnya de ngan menjadi perintis ba pada program belajar ta tahun di universiti dan se tahun di industri Guli pada September ini

Menteri Pendidika nggi Datuk Seri Idris Ju berkata, pelaksanaan di universiti itu se dengan dasar un kinya dalam Pela ngunan Pendidika laysia 2015-2025 bag ngkukuhkan pengala industri dan kaedal di kampus, ... nya, dua fakul ... a Fakulti Ko ... Pengajian Me ... dan Fakulti Filem ... Animasi

Program 2U2I penuhi permintaan, tingkat kebolehpasaran graduan

Jalinan kerjasama bolehkan industri latih pelajar ikut keperluan semasa

JENERAL Tan Sri Affendi Buang (dua dari kanan) menukar dokumen perjanjian dengan Leftenan Jeneral Datuk Abdul Halim Jalil (dua dari kiri) pada majlis menandatangani MoA bagi pengajian bahru untuk Pegawai Kadet Juruterbang antara TUDM dan UPNM di Kolej Tentera Udara, Alor Setar, Kedah di sini, hari ini. — UTUSAN ONLINE/YANG KUNADO

ALOR SETAR 23 Jan. — Tentera Udara Diraja Malaysia (TUDM) memperkenalkan konsep pengajian baharu bagi melahirkan lebih ramai juruterbang tentera yang bertauliah ... ti Program 2u2i hasil kerjasama dengan Universiti Pertahanan Nasional Malaysia ...

... TUDM, Jeneral Tan Sri Affendi Buang berkata, program itu akan menyaksikan ... gawai juruterbang hanya mengambil masa empat tahun untuk ... pkan pengajian mereka di UPNM dan di Kolej Tentera Udara (KTU) ... g hampir enam tahun sebelum ini.

UiTM cipta rekod laksana program 2U1i

Program 2U2I bantu kurangkan kadar graduan menganggur

Dr Noorul Ainur Mbmpat, ...

SHAH ALAM ... rekod bahu Universiti ... gi Mara ... lahnya melaksa ... lalui 11 pro ...

... enteri Pendidikan Tinggi, Datuk Seri Idris Jusoh berkata, pelaksanaan program berkenaan membabitkan dua fakulti iaitu Fakulti Komunikasi dan Pengajian Media serta Fakulti Filem, Teater dan Animasi.

"Pelaksanaannya akan bermula pada September tahun ini.

"Pelaksanaan 2u1i di UiTM ini bertuju an mempertingkatkan pengalaman pem belajaran pelajar secara fleksibel berasas...

... pengalaman ... digabungkan dengan ... nal di kampus," katanya ... lepas majlis pelancaran pr ... Dewan Agung Tuanku Cansel ... UiTM, di sini, kelmarin.

Pada majlis itu, uj ... nandatangani Memorandum ... Antara UiTM dan pihak indu ... babitkan 19 syarikat turut diadakan ...

Dalam pada itu, beliau berkata ... laksanaan agenda 2U1i bukan saha ... membolehkan pelajar menimba ilmu pe ... ngetahuan bahkan secara tidak langsung ... mereka didedahkan dengan alam pekerjaan ... yang sebenar.

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Ministry of Education Malaysia

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