

Designing Mobile-Based Interactive Learning Media in MICE Courses

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Abstract

The emergence of the MICE industry, which is multifaceted and involves various stakeholders, presents a novel opportunity for multiple parties to derive benefits. This reason has made the growth rate of MICE organizers appear, so it is undeniable that the MICE industry, as an industry today, requires a lot of skilled human resources. So, education for MICE courses must be conducted optimally to produce quality human resources through excellent learning. This study aims to design mobile-based interactive media applications for MICE courses. so that it can increase student interest in learning and improve the quality of learning. the application is designed using the Multimedia Development Life Cycle (MDLC) method. The design is carried out in six stages starting with concept, design, material collecting, assembly, testing and distribution. It is hoped that the development of this application can contribute to the creation of superior human resources for the MICE industry and have capabilities that are in line with industry needs.

Keywords: MICE, Mobile Application, Interactive Media Learning, MDLC.

1 Introduction

Meeting, Incentive Trip, Conference and Exhibition (MICE) courses are skills courses to prepare Human Resources who know and have insight into aspects related to organizing MICE activities. The growth of the MICE industry has brought a diverse range of service industry activities, which are known for their service-oriented nature, to life. MICE also serves as a highly impactful economic venture, particularly for developing nations. The provision of high-quality services ensures satisfaction for all participants. The development of the MICE industry is a fresh and intricate field that offers advantages to numerous stakeholders due to its complexity and involvement of multiple parties. This reason has made the growth rate of MICE organizers appear, so it is undeniable that the MICE industry, as an industry today, requires a lot of skilled human resources. So education for MICE courses must be conducted optimally to produce quality human resources through excellent learning [1].

The classroom learning experience involves a close relationship between the media, methods, and learning outcomes. Media serves as a means to deliver educational content from instructors to students. On the other hand, learning methods govern the structure of teaching materials and the strategies employed for their delivery. Additionally, learning outcomes are effectively and

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efficiently assessed to gauge students' proficiency and level of interest in the subject matter. The problem often faced by the world of education is the weakness of the learning process. In the learning process, students learn more theoretically. Classroom learning is more directed at the ability to understand the subject matter. While the theory studied lacks suitability with conditions in the industry. It causes students to understand less deeply of the learning material. In the learning process, lecturers are expected to stimulate students' potential and creativity. So that students not only gain theoretical knowledge but can also apply it to face challenges in the future. Learning media plays a vital role in the process of acquiring knowledge. It is a valuable learning resource that aids instructors in enhancing students' understanding. Educators can cultivate students' curiosity and engagement with the material being taught by employing a diverse range of learning media, thereby facilitating comprehension. Engaging in learning media can catalyze the learning process. Effective management of learning resources is imperative within formal educational institutions. Learning media serves as a tool to support teaching and learning activities. As an educator, selecting appropriate and suitable learning media is crucial to ensure the accomplishment of the predetermined teaching objectives.

In this ever-evolving digital era, the use of mobile technology has become an integral part of everyday life. Mobile devices, such as smartphones and tablets, have changed the way of accessing information, communicating, including learning. The development of mobile technology has had a significant impact on education. With the increasingly widespread use of mobile devices, mobile-based learning media has emerged as an effective way to deliver engaging, interactive and easily accessible learning content. Through mobile-based interactive learning media, students can learn anywhere, anytime, and in contexts relevant to everyday life. Students tend to lack material understanding with conventional methods so that this game can serve as an effective learning tool and fun for elementary school students to understand the character education [2].

2 Literature Review

A. Learning Media

Media is an essential component of the learning system. As a component, the media should be an integral part and must follow the learning process. The end of the selection of media is using the media in learning activities to allow students to interact with the selected media.

Dina Indriana explained that the media is a handy tool for students and educators in the learning and teaching process [3]. Yusufhadi Miarso states that learning media encompasses various means of communication that can provoke learners' thoughts, emotions, focus, and motivation, thus fostering an intentional, goal-oriented, and regulated learning experience [4].

B. The function of Learning Media

Learning media holds great significance in the learning process as it enables instructors to communicate more effectively, beyond mere lecturing and facilitating a genuine understanding of the subject matter among students. According to Wina Sanjaya, learning media serves several functions: 1) Communicative function: Learning media facilitates smooth communication between educators and learners, eliminating challenges related to verbal language and misunderstandings in message delivery. 2) Motivational function: Learning media can inspire and motivate students to learn. Through diverse learning media, not limited to artistic elements, students find it easier

to engage with the subject matter, leading to increased enthusiasm for learning [5]. 3) Meaningful function: Learning media enhances the meaningfulness of the learning experience, as it not only contributes to information acquisition but also fosters students' analytical and creative abilities. 4) Perceptual alignment function: Learning media helps align students' perceptions, ensuring they develop a shared understanding of the information conveyed. 5) Individuality function: With students coming from diverse backgrounds, experiences, learning styles, and abilities, learning media caters to the unique needs and interests of each individual, accommodating different learning styles [6].

Learning media also has other functions, namely as follows: 1) Capturing an object or certain events Can be immortalized with photos, films or recorded via video or audio 2) Manipulating certain conditions or objects abstract becomes concrete so that it is easy to understand 3) Increase student enthusiasm and motivation With the use of media, students' attention to learning material can be further increased [6]. According to the viewpoint expressed, the learning media is a valuable educational tool that enables students to access the messages and information shared by instructors. It, in turn, enhances the learning materials and facilitates student knowledge development.

Due to advancements in information and communication technology, instructors delivering course content must keep up with these advancements. They should be capable of utilizing engaging and enjoyable learning media that align with the learning needs of students. It ensures that students can readily grasp the lessons presented by the instructor. Nasution highlights several advantages of incorporating learning media into the educational process, including: 1) Attracting students' attention, thus fostering their motivation to learn. 2) Simplifying the meaning of teaching materials, enhancing students' comprehension, and enabling them to achieve learning objectives effectively. 3) Diversifying learning methods beyond traditional verbal communication prevents student boredom and reduces teacher fatigue. 4) Encouraging students to engage in a broader range of learning activities, such as observation, practical application, and demonstration, rather than solely relying on listening to the teacher's explanations [7].

C. Classification of Learning Media

Lecturers must be able to choose the right type of learning media to use according to the learning needs of the class. According to Nana Sudana and Ahmad Rivai, learning media can be classified into several classifications, namely:

- 1) Judging from its nature, the media is divided into:
 - a) Auditive media refers to media that is solely perceived through hearing.
 - b) Visual media denotes media that is exclusively perceived through sight.
 - c) Audiovisual media is a form of media that incorporates both sound elements and visual elements that can be observed.
- 2) Based on the ability to reach, the media can be divided into:
 - a) Media platforms that offer extensive and simultaneous coverage, such as radio and television.
 - b) Media platforms with limited space and time coverage, such as slide films, movies, and videos.

3) Judging from the method or technique of use, the media is divided into:

- a) Projected media such as films, film strips, slides, and transparencies.
- b) Non-projected media such as pictures, photographs, paintings, radio [8].

Meanwhile, according to Yusufhadi Miarso, the classification of media is based on specific characteristics known as media taxonomy, namely:

- 1) Presenting media, consisting of:
 - a) Group one: Graphics, Printables and Still Images
 - b) Group Two: Silent Projection Media
 - c) Group Three: Media Audio
 - d) Group Four: Audio plus Visual Media Silence
 - e) Group Five: Live Pictures (movies)
 - f) Group six: Television
 - g) Group Seven: Multimedia
- 2) Media Objects

Media objects are physical objects with three-dimensional attributes that convey information not through the presentation but through their physical characteristics, including size, weight, shape, arrangement, colour, and function.

3) Interactive Media

With this media, students do not only pay attention to delivery or objects but interact during the lesson [4].

D. Criteria in the Selection of Learning Media

According to Arief S. Sadiman, to make learning media, several criteria must be considered by lecturers so that they can be arranged in the following order:

- 1) Analyze needs and characteristics.
- 2) Formulate instructional objectives.
- 3) Formulate detailed material items that support the achievement of objectives.
- 4) Develop a measure of success.
- 5) Writing media scripts.
- 6) Conduct tests and revisions [9].

3 Methods

Incorporating mobile-based interactive learning media in MICE courses enhances students' engagement and enthusiasm in studying these courses, ultimately maximizing the attainment of learning objectives. The Multimedia Development Life Cycle (MDLC) methodology accomplishes this objective. MDLC is a systematic approach that involves the stages of designing, developing, and evaluating instructional media. This method ensures that the resulting learning media meets learning needs, is interesting, and effectively communicates material to students. Multimedia-based learning media offers the potential to overcome obstacles in MICE learning. By utilizing multimedia elements, such as text, images, audio, video and interactivity, learning media can present material more visually, visually and attractively. It helps increase student understanding, engagement, and learning motivation.

The MDLC method has six stages as follows: Concept, Design, Material Collecting, Assembly, Testing and Distribution [10].

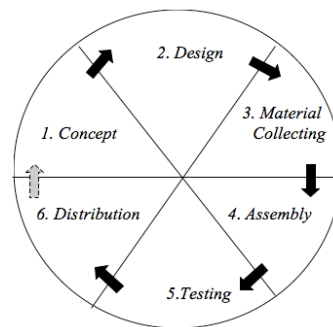


Figure 1: MDLC cycle

1. Concept

The objective in this stage is to create the application and identify its intended users while also analyzing the system requirements and needs.

2. Design

This stage is about the storyboard on the application that is designed and the appearance and materials that exist in the program or application.

3. Material Collecting

The stage of gathering the materials to be used first. Then the materials that have been collected will be continued at the next step, namely assembly.

4. Assembly

The manufacturing or merging stage involves integrating collected materials according to the designs prepared during the design stage. This integration follows the storyboard and navigation structure for the intended application.

5. Testing

During this stage, testing is conducted after combining all the components in the assembly phase. The testing aims to determine the designed application's proper functionality and identify any potential malfunctions.

6. Distribution

This stage is where the results of application testing are stored. Will compress if the application exceeds the capacity of the storage media provided.

4 Result and Discussion

Six stages are carried out in designing mobile-based interactive learning media in the MICE course using the MDLC method. The implementation of the stages is as follows:

1. Concepts

At this stage, the purpose of designing this application was determined, namely designing interactive learning media for MICE courses so that learning in class was more dynamic, made it easier for lecturers to convey material and was interesting for students to understand and made mobile-based so that lecture material could be accessed wherever students were and whenever the time is unlimited.

Table 1: Application description

<i>Description</i>	<i>Description</i>
Title	MICE Interactive learning media
User	Lectures and MICE students
Graphics	2-Dimensional objects
Audio	Sound Recorder and Backsound Music
Animation	Text material, 2D images and Videos
Interactive	Selecting menus and playing simulation

2. Design

Designing interactive learning multimedia applications during this stage involves creating a navigation structure that illustrates the hierarchical graph depicting the relationship between menus.

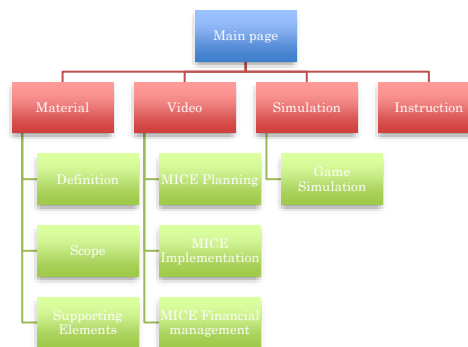


Figure 2: MICE Interactive Learning Media Navigation Structure

3. Material Collecting

This stage is carried out by collecting materials that will be included in interactive learning media applications for MICE courses, including 2-dimensional objects/images, video recordings, learning materials that will be included in the application as well as audio recordings for the application back sound so that later the application is designed to be an attractive application.

4. Assembly

Multimedia objects and materials are utilized during the assembly stage to build the application. This stage called the assembly stage, involves creating the application by incorporating the design stage's navigation structures or object diagrams. All the elements collected during the material-gathering stage are merged into a unified application unit and integrated using Adobe Animate software. The initial step in this process involves designing the application background or background image and other images like logos and icons using Adobe Photoshop CS6.

Meanwhile, vector images are separated from the original background of the image with the move tool in Adobe Photoshop CS6 and then transferred to the prepared background image. The second stage of making navigation buttons is the process of making navigation buttons using the Iconion application by selecting symbols that suit your needs. After the required background image and navigation buttons are complete, the next step is to create an animation. Animated materials are produced in image frames with different motion variations. Making animation based on the number of image frames added, the more frames and motion variations in the image, the better the animation. The animation is made in the Adobe Animate application, which is illustrated in figure below.

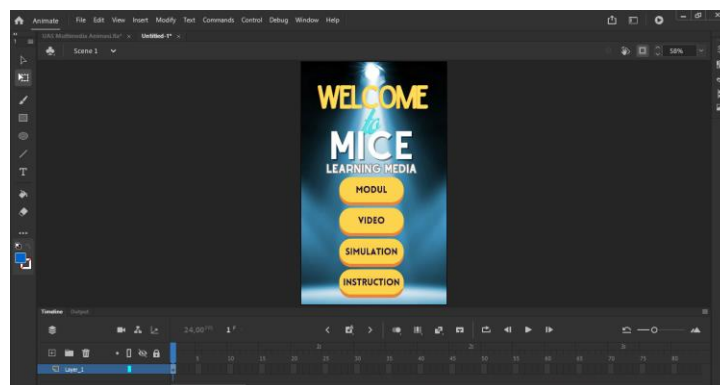


Figure 3: Main page

5. Testing

At this stage, it aims to ensure that the application developed is free from errors. At this stage, the application was tested by lecturers MICE course and several MICE course students by asking questions about the application that had been designed and information related to the application.

6. Distribution

This stage is the last stage of designing interactive learning media applications in MICE courses. Distribution is done by distributing and delivering applications to its users. The deployment of this application is done via Google Drive media which users can directly download, and users can now install the application on mobile devices with an Android operating system.

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