

INFORMATION AND COMMUNICATION TECHNOLOGY

LEARNING MODULE

MULTIMEDIA DEVELOPMENT



Pusat Perkembangan Kurikulum
Kementerian Pelajaran Malaysia
2006

1. What is it?

This is a learning module for a specific Learning Outcome as stipulated in the HSP that is:

- 4.3 MULTIMEDIA DEVELOPMENT

2. Who is it for?

This module is for students who are taking the ICT subject as their elective and for those who are interested in ICT.

3. What can be achieved?

Upon completion of this module, you should be able to produce an interactive educational multimedia project.

4. Is previous knowledge necessary?

No. The content of this module will enable you to acquire the knowledge.

TOPIC: 4.3 Multimedia Development

SUBTOPIC: 4.3.3 Multimedia Production

LEARNING OUTCOMES

You should be able to:

4.3.3.2 Apply all the phases of multimedia production to produce an interactive educational multimedia project.

- A. Phase 1 – Analysis
- B. Phase 2 – Design
- C. Phase 3 – Implementation
- D. Phase 4 – Testing
- E. Phase 5 – Evaluation
- F. Phase 6 – Publishing

DURATION: 22 periods

4.3.3 MULTIMEDIA PRODUCTION

OVERVIEW

Multimedia can be defined as a computer based interactive communications process that incorporates text, graphics, animation, video and audio. Multimedia provides an environment in which the user can interact with the program. Multimedia can be delivered in the form of CDs or web-based using the Internet. The production of multimedia involves 6 phases. They are analysis, design, implementation, testing, evaluation and publishing phases. In this module, we will go through each phase in detail to produce a multimedia production that will be delivered in the form of CD.

REQUIREMENTS

A. Hardware

Multimedia PC
Digital Video Camera
Digital Camera
Scanner
Printer
CD Writer / DVD Writer
CD-R / CD-RW

B. Software

Graphic Editor
Video Editor
Audio Editor
Multimedia Authoring Software

C. Worksheet

Analysis form
Storyboard Template (hardcopy/softcopy)
Evaluation Form

REFERENCES

A. Books

1. Stephen McGloughlin (2001) Multimedia Concepts and Practice.
2. Shelly G.B, Cashman T.J, Vermaat M.E, Walker T.J. (2005) Discovering Computers 2006: A Gateway to Information, Course Technology.
3. Stephen M. Alessi and Stanley R. Trollip (2001) Multimedia for Learning. A Pearson Education Company. USA.
4. James E. Shuman (1998) Multimedia in Action. Thomson Course Technology. Belmont CA.

B. Web Address:

1. http://www.shawmultimedia.com/analy_1.html
2. <http://www.klariti.com/technical-writing/User-Guides-Tutorial.shtml>

A. Phase 1 – Analysis

LEARNING OUTCOMES

You should be able to:

1. investigate and write a short report of the findings.

Duration: 2 periods

Introduction:

What is analysis phase?

Analysis phase is the first phase in multimedia production. In this phase, problem will be defined and the possible solution will be determined. Preliminary investigation will also be carried out.

Situation 1:

You are working with the Malaysian Tourism Board. One day, your boss asks you to produce a multimedia project which is informative and interactive for the ‘Visit Malaysia Year’ campaign.

Study and analyse the above situation, then

1. Identify the project title.
2. Identify the problem.
3. Determine the objective that you want to accomplish.
4. Determine the possible solution.
5. Determine the target audience or end user.
6. Fill in the analysis form.

Example : Analysis Form

Items	Response(s)
Project title	Visit Malaysia Year
Problems	To produce an informative and interactive multimedia
Objectives	- to introduce Malaysia - to give more information on interesting places in Malaysia - to give an idea about Malaysian cultures and customs - to introduce local cuisines

Possible solutions	An informative and interactive multimedia project containing texts, videos, audios, animation and graphic; provide an interactive tour to the users
Target Audience	Local and Foreign tourists

Based on the analysis, write a **short report** of your project title

Example of a short report

This multimedia project is about the 'Visit Malaysia Year'. This project will promote and introduce interesting places in Malaysia. Malaysian cultures and customs and also the famous Malaysian cuisines are attractive pull to both local and foreign tourists.

Activity 1:

Study and analyse the situation below, then:

- i). Fill in the analysis form.
- ii). Write a short report.

Situation:

Your school is going to have a new intake for the Form 1 students. As a school head prefect, you are given the responsibility by your principal to produce a multimedia project which will include all the information about your school for the parents and the new students. Your multimedia project must be both informative and interactive.

Analysis Form

Items	Response(s)
Project title	
Problems	
Objectives	

B. Phase 2 - Design

LEARNING OUTCOMES

You should be able to:

1. apply CASPER into multimedia project
2. provide an overview of the project in the flow chart
3. create storyboards

Duration: 4 periods

Introduction: What is design phase?

In the design phase; the course content, navigational structure, assets, approach and graphic design are developed in detail. Sample graphics and layouts are established and technical requirements are specified.

Activities:

Activity 1

Study the CASPER design principles and apply in your multimedia project.

CASPER screen design and layout principles
<p>Contrast</p> <p>The principle of contrast states that if two items are not exactly alike make them different. Contrast provides interest within a piece and keeps the observer entertained.</p>
<p>Alignment</p> <p>Alignment is the idea that while items are separated by idea and space (the principle of proximity) they are still all part of the same page. Nothing should be placed on a page arbitrarily; each item should have a visual connection with something else on the page.</p>

Simplicity

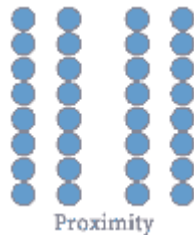
Although gaining attention is an important part of any communication act, it is important to try to keep your message as simple as possible.

- Use only the amount of text and graphics as is *absolutely necessary* to get your point across
- Superfluous graphics can interfere with understanding.
- An overabundance of fonts or colours can distract rather than assist learning.

The general rule of thumb is to use graphics that are as simple as possible when displaying content on the screen. Provide the main ideas and a means of getting more information for those who might need or desire it.

Proximity

The principle of proximity states that things, which are closer together, will be seen as belonging together. Looking at the picture to the right, since the horizontal rows of circles are closer together than the vertical columns, we perceive two vertical lines. Since the first two columns and the last two columns have less space between them than the centre two columns, we perceive two groups of two columns.

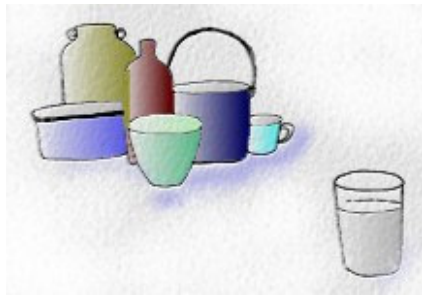


Emphasis

One method used to attract attention in the design of a screen or work of art is the use of a focal point. A focal point draws your attention to the most important element on the page. There are several techniques used to emphasize the most important object on a page.

Emphasis by Isolation

If most of the elements in a work of art are grouped closely together, an object by itself stands out as a focal point.

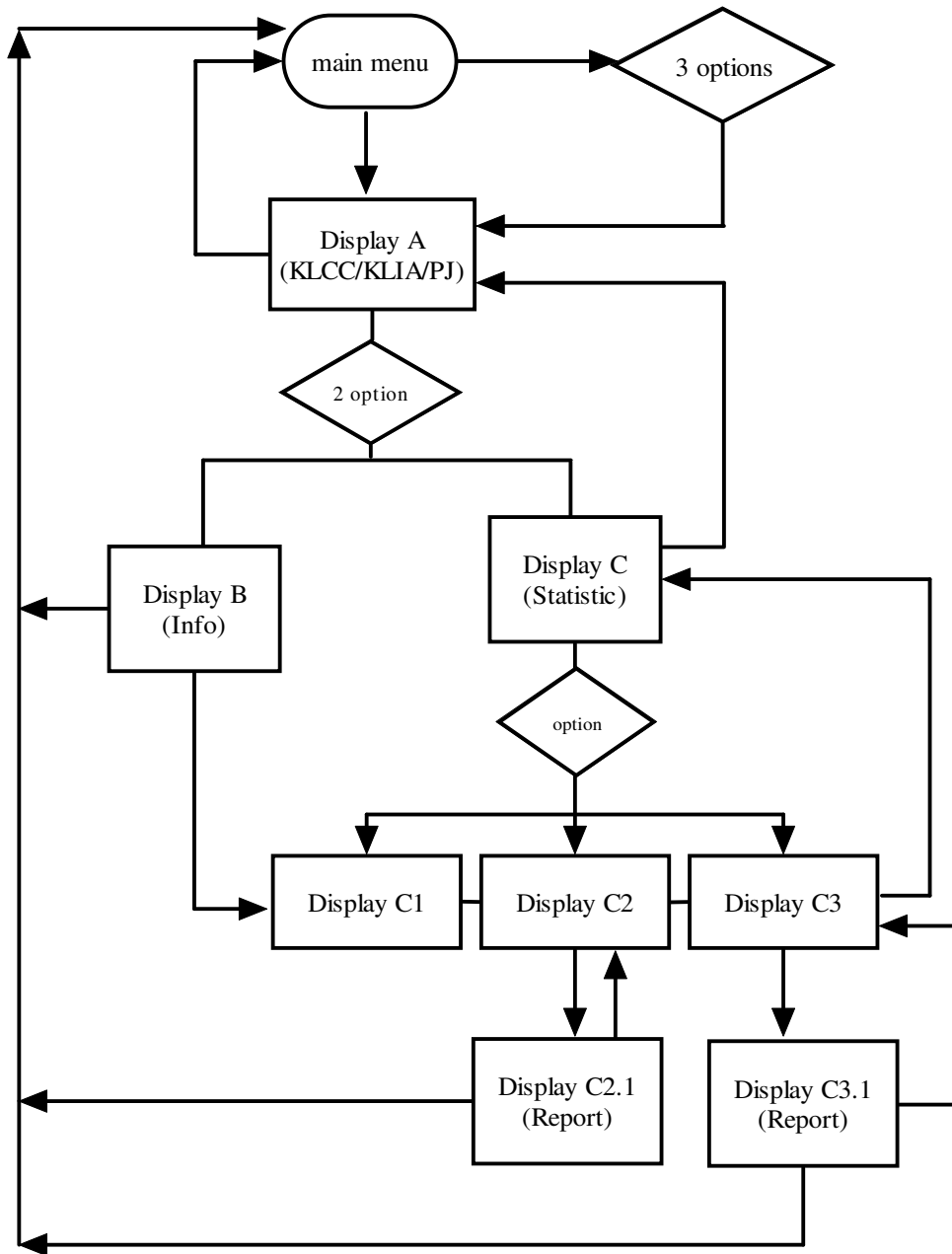


Emphasize with text attributes.

Use highlighting or boldface to draw attention to the main points. Underlining rarely looks good on screen. Blinking should only be used in critical situations. It is distracting. Vary the size and rotation of text to attract attention. Scrolling text is generally not a sound practice in interactive multimedia (IMM). Multiple fonts should rarely be used. Pick a good font and work with its different styles.

Repetition

Repetition is the idea that consistency can be gained by repeating elements throughout a page or series of pages. Repetitive items in a piece tie it together as a whole. The best computer interfaces will maintain a consistent look. In particular, icons used for navigation should maintain one position to avoid confusing the learner. It is also wise to use similar font faces and colour schemes throughout a particular interface, unless the change is used to signal a new unit, topic, or section.



Activity 2

Design the storyboard and the navigation scheme. Include a template design if appropriate and specify the hyperlinks. (Multimedia / Worksheet / Storyboard Form.doc)

Title : VISIT MALAYSIA		Section : 1		Page : 1
Sub Title : Introduction		Graphics : Yes / No	Audio : Yes / No	
Notes :	<p style="text-align: center;">WELCOME TO MALAYSIA</p> <p style="text-align: center;">❖ KUALA LUMPUR</p> <p style="text-align: center;">❖ PUTRA JAYA</p> <p style="text-align: center;">❖ SEPANG</p> 			
Next →				
Back →	QUIT	BACK	NEXT	
<u>Audio</u>	<u>Video</u>	<u>Animation</u>	<u>Graphic</u>	

Reference : [Multimedia In Action , James E.Shuman. www.wadsworth.com](http://www.wadsworth.com)

Evaluation/ :

Self Test
Summary :

Title : VISIT MALAYSIA	Section : 1		Page : 1
Sub Title : Introduction	Graphics : Yes / No	Audio : Yes / No	
<p>Notes :</p> <p>Next →</p> <p>Back →</p>	<div style="text-align: center; margin-bottom: 20px;"> <div style="border: 1px solid black; padding: 5px; width: 300px; margin: 0 auto;">Title Text</div> </div> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <div style="border: 1px solid black; padding: 5px; width: 150px; margin-bottom: 5px;">Hypertext 1</div> <div style="border: 1px solid black; padding: 5px; width: 150px; margin-bottom: 5px;">Hypertext 2</div> <div style="border: 1px solid black; padding: 5px; width: 150px; margin-bottom: 5px;">Hypertext 3</div> </div> <div style="border: 1px solid black; padding: 20px; width: 150px; height: 150px; display: flex; align-items: center; justify-content: center;"> <p>GRAPHIC</p> </div> </div> <div style="text-align: center; margin-top: 20px;"> <p>Navigation button</p> <div style="display: flex; justify-content: center; gap: 50px;"> <div style="border: 1px solid black; width: 50px; height: 20px; background-color: yellow;"></div> <div style="border: 1px solid black; width: 50px; height: 20px; background-color: yellow;"></div> <div style="border: 1px solid black; width: 50px; height: 20px; background-color: yellow;"></div> </div> </div>		
<u>Audio</u>	<u>Video</u>	<u>Animation</u>	<u>Graphic</u>

C. PHASE 3: IMPLEMENTATION

LEARNING OUTCOMES

You should be able to:

1. apply editing software.
2. apply authoring tools
 - creating texts and changing objects attributes in presentation area
 - inserting graphics in presentation area
 - inserting animation graphics in presentation area
 - inserting audio objects in presentation area
 - inserting video objects in presentation area
3. produce an interactive educational multimedia project.

Duration: 8 periods

Introduction

Implementation of the design includes using a multimedia authoring software.

Activities:

Activity 1

You are required to prepare some images which are related to the topic. You have many ways to get the images:

1. Take pictures using digital camera / pictures
2. Scan your photo using scanner
3. Download pictures from Internet

Activity 2

You have to prepare some audio. Your audio format must comply with the multimedia authoring software. You may:

1. Record your voice into digital form
2. Download audio from Internet
3. Create your own audio file

Activity 3

Take a short video.

Activity 4:

Creating an interactive multimedia production.

1. *Creating texts in presentation area and change the attributes.*

- i) Open new file by selecting **File** at the menu bar. Select **New**.
- ii) Select text object.
- iii) Now you are ready to type any text. For this exercise, please type "VISIT MALAYSIA YEAR".
- iv) Choose attribute object to make changes.
- v) Save your exercise. First click File > Save.
- vi) Type file name as **VISIT_MALAYSIA_YEAR** in column provided. File name must be in one word.
- vii) Click Save.

2. *Inserting graphics in presentation area*

- i) Click at the icon to insert graphic.
- ii) Select suitable image from the image folder. Get a suitable size for your presentation.
- iii) Save your project.

3. *Inserting animation graphics in presentation area*

- i) Click at animation icon. Choose suitable animation for your presentation.
- ii) Save your project.

4. *Inserting audio objects in presentation area.*

- i) Select audio icon to insert sound.
- ii) Choose suitable sound for your project.
- iii) Click Run to test the sound.
- iv) Save the project

5. *Inserting video objects in presentation area*

- i) Choose suitable video from your file.
- ii) Run the video. Save your project.

D. Phase 4 – Testing

LEARNING OUTCOMES

You should be able to:

1. test an ongoing multimedia production.
2. repair and fixed of any problems that testing exposes.
3. use the check list for testing.

Duration: 4 periods

What is testing?

Testing is an ongoing process and should begin at the very beginning stage of multimedia production. It is important to test the design and the function to find out how the user interacts with the multimedia products

Who will do the testing?

Your friends, teacher or any one can do the testing.

Why do we need to test our multimedia production?

This is to repair and fix any problem that testing exposes. You cannot predict how someone who has never seen your product before will use it. Independent testing also gives you feedback on how your product performs. Testing process will prove or indicate where you need to make changes.

Do I need to have all the items listed in the checklist?

No, not all the items given should be in your multimedia productions. For example, if you have navigation buttons, there is no need for hotspot.

What to do with the checklist?

Just tick (\checkmark) at the Yes or No column according to the items shown in the Multimedia Production and give some comments regarding the item tested for improvement if needed.

Example: When user guides are given but not in proper order, then we have to give some comments on that part to be improved by the developer.

Check List For Testing A Multimedia Production

Name : _____

Form : _____

Title : _____

Date : _____

Tick () **Yes** or **No** according to the items shown in the Multimedia Production.

	Items	Y E S	N O	Comments
A	Content			
	Matches the goals			
	Text			
	Animation			
	Graphic			
	Video			
	Audio			
	Language			
	Informative			
B	Interface			
	Contrast			
	Alignment			
	Simplicity			
	Proximity			
	Emphasis			
	Repetition			
C	Navigation			
	Navigation aids			
	Consistency			
D	Documentation			
	Production documents			
	User guide given			
	Supplementary documents			
E	Others			
	Colour			
	Icon			
	Hotspot			
	Menus			
	Interactive			

E. Phase 5 – Evaluation

Duration : 2 periods

Learning Outcome :

Students should be able to assess their own multimedia project by using the checklist form.

What is evaluation phase?

The evaluation of the project is an on going process. This phase of the development process focuses on summative evaluation and measures the effectiveness of the project.

Evaluation process focuses on the product used rather than its features and functions. It is done earlier to discover any design faults and reduce the costs of correcting the faults. It can reduce the need for a technical help and training costs, and can increase users' satisfaction.

Evaluation can also reduce 'over design' by making you aware of what the user really needs. There is a range of different types of evaluation that can be applied to an educational multimedia product. Some of them are stated in the evaluation form below.

http://www.tecmasters.com/Multimedia_pg1.html

<http://www.tedi.uq.edu.au/mag/view.asp?Section=61>

EVALUATION FORM

Name : _____

Form : _____

Project Title : _____

Date : _____

Scale : 1 – Poor
 2 – Good
 3 – Excellent

Tick (/) in the appropriate column.

	Items	1	2	3	Comments
A	Content (e.g.: match the project goal, informative, etc)				
B	Interface (e.g.: interesting, user friendly, interactive, etc)				
C	Navigation (e.g.: flow of the slide, all buttons functioning)				
D	Documentation (e.g.: all the six phases are documented)				

F. Phase 6 – Publishing

LEARNING OUTCOMES

You should be able to:

1. produce a multimedia Compact Disc (CD)
2. create cover and inlay for the CD
3. do CD packaging

Duration: 2 periods

Introduction:

What is publishing phase?

In the publishing phase, the process of producing a CD and its cover will be implemented. In this phase, quality of packaging will be considered.

Activities :

Activity 1

You are required to use CD writer to produce a multimedia CD.

1. Use the software that come with the CD writer to produce the CD.
2. Follow the step given.

Activity 2

You have to create the CD cover and the CD inlay.

1. Use the software that come with the CD writer to create the CD cover and inlay.
2. Follow the step given.

PROJECT TASK: DO IT YOURSELF

Instruction

1. Choose a suitable title to develop your educational multimedia product. The project title should not touch any sensitive issues such as religion, politic, race, artists, etc.
2. Your presentation should be within 5 to 10 minutes.
3. Include text, graphics, video, audio and animation elements.
4. Apply suitable interface principles in your project.
5. Carry out the project using the phases accordingly as below:
 - Analysis
 - Design
 - Implementation
 - Testing
 - Evaluation
 - Publishing
6. Compile all the related documents.
7. Submit your documents and the softcopy of the multimedia product (CD) to your teacher.