UNIVERSITI MALAYA

PHASES AND STAGES IN DEVELOPING SIM

ODL SIM DEVELOPMENT MANUAL

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GLOSSARY

Open and Distance Learning (ODL)

A learning approach where teaching is delivered remotely, typically through online platforms, allowing learners to access educational content at their own pace and location.

Self-Instructional Material (SIM)

Specially designed learning materials created for independent study. SIM guides learners in achieving course outcomes without continuous direct instruction from a teacher/instructor.

Learning Management System (LMS)

A software platform used for delivering, managing, and tracking online learning and training programs.

Synchronous Learning

A mode of learning where students and instructors interact in real-time, usually through live video conferencing or chat sessions.

Asynchronous Learning

A learning model that allows students to access materials and complete tasks at their own pace, without real-time interaction with the instructor.

Plug-ins

Software components that add specific features or functionalities to an existing platform.

Instructional Designer (ID)

ID analyse content and learning objectives, utilizing their expertise in content enhancement with multimedia integration to assist create self-instructional materials that maximize learner engagement and comprehension.

INTRODUCTION
WHAT IS SIM?

Self-Instruction Materials (SIM) is created to meet the diverse needs of learners without access to traditional classrooms. SIM serves as a key **instructional tool**, bridging the gap between educators and students through comprehensive, accessible, and engaging content. As defined by the Malaysian Qualifications Agency (MQA, 2019), SIM **promotes personalized learning**, built on strong instructional design principles. It must be learner-centered, use conversational and simple language, and incorporate learning activities, self-assessment, and feedback mechanisms.

PURPOSE

This manual aims to guide Universiti Malaya (UM) academic staff and related stakeholders in **effectively developing SIM** for Open and Distance Learning (ODL) programs. ODL focuses on education and training in which learners engage primarily with instructional resources rather than attending face-to-face classes (Commonwealth of Learning, 2003). It **emphasizes flexibility and accessibility**, offering opportunities to learn without the constraints of time, location, or conventional learning environments.

According to MQA (2019), ODL offers **flexible educational** opportunities in terms of access and multiple modes of knowledge acquisition:

- **Flexible** means the availability of choices for educational endeavors anywhere, anytime and anyhow.
- **Access** means opportunity made available to all, freeing them from constraints of time and place.
- **Multiple modes** mean the use of various delivery systems and learning resources.

In Universiti Malaya (UM), the ODL programme will be conducted fully online. Delivery of course(s) in each semester can be summarised in the following Table:

Category of Activities	Learning Activity	Mode	Duration (Weeks)
Guided Learning	• Lecture, Tutorial & Webinar • Discussion, Presentation & Facilitation.	Face to face (Synchronous)	14
Self Learning	Pre-recorded lecture, tutorial, webinar, discussion forums, and pre-prepared quizzes.	Self-Instructional Materials (Asynchronous)	
	• Independent study/revision • Preparation of assignments/projects • Preparation of assessments		
Formal Assessments	• Continuous Assessments • Final Examination sitting	Synchronous or/and Asynchronous	

Table 1: Delivery of courses in UM

1. GET STARTED
SIM DEVELOPMENT

1.1 PLANNING A SELF-INSTRUCTIONAL MATERIAL (SIM)

Before you start your search for SIM materials, you must be clear about the need you are trying to meet. The following items will help you to plan your SIM:

1. Your **target learner group** – age, sex, prior education, preferred modes of study.
2. The module that you wish to teach – its **aims and outcomes**.
3. The **level of the module** – secondary school leavers, undergraduate, postgraduate.
4. The **delivery language**; and
5. The **delivery media**.

Besides, the SIM should be **oriented towards self-learning** so that the learner may be able to learn with or without the support of the teacher. The self-learning materials must combine most of the functions of a classroom teacher.

1.2 DEVELOPING A SIM

1.2.1 Methods of SIM development:

i. Adopt existing materials
ii. Adapt existing materials: Each material has a level of difficulty when adapted into Self-Instructional Material. Therefore, the content writer must **evaluate existing materials** and determine which ones will be used and what improvements are necessary.
iii. Create new materials: For newly proposed courses, new learning materials must be created. For existing courses, content writers are also allowed to create new learning materials.
iv. Any other suitable approaches

The content writer must ensure that the developed SIM is **free from copyright issues**. The **copyright** for all SIM or e-Content materials for ODL **belongs to Universiti Malaya**.

1.2.2 SIM Structure:

Introduction

i. In the Introduction section, the content writer should **welcome and motivate the students** by providing an overview of the learning they will experience. The content writer is encouraged to reference materials discussed in the previous topic/week to promote continuity and help students review the learning materials.
ii. One example of an introduction in SIM is through **Learning Objectives**.

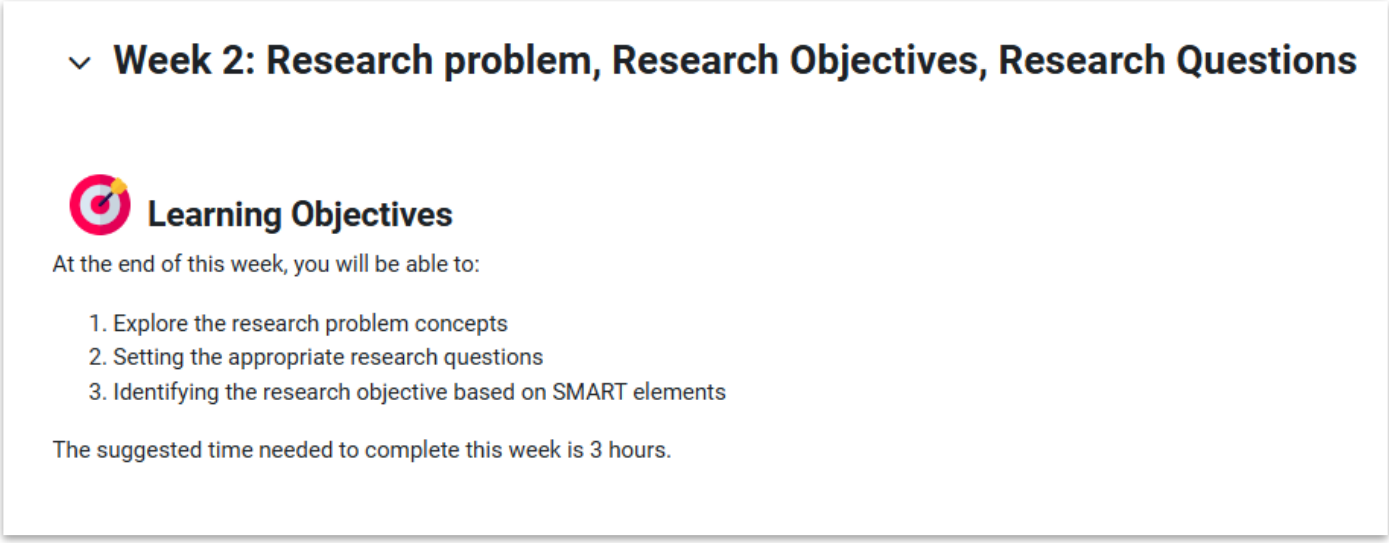


Figure 1: Example of Learning Objectives

Content

i. In the main part of the SIM, the content consists of a **sequence of materials explaining the teaching topics**. The content includes:
    a. Pre-recorded Lecture Videos
    b. Self-Assessment Evaluations
    c. Assignment Briefings
    d. Content Slides (Note: Content writers are encouraged to use the template provided by the ID).

ii. The Content Writer will be provided with a template by the Instructional Designer on the ODL SPECTRUM platform. ODL SPECTRUM is the Learning Management System (LMS) used. The structure of SIM content can be modified, but it should **maintain consistency throughout the course** to help students understand the learning process and uploaded materials.

Summary – Conclusion of SIM

In the Summary section, students will find a **concise overview of the topic**, highlighting key points to aid in recalling and understanding the main concepts covered. This summary provides a clear and focused recap of essential information.

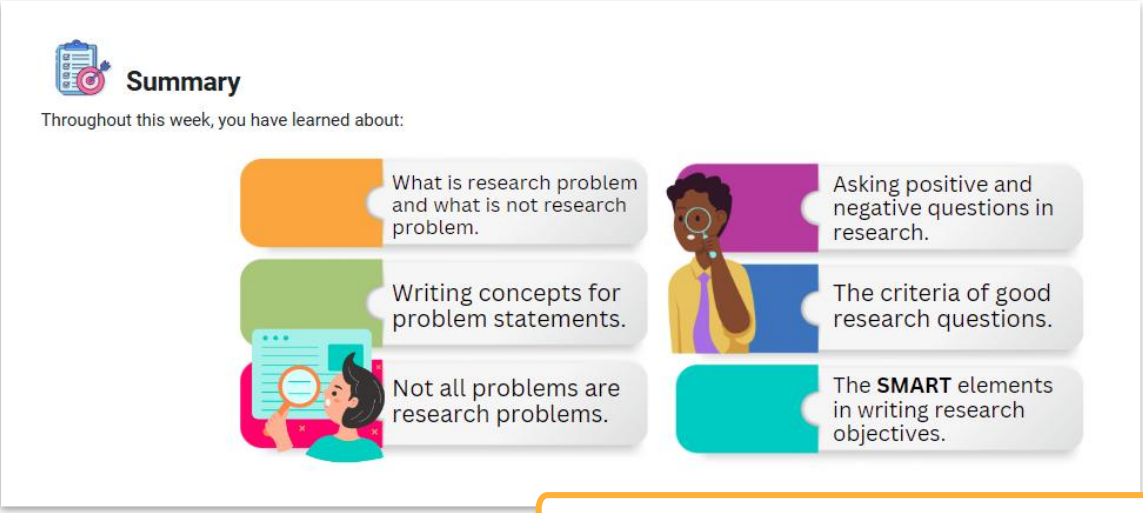


Figure 2: Example of Summary

It is advisable to include visual elements such as graphical information, illustrations, or icons to enhance visual appeal.

Instructions

The content writer must provide **detailed learning instructions** or steps to guide the students. The content writer can present the instructions in the form of written text or flowcharts.

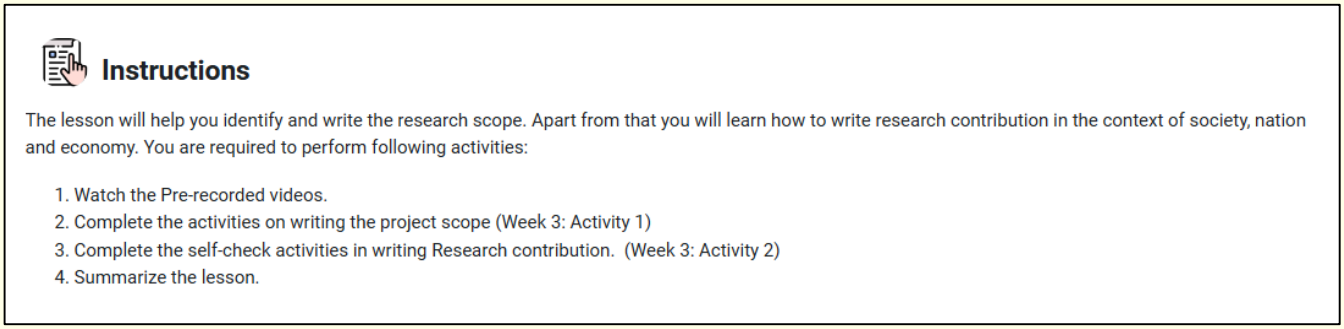


Figure 3: Example of Instructions in written form.

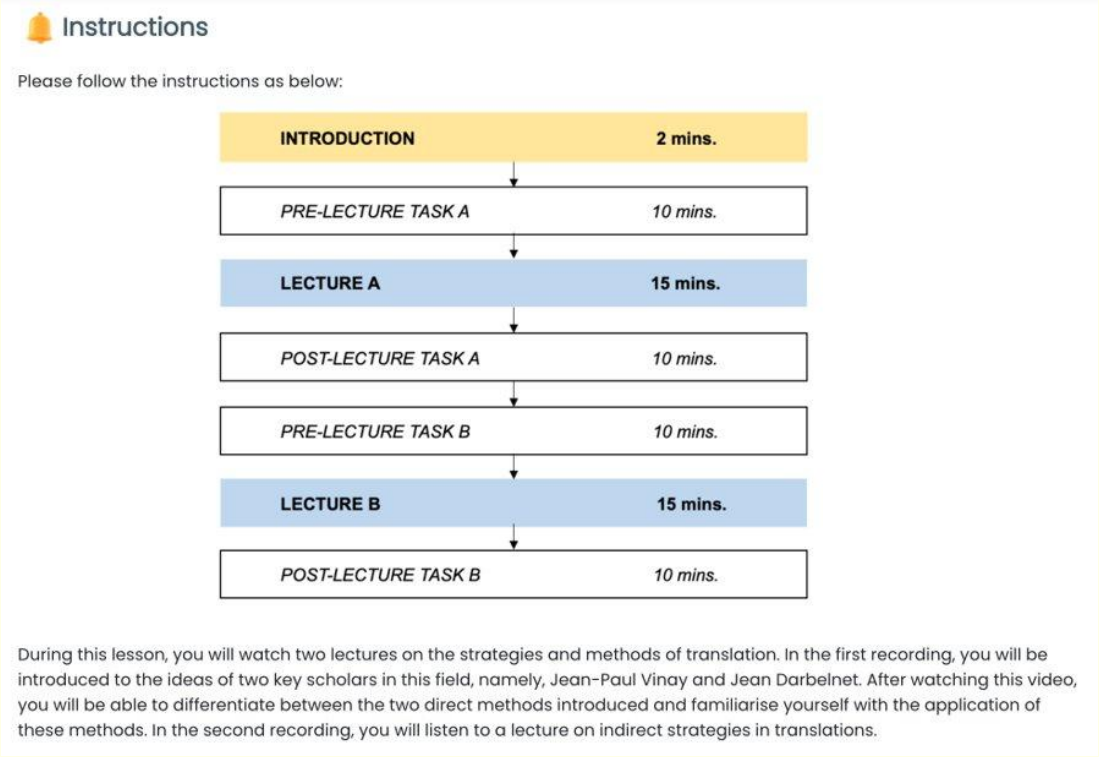


Figure 4: Example of Instructions in flowchart form.

1.2.3 Types of Activities

i. Self-Check Assessments: The content writer must provide exercises or self-assessment evaluations to **allow students to assess their understanding**. These include multiple-choice questions, fill-in-the-blank exercises, summaries, pronunciation drills, essays, and others.

ii. Discussion Forums: Discussion forums can encourage **collaborative learning** among students and **increase their participation**. Questions posted in the forums can be accessed and answered by lecturers or classmates.

iii. Feedback: Feedback activities are crucial for helping students improve their performance by providing clear and constructive evaluations. Reflection: Reflection activities encourage students to express their learning experiences and apply their knowledge in real-world situations.

1.2.4 Assessment Method

Content Writers are encouraged to use innovative and diverse assessment methods to evaluate learning outcomes. One non-graded method is self-assessment.

Examples of assessment methods and the relevant platforms are:

Method	Platform
Multiple-Choice Questions	H5P, Edpuzzle
Open-Book Test	• H5P • "Assignment Quiz" function on ODL SPECTRUM • Submit answers via email • Submit answers through private messaging on WhatsApp, Telegram, or any related platform • Physical examination at a designated location • Written and submitted through scanning as a PDF file.
Written Assignments / Lab Reports / Final Project Reports	• "Assignment" function in ODL SPECTRUM • Submit assignments via email • Submit assignments via Google Drive, WhatsApp, Telegram • Written and submitted through scanning as a PDF file
Individual Interviews	Through online video conferencing applications or phone calls
Portfolio of Past Assignments	• Post-it style websites such as Padlet, Listium, Miro • Portfolio-based websites such as Issuu, Behance, WordPress, Adobe Portfolio • Submit portfolio via private messaging on WhatsApp, Telegram, or other related platforms • Submit via email as a PDF file
Reflection on Learning Experience	• Forum in ODL SPECTRUM • Submit via private messaging on WhatsApp, Telegram, or other related platforms • Submit via email
Project Videos	• Upload on video-sharing websites such as YouTube, Vimeo, TikTok, etc. • Upload on cloud storage platforms such as Google Drive and SharePoint • Submit .mp4 files via email or private messaging on WhatsApp, Telegram, or other related platforms
Virtual Lab Work/Assignments	• Through lab-based websites such as Praxilab and Wolfram Demonstration
Social Media-Based Projects	• Posts on Instagram, TikTok, etc. • Posts on Facebook
Posters/Brochures/ Infographics	• PowerPoint • Pictochart • Canva • Submit via email or private messaging on WhatsApp, Telegram, or other related platforms

Table 2: List of assessment methods and relevant platforms.

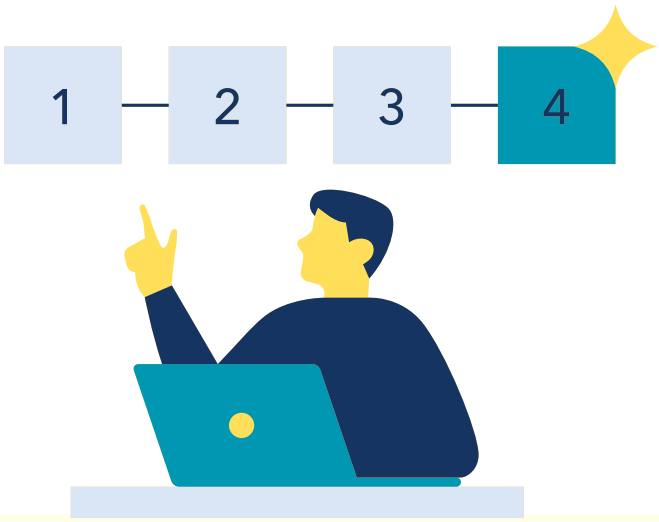
1.2.5 Types Of Learning Materials

The use of appropriate plug-in items on the ODL SPeCTRUM platform in the development of SIM is highly encouraged.

1.2.6 Summary

To develop effective SIM materials, activities and assessments should encompass the following key elements:

1. General Course Information
2. Course Introduction or Summary
3. Course Content (by topic/module)
4. Conclusion or Summary of each topic
5. Reference List



2. PHASES IN SIM DEVELOPMENT

2.1 PHASES IN SIM DEVELOPMENT

The following are suggested phases of SIM development that can be referred to by the Content Writer.

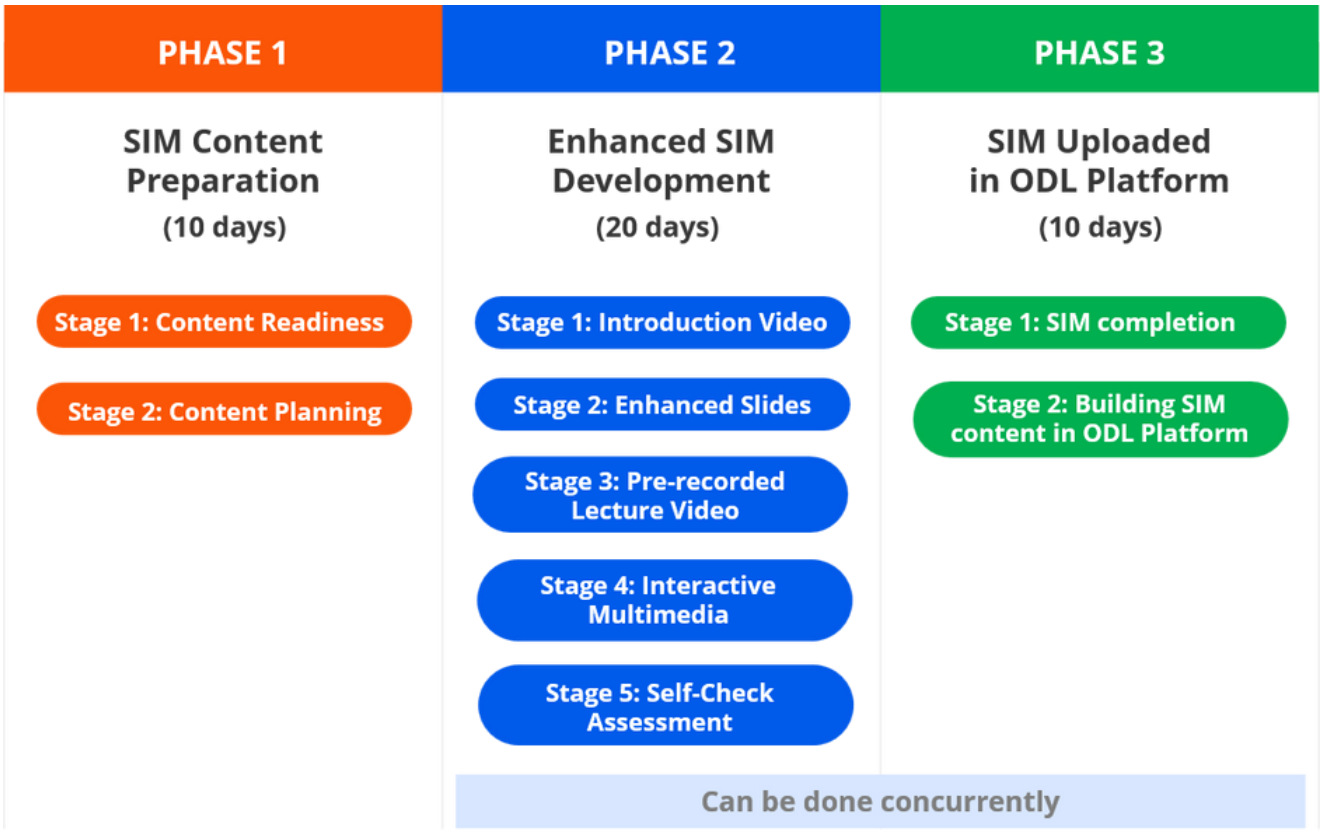


Figure 5: Phases and stages in SIM development.

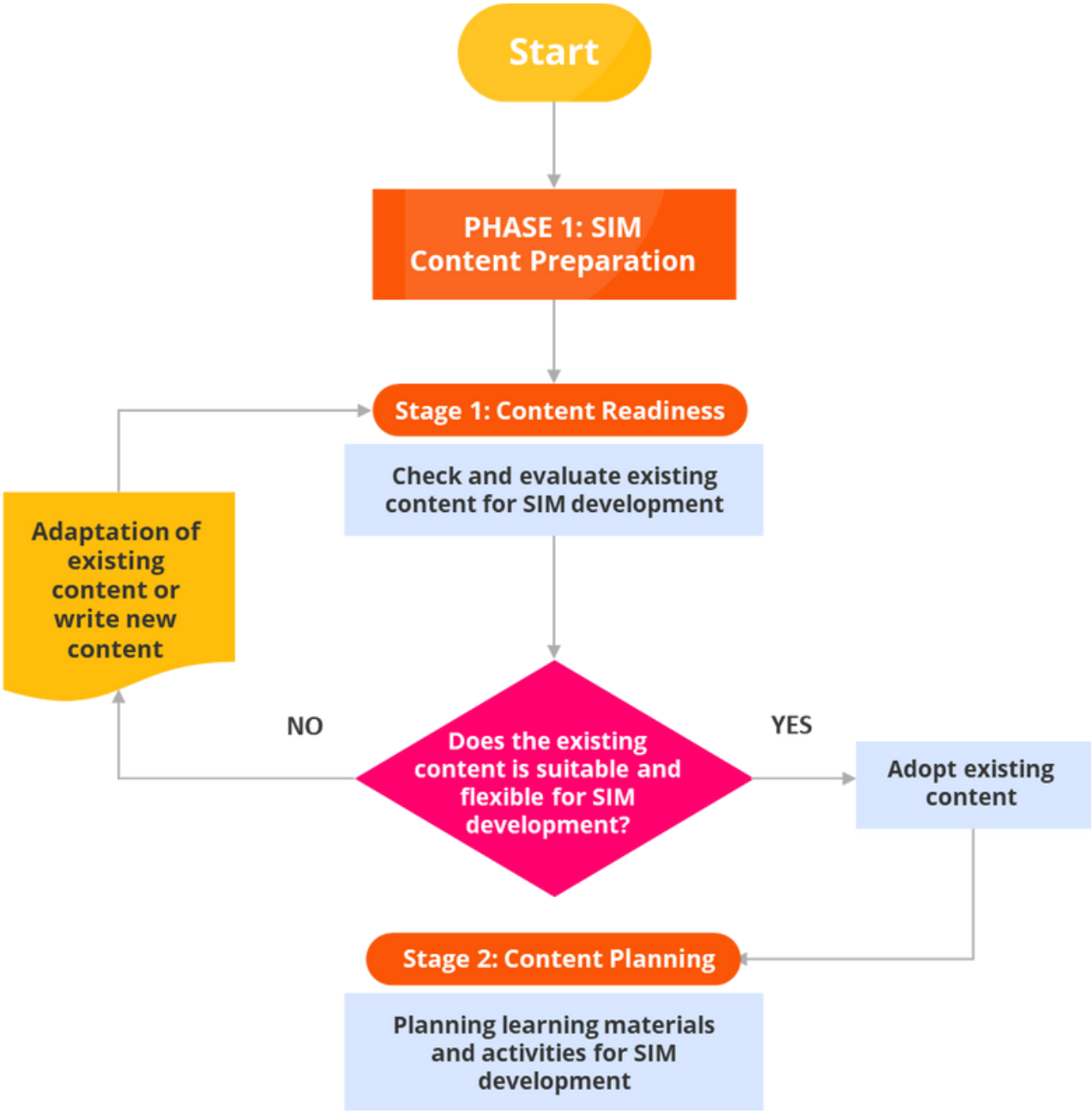


Figure 6: Proses to assess content readiness for SIM development.

2.2 Why it is important to evaluate your existing content?

Flexibility: Self-study and self-directed learning

Conventional program typically require the physical presence of an instructor in a classroom setting to deliver the course content. **The existing content is more suitable for conventional classroom based setting**, in which **do not cater to ODL**. In ODL, students have complete control over their lessons. Meaning, they can learn as per their own pace and learning capacity.

Self-instructional materials (SIM) are designed for **self-directed learning**, as an overall it **supports flexible learning**.

Figure 7: Proses to prepare enhanced SIM.

2.3 What is enhanced SIM?

Facilitate self-directed learning

Enhanced SIM refer to **educational resources and learning materials** that are designed to facilitate self-directed learning with more **multimedia interactive elements**. These materials go beyond traditional textbooks or simple handouts and incorporate various elements to enhance the learning process.

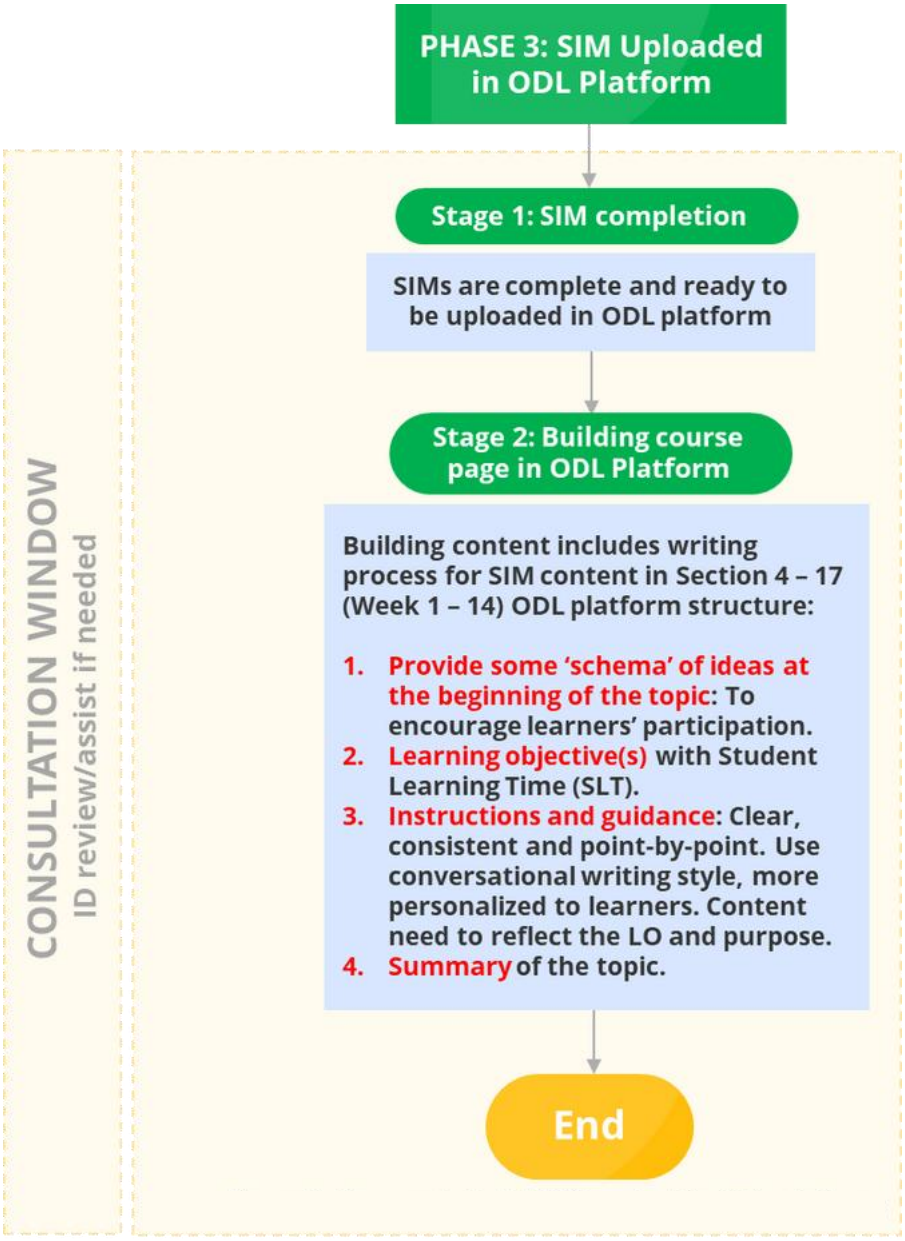


Figure 8: Proses to build SIM content in ODL platform.

2.4 What is a Well-Structured SIM?

Clarity: Enhances understanding of content and learning objectives.

Once SIM is enhanced, it must be uploaded to the ODL platform following the prescribed structure. This involves **building the course page systematically** to ensure content aligns with learning objectives. The process includes organizing materials for Weeks 1–14 with a focus on providing guidance, clear instructions, and summaries.

Consulting an instructional designer (ID) during this phase is highly recommended. IDs can help improve content quality, ensure it follows ODL guidelines, and address any technical or teaching-related issues.

3. GUIDE TO WRITING E-CONTENT

3.1 SIM AS THE BRIDGE BETWEEN INSTRUCTOR AND THE LEARNERS

e-Content refers to SIM (Self-Instructional Material), which is **teaching and learning material (T&L)** specifically designed to allow ODL students to carry out most of their learning independently. It aims to facilitate personalized learning. The Content Writer is responsible for preparing SIM to guide students in achieving course learning outcomes based on the appropriate types of learning materials.

SIM is developed based on sound **instructional design principles**:

- Learner-friendly
- Written in conversational writing style
- Use simple language
- Include learning activities, self-check assessment and feedback

When writing a SIM, you need to aware the following considerations:

- **Small steps:** Present content in small, manageable points to help learners move through it easily, one step at a time.
- **Logical arrangement:** The content should be logically arranged. Arrange content in a clear, logical order, with each point connecting smoothly to the next.
- **From known to unknown:** Link new information to learners' existing knowledge or experiences to make it more meaningful.
- **From concrete to abstract:** To initiate understanding, start with concrete examples (like illustrations or demonstrations) before moving to more abstract ideas.
- **Personalized style:** In writing self-learning materials, use "you" to create a more personal, one-on-one feel, as if the learner is being guided by a teacher. This gives to the learner a feeling of being paid individual attention.

3.1.1 Language and Writing Style

Text is always easier for readers to understand if they are familiar with the words being used. These are several examples of less familiar words together with more familiar alternatives:

Less familiar word	More familiar word
facilitate	help
attenuate	reduce
detriment	harm
influx	arrival

Basically, short words are easier to understand than longer ones.

The examples are as follows:

Long word	Short word
fundamental	basic
intoxicated	drunk
indistinct	hazy
inundation	flood
pernicious	evil

However, sometimes the longer word is more familiar, so it should be used in preference to the shorter one.

Long sentences can be harder to understand than short ones. However, overusing short sentences may harm cohesion. When shortening sentences, ensure the text remains cohesive and flows naturally.

Provide some 'schema' of ideas at the beginning of the topic. You can use: **Pretest or questions**, **behavioral/ learning objectives overviews** and **advance organizers**.

3.1.2 Engaging Content Writing

It is important to **build personal connection** through learning materials that are available in your SIM.

Avoid Jargon: Use simple and straightforward language. Avoid technical jargon unless it's necessary, and always explain it.
Active Voice: Use active voice to make sentences more direct and easier to understand.
Real-life Examples: Incorporate examples, case studies, or stories to explain concepts, making them relatable and easier to remember.

The instructions provided must be in logical flow of ideas. Use 'the hook' as transitions between Week 1 to Week 2 and so on.

E.g. The hook:

Week 1
Start: "This week, we will explore..."
End: "Next week, we will learn about..."

Week 2
Start: "In Week 1, we have explored...So this week, we will..."
End: "Next week, we will discuss in depth..."

Week 3
Start: "For the past 2 weeks we have learned about...This week..."
End: "Before we end our topic, lets recall...."

4. GUIDE TO ODL STRATEGIES

4.1 FLIPPED CLASSROOM

Flipped Classroom is a pedagogical approach in which the traditional elements of the lesson taught by the teacher are **reversed**. The educational materials are **studied by the students at home and, then, worked on in the classroom.**

According to Hwang (2019), in flipped learning, students learn via videos or multimedia learning materials prepared by the teacher before online class. In the online class, students will be guided to engage in learning activities in which they apply knowledge with the assistance of the teacher or peers. It is expected that, via having more opportunities to interact with the teacher and peers as well as to practice and apply knowledge, **students' learning performance** and **higher order thinking abilities** can be improved.

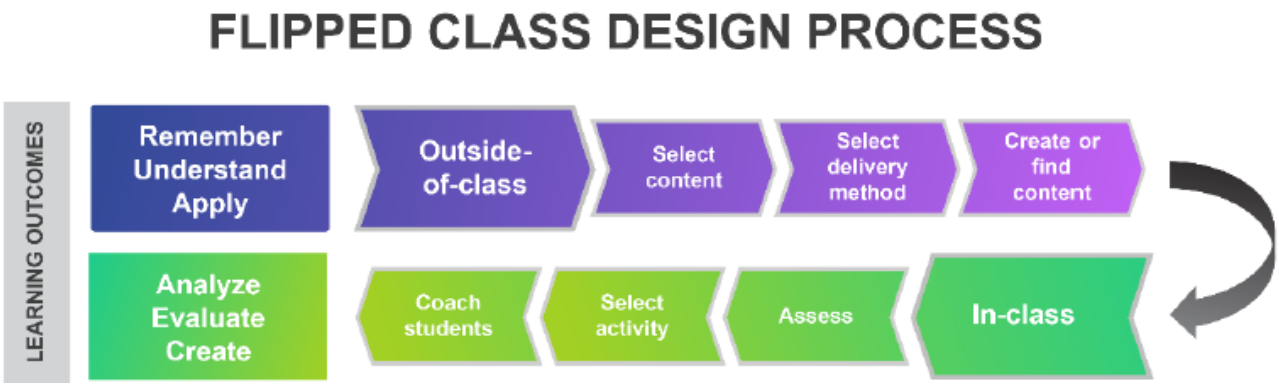


Figure 9 Resource: Ritchie Diopita (2016), Foundation of Adult Education: Journal 4 Flipped Classroom

4.2 PROJECT-BASED LEARNING

According to Realinfluencers (2020), the Project-based Learning allows students to **acquire key knowledge and skills** through the **development of projects** that respond to real-life problems. Starting from a concrete problem, instead of the traditional theoretical and abstract model, you will see improvements in students' ability to retain knowledge as well as the opportunity to develop complex competencies such as critical thinking, communication, collaboration or the problem solving.

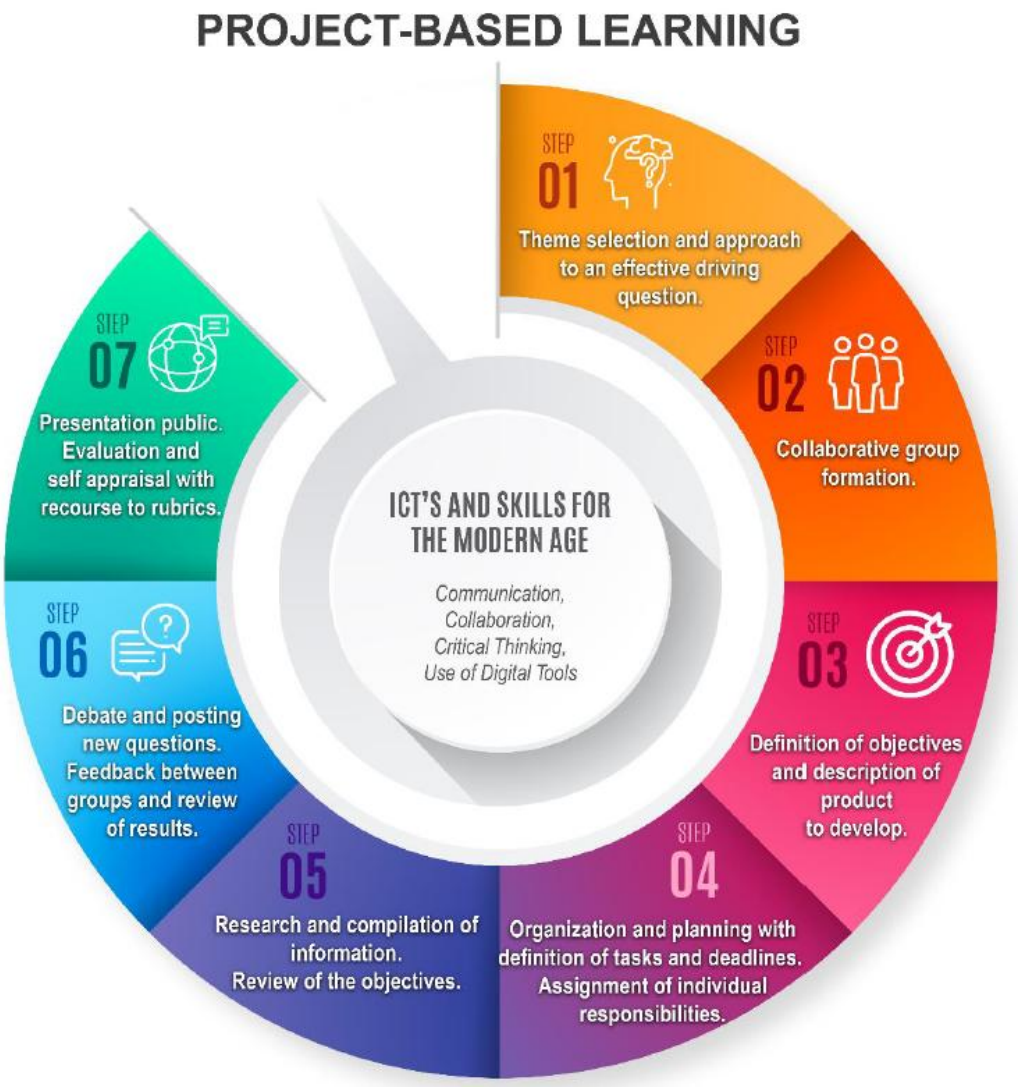


Figure 10 Resource: https://www.realinfluencers.es/en/2019/04/30/pbl-innovation-in-the-classroom/

4.3 COOPERATIVE LEARNING

According to Paula Lombardi (2018), cooperative learning **involves students working together to accomplish shared goals**, and it is this sense of interdependence that motivate group members to help and support each other. When students work cooperatively they learn to listen to what others have to say, give and receive help, reconcile differences, and resolve problems democratically. The role the teacher plays in establishing cooperative learning in the classroom is critically important for its success. This involves being aware of how to structure cooperative learning in groups, including their size and composition the type of task set; expectations for student behavior; individual and group responsibilities; and the teacher's role in monitoring both the process and the outcomes of the group experience.

There are three phases of the implementation of cooperative learning:

1. The first phase is the **pre-implementation phase**, which includes: specifying instructional objectives, determining group sizes and assigning students to groups, arranging room, planning instructional materials to promote interdependence, assigning group roles, assigning tasks, explaining the criteria for success, structuring positive interdependence and accountability, and specifying desired behaviors.

2. The second phase is **implementation** which includes: monitoring behavior, intervening if needed, assisting with needs, and praise.

3. The third phase is **post-implementation** which includes: providing closure through summarization, evaluating students' learning, and reflecting on what happened.

4.4 PROBLEM-BASED LEARNING

According to Elaine H.J and Karen G. (2016), Problem-based Learning (PBL) is a pedagogical approach that enables students to learn while **engaging actively with meaningful problems**. Students are given the opportunities to problem-solve in a collaborative setting, create mental models for learning, and form self-directed learning habits through practice and reflection.

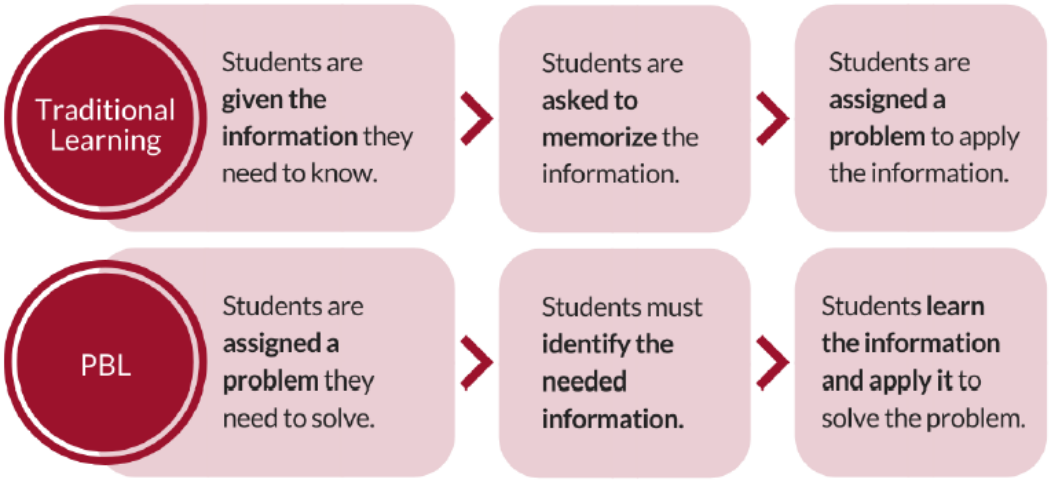


Figure 11 Resource: Queen's University (2020)

4.5 DESIGN THINKING

According to Christopher Pappas (2019), Design Thinking is a process in which we center around the user, **challenge opinions** and **redefine obstacles** in an attempt to recognize alternative procedures and solutions that might not be instantly apparent with our primary level of understanding. It's a way of thinking and working as well as a collection of hands-on methods.

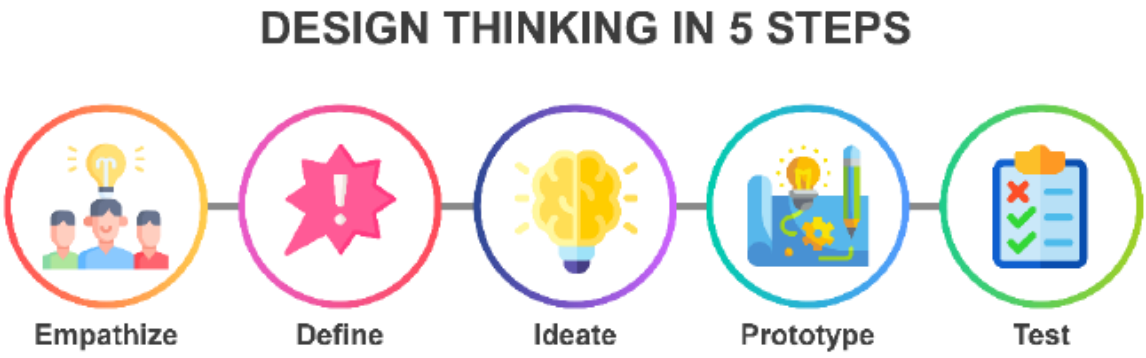


Figure 12 Resource: Christopher Pappas (2019)

4.6 COMPETENCY-BASED LEARNING

TeachThought Staff (2016) defines Competency-based Learning as an approach to education that focuses on the **student's demonstration of desired learning outcomes as central to the learning process.**

It is concerned chiefly with a student's progression through curriculum at their own pace, depth, etc. As competencies are proven, students continue to progress. It is similar to mastery-based learning, with the primary difference being that competency-based learning often focuses on observable skills or 'competencies,' while mastery learning may be academic–as likely to focus on concepts as skills.

- Reduce didactic lectures, make them shorter, and use a combination of live and recorded lectures. You can use the flipped classroom model with recorded lectures made available in advance.
- Alternate synchronous with asynchronous sessions.
- Avoid long sessions (e.g. 3 hours of class time) and incorporate more breaks.
- Use break-out groups to enhance student interactions and participation.
- Use audience polls and interactive tools, such as Mentimeter and Kahoot!
- Offer accessible office hours (flexible times for support), and engage teaching assistants to enhance student contact
- Be more lenient and kinder with grading.

5. QUALITY ASSURANCE

5.1 TESTING

Testing can explore a wide range of issues. There are two basic methods of testing materials:

1. **Field trials**, where you send the materials to random students (minimum 30 students).
2. **Expert review**, where you send the materials to other subject matter experts.

Besides, you need to select what you think are the most important issues for your SIM. Some you might want to explore are shown in the following table:

Items	Issues
Objectives	Are they clear? Are they sufficiently detailed? Are they too detailed? Do learners make use of them?
Pre-requisites	Are these correct for the target population? Did we assume some things that learners do not know?
Course structure and components	Is the course structure clear to learners? Do learners understand the function of each component? Are learners able to use all the components in an effective way?
Learning	To what extent do learners achieve the course outcomes? To what extent do learners achieve the outcomes of each unit?
Activities	To what extent do learners complete the activities? How helpful do learners find the activities?
Self-assessment	To what extent do learners complete the self-assessment? How helpful do learners find the self-assessment?
Language	How clear is the language in the course? What difficulties do learners have in understanding the language?
Level	Is the course at the right level? Or too easy? Or too hard?
Pace	Is the course at the right pace? Or too fast? Or too slow?
Time	How much time does each unit take?
Interest and motivation	How interesting is the course to students? To what extent does the course motivate students to want to study it?

Table 3: List of important issues in SIM.

5.2 STANDARD

1. You must make sure that the SIM that will be developed is **free from any copyright issue.**
2. Copyright of the SIM or ODL material that is developed **belongs to the Universiti Malaya.**
3. For the content, a module should have:
    - Maximum of 15 minutes pre-recorded video – summarizes the whole module (preferably 10 minutes); or
    - Slideshow – Powerpoint or pdf format, or
    - Maximum of 5 minutes pre-recorded audio – summarizes the whole module (preferably 3 minutes); or
    - Narrated slideshow – in mp4 format; or
    - Live lecture – recording will be provided to the students after the learning session.
4. When creating a Powerpoint for the students, use the template provided by the Instructional Designer.
5. For confidentiality and security purposes, the official ODL online platform is ODL SPeCTRUM.
6. If you want to use other tools/ platforms, please ensure that there is no copyright issue or any illegal misconduct when using the tools/ platforms.
7. Assessment principles, methods and practices must be aligned to the learning outcomes, consistent with the levels defined in the MQF.
8. The SIM must be in English or Bahasa Melayu. The use of other languages is according to the course requirements.

Learn More:
YouTube link

For further information and to learn more about the structure of the ODL platform, you can visit the official ADEC YouTube channel and play the following ODL playlist. **Platform ODL**

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