Universiti Utara Malaysia

CONTINUOUS QUALITY IMPROVEMENTS GUIDELINES FOR ACADEMIC PROGRAMMES

ACADEMIC AFFAIRS DEPARTMENT

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TABLE OF CONTENTS

PREFACE

The Continuous Quality Improvement, also known as the CQI is an ongoing effort to improve products, services, or processes. The process encourages team members going through self-checking by asking the questions, “How are we doing?” and “Can we do it better?”.

In the Malaysian Higher Education context, it is a part and parcel of the Malaysian Qualifications Framework process that cannot be left unchecked or must not be ignored.

This UUM CQI Guideline consists of four sections. Apart from the Introduction (1.0) section which focuses on the philosophy of CQI, the Guideline presents The CQI in Higher Learning Institutions (2.0) and the UUM CQI Cycle (3.0).

The Programme Sustainability Through CQI (4.0) are discussed in the following section, which include discussing on the roles of top management, academic managers, and the academics as a whole. Some samples from the AACSB programme are used in the explanation of the guideline.

It is hoped that the Guideline will assist instructors in the process of articulating the strengths of the programme, identifying specific actions to address gaps within an academic programme, improving teaching and learning practices, and providing an opportunity for critical reflections on the programme curriculum requirement at Universiti Utara Malaysia.

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1.0 INTRODUCTION

In general, the Continuous Quality Improvement or CQI is a quality management approach which is an ongoing effort to improve products, services or processes (O'Donnell & Gupta, 2020). Sollecito and Johnson (2012), on the other hand defined CQI as the need to continuously serve customers better and more economically, using the scientific method, team-work and focusing on the removal of all forms of waste.

CQI is important for the organisations because it was found to have a significant impact on various indicators of organisational performance. Some of the benefits of CQI include operational efficiency, reduced costs, increased sales, reduced defects, increased customer as well as staff safety and satisfaction (O'Donnell & Gupta, 2020).

1.1 The Philosophy of CQI

CQI is a management philosophy that organisations use to reduce waste, increase efficiency and increase internal (employees) and external (customers) satisfaction. It is an ongoing process that evaluates how an organisation works and ways to improve its processes. CQI focuses on the improvement of the process, system or product repeatedly until it meets customers' satisfaction. There are many standards or frameworks that can be implemented to achieve the optimum level of quality.

The common approach to CQI involves several stages based on the commonly used and accepted model of Plan-Do-Check-Act (PDCA Cycle). This model is also known as the Deming Cycle (1950) as illustrated in Figure 1.1.

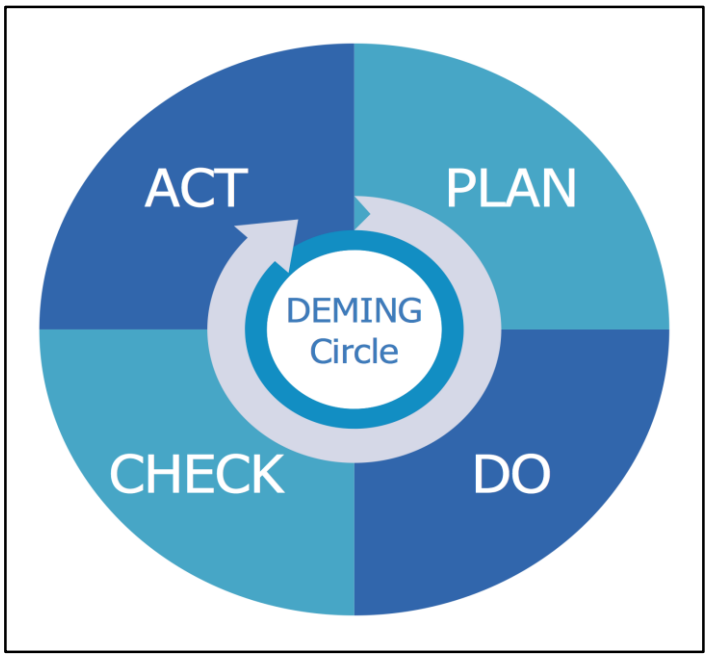

Figure 1.1

Deming Cycle

The CQI cycle also comprises four steps, adapted from the Deming cycle. Thus, the terminologies used are slightly different. These steps include:

1. **Plan**: Develop or review strategies and/or improvement plans in line with the desired improvements.
2. **Implement**: Organise strategic plans and/or improvement plans;
3. **Monitor and Review**: Measure and analyse the achievement of set targets, reflect on the achievement gap and the appropriateness of the strategic plans and/or improvement plans;
4. **Improve**: Implement improvements or develop performance-based improvement plans related to the targets and suitability of the strategic plans and/or enhancement plans.

As indicated in Figure 1.2, the same CQI cycle was also adopted by MQA when designing a guideline for the higher educational institutions' CQI process in 2014.

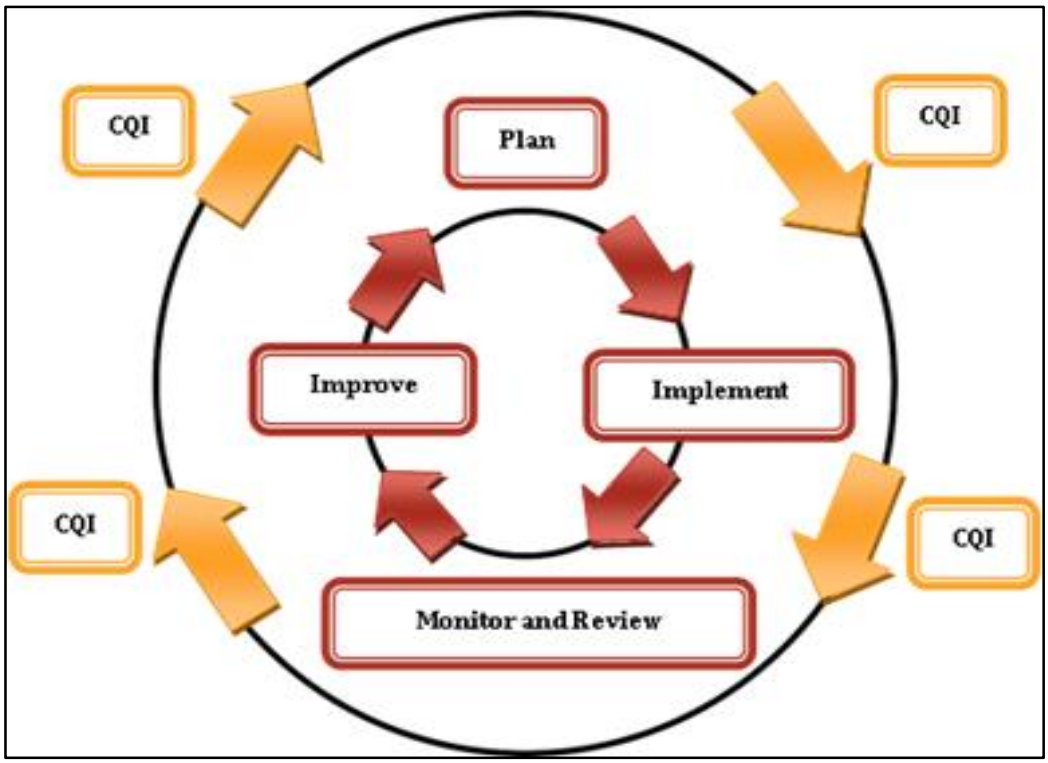

Figure 1.2

Continuous Quality Improvement Cycle

(Source: MQA, 2014)

2.0 THE CQI IN HIGHER LEARNING INSTITUTIONS

In most higher learning institutions, there is a centre that is responsible for managing the quality of education provided. Similarly, in UUM, this role is led by the Institute of Quality Management (IPQ). IPQ focuses on the quality assurance to enable successful implementation of the strategic plan in achieving its vision and mission to be an eminent university. In relation to academic programmes, IPQ needs to ensure that these programmes align with the university's goals. In addition, IPQ assists all departments in complying with the quality standards set by the accreditation bodies both domestic (i.e., MQA, SIRIM) and abroad (e.g., AACSB, AMBA, AUN-QA).

The internal quality assurance system (IQA) at IPQ is to implement a systematic and effective quality assurance process and each process is supported by:

1. the information systems that provide a database of related process operations and feedback systems that collect customers' and stakeholders' feedback;
2. the evaluation and benchmarking process to measure the results obtained and ensure that the process meets the set objectives and targets; and
3. the continuous improvement detailing further actions that need to be taken in strengthening the process, removing and preventing any weaknesses and non-compliance.

Therefore, a programme quality policy must be developed to monitor and review all accredited programmes periodically. The overall goal of programme monitoring and reviewing is to ensure the validity, relevancy and marketability of the programme. The internal quality system established by the Higher Education Provider (HEP) can be used as a mechanism to implement the CQI process effectively.

2.1 The CQI Process

At the institutional level, CQI is a systematic and structured mechanism for HEPs to achieve their visions, missions, educational goals. It aims to continuously

improve the IQA system. This process usually begins with the strategic plan of the HEP and involves the entire HEP. However, this process can be initiated through a more specific improvement plan involving specific process.

CQI at the institutional level generally covers four stages of the CQI cycle: (i) plan (ii) implement (iii) monitor and check and (iv) improve. However, these stages can occur sequentially. For example, unexpected external and internal events and environments, such as changes in the government policy and changes in the direction of HEP imply that the 'planning' stage needs to be revisited. In such a situation, a strategic plan and/or improvement plan will be adapted so that the HEP can deal with the changing circumstances.

The purpose and rationale (why), key activities (what), sources of information (data/ output) and the related quality assurance areas (outlined in COPIA) in addition to the relationship with the four stages of the CQI cycle at the institutional level are summarised in Table 2.1.

Table 2.1

CQI Practice at the Institutional Level

Focus/ CQI Stages	**Plan**	**Implement**	**Monitor and Review**	**Improve**
Why? (Purpose and Rationale)	To set the direction, priority, method (strategic and / or improvement plan).	To arrange and implement the method (strategic and/or improvement plan) to support the direction and priority.	To achieve the target effectively and ensure the relevance and appropriateness of the strategic and/or improvement plan.	To close the gap (or to focus on the opportunities for improvement) and increase strength.

Focus/ CQI Stages	Plan	Implement	Monitor and Review	Improve
What? (Main Activities)	Develop or review the strategic and/or improvement plan: i. Goals. ii. Strategic objectives and/or improvement objectives; iii. Key performance indicators and targets; Strategic and/or improvement initiatives / activities and allocation requirements; Related Internal Quality assurance system/support.	Implement the strategic and/or improvement plan. It may involve the development and implementation of the action plan ***(see Figure 2)*** Its implementation must be supported by the appropriate governance structure/ organisation including physical, financial and human resources.	Measure and analyse the achievement of set targets. Reflect on the achievement gap and suitability of strategic and/or improvement plans as well as the IQA system taking into account the external references and benchmarks. Checking usually contains the internal and external reviews that may involve benchmarking activities.	i. Implement improvements to bridge gaps (for minor issues). ii. Develop the improvement plans (for more complex issues) using the performance data compared to the strategic plan targets and appropriateness. This includes updating the strategic and/or improvement plans and also quality assurance system.
Sources of information (Data)	Analyse situation/scan the environment such as: i. Government policy and the direction of higher education; ii. Changes in the programme	Strategic and/or improvement plan (new or reviewed).	Implementation data or performance data (quality indicators) from the implementation of strategic or improvement plans.	Strengths and opportunities for improvement.

Focus/ CQI Stages	Plan	Implement	Monitor and Review	Improve
	practices and standard code; iii. Global and local developments in higher education; iv. Global and local market trends (e.g., job market trends and industry needs/ expectations); v. Feedback from the third party evaluation such as institutional audit, delivery service audit or quality management system audit; vi. Benchmarking report; vii. Feedback from the internal and external stakeholders including students; viii. Resource availability; and ix. Improvement plan based on the implementation achievement of		Feedback from the internal and external stakeholders. Findings of the internal and external audit reports. External requirements. Benchmarking information.	

Focus/ CQI Stages	Plan	Implement	Monitor and Review	Improve
	strategies or existing plans.			
Output	Strategic and/or improvement plan, (new or reviewed) supported by the IQA system	Implementation or performance data.	Strengths and opportunities for improvement.	i. Improvement; ii. An action plan that aligns with the improvement.

(Source : MQA, 2014)

At the institutional level, the purpose of the planning stage is to determine the direction, priorities and related methods to achieve the goals (Table 2.1). This stage focuses on the formulation of improvement plans, which contain goals, improvement objectives, improvement activities and allocation requirements. Improvement plans need to be supported by the HEP's IQA system.

For example, one of the goals of HEP is to produce graduates with a global perspective. To support the achievement of these educational goals, the governance, teaching and learning activities, assessment, support services, academic staff and the educational resources in addition to monitoring and reviewing practices need to be aligned.

The information for the planning stage is usually obtained from the situational analysis or environmental scans. Such information can stem from the following dimensions:

i. Government policy and the direction of higher education;
ii. Changes in the programme practices and standard code;
iii. Global and local developments in higher education;
iv. Global and local market trends (e.g., job market trends and industry needs/expectations);
v. Feedback from third party evaluation such as institutional audit, delivery service audit or quality management system audit;
vi. Benchmarking report;

vii. Feedback from the internal and external stakeholders including students;

viii. Resource availability; and

ix. Improvement plan based on the implementation achievement of strategies or existing plans.

The focus of the implementation stage aims to organise, publicise and implement strategic and/or improvement plans to support the direction and priorities. As stated earlier, the improvement plan should be submitted to the relevant committees, departments and individuals for the effectiveness of implementation at the implementation stage (refer to Figure 2.1). In addition, a more detailed implementation/action plan can be developed and implemented at this stage.

To ensure effective implementation, it needs an appropriate governance structure or committee structure to support its implementation to ensure a clear platform for decision making. The roles and responsibilities of committees, departments and individuals must be clearly communicated and understood. In addition, to support implementation there must be adequate physical, financial and human resources.

(Source : MQA, 2014)

Figure 2.1:
The Implementation and Review of the Institutional Strategic Planning and/or Improvement Plan

The purpose of the monitoring and review stage is to understand whether the HEP has achieved the target of the improvement plan, as well as to ensure the relevance and appropriateness of the plan. Hence, at this stage, the HEP measures and analyses the achievement of the set targets (refer to Figure 3). HEP also reflects on the gap in achievement. In addition, HEP reflects on the relevance and appropriateness of strategic plans or improvement plans, as well as the IQA system by taking into account the external references or benchmarks. The purpose of the improvement plan is to bridge the gap by paying attention to the improvement opportunities and to enhance the strength of the programme to ensure the sustainability of HEP.

2.2 Main Elements of CQI

In order to make CQI work effectively, Hogg and Hogg (1995) asserted that the following five (5) elements are crucial.

2.2.1 Manager / Top Management

Managers must define the organisational mission and vision. They must recognise the need to change to improve substantially, which often means adopting new paradigms to achieve major improvements. Managers should become coaches and facilitators, build trust, drive out fear, benchmark, take risks and eliminate waste. Rather than sub-optimise, leaders must coordinate the optimisation of the total system. The Vice-Chancellor, Assistant Vice-Chancellor, Deans, Deputy Deans and Heads of Department should serve on the multilevel teams with the faculty and staff members to make more effective decisions for the colleges and universities.

2.2.2 Customers / Students

Managers should listen to the internal and external customers, recognise the high cost of losing them and try to enlighten them by exceeding their expectations. It is often valuable to use customers as members of the quality improvement teams. However, in education, we gather very few useful data about our curricula from students, alumni and employers. Worthwhile alumni

and student surveys are needed to measure the customer needs and expectations.

2.2.3 Employees

Employees must see how they contribute to the organisation's final product or service. This ultimately contributes to having healthier staff morale and a healthier work environment in general. Employees must have proper training and be given necessary tools and resources. They can then be empowered to make decisions and amend errors within the limits established by the system. Training in team-building and team decision-making is essential. The maintenance staff, support staff and student services staff should all be able to make decisions that directly affect them without engaging in the bureaucratic ‘red tape’ to improve colleges and universities. It should be noted that appropriate training is expensive. If possible, an internal expert in CQI should be identified so that training can be done at the right time, on the right topics and in the right volume. Often, much training is a waste if it is not used, or if it is just a ‘quick fix’.

2.2.4 Suppliers

Suppliers should become trusted members of the decision-making teams or even partners in business which makes the programmes such as ‘just-in-time’ delivery of goods and services possible. Secondary schools are definite suppliers of college students; thus they should be included in partnerships. Open lines of communication should be established at the very least between schools in the immediate geographic area and local colleges and universities.

2.2.5 Statistics / Data

The importance of basing decisions on data and using the scientific method cannot be overemphasised. Often, at the beginning of the CQI implementation plan of an organisation, simple measures or metrics like number of defects, cycle time, costs, absenteeism, market share and simple statistical summaries

can bring great improvements. In higher education, too often, the numbers are there (as in the survey results) but nothing is ever done with these metrics. Data should lead to action. For example, if the attendance in a large lecture class is below 50 percent, serious consideration should be given to changing the format. This should be done if the course is important to the curriculum. Otherwise, the course should be dropped.

The CQI of the academic programmes enriches the quality of education through the following activities:

1. provide opportunity for a continuous review;
2. identify areas for improvement; and
3. perform appropriate and timely actions.

Therefore, all academic departments must ensure that the academic standards are met by aligning the learning outcomes of the programme with the relevant qualification description as stated by MQF. The department is responsible for ensuring that the programme complies with the academic standards, including the HEP's educational goals and graduate characteristics as described in the MQA Programme Standards as well as the conditions set by the professional body.

3.0 THE UUM CQI CYCLE

CQI is a process which examines each academic programme as a whole, including the component modules, curriculum, learning and teaching, assessment methods, learning environment, physical and educational resources (including digital educational resources), staff input, student input as well as input from the external evaluators and industry advisory boards. In general, periodic CQI process will enable the HEP to:

1. identify key issues related to academic standards, quality of student learning experience, programme design and content;
2. analyse issues raised in the student performance data (programme performance indicators such as admission, registration, admission qualifications and direction, retention, progress, graduation, graduation qualifications);
3. analyse issues raised in the student internal feedback and external surveys such as tracking studies;
4. review other issues such as the graduate marketability or soft skills as well as the programme sustainability.

The process of CQI is indeed important for all academic programmes to ensure quality education is being delivered to the learners. For academic programmes in UUM, the CQI cycle occurs at three levels, as illustrated in Figure 3.1. Specifically, the three level of CQI processes are:

a) **Course CQI (C-CQI):** is implemented after students complete a course, which requires a measure of CLO achievement;
b) **Programme CQI (P-CQI):** is also known as the curriculum review process which is implemented after the students complete the entire course in a programme, which requires a measure of the achievement of the PLOs;
c) '**After-graduation' CQI (AG-CQI):** is implemented within three to five years after the students graduate, which requires the PEO achievement to be measured.

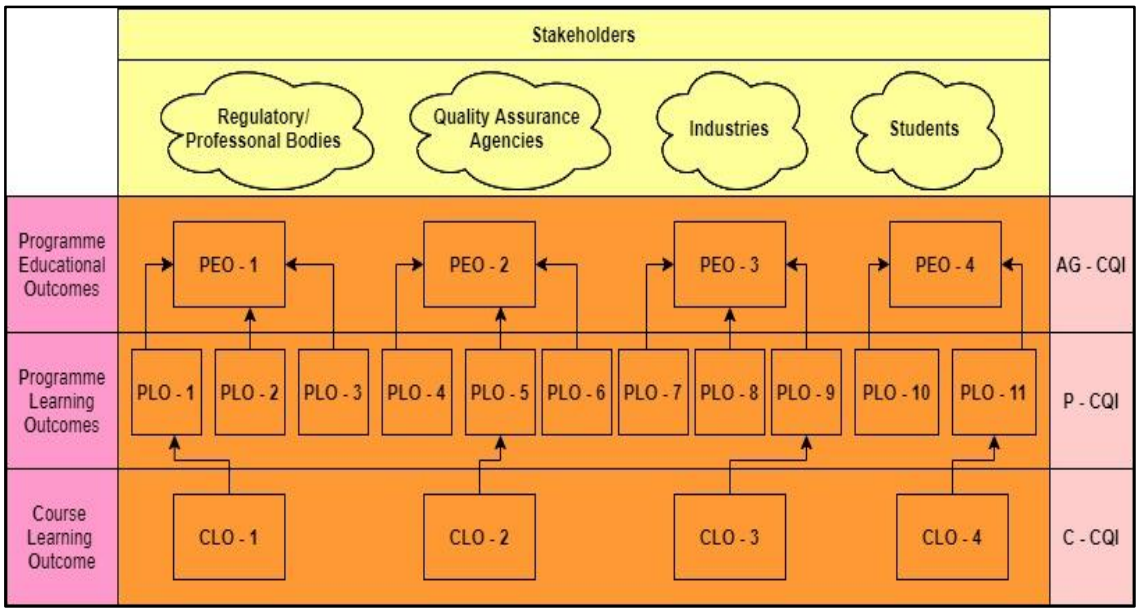

Figure 3.1

Three Levels of CQI Process

As Figure 3.2 illustrates, the learning outcomes need to be determined, assessed and analysed for further improvements at each level of the UUM CQI process. Figure 3.2 also illustrates the important role played by the university's vision and mission statements, alumni, stakeholders and various advisory committees in providing inputs for the CQI processes.

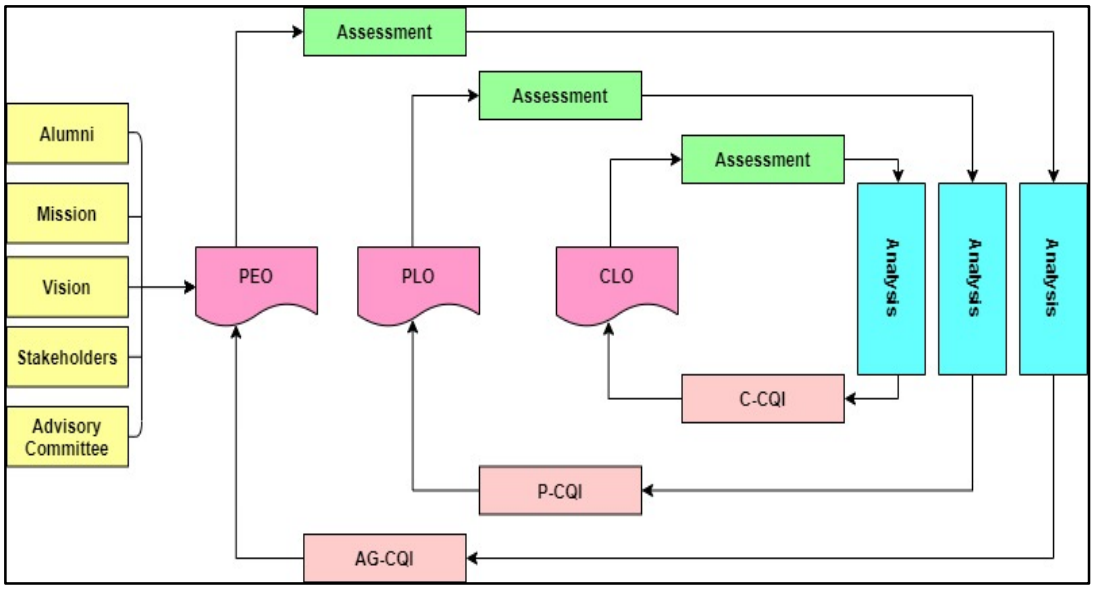

Figure 3.2

Assessment Model and CQI Process for Programme/Course Improvement

Regardless of the CQI level, the basic process of UUM CQI consists of CQI plan, CQI implementation, review and monitoring and finally implementation of improvement. As shown in Figure 3.3, this should be an ongoing process that is known as the UUM CQI cycle.

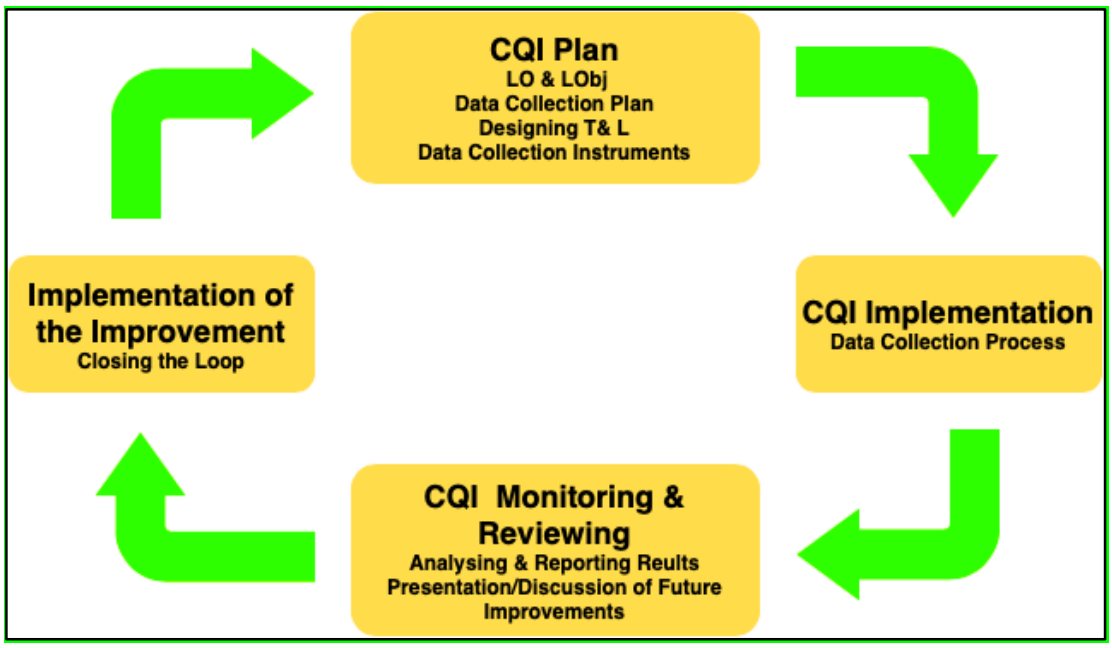

Figure 3.3:
UUM CQI Cycle

To ensure the successful implementation of the UUM CQI process, an effective CQI system must be developed to tie together the overall processes. In essence, a good **CQI system** outlines the key processes, as well as the recurring and onetime outputs of the system. The CQI system should include several important elements. These elements are:

a. How to implement the Outcome-Based Education (OBE);
b. Methods of measurement, results and evaluation;
c. Approaches taken in the implementation of CQI after evaluation results are analysed;
d. Achievement analysis versus objectives or targets;
e. Evaluate the results achieved (increasing or decreasing).
f. Recording system

Hence, the following discussion provides the details on the CQI system the departments in UUM can adopt that incorporates all these elements.

3.1 The CQI Plan

The first phase of the UUM-CQI cycle is the CQI plan. Planning is important to determine the success of the CQI process. There are several important elements in CQI planning including mapping of the learning outcomes, establishing learning objectives, aligning learning activities and assessment with learning outcomes/objectives, planning for data collection and designing data collection instruments.

3.1.1 Learning Outcomes and Learning Objectives

The CQI of Academic programmes involves three levels:

1. Programme Educational Objective(s) (PEO).
2. Programme Learning Outcomes (PLO)
3. Course Learning Outcomes (CLO)

Table 3.1 briefly describes the differences between the three levels of UUM CQI process. Basically, the differences are in the aspect of the objective of the process, as well as the time and method of data collection.

Table 3.1:
Different Levels of CQI and Samples of LOs

Level	What | When | How	Examples of LO
After-graduation CQI	**Objective:** Measures the achievement of the PEO. **When:** Few years after graduation (3-5 Years).	PEO 1: To produce graduates with strong foundation in operational research, decision sciences and ICT. PEO 2: To produce graduates with problem solving skills to be applied in various fields in the organisation and society.

Level	What | When | How	Examples of LO
	How: • Through Employer Survey and the • Alumni Survey.	
Programme CQI	**Objective:** Measures the achievement of PLO. **When**: • Throughout the academic cycle. • Upon graduation. **How:** • By referring to the achievement of course performance target, • My3S, • Exit Survey, and • Programme Survey.	PLO1: To apply basic and advanced knowledge of operational research/decision science and operation management, as well as information and communication technology (ICT). PLO2: To design, model and solve real world, hypothetical and complex problems thus be able to analyse and interpret data using appropriate computer tools.
Course CQI	**Objective:** Measures the achievement of CLO. **When:** • Upon course completion. **How:** • Using summative and formative assessments to measure the achievement of CLO.	CLO 1: To describe the concepts of data mining and data warehouse used in the Knowledge Discovery Process. CLO 2: To demonstrate suitable data mining techniques to real world data

The assessment of PEO's achievement is conducted on the graduates. Meanwhile, the assessment of PLOs and CLOs are conducted continuously to know the performance of the students before they graduate. The PLO is for the

department to state their expectations which specify the intellectual and behavioural competencies that the programme is intended to instil. The statements of PLOs describe what students are expected to know and able to perform or attain by the time they graduate (Cognitive, Psychomotor and Affective Domains). The departments have to clarify their intention, that is, how they want their students to be competent and effective as a result of completing the programme. CLOs are expectation statements specifying the cognitive, psychomotor and affective skills that students are able to achieve at the end of the course.

Learning outcomes (PLO and CLO) have to be specific and observable and can measure what the students are able to do upon the completion of their learning process successfully (i.e., having experienced the process of learning).

The learning objective is defined by the scholars as follows: (Learning) objectives identify specific, observable behaviours and actions related to a goal that faculty will use to describe, monitor, and assess student achievement. Thus, the objectives are used as the indicators of outcomes, that is, they “are clear statements about outcomes that faculty expect from students" (Martell & Calderon, 2005, p.3).

The difference between the learning outcome and learning objective is summarised in Table 3.2.

Table 3.2:
The Difference between Learning Outcome (LO) and
Learning Objective (LObj) *AACSB

Learning Outcome (LO)	**Learning Objective (LObj) *AACSB**
PLO: - Map to mission - Describe what students will be or will have - Specify program outputs	LObj: - Map to outcome - Describe what students will do or will make - Specify behaviours or products

Typically, a single outcome can lead to one or several objectives as shown in Table 3.3.

Table 3.3:
Samples of Learning Outcomes and Objectives

Learning outcome (PLO & CLO):	Students will integrate knowledge of accounting information systems and technology in organisations.
Learning objectives: (LObj) *AACSB	Students will be able to demonstrate the knowledge of networking. Students will be able to demonstrate the knowledge of system analysis and design used in accounting. Students will be able to demonstrate the knowledge of information security and risk management related to accounting information.

3.1.1.1 Domains/Clusters of Learning Outcomes

The basis of UUM's Learning Outcomes were the learning domains established and operationalised in the MQF first edition, which were later revised in the MQF second edition. Basically, the MQF edition 1 listed a set of eight domains of generic learning outcomes and sixteen (16) specific learning outcomes. In the MQF second edition, these have been clustered, re-profiled and retained. The listed outcomes resonate and mostly align with the aspirations of the National Education Philosophy (1961), the Malaysia Education Blueprint 2013-2025 as well as the Malaysia Education Blueprint 2015-2025 (Higher Education). The MQF second edition is linked to, and a continuum of, the educational outcomes from basic education to higher education as set in the national blueprints.

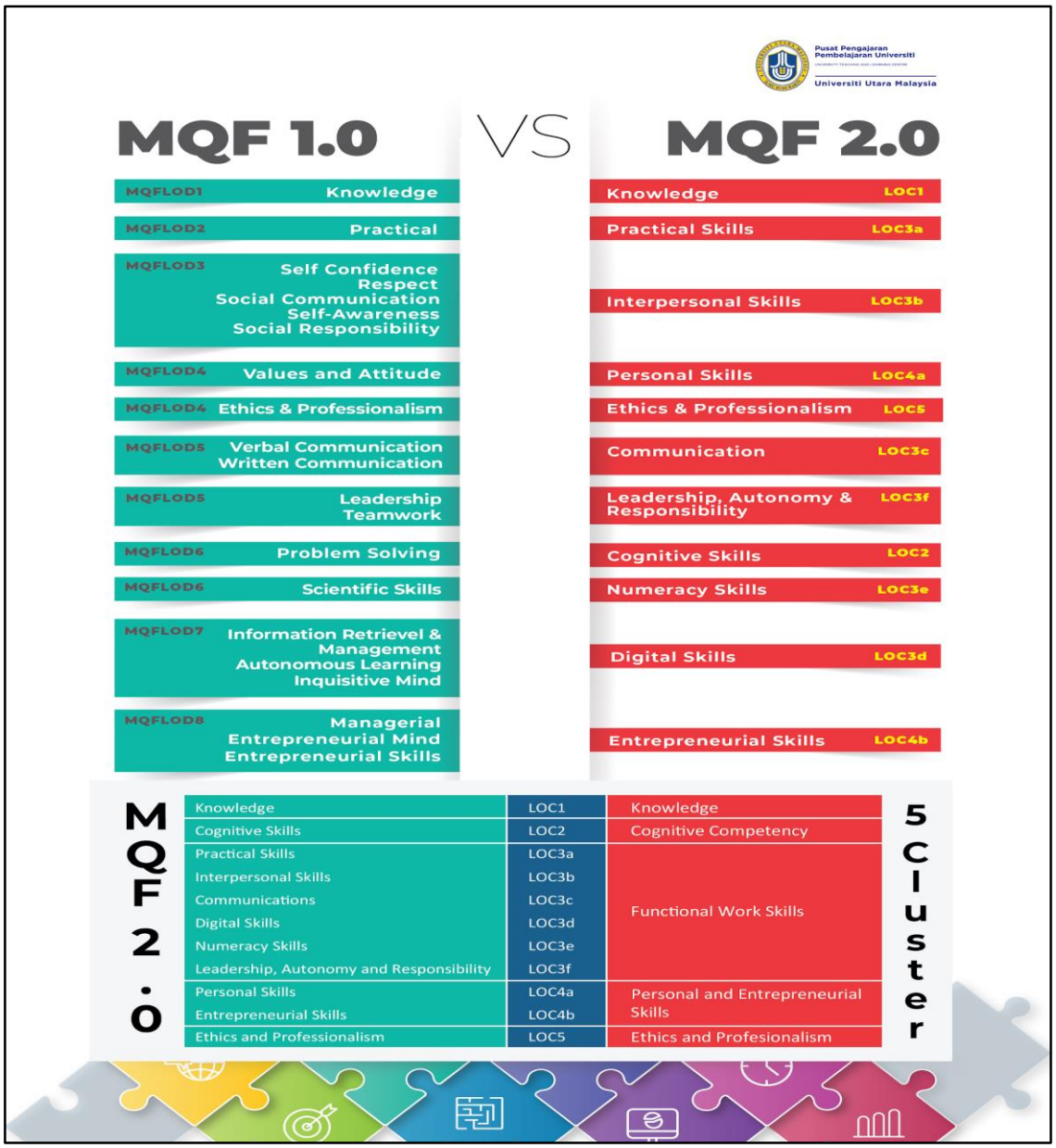

Figure 3.1:

Mapping MQF 1.0 to MQF 2.0 (UTLC,UUM 2019)

These learning outcomes clarify the demands and complexities of learning by each level. It is within the context of study and/or work/practice situations, where for example, knowledge and understanding is required concurrently as these traits are dominant and important in pursuing higher education and advanced skills training.

The five clusters of learning outcomes are:

i. Knowledge and understanding

ii. Cognitive skills

iii. Functional work skills:

a. Practical skills

b. Interpersonal skills

c. Communication skills

d. Digital skills

e. Numeracy skills

f. Leadership, autonomy and responsibility

iv. Personal and entrepreneurial skills

v. Ethics and professionalism.

Table 3.4 shows a sample of learning outcomes and learning objectives at the programme level based on the new MQF 2.0.

Table 3.4

A Sample of Learning Outcome Cluster (LOC), PLO and Learning Objective (LObj) *AACSB

Learning Outcome Cluster	**Description**	
Learning Outcome Cluster 1 (LOC 1) (Knowledge and Understanding)	PLO 1	Our students will demonstrate that they have salient knowledge and understanding in Islamic finance and banking.
	LObj1 *AACSB	Our students will be able to explain the concepts and theories from all functional areas related to Islamic finance and banking.
Learning Outcome Cluster 2 (LOC 2) (Cognitive Skills)	PLO2	Our students will demonstrate analytical and critical thinking skills in solving Islamic finance and banking problems.
	LObj2 *AACSB	Our students will be able to use appropriate techniques in solving Islamic finance and banking problems.
Learning Outcome	PLO 3	Our students will demonstrate practical skills in

Learning Outcome Cluster	Description	
Cluster 3a (LOC 3a) (Practical Skills)		Islamic finance and banking practices.
	LObj3 *AACSB	Our students will demonstrate practical skills in Islamic finance and banking practices.
Learning Outcome Cluster 3b (LOC 3b) (Interpersonal Skills)	PLO4	Our students will demonstrate good social skills in being a responsible person.
	LObj4 *AACSB	Our students will be able to responsibly interact with their stakeholders.
Learning Outcome Cluster 3d (LOC 3d) (Digital Skills)	PLO6	Our students will continuously update and integrate various knowledge for career development.
	LObj6 *AACSB	Our students will be able to search and integrate knowledge related to Islamic finance and banking. Our students will be able to use various knowledge for self-development
Learning Outcome Cluster 4b (LOC 4b) (Entrepreneurial Skills)	PLO10	Our students will portray good managerial and entrepreneurial characteristics.
	LObj10 *AACSB	Our students will be able to manage their tasks efficiently. Our students will be able to demonstrate entrepreneurial values.

3.1.2 Data Collection Plan

The data collection plan begins when the department designs and maps the learning outcomes at the programme levels and course levels, followed by planning teaching and learning (T&L) activities and assessment in accordance with the planned performance (achievement target).

The planning to assess the achievement of the PLO and CLO needs to be done in the relevant academic cycle. The differences between assessment of PLOs and CLOs are shown in Table 3.5.

Table 3.5

The C-CQI versus P-CQI

	Programme assessment (P-CQI)	**Course assessment (C-CQI)**
Scope of assessment	Selected courses for each PLO.	All courses for all CLOs.
Sample size	Selected sample of students in the programme.	All students in the class.
Faculty input	Selected group of programme members/faculty (Department)	Individual lecturer(s) of the course.
Improvement	For the students' performance in the programme by the department.	For students' performance in the class by the individual lecturer.
Assessment Cycle	Every academic cycle.	Every semester

3.1.2.1 Mapping of PLO vs CLO

The curriculum mapping shows how well and to what extent the department has matched the content that the students are taught in the courses with the academic performance expectations described in PLOs. The mapping at the programme-level allows the department to identify which courses address each of the PLOs. It shows how the courses in the programme support the

PLOs which are expected to be achieved during the three or four years of the programme.

The basic map is built on a two-dimensional matrix, with the outcomes arrayed across the top (the x-axis) and the courses are listed down the left side (the y-axis) as shown below. The grid is then filled in by marking where the learning outcomes for the programme are embedded within the courses. Some PLOs might be embedded in most of the courses (as shown in Table 3.6 for learning outcome 1). There can also be a course that addresses most of the PLOs (For example, Course 5 in Table 3.6). The department may also assess PLO 1 in Course 1 and in Course 5 to get a sense of development of the students' progress.

Table 3.6

Mapping PLOs and CLOs

	PLO 1	**PLO 2**	**PLO 3**	**PLO 4**	**PLO 5**
Course 1	x		x		
Course 2	x	x			
Course 3			x		
Course 4	x		x	x	
Course 5	x	x		x	x

Alternatively, the department may assess all outcomes near the end of the programme to determine the students' performance upon graduation as shown in Figure 3.2.

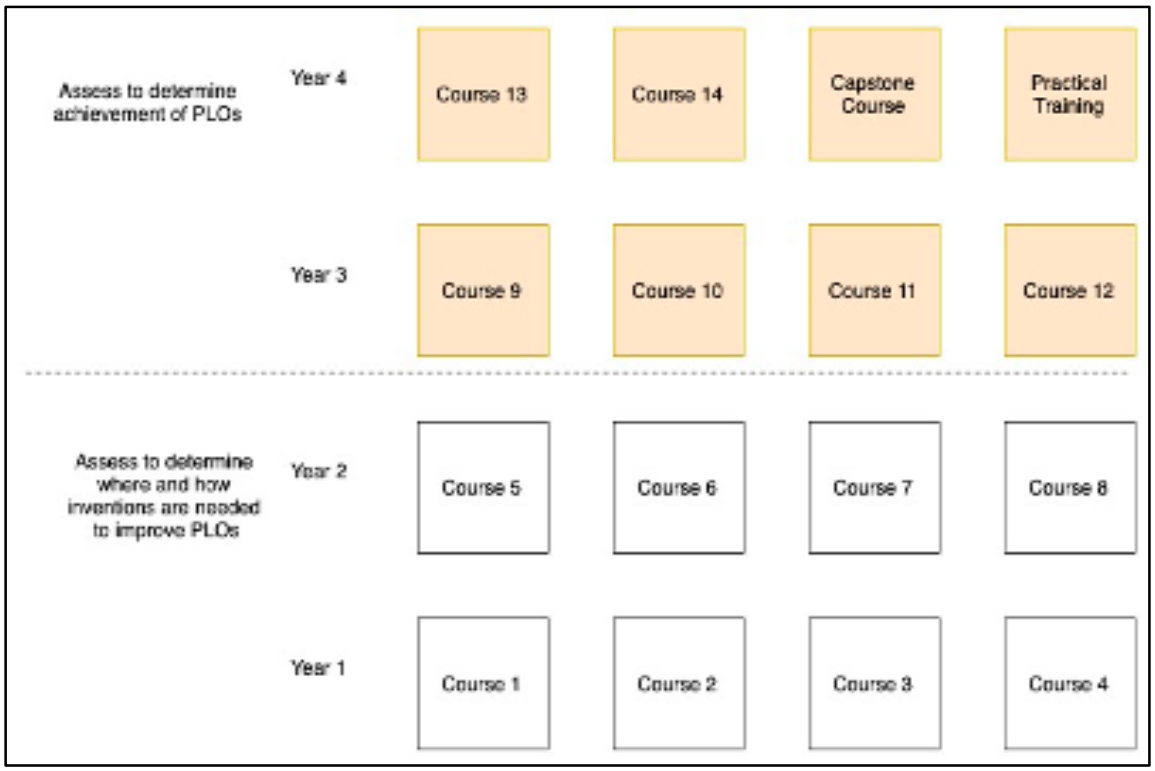

Figure 3.2: Using the performance of students near the end of the programme for assessment of PLO.

The mapping may also go a step further to indicate the degree or level to which the PLOs are expected to be emphasised in each of the courses. However, this is just an option to the department. If this section is chosen, the first step is to identify any course (s) to embed the PLO as explained earlier in the basic map. Next, the department needs to decide the level of focus set for the outcomes. The level of focus is different based on the development of students for assurance of learning. The level of learning focus or assurance of learning level can be described as “introduced” (I), “developed” (D), and “mastered” (M). For example, to monitor students’ performance in communication skills as needed in the learning outcome, the department can design the development plan as follows:

Year 1 (Introduce): Students will be able to communicate effectively in a format appropriate to the discipline(s) in a clear and concise manner.

Year 2 (Develop): Students will be able to communicate effectively in a manner appropriate to the discipline(s) in a clear and concise manner in a variety of format.
Year 3 (Master): Students will be able to engage effectively in a debate in a professional manner and produce detailed and coherent project reports.

Table 3.7 shows examples of how learning outcomes are embedded in the curriculum of the programme and the level to which each course addresses the learning outcomes. The level "L1", "L2", or "L3" shown in the table is about the level of focus for assurance for the learning outcome. The descriptors used depend on the appropriateness. In most cases, level 1 is for the introductory courses, level 2 for intermediate courses and level 3 for the advanced courses.

Table 3.7

Mapping PLO vs CLO (with degree of learning focus)

Course	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5
Course 1	L1			L1	
Course 2	L1	L1	L1		
Course 3			L1		L1
Course 4	L2			L2	
Course 5		L2	L2		
Course 6	L2				L2
Course 7	L3			L3	L3
Course 8 (Elective)			L3		
Course 9 (capstone)	L3	L3	L3	L3	L3

Table 3.8 provides an example of descriptors (Beginning, Intermediate, Advanced; Introducing, Practicing, Mastering) that may be used to describe the degree of focus in monitoring the assurance of learning or performance outcomes.

Table 3.8

An Example of Descriptor for the Degree of Focus

Level of Focus	**L1**	**L2**	**L3**
Development of learning focus	Beginning	Intermediate	Advanced
	Introduce	Reinforce	Master
	Emerging	Developing	Proficient
	Introduce	Emphasis	Assess

3.1.2.2 Quality Achievement Target (QAT)

The achievement target or performance indicator is the expectation of students' performance for each learning outcome. It may be stated as follows:

1. the target is that more than 75 percent of the students in the class obtain the scores of more than 50 percent of the total score.
2. at least 90 percent of the students will perform at or above the “satisfactory level”.

It can also be defined and set as follows:

- Percentage of improvement (e.g., students improved their scores by an average of 10% or higher).
- Score (e.g., mean score of students in class is 60% or higher).
- Thresholds (e.g., mean score 5% or higher than other students within the peer group).
- Trends over time (e.g., improve 5% per year for the next 2 semesters).

Later, the gap between actual and expected student performance indicates the weakness in learning accomplishment and provides an opportunity for teaching and learning improvement. Thus, the teaching will be effective and the students' learning will be meaningful when the learning process sets a target or learning expectation.

3.1.2.3 Data Collection Period

The assessment of CLO for the C-CQI process is expected to be done at the end of the semester. On the other hand, the planning for PLO assessment for the P-CQI process of an academic cycle can be done in three to four years based on the agreement of the programme committee.

Table 3.9 illustrates the selection of courses by a particular department in collecting data for the P-CQI process. The department can decide the data collection time for the PLOs in a cycle which comprises eight (8) semesters. As shown in Table 3.9, the data collection for each PLO assessment can be done in three rounds and the data can be collected in different semesters from several different courses. Based on the result of the students' performance in the first round of data collection, the department can make 'suggestions for improvement' to be implemented in the next semester. The result for the second round of data collection should show the outcomes of the implementation of the 'suggestions for improvements'. Regardless of whether the target is achieved, one P-CQI round is considered done (*closing the loop*). The same P-CQI process continues in the third and subsequent rounds. Table 3.9 shows an example of the data collection plan for P-CQI for one academic cycle of a programme. It includes the three (3) rounds of assessment for each PLO.

Table 3.9

An Example of Data Collection of P-CQI Cycle

	Semester							
PLOs	1	2	3	4	5	6	7	8
PLO 1		Course B			Course I		Course M	
PLO 2			Course F			Course J		Course F
PLO 3	Course A			Course H			Course N	
PLO 4		Course C			Course K			Course C
PLO 5	Course D		Course G					Course D
PLO6	Course E				Course L			

	1st round		2nd round		3rd round

3.1.3 Designing Learning Activities and Assessments

It is essential to design learning activities or assignments that are appropriate to assess each outcome. It is often labelled as constructive alignment (Bigg, 2003). The learning outcomes can be divided into several learning objectives to describe what we expect students to be able to do by the end of the course through learning activities or assignments. Doing the right assignments can help students to demonstrate their knowledge, skills and abilities, as well as have meaningful learning experience and reinforce the learning for each learning outcome.

Assignments can be assessed in a variety of forms and types, but it should be aligned with the knowledge and skills to be imparted in the learning outcomes. In other words, it must allow the development of the knowledge and skills necessary to practise in the specific programme. The description in the assignments must specify what students need to do by using concrete verbs from the Learning Taxonomy. The Taxonomy has provided a framework to design what and how to assess assignments. For example, students can remember the content, understand the ideas, apply information to a new situation, analyse the information and create new ideas. The assignments are typically 'assessed' using a specific rubric instrument developed by the department. Table 3.10 shows the examples of course activities and assessments which aligned with the course learning outcomes.

Table 3.10

Sample of Alignment of Course Activities & Assessment with CLO

CLO	**Course Objective *AACSB**	**PLO**	**L&T Activities**	**T & L Assessments**		
				Coursework (40%)	**Final Exam (60%)**	**Total**
CLO 1	LObj 1a		Discuss short case	Quiz 1 (5%)	Q 1a Q 1b (15%)	**25%**
	LObj 1b		Tutorial	Assignment 1 (5%)		
CLO 2	LObj 2a	PLO 5 (communication)	PBL Group work	PBL 1 (Rubric) (10%)	Q 2a Q 2b (15%)	**25%**
	LObj 2b					
CLO 3	LObj 3a		PBL Group work	PBL 2 (Rubric) (15%)	Q 3a Q 3b (20%)	**35%**
	LObj 3b					

CLO 4	LObj 4a		Discussion	Quiz 2 (3%)	Q 4 (10%)	**15%**
	LObj 4b		Individual work	Assignment 2 (2%)		

3.1.4 Data Collection Methods/Tools

To measure the achievement of learning outcomes, it is important to design a suitable measurement tool. This tool should be able to assess the students' knowledge, skills and abilities. There are two types of measurements:

1. **Direct measures** refer to the evidence from students' work such as examinations, quizzes, assignments and internship or externship feedback that is based on direct observation of specific performance behaviours or outcomes.
2. **Indirect measures** of learning refer to the evidence obtained from the third-party input. Examples of indirect assessments include exit surveys, alumni surveys, advisory council feedback, employer input, career fair feedback, inspection of course documentation, external outcome measures, focus groups and interviews.

Both direct and indirect measures should be supportive of the learning outcomes of the programme, including the successful achievement of the learning outcomes. In reference to Table 3.11, the difference between direct and indirect measures can be discussed in terms of method used, as well as the purpose and scope.

Table 3.11

Difference between direct and indirect measurements

Item	Direct Measurements	Indirect Measurements
Method used	• Tests • Quizzes • Examinations • Assignments	• Exit interviews and surveys of graduates • Employer survey • Alumni survey

	• Projects • Portfolios • Presentations	• Industry feedback • Community feedback • e-CeVaS
Purpose and Scope	• Measure demonstrate. • Measure individual students. • These give detailed feedback and identify specific problems.	• Measure opinions. • Measure a group of students. • These are aggregate generalisations that are global and do not clearly identify problems.

However, in the context of teaching and learning, the use of direct measures is more important. It is imperative to have appropriate learning activities and measurement tools to ensure the quality of teaching and learning. This is because direct measures are used to evaluate students' performance in relation to the learning outcomes (both CLO and PLO). In other words, the scores obtained from the evaluation of direct measures serves as an indicator of students' performance and also the achievement of both CLOs and PLOs. Therefore, developing appropriate assessment tools is crucial. Table 3.12 shows the assessment tools to be used with various direct measurement methods.

Table 3.12

Direct Measurement Methods and Assessment Instrument based on Learning Domains

Learning Domains	**Direct Measurement Methods**	**Assessment Tool**
Knowledge & understanding	• Examinations • Tests • Quizzes	Answer scheme
Cognitive skills	Assignment/projects/tasks that involve:	• Cognitive skills rubric • Answer scheme

Learning Domains	Direct Measurement Methods	Assessment Tool
	• Problem solving • Critical/ creative thinking • Analysing • Synthesising	
Practical skills	Assignments/projects/ tasks that involve: • Planning • Organising • Selection and use of tools, materials, technology methods and procedures.	Practical skills rubric
Interpersonal skills	Assignments/projects/ tasks that involve: • Interactive communications • Team collaboration • Networking	Interpersonal skills rubric
Communication skills	• Presentation	Oral communication rubric
	• Written assignment	Written communication rubric
Digital skills	Assignments/projects/ tasks that involve: • The application of ICT	Digital skills rubric
Numeracy skills	Assignments/projects/ tasks that involve: • Mathematics and statistical techniques	Answer scheme
Leadership, autonomy and responsibility	Assignments/projects/ tasks that involve: • Team management • Decision making	Leadership, autonomy and responsibility skills rubric

Learning Domains	Direct Measurement Methods	Assessment Tool
Personal	Assignments/projects/ tasks that involve: ● Independent learning ● Intellectual and self-development	Personal rubric
Entrepreneurial	Assignments/projects/ tasks that involve: ● Creativity ● Innovation	Entrepreneurial skills rubric
Ethics & professionalism	Any assignments or projects	● Turn-it-in ● Ethics and professionalism rubric

3.1.4.1 Rubrics as Direct Measures of Assessment

Rubrics are very useful in teaching and learning, both for the teachers and the learners. For the teachers, rubrics are used as a scoring guide to evaluate the quality of students' assignments, projects and others. This is because rubrics define the criteria or elements that are expected in the students' assignments. It clarifies to the students the standards that they must meet to score a certain mark on the assignment.

Besides that, data from rubrics are useful indicators of the achievement of learning outcomes. Therefore, the assignments and the corresponding rubrics must be carefully designed to reflect the learning objectives to be measured.

3.1.4.2 Designing the Rubrics

In essence, MQA has designed good rubrics to measure the achievement of each learning outcome. These rubrics can be obtained from *Rubrik PNGK bersepadu iCGPA, Panduan Pentaksiran Hasil Pembelajaran* (MoHE, 2016). Nonetheless, if there is a need to design a rubric, it is important to understand

the types of rubrics. Generally, rubrics can be categorised into three broad groups, which are:

1. analytic versus holistic rubrics.
2. generic versus task-specific rubrics.
3. primary trait versus multiple trait rubrics.

The first group of rubrics distinguishes the analytic from holistic descriptors. **Analytic rubrics** are single criteria rubrics (one-dimensional) used to assess the participants' overall achievement on an activity. An example would be the examination answer scheme that we usually develop with the final examination question. On the other hand, **holistic rubrics** are two-dimensional rubrics with levels of achievement as columns and assessment criteria as rows (refer to Table 3.13). Holistic rubrics allows the participants' achievements to be assessed based on multiple criteria using a single rubric. For learning purposes, holistic rubric is more useful because it provides feedback to the students on the areas that need improvement.

The second group distinguishes the generic from the task-specific rubrics. **Task-specific rubrics** are also known as the special purpose rubrics to assess the students' performance with regards to a specific task or assignment. In contrast, the **generic rubrics** is a general inquiry rubric which can be used to assess various tasks that measure the same trait or criteria. In measuring the achievement of a learning outcome, data might be collected from several different courses. In order to compare and consolidate the results from different courses, a standardised generic rubric is more useful. Task-specific rubrics might not be applicable because different course assignments require different tasks being performed. If needed, instructors can develop task-specific rubrics to be used in conjunction with the generic rubrics.

Finally, it is also useful to differentiate between the primary trait and the multiple trait rubrics. The **primary trait** rubrics evaluate the performance based on only one main characteristic of the assignment, while the **multiple trait** rubrics evaluate the performance based on several characteristics.

Based on these definitions, it can be stated that the rubrics that are useful for UUM's CQI process are holistic rubrics that are generic and measure multiple traits. An example of a written communication rubric is presented in Table 3.13.

Table 3.13

A Sample of Written Communication Rubric

	1 Below basic	2 Basic	3 Proficient	4 Advance	Marks
Understanding of Topic	Demonstrates little or no understanding of topic.	Demonstrates some understanding of topic; Does not make connections among ideas	Moves beyond surface understanding; Demonstrates facility with topical and disciplinary knowledge	Demonstrates disciplinary understanding and interconnections; makes links that suggest discovery of new information or new ways of relaying information	
Content Development	Uses appropriate and relevant content to develop simple ideas in some parts of the task.	Uses appropriate and relevant content to develop and explore ideas through most of task.	Uses appropriate, relevant and compelling content to explore ideas within the context of the discipline and shape the whole task.	Uses appropriate, relevant, and compelling content to illustrate mastery of the subject, conveying the writer's understanding, and shaping the whole task.	
Support for ideas	Inappropriate or insufficient details to support idea	Includes some, but not adequate support for arguments	Advances argument with sound evidence and references	Expertly advances argument with well-researched evidence and documentation	
Mechanics	Errors are frequent and distracting.	Some errors in style or grammar occur that they become distracting.	Writing is generally error free.	Writing is free of errors in grammar, punctuation, sentence structure, capitalization and spelling.	
Organization and development	Not organized, discussion makes no sense	Some organization, discussions jump around, start and end are unclear.	Good organization and discussions are logically ordered.	Excellent organization and discussions are logically ordered.	
				Total Marks	

Table 3.13 shows how the rubrics can be broken down into three parts, which includes:

1. The performance traits,
2. The performance levels, and
3. The performance level descriptors.

The performance criteria are basically the factors being measured. Commonly, they are presented in the first column in the rubric. For a written communication rubric, some of the performance criteria being measured include understanding the topic, content, support for ideas, mechanics and organisation (Refer to Table 3.13). Performance levels, on the other hand, represent gradations of

performance and typically take the form of the column headings of a rubric. As shown in Table 1, the performance levels can be presented in the form of numeric (e.g., 1, 2, 3, 4) or textual (e.g., below basic, basic, proficient, advanced). Lastly, the performance level descriptors articulate observable characteristics of performance. In the rubric, the descriptors are found in the cells below the performance levels and to the right of the performance criteria.

Essentially, in developing a rubric, van Leusen (2013) recommended the following questions to be answered:

1. What knowledge and skills are the assignment designed to assess? (learning objective)
2. What observable criteria represent those knowledge and skills? (performance criteria)
3. How can you best divide those criteria to represent distinct and meaningful levels of student performance? (performance levels)
4. What observable characteristics of students' work differentiate among the performance levels for each criterion? (performance level descriptors)

Hence, the process flow of developing a rubric is presented in Figure 3.3.

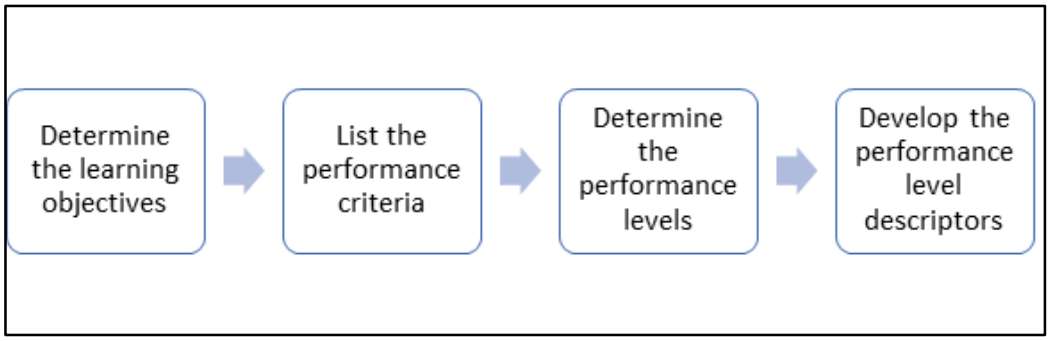

Figure 3.3

Rubric development process flow

3.2 The CQI Implementation

The CQI implementation involves a data collection process which is based on the agreed plan. The data (students' mark) should be collected using appropriate rubric or assessment instruments tools to measure the learning objective. As mentioned, CQI has to be implemented at both levels which are course (C-CQI) and program (P-CQI). This section will discuss the data collection process and using rubric effectively in the process.

3.2.1 Data Collection Process

The data collection process stage is to position and execute the tools (strategic and/or improvement plan) to support the directions and priorities. This stage involves the development and implementation of action plans as agreed in the C-CQI and P-CQI plan. The implementation should be supported by proper organisation structure including physical, financial and human resources. The involvement of all department members is very important at this stage for the data collection. The head of department has to deliver clear direction to all department members on data collection for a programme.

In the data collection process, the department members have to make sure that the data collection tools or rubrics used are correct. Faculty members have to know 'when' and 'how' to collect the data. There are four (4) steps involved in the data collection process as can be seen in Figure 3.4.

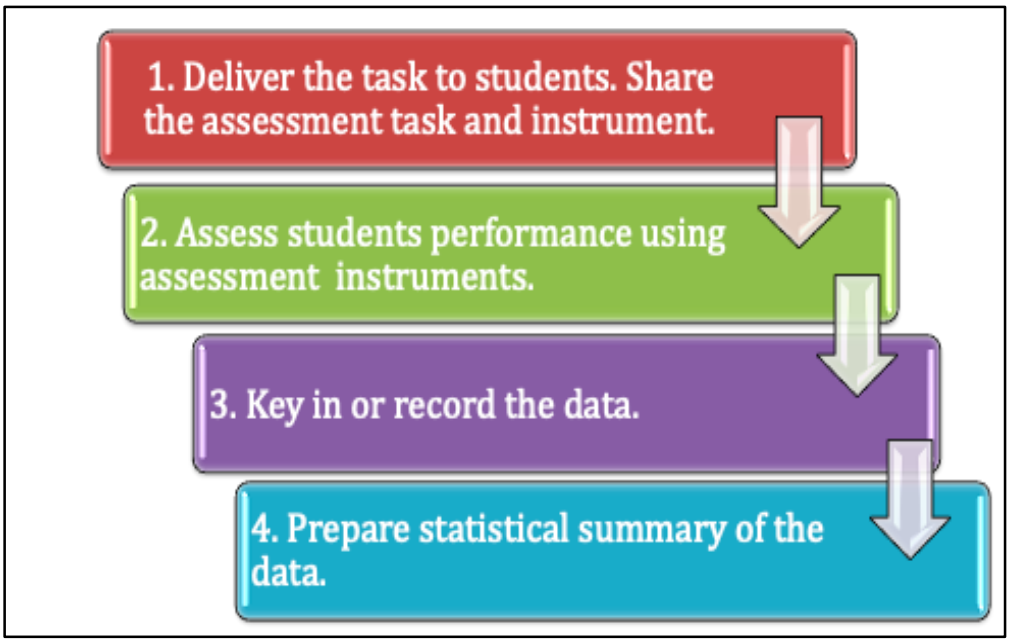

Figure 3.4: The four (4) steps of data collection process

As shown in Figure 3.4, the **first step** is for the instructors to deliver, share and explain the tasks and assessment instruments with the students, to ensure that they know 'what' and 'how' they will be assessed. The teaching and learning activities of the course must be implemented as the C-CQI plan (refer to Section 3.1.3) for the semester. In the **second step,** the students' activities and assignments will be assessed using a rubric or answer scheme. The **third step** is to record the students' marks. When using a rubric, Table 3.14 shows an example of a record of every student's mark by each trait. If the score is used instead of the rubric, Table 3.15 shows a sample of the score recorded for every assignment or task.

Table 3.14

Sample of excel for data collection (using rubric)

A	B	C	D	E	F	G	H	I	J
1	**Course (Group): BKAL3033 GROUP A** **Session : A201**								
2			**COMMUNICATION SKILL (using Rubric)**						

3	No	Matric No.	Trait1	Trait2	Trait3	Trait4	Trait5	Trait6	TOTAL (24)
4	1	XXX1	3	4	3	4	4	4	22
5	2	XXX2	3	3	3	3	3	3	18
6	3	XXX3	2	3	4	3	3	2	17
7	n	XXXn	4	4	4	3	3	3	21

Table 3.15

Sample for data collection for a coursework scores

	CLO 1 (10%)		CLO 2 (10%)			CLO 3 (15%)			CLO 4 (5%)		Total (40%)
			PBL 1			PBL 2					
Student	Quiz (5%)	Assign 1 (5%)	Written (6%)	Presentation (3%)	Log (1%)	Written (9%)	Present (5%)	Log (1%)	Quiz 2 (3%)	Assign 2 (2%)	
1	4.63	5	5.05	2.83	1	7.2	3.78	1	3	2	35.49
2	5	4.75	4.75	2.33	1	8.1	3.82	1	3	2	35.75
3	5	5	4.6	2.50	1	7.2	3.44	1	3	2	34.74
n	4.75	5	4.75	2.33	1	8.1	3.82	1	3	2	35.75

Note: Assign 1 = Assignment 1

↳ Map to PLO 4 Communication skill

The **fourth step** is to prepare a statistical summary of the students' marks by traits (see Table 3.16) or by CLOs (see Table 3.17). Table 3.16 shows the sample of summary data for the whole class according to a learning outcome by traits. The instructor also needs to prepare a statistical summary of the students' marks for every CLO as shown in Table 3.17.

Table 3.16

Sample of Statistical Summary of Data for a LO

Learning Outcome: Communication Skills							
Achievement Target: 70% of students achieve the level of 'proficient' and above for all traits.							
Number of students and percentage based on score for Semester A201 (N = 196)							
	Traits	Below Basic	Basic	Proficient	Advance	Achieved Target	Remark
1	Trait 1	0 (0 %)	0 (0 %)	0 (0 %)	196 (100%)	196 (100%)	Achieved
2	Trait 2	0 (0 %)	0 (0%)	0 (0%)	196 (100%)	196 (100%)	Achieved
3	Trait 3	0 (0 %)	0 (0%)	23 (12%)	173 (88%)	196 (100%)	Achieved
4	Trait 4	0 (0 %)	30 (15%)	60 (31%)	106 (54%)	166 (85%)	Achieved
5	Trait 5	15 (8%)	45 (23%)	50 (25%)	86 (54%)	136 (69%)	Not Achieved

Table 3.17

Sample of C-CQI Analysis for a Group of Course

Session: A201 Course: BKAL 3033 (Group A)							
Target: 70% of the students achieve more than 50% of the marks (satisfactory and above) for each CLO							
Score	0-39	40-49	50-64	65-79	80-100		**Students achieved target**
CLO	**Poor**	**Unsatisfactory**	**Satisfactory**	**Good**	**Excellent**	**Total**	
CLO1	0	0	0	23	26	49	49
	0%	0%	0%	47%	53%	10%	100%

CLO2	5	4	6	35	1	49	40
	1%	8%	12%	71%	2%	10%	81%
CLO3	0	0	10	28	11	49	49
	0%	0%	20%	57%	22%	10%	100%
CLO4	0	2	8	29	10	49	47
	0%	4%	16%	59%	20%	10%	95%

3.2.2 Using Rubrics Effectively

To use rubrics effectively, it must be shared with the students. They need to know how their assignments are being graded and the standards that they are expected to meet. Students should understand that the rubric is given to help them reflect and self-assess their assignments before submitting those assignments for grading.

Even though rubrics are helpful in grading the students' assignments, they are still subjective in nature. The problem with subjective measures is that rater errors might be difficult to avoid. Rater errors are errors in judgement that occur in a systematic manner when an individual observes and evaluates another. In short, when evaluating the students' assignments, we might not give the assignment the exact evaluation that it deserves. Common errors that can occur when evaluating students' assignments or tests are:

1. Leniency error
2. Central tendency error
3. Strictness error

Leniency error occurs when the instructors are being too nice and have the tendency to become over-positive by giving the students high marks. This could be detrimental to the students' learning process because it causes the learners to believe that they do not need to improve their performance. In other words, the feeling of complacency sets in.

On the other hand, **central tendency error** occurs when the instructor evaluates and grades a majority of students as average or away from the extreme points of the scale. Basically, we are saying that all candidates are 'mediocre'. No one is exceptionally strong or poor, all are equally average. This is not useful either because by doing this, we will not be able to differentiate the good students from the poor ones. It will cause the feelings of unfairness among the students, especially the good ones.

Finally, **strictness error** is the inverse of the leniency error. It occurs when the instructor has the tendency to give low marks to the students thinking that no one is perfect, and there is still room for improvement. While this looks like a good strategy to make the students work harder, it could be demotivating, in particular, when the marks do not change even after the work has been improved.

Regardless of the type of error and the reason behind it, the most important point that is being emphasised here is that any form of evaluation made on the students activities should be an accurate reflection of the performance. Only then the results are useful for learning and development and also a good indicator of learning.

3.3 The CQI Monitoring and Reviewing

Monitoring and reviewing provide information for the timely improvement of programme quality. In this stage, the data collected serves as an indicator of performance to be compared with the performance target. The objective of this process is two-fold:

1. Evaluate the achievement of the target.
2. Ensure the relevancy and suitability of the CQI plan.

This stage involves two important steps which are analysing and reporting the students' marks. Data (students' marks) collected in the previous step will be analysed to identify comparative strengths and opportunities for improvement.

Next, a report that outlines the findings and recommendations for improvements is prepared and shared with the department members.

3.3.1 Analysing Data and Reporting Results

Data analysis involves the process of scrutinising the summary tables that we have prepared as discussed in Section 3.2.1. For this purpose, it is important that the data is compared with the target and the previous semester's data. Based on the comparison, the instructor(s) can conclude whether the target has been achieved or not and identify suggestion(s) for improvements. The results of this analysis must be documented and shared.

An example of a CQI report for a PLO from a course can be seen in Figure 3.15. There are four (4) main elements to be explained and described in an individual lecturer's report for a single learning objective. The report should include a discussion of assessment background, result, discussion and recommendation as shown in Table 3.18.

Table 3.18

Description of elements in the CQI report

Elements	Description
Background	Explain the type of assessment activities being delivered to students and the type of assessment tools being used to evaluate the student performance.
Result	Shows the statistical summary table which portrays the result based on the data collected using assessment tools and also stated the percentage and number of students categorised in the levels outlined. Explain the achievement of the target based on the result.
Discussion	Provide the justification of the result.

	Discuss the changes that occur resulting from the implementation of 'suggestions for improvement' from the previous semester.
Recommendation for improvement	Suggest action to be taken to improve the students' competencies. The suggestions should be practical and provide enough detail to be implemented in the subsequent semester.

The CQI report template is available in Appendix 1 (Blank Template). The example of the C-CQI process is shown in Appendix 2.

Lecturer's Name:	XXX						
Learning Goal X:	XXX [As outlined by program committee]						
Learning Objective:	XXX [As outlined by program committee]						
Course Code & Name:	XXX					**Group:** X	**Semester:** XXX

Background:

[Assignment – present portfolio, business strategies, 10 marks, oral rubric]

Results:

Table 3.1
Assessment results of Communication skill for XXX Course in Sem XXX
(N = 100)

Traits	Below Basic	Basic	Proficient	Advanced	Target Achieved
Trait1	0 (0%)	20 (2%)	40 (40%)	40 (40%)	80 **(80%)**
Trait2	0 (0%)	30 (30%)	50 (50%)	20 (20%)	70 **(70%)**
Trait3	5 (5%)	35% (35%)	30 (30%)	30 (30%)	60 **(60%)**

Results showed that more than **70%** of the students achieved the level of 'Proficient' and above for trait 1 and 2.

Discussion:

Discuss the result and explain why it is achieved or not achieved.
Explain the suggestion for improvement implemented for this semester and the changes result.

Recommendations:

Suggestion for improvement

Figure 3.5: Template of CQI Report by individual instructor for a PLO

3.3.2 Presentation/Discussion of Future Improvements

A department has to have a proper 'CQI reporting system' to ensure the involvement of all department members in the CQI process. The report has to be presented at the department level where all of the department members should be informed and also agreed to implement the recommendation made by the instructor. Other instructors can also benefit from the presentation and

discussion for teaching and learning improvement through the experience sharing session. During the presentation of the report at the department level, all members should focus and think on the evaluation of the students' performance. If the assessment demonstrates that students are not mastering the learning competencies, departments have to describe efforts to improve such learning outcomes.

3.4 Implementation of the Improvement

At this stage, the recommended improvements are implemented, and the outcome may become the input of the next CQI cycle. This stage is to close the gaps (closing the loop) or to address the opportunities for improvement and to enhance the strengths of our students. The Head of Department together with the department members have to develop an improvement plan.

Closing the loop is an activity that marks the end of a CQI cycle, which also indicates the beginning of a new CQI cycle. In essence, it shows how curriculum was improved as a result of the CQI process. The department typically "closes the loop" at least once in an academic cycle for each learning outcome. See Figure 3.6 for a sample report of CQI for an academic programme.

Program: Bachelor of Accountancy (Honours)
Semester: A181
Learning Outcome: problem solving
Our students will think critically and integrate knowledge with respect to accounting and managerial functions into the business environment.

Objective:
Students will demonstrate their ability in (a) problem diagnosis, and (b) application of current knowledge or theories for problem solving in business environment cases

Quality Assurance Target:
The quality assurance target was that at least 70% of students achieved the level of 'Good' and above for all traits.

Courses that have assessed this LG:
BKAR1013 Financial Accounting and Reporting I
BKAR3043 Financial Accounting and Reporting IV

Closing the Loop
All the courses assessed students' critical thinking and problem solving through a group project. Overall results show that more than 70% of the students in all courses achieved the level of "Good" and "Excellent" for all traits.

Even though the dean and faculty members are satisfied with the overall performance of this Learning Goal, further improvements can be done. It is suggested that a smaller class could be implemented so that more direct interaction can occur .

Figure 3.6: Sample of CQI report for an academic programme

At the same time, closing the loop can also enhance the curriculum review of an academic programme which occurs as a routine and systematically from the CQI process. For example, based on closing the loop recommendation given in Figure 3.6, the related department has created classes with only approximately thirty (30) students (maximum) in this course. The CQI report can drive curriculum changes along with a multitude of sources such as the external stakeholder input, the university or department strategic choices, the financial aspect or competitive drivers.

4.0 PROGRAMME SUSTAINABILITY THROUGH CQI

The sustainability in the HEP includes the processes which academic leaders undertake to implement sustainable development policies and other activities within UUM. However, sustainability activities need continuous support from the UUM community.

One of the active government agencies, Higher Education Leadership Academy (AKEPT) is committed to develop potential leaders in HEP that are exposed to CQI from time to time and renew their managerial skills and abilities (Leader, 2016). This includes approaches, methods, and various solutions to solve weaknesses and drive HEP such as UUM towards becoming a sustainable organisation.

University is a place of scholars and professors who might have been appointed as academic leaders who are able to work based on collegiality (McCaffery, 2019). Thus, selecting and managing academic leaders are extremely important as this is the backbone of the university's sustainability programme which involves strategic planning, triggering opportunities and maintaining university's ranking. In UUM, the management structure is based on several hierarchies. Please refer to the management structure of UUM (Appendix 1: UUM organisational structure).

UUM academic community can be divided into three main levels:

1. Top management
2. Academic managers
3. Academics.

4.1 The Role of Top Management

The first rank of leadership in UUM is top management. These are individuals who are very important persons (VIPs). At this level, the role is more to leadership rather than management and operation managers. The Chancellor of UUM is the top position who governs the university. The top management consists of two categories:

(i) The Board of Directors' members and (ii) the academic top management.

UUM Organisational Management

UUM Chancellor
1. UUM Board of Directors a) Chairman b) Vice-Chancellor c) Board members
2. UUM Academic Management a) Vice-Chancellor b) Deputy Vice-Chancellor c) Assistant Vice-Chancellor d) Senate members e) Deans

At UUM, the top management has always been concerned with good and effective leadership. The appointed individuals/leaders are often particular with the change of management and in pursuing the university's vision to become an 'Eminent Management University'. They constantly align the university community with this vision as well as motivating and empowering all staff members through relevant programmes and activities. Consequently, UUM is now soaring upwards and is able to be in line with other research university status in Malaysia (refer to QS Global world ranking: https://www.topuniversities.com/universities/universiti-utara-malaysia-uum)

However, the most important issues are how top management can continuously improve and help the university particularly in the process of maintaining the quality of academic programme, its developments and reviews which are in line with the purpose of CQI. Below are several roles of the top management in supporting the CQI process:

Basically, the roles of top management are several:

1. To continuously develop and articulate UUM agendas through its vision, establishing the proper direction and developing effective strategies.
2. To be able to think outward with broad mindsets and focus on people (people-centred).
3. To continuously empower colleagues, build trust and develop the plan for future and strategic developments.
4. To govern through providing clear information, updated roles, structures and directions to the leaders of the HEP.
5. To continuously sustain and reinforce the CQI culture among the university stakeholders and the public.

4.2 The Role of Academic Managers

The second levels of managerial positions in UUM are academic managers who have been appointed to manage their respective organisations such as Schools and Centre of Excellence (CoEs). The positions can be divided into two categories: (i) the academic managers at school levels, and (ii) the academic managers at the respective units or CoEs.

The following are the relevant positions of the academic managers:

Academic managers at school level	Academic managers at unit or centre of excellence
Assistant-Vice Chancellor	Director
Dean	Deputy Director
Deputy Dean	Coordinator/ Programme Manager
Head of Department	
Programme Coordinator	

Academic managers, in contrast, are coping with the complexity and advocating stability and preserving established routines. The management at this level involves, for instance, planning and budgeting, organising and controlling and troubleshooting which might be related to day-to-day problems at Schools and CoEs. The managers usually work to ensure that the processes and standards that have been set by the top management are done to uphold the university strategic plan and achieve the university target through the process of CQI.

Below are some roles of the academic managers towards CQI:

1. Continuously administering the educational programme(s) and fostering the managerial aspects of the schools or CoEs.
2. Continuously govern the operations of the respective organisation effectively through providing clear roles, structures and directions to the academics.
3. Continuously harness a strong relationship amongst academics by forming a strong sense of collegiality and mutual understanding.
4. Forges and sets a good and harmonious environment for the purpose of enhancing and providing the academics with strong educational support, good and sufficient allocation of research funds, research opportunities and consultancy, publication incentives and scholarly endeavours.
5. Continuously foster the facilities and good customer services to both external and internal stakeholders.

4.3 The Role of Academics

Academic workforce is an important asset to the university. We need to continuously maintain and further upgrade the roles of academics. In UUM, the categories of academics include professors (ranging from V6 to V7), associate professors, senior lecturers, lecturers, and language teachers.

In terms of development and sustainability of academic staff, there are four main concerns, namely: the recruitment of academic staff, the academic

management, the personal and career developments of staff and professionalism (MQA, 2014).

Recruitment of academic staff

Recruiting passionate and hardworking academic staff is a challenge to all HEP. In fact, recruitment is the first gateway that all universities need to be concerned with. A high commitment academic and dedication academic staff can enhance the rank and popularity of the HEP through high impact publications and noble contributions at the national level and at the international levels. Thus, UUM should continuously aim to improve and set very clear and strong criteria in recruiting the academic staff.

Academic management

For the academic staff, academic tasks can be considered subjective and not static. In fact, it is rather dynamic. Academics are individuals who have many responsibilities; they conduct classes, give lectures, and spend many hours communicating with the students, either face to face or using the online platform (e.g., Webex). They are also supervisors and mentors to students in the university. Most of the time, they deal with the development of knowledge by updating and gathering data through research and publications. This means that academics also have to write and publish their works to be known and cited. This, in turn, will help the university to be known by others in the world through their writing. Thus, academics need to manage and update their knowledge from time to time to keep abreast with the development and today's world of digitalisation.

Personal and career development

Rewards and self-actualisation in the academic world are a must to HEP. Opportunities and personal developments are specifically vital to maintain loyal and good academics who really contribute to the HEP. Therefore, promotion schemes are encouraged to be very competitive, rational, and well planned in line with the achievement level of the academics.

Professionalism

As an academic, social networking and relationship building is a compulsory element. Nowadays, there are many mediums of academic networking such as LinkedIn, ORCID, Publons and many more. Furthermore, academics gain more visibility through professional membership from high reputable academic societies or associations such as Academy of International Business (AIB), Certified Public Accountant (CPA), and Association of Chartered Certified Accountant (ACCA). This element helps academics to share research and academic collaboration. It also develops a good reputation among peers and encourages them to help each other. Some suggestions to build a reputation in the academic world include:

- Produce research and publish the highest quality output (journals, books, etc.).
- Obtain sufficient and good research funding (local and international levels).
- Maintain good professional network (Academia.edu, LinkedIn).
- Join and take an active role in any professional association(s).

These four elements can be enlightened in the perspective of CQI. As such, the roles of academics are several:

1. To continuously give commitments and have passion for academic responsibilities such as managing and engaging in the teaching and learning programmes, publication, research, and other administration tasks.
2. To be able to accept and abide any appointment or instruction from the academic leaders positively pertaining to the developments and improvements of the schools.
3. To continuously motivate and encourage students to challenge ideas and traditions and not blindly accept everything the lecturer says.
4. To engage his or her students in more ways than one, present ideas, concepts and problems from various perspectives.
5. To engage the community at large through their writings and physical involvement.

In conclusion, HEP needs to apply and implement the CQI at both levels: institutional and department. Decision makers such as academic leaders need to be proactive and have visionary outlook. The leaders will approach and engage their subordinates in implementing their tasks and roles. In that way, the CQI will be accomplished as planned for all academic programmes as all staff are aware of their responsibilities. Another important element in CQI in HEP is the training and knowledge advancements among the academic leaders. This also applies to all academics to improve academic activities related to the CQI. All of these elements are supporting the elements of CQI as presented in this UUM Guideline.

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FREQUENTLY ASKED QUESTIONS (FAQs)

1. **How can CQI help the HEP?**

   CQI process drives the HEP to comply with the standard set by the accreditation bodies. Thereby, the reputation of the HEP will be established and being referred to by other organisations.

2. **How to differentiate between CQI for the programme and the AoL?**

   CQI for the programme and the AoL are the same thing whereby the AoL is commonly used in the Association to Advance Collegiate Schools of Business (AACSB) and other academic accreditation. AACSB defines AoL as a systematic process which produces a portfolio of evidence demonstrating achievement of learning goals (learning outcomes) outlined. These processes also produce a portfolio of documented improvements based on collected evidence. The school provides a portfolio of evidence for each programme to demonstrate that students meet the learning goals. Or, if assessment demonstrates that students are not meeting the learning goals, the school has executed efforts to eliminate the discrepancy.

3. **What are the important elements in implementing CQI?**

   The important elements are as the following, namely:

   - A well-documented process.
   - A systematic process involving the faculty members and stakeholders
   - Learning outcomes that have been met, or in cases where learning outcomes are not being met, efforts are taken to eliminate the discrepancies.
   - Learning outcomes that are consonant with the HEP's mission, expected outcomes and strategies.
   - Curriculum improvement based on the CQI process.
   - PLO established for each degree programme, including conceptual and operational definitions.
   - Curriculum maps showing where PLO are assessed.

- Direct assessment of student learning is required (indirect allowed as supporting evidence).

****

Appendix 1:

C-CQI Template for 1 learning outcome

Learning Goal:					
Learning Objective:					
Course code & name:		Group:		Semester:	

Background:

Quality Assurance Target:

Discussion :

Results:

Assessment results of {LG} for {course code} in Semester {????}
(N = ??)

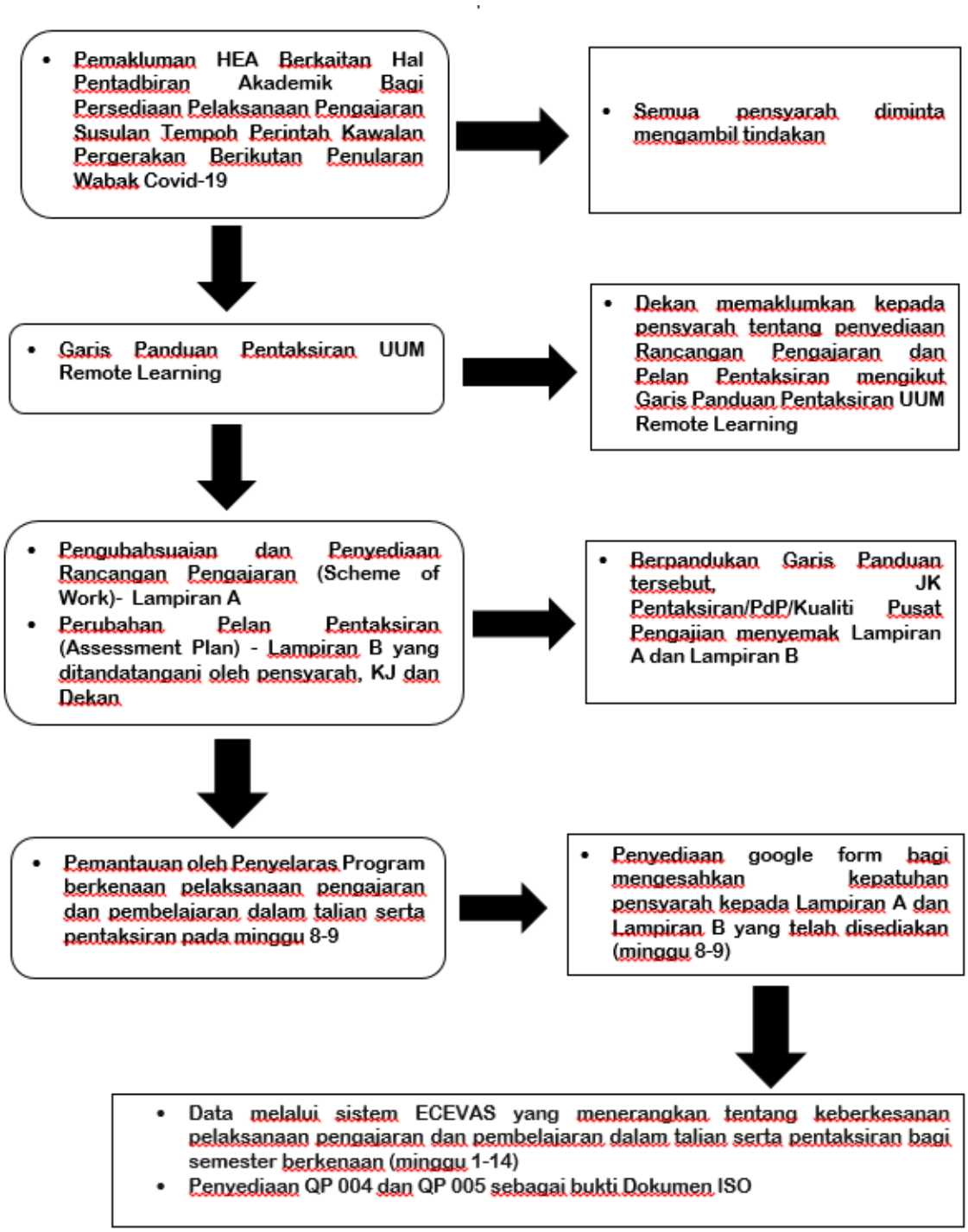
Traits	Below basic	Basic	Proficient	Advanced	Target achieved

Recommendation:

The CQI report template is available in Appendix 1 (Blank Template).

Appendix 2:

a) Example of C-CQI Process



b) STEPS IN C-CQI

- Align Teaching and Learning (T&L) activities with learning outcomes.
- Align assessment with learning outcomes.
- Establish achievement target.
- Collect assessment data for CLOs.
- Analyse data.
- Discuss your findings/results. Do you achieve your target (or not)?
- Share your findings/results. Are you satisfied with the findings (or not)? Which CLO(s) is/are achieved?
- Plan for improvements for the continual improvement in the T&L process/assessment.
- Document it.

Example of the steps:

1. Alignment of T&L activities, assessment with CLO

Outcome	**Objective** ***AACSB**	**T&L Activities**	**T & L Assessments**		
			Coursework (40%)	**Final Exam (60%)**	**Total**
CLO 1	LObj 1a	Discuss short case	Quiz 1 (5%)	Q 1a Q 1b (15%)	25%
	LObj 1b	Tutorial	Assignment 1(5%)		
CLO 2	LObj 2a	PBL Group work	PBL 1 (Rubric) (10%)	Q 2a Q 2b (15%)	25%
	LObj 2b				
CLO 3	LObj 3a	PBL Group work	PBL 2 (Rubric) (15%)	Q 3a Q 3b (20%)	35%
	LObj 3b				
CLO 4	LObj 4a	Discussion	Quiz 2 (3%)	Q 4	15%

	LObj 4b	Individual work	Assignment 2 (2%)	(10%)	

2. Achievement Target (Quality Assurance)

Target: 70% of the students achieve more than 50% in each CLO

3. Data collection

a. Assessment -Coursework Scores

	CLO 1 (10%)		CLO 2 (10%)			CLO 3 (15%)			CLO 4 (5%)		Total (40%)
			PBL 1			PBL 2					
Student	Quiz (5%)	Assign1 (5%)	Written (6%)	Presentation (3%)	Log (1%)	Written (9%)	Present (5%)	Log (1%)	Quiz 2 (3%)	Assign 2 (2%)	
1	4.63	5	5.05	2.83	1	7.2	3.78	1	3	2	35.49
2	5	4.75	4.75	2.33	1	8.1	3.82	1	3	2	35.75
3	5	5	4.6	2.50	1	7.2	3.44	1	3	2	34.74
n	4.75	5	4.75	2.33	1	8.1	3.82	1	3	2	35.75

b. Assessment- Final Exam Score

Score	FINAL EXAM 60%				
Student	CLO1 (15%)	CLO2 (15%)	CLO3)	CLO4)	TOTAL (60%)
1	9	12	11	2	34
2	15	9	17	8.5	49.5
3	7	3	19	7	36
n	4	5	3.5	6	18.5

4. Analyse achievement

a. Achievement of CLO (Coursework and Final exam score) for all students

	CLO1 (25%)	CLO2 (25%)	CLO3 (35%)	CLO4 (15%)
1	*74.52%	83.52%	90.17%	46.67%
2	99.00%	68.32%	85.49%	90.00%
3	68.00%	44.40%	87.54%	80.00%
n	55.00%	52.32%	46.91%	73.33%
	*(4.63+5+9)/25 =74.52%			

b. % of Students that achieve each target CLO

Target: 70% of the students achieve more than 50% (satisfactory and above) in each CLO.

Total number of students is 49 in a class (Group A).

	0-39	40-49	50-64	65-79	80-100		
CLO	Poor	Unsatisfactory	Satisfactory	Good	Excellent	Total	Students - archived target
CLO1	0	0	0	23	26	49	49
	0%	0%	0%	47%	53%	100%	100%
CLO2	5	4	6	35	1	49	40
	1%	8%	12%	71%	2%	100%	81%
CLO3	0	0	10	28	11	49	49
	0%	0%	20%	57%	22%	100%	100%
CLO4	0	2	8	29	10	49	47
	0%	4%	16%	59%	20%	100%	95%

Interpretation of the target: For each of CLO at least 34 students score 50 or more marks.

Course Achievement:

The target level of 70% “Satisfactory” or above is achieved for all CLOs

5. Prepare Report and Plan for Improvement

Coordinator combines all data from all groups and prepares the report. Then the result needs to be shared in the department.

Sample of C-CQI Report

COURSE LEARNING OUTCOME ACHIEVEMENT

COURSE: BKAL 3033 COMPANY SECRETARIAL PRACTICE

COORDINATOR: XXXXX

SESSION: A201

Target: 70% of the students achieve more than 50% in each CLOs

Number of student is 224 (N = 224)

	0-39	40-49	50-64	65-79	80-100
CLO	**Poor**	**Unsatisfactory**	**Satisfactory**	**Good**	**Excellent**
	3	4	45	92	80
CLO1-	1%	2%	20%	41%	36%
	5	4	15	102	200
CLO2-	2%	2%	7%	46%	44%
	0	1	11	109	103
CLO3-	0%	0%	5%	49%	46%
	4	18	59	90	53
CLO4-	2%	8%	26%	40%	24%

Reflection on course achievement:

The target level of 70% “Satisfactory” or above is achieved for all traits where more than 70% students reached “Satisfactory” level and above. Students’ achievement is contributed largely from their coursework marks where high marks are obtained upon their satisfactory completion of the Problem-Based-Learning (PBL) tasks. PBL contributes 40% of the total marks and covers two CLOs.

Actions for Continuous Quality Improvement (CQI):

To help students to answer well in their final examination questions, the following actions are suggested:

1. Continue to employ PBL to enhance students’ understanding.
2. Have more intervention during the PBL sessions.
3. Continue to discuss the techniques to answer examination questions.
4. Provide more detail and timely feedback on their tasks/ assignments, preferably on individual basis whenever possible.

Coordinator’s Details:

Name :

Tel. No:

E-mail :

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May 2021