



Optimising ICT for 21st Century Learning

Lim Tick Meng

limtm@oum.edu.my



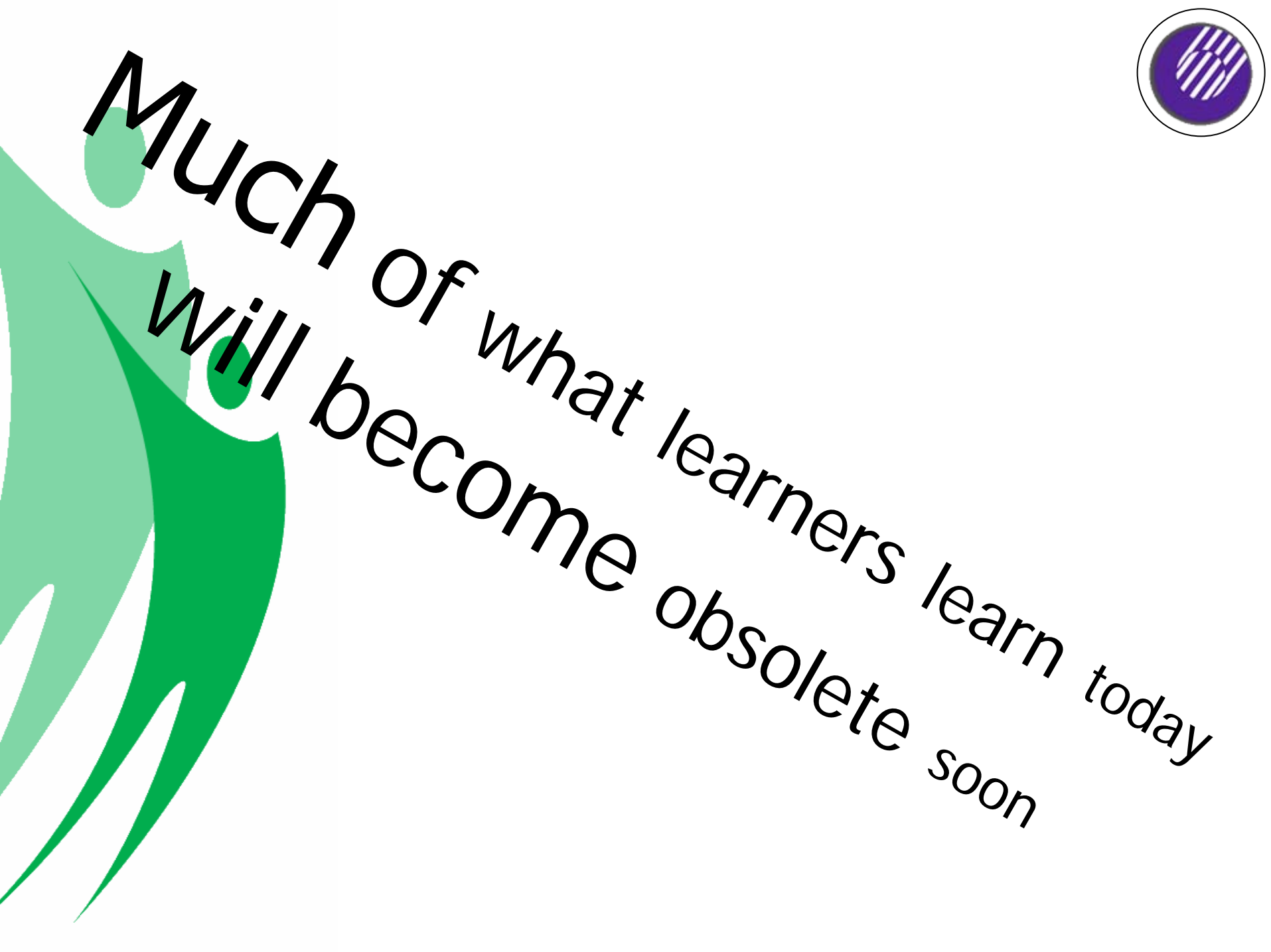
Part 1

21 Century Learning

What ?

Why ?

How ?



Much of what learners learn today
will become obsolete soon

How many new books do you think are published every day?



?

How much do we know?

How much can we teach?



Problems faced by Today's Educators

- **Information (both relevant and irrelevant) is in abundance**
- **Knowledge life cycle is getting shorter**
- **We are educating people to face future challenges which currently doesn't exist**



Teaching and Learning Today

**Are they learning the
knowledge and skills they
want and need to have?**

**Are they acquiring the
knowledge and skills needed
by the employers?**



IT IS NOT WHAT
YOU TEACH

IT IS WHAT
THEY LEARN
THAT MATTER



So ... what is Teaching



If we **TEACH** what we were taught
yesterday

We **Fail** to prepare them for
tomorrow

We need to
change our
perception
about teaching





**A teacher is one who makes
himself progressively
unnecessary.**

~Thomas Carruthers

**This is in line with the notion of
Open and Distance Learning**



**The
Learner**

ELECTRONIC MEDIA

EXPERIENCE

BOOKS/Modules

INTERNET

FRIENDS

Tutors

We

But ...

HOW





Part 2

Optimising ICT for

21 Century Learning



Proposed 21st Century Instructional Approach

- 1. Apply the Pareto Principle
(20-80 rule)**
- 2. Shifting from knowledge provider
to knowledge navigator**
- 3. Learners as knowledge constructor**



1 Apply 80/20 Rule in the Instructional Strategy

- **80/20 rules means that 80% of your outcomes comes from 20% of your Inputs**
- **Applying to teaching, it means that 80% of effective learning comes from 20% of the total instructional effort.**
- **Thus if we are able to identify the essential 20% effective instruction, it means we reduce unnecessary learning time and increase learning efficiency as well as effectiveness.**



Current Mode



One hour
classroom
lecture

- 60 minutes delivery time – but only 12 minutes effective delivery time (80%-20% principle)
- Lecture not repeatable
- constraints of time and place
- Confined to limited number of students
- Allow real-time guidance

Converting Classroom Lectures into Internet-Based Lectures



Classroom Lecture



The screenshot shows a video player interface. The main content is a slide titled "A shift from Conventional Teaching to Contemporary Teaching". The slide is divided into two columns: "Conventional teaching" and "Contemporary Teaching".

Conventional teaching	Contemporary Teaching
<ul style="list-style-type: none">▪ Emphasizing Content▪ Focus on what, when and where▪ Teacher-centred▪ Focus on content delivery	<ul style="list-style-type: none">▪ Promote competency and performance▪ Focus on how and why▪ Student centred▪ Focusing on exploratory learning

Below the slide, there is a list of bullet points:

- Extracted 12 minutes video presentation
- Synchronise voice with PowerPoint notes
- Add callout
- Include quizzes
- Unlimited number of students
- Does not allow real-time guidance

Internet-Based Lecture

- Flash
- Media Player
- Real Player
- Quick Time
- Streaming Flash Videos
- Pod Casts





A Sample Screencast (Internet-Based Lecture)

Introduction to ERIC
Selecting Sources
Finding Peer-Reviewed Journals
Effective Searching
Finding Full Text
Citing Sources Easily

About ERIC

(the database, not the librarian)

UT ARLINGTON
LIBRARY LESSONS

Source: "ERIC" slides © by Margaret A. Johnson, 2004

00:00 / 03:24

6040 / 6040



Another Sample Screencast

Academic Journals/Scholarly Articles



00:10 / 01:42

00:11 / 01:43



Tools for Creating Internet-Based Lecture

- **Techsmith's Camtasia Studio**
- **Adobe's Acrobat Connect Pro**
- **Adobe Presenter 7**
- **PowerPoint to Flash Convertor**
- **Adobe Flash**
- **Anystream's Apreso Podcast software**
- **Tegrity Campus**
- **Accordent.com's Capture Station**
- **Sony Fondry's Mediasite**



Camtasia Studio

- **Captures any computer screen activity:**
 - PowerPoint presentations
 - Video and audio components
 - Java Applets demonstrations
 - Software learning tutorials
 - Computer lab assignments
- **Can use web camera to create picture-in-picture**
- **Ideal for creating tutorials for software packages and learning management system.**

How is Camtasia Studio used?



- Record a class lecture to CD
- Pre-record a lecture for later review
- Create Web-based tutorials or demos
- Train remotely
- Record an error path
- Demonstrate a new LMS feature
- Embed videos into help files
- Rehearse & review presentations



2 Shifting from knowledge provider to knowledge navigator

- **Instead of trying very hard to produce the best (such as producing the best module), why don't we shift the focus: try hard to guide and help them get the best available.**



Comparing Existing Model and Proposed Model

Current Model

- Printed Module or Digital Module
- Face-to-Face tutorial
- Online asynchronous Tutoring

Suggested Mode

- Hyperlinked integrated module
- Internet-based short modular lecture
- Real-time synchronous tutoring



Use of Hyperlinked Integrated Module (HIM) to manage required knowledge enhance knowledge navigation

- TOPICS**
- Topic 1
 - Topic 2
 - Topic 3
 - Topic 4
 - Topic 5
 - Topic 6
 - Topic 7
 - Topic 8

- Sub-Topics**
- Sub-Section 1
 - Sub-section 2
 - Sub-Section 3
 - Sub-section 4
 - Sub-Section 1
 - Sub-section 5
 - Sub-Section 6
 - Sub-section 7

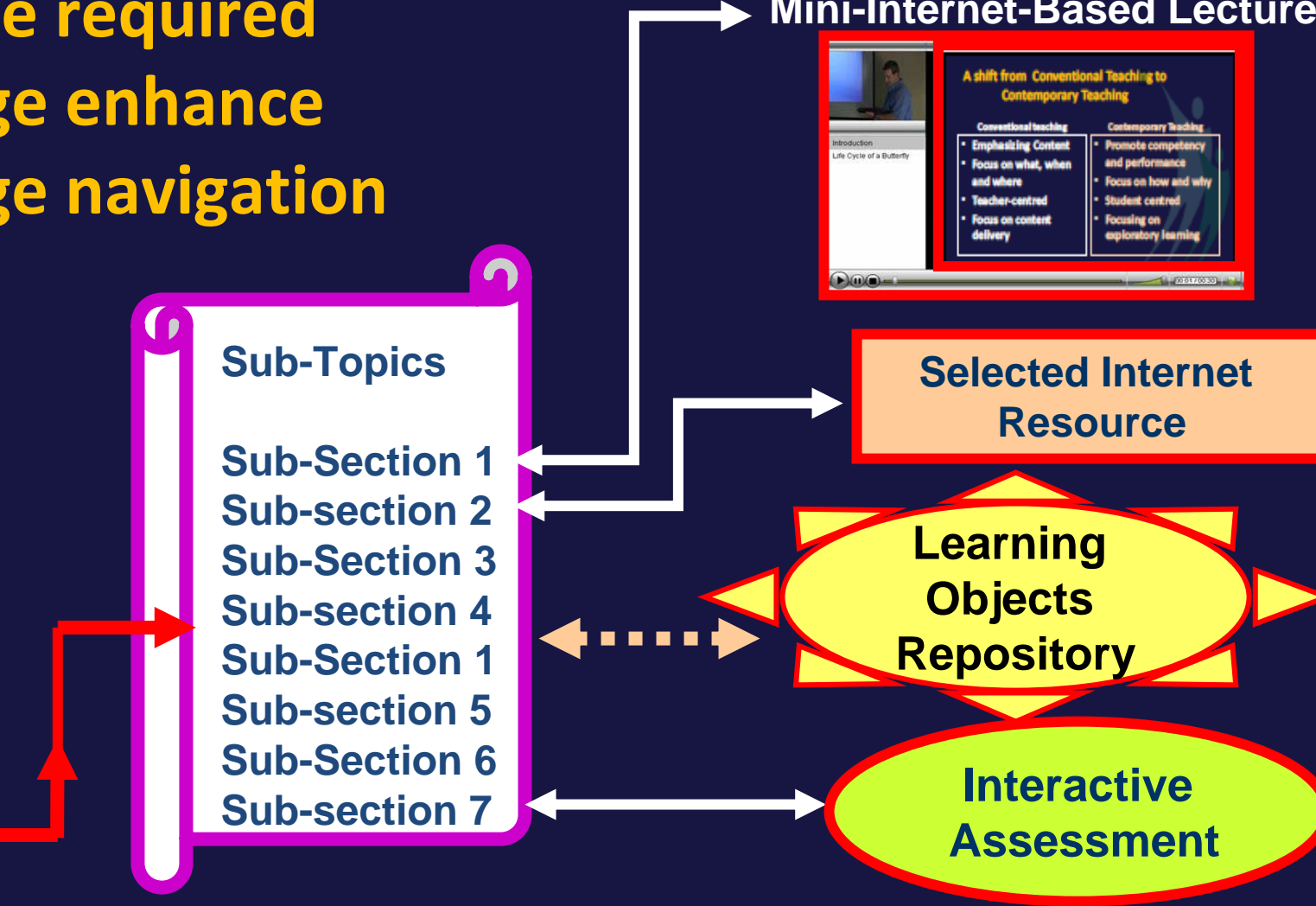
Mini-Internet-Based Lecture

Conventional teaching	Contemporary Teaching
<ul style="list-style-type: none">• Emphasizing Content• Focus on what, when and where• Teacher-centred• Focus on content delivery	<ul style="list-style-type: none">• Promote competency and performance• Focus on how and why• Student centred• Focusing on exploratory learning

Selected Internet Resource

Learning Objects Repository

Interactive Assessment

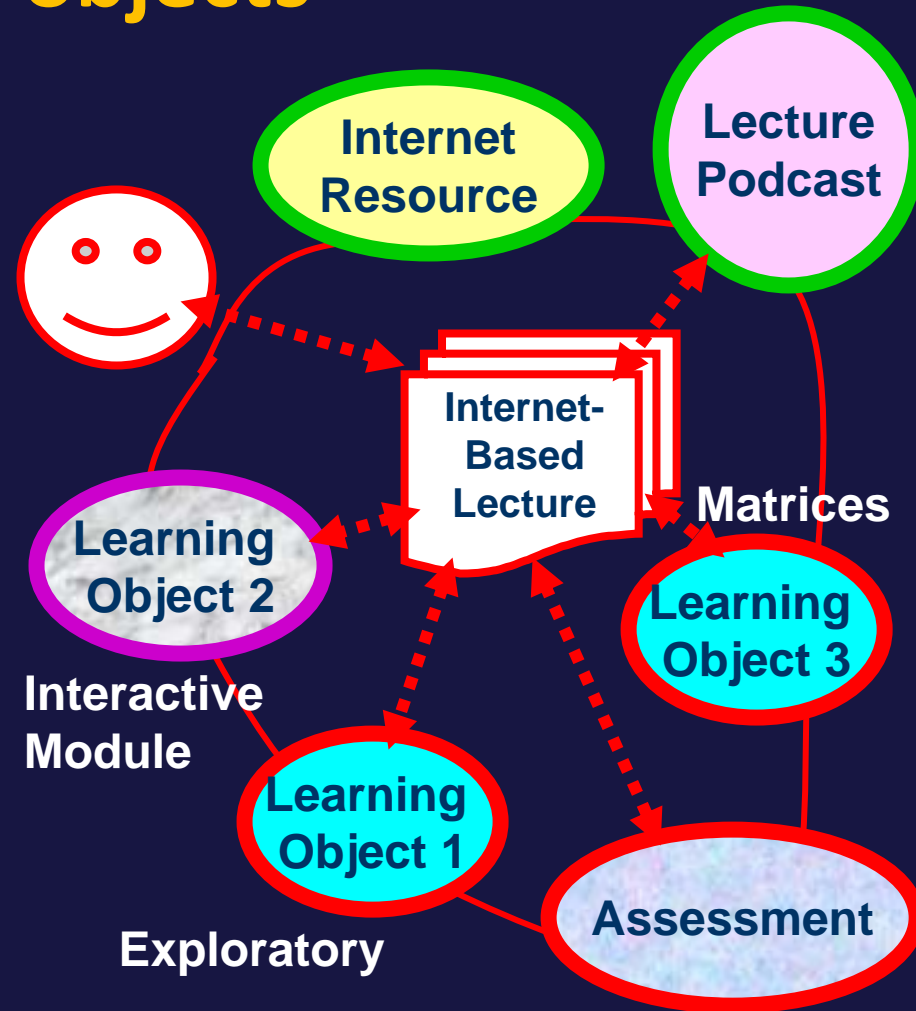




3

The Learner as Knowledge Constructor using suitable learning objects

Use well constructed microworld or suitable interactive learning objects to guide learners in the construction of their knowledge





Web-based Learning

Overcoming the Limitation

F-2-F Teaching

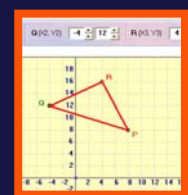
- One (teacher) – Limited no. of learners
- Constraints of time and place

Web-based Learning

- Unlimited number of learners
- No constraints of time and place

- Teacher can see the learner's work and provide real-time guidance

- Guidance from remote and teacher “**CANNOT SEE**” what the learner is doing.





we should always caution ourselves

Don't Use Technology
just for the sake of Technology

Wrong use of Technology brings
more Harm than Good



Thank you