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Project Management and File Management in Multimedia Applications Version of ActionScript 2.0

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ABSTRACTS

Multimedia is a key focus within the Information Systems Study Program at Universitas Komputer Indonesia. With increasing student interest and certification from the National Professional Certification Agency, more students are producing quality multimedia theses. However, many lack understanding of theoretical principles such as project and file management, which this research aims to address for both academic and real-world applications. This research was conducted at PS-SI UNIKOM. The research data was taken from the collection of thesis students of the UNIKOM PS-SI even semester academic year 2019/2020. The focus of this research is using the Adobe Flash CS 6 version ActionScript 2.0 approach. This study expects students to understand multimedia scientific principles and implement them in a real thesis and multimedia project. Implementing project management and file management in the multimedia field will help developers develop multimedia application products effectively and efficiently.

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1. INTRODUCTION

Multimedia is one of the specializations at the UNIKOM. Many students are starting to take an interest in this field. One of the reasons is the increasing number of students who have BNSP certification in multimedia, even when they are still students, so they have decided to pursue a career in this multimedia field. Therefore, the interest in the thesis in the multimedia field has increased. However, unfortunately, many students (maybe even the general public) do not apply multimedia scientific principles. Many products are good but ineffective and inefficient (Cybulski & Linden, 1999). One of the problems is not to implement project management and file management in multimedia projects. Project management is a multimedia project that is separated (modular). In a large multimedia project, the project must be broken down and put back together in a team. Meanwhile, file management is the result of exporting multimedia files (based on authoring tools (Ryan, *et al.*, 2016)) which will be called through the main multimedia application (Naser, 2016).

Individually such a frame of mind may not be a problem, and maybe we will say, "It does not matter if multimedia products are made carelessly; the important thing is that they are finished." However, it will be a problem if we work in the multimedia field, where multimedia applications have complex functionality, so they must be done in a team (Axtell, 2017). The wrong frame of mind will make it difficult for students to work in teams. The research data taken focuses on interactive learning multimedia application projects. The main multimedia project uses the ActionScript 2.0 version of Adobe Flash CS 6. Multimedia is a combination of text, images, animation, audio, and video to convey information (Hardiyana & Yudistira, 2018). Learning is a process carried out by humans who previously could not be able to (Mayer, 2014). Interactive is a two-way communication carried out by at least two humans/objects (Van der Kleij, *et al.*, 2015). Interactive learning multimedia is an application that can facilitate humans in learning by combining multimedia elements that are dynamic (Rachmadtullah, *et al.*, 2018). ActionScript 2.0 (AS 2.0) is the programming language choice of Adobe Flash CS6 (Zainil, *et al.*, 2018). AS 2.0 is suitable for making interactive learning multimedia application projects, for material content, quizzes, and even educational games (Rozali & Zaid, 2017).

The purpose of this research is to awaken students, content creators, and even the general public who have a career in the multimedia field, especially as content creators for interactive learning multimedia applications. This research emphasizes that it is important to think globally because the challenge of the world of work in the multimedia field is working in teams.

2. METHOD

2.1. Object of research

The object of research was conducted at the PS-SI at UNIKOM, Jl. Dipati Ukur No.112-116, Lebakgede, Coblong, Bandung, West Java 40132.

2.2. Research methods

The data used comes from the SIMITA PS-SI (Sistem Informasi Skripsi

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dan Tugas Akhir Program Studi Sistem Informasi) website in the even semester 2019/2020 academic year. Meanwhile, the application project data was taken from the student thesis file for even semester the academic year 2019/2020, who take the multimedia field. The following is student application project data based on multimedia specialization (see Table 1).

Table 1. Student thesis title for the 2019/2020 academic year

No	Project Title (*Indonesia*)	Project Title (English)
1	*Media Pembelajaran Interaktif IPS*	Social Studies Interactive Learning Media
2	*Multimedia Interaktif Dalam Pembelajaran Tata Cara Beribadah Di TK Bunga Dewi*	Interactive Multimedia In Learning Procedures For Worship In TK Bunga Dewi
3	*Media Pembelajaran Interaktif Sistem Pencernaan Manusia Berbasis Desktop Untuk Siswa Kelas VIII Pada SMP PGRI Limbangan*	Desktop-Based Human Digestive System Interactive Learning Media for Class grade VIII Students at SMP PGRI Limbangan
4	*Simulasi Game Pandemik Menggunakan Finite State Machine*	Pandemic Game Simulation Using Finite State Machine
5	*Rancang Bangun Aplikasi Pembelajaran Daur Hidup Hewan Berbasis Multimedia Untuk Peserta Didik Tunarungu*	Design and Development of Multimedia Based Animal Life Cycle Learning Application for Deaf Students
6	*Rancang Bangun Aplikasi Edukasi Petanesia (Pembelajaran Tata Letak Dan Budaya Daerah Di Indonesia) Berbasis Multimedia*	Design And Development Of Petanesia Education Application (Local And Cultural Learning Learning In Indonesia) Based On Multimedia
7	*Rancang Bangun Aplikasi Pembelajaran IPA Materi Perubahan Cuaca 2 Musim Berbasis Multimedia Untuk Peserta Didik Tunarungu*	Multimedia Based 2-Season Weather Change Science Learning Application For Deaf Students
8	*Rancang Bangun Aplikasi Pembelajaran Salat untuk Peserta Didik Tunarungu Berbasis Multimedia*	Design and Application of Prayer Learning Applications for Multimedia-Based Deaf Students
9	*Aplikasi Media Pembelajaran Multimedia Interaktif IPA Materi Klasifikasi Makhluk Hidup Tingkat SMP Kelas VII di SMPN 27 Merangin*	Science Interactive Multimedia Learning Application Material Classification of Living Creatures for VII Grade Junior High School in SMP N 27 Merangin
10	*Multimedia Aplikasi Pelatihan Pranikah Di Kantor Urusan Agama Kecamatan Cisalak Berbasis E-Learning*	Application Multimedia of Prannic Training In The Office Of Religious Affairs Cisalak District Based On E-Learning

There is no requirement to use a special method in this research. Researchers only collect all the required project files and check the research results one by one. After that, find out which projects implement multimedia project

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management and file management. Then a description of each existing project is made. A complete explanation regarding this is shown in chapter 3.1.

2.3. Multimedia development methods

The research method is based on developing the method below (see Figure 1). There are five core processes, including (1) Groundwork, (2) Content Design, (3) Multimedia Development, (4) User Test, and (5) Improve; processes 4 and 5 keep repeating. Implementation of project management and multimedia files is at step (core processes) 2 and 3 (Sari, *et al.*, 2020).

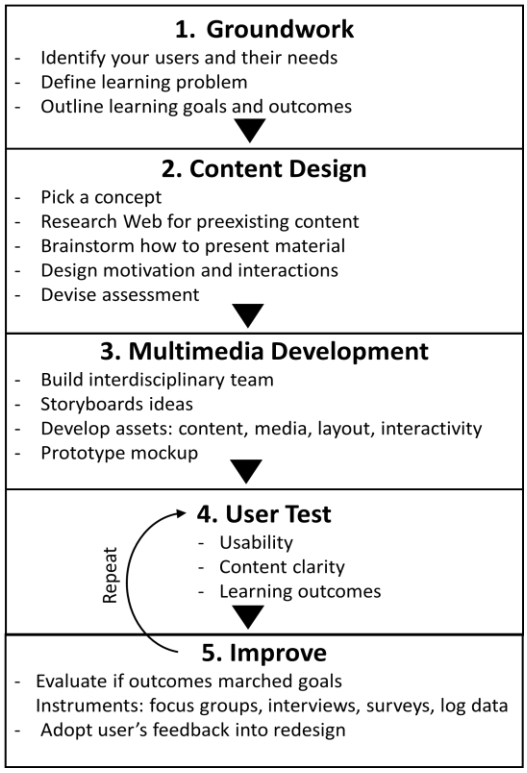

Fig. 1. Multimedia Development Method (Huang, 2005)

The importance of implementing project management and multimedia files will apply if a large multimedia project is built, so it must be completed in a team. For example, we want to create an interactive learning multimedia application consisting of five modules. Each module must contain multimedia elements (text, images, animation, audio, and video), and there are quizzes and educational games for each module; then what should we do? The answer is to solve it in a team, which means that each person has their task. However, if all the work is gathered, then the multimedia project must become one unit. As an example, see figure 2.

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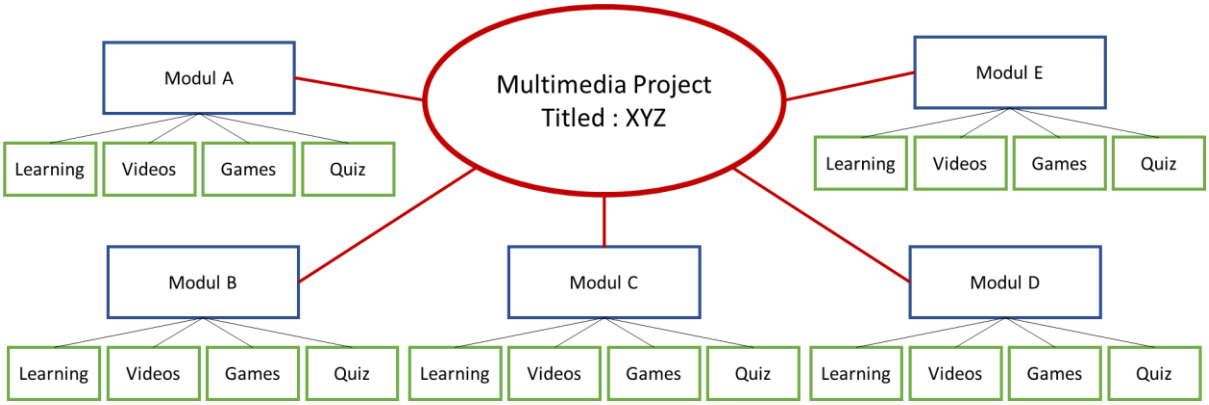

Fig. 2. Multimedia Project Example

It is assumed that in this multimedia project, there are 11 people, namely one person in charge of the module, two people in charge of the module, two people work on learning materials, two people make videos, two people make educational games, and two people make interactive quizzes. If combined, each of these jobs must be able to become a single unit, which is called an interactive learning multimedia application.

3. RESULTS AND DISCUSSION

3.1. Multimedia project and file management errors

Based on data from table 1, only 4/10 (40%) of the projects implement a good project and file management (see Table 2).

Table 2. Multimedia project and file management errors

No	Implementation Correct	Description
1	×	Created in one project, all modules are included in the project. Resources are not separated.
2	×	Created in one project, all modules are included in the project. Resources are separated by folder according to their function.
3	×	Created in one project, all modules are included in the project. Resources are separated by folder according to their function.
4	✓	Created in several projects based on modules. Resources are separated by folder according to their function. Authoring tools are integrated with each other.
5	✓	Created in several projects based on modules. Resources are separated by folder according to their function. Authoring tools are integrated with each other.
6	×	Created in one project, all modules are included in the project. Resources are separated by folder according to their function.
7	✓	Created in several projects based on modules. Resources are separated by folder according to their function. Authoring tools are integrated with each other.
8	✓	Created in several projects based on modules. Resources are separated by folder according to their function. Authoring tools are integrated with each other.
9	×	Created in one project, all modules are included in the project. Resources are not separated.
10	×	Created in several projects. Resources are not separated.

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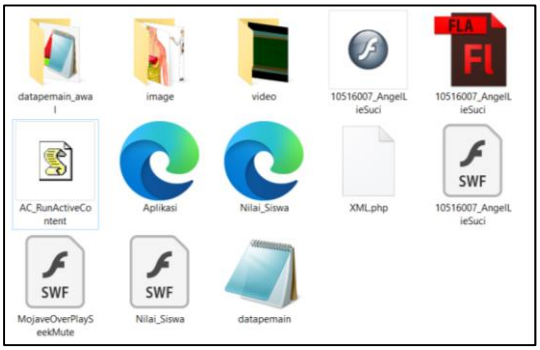
3.2. Project example (incorrect implementation)

The correct multimedia application project should divide the project into parts (modules). In addition, file management also needs to be done. In addition to making the application look neat, this process can help teams work on projects separately. An example of a project (incorrect implementation) is shown in Table 3.

Table 3. Project example (incorrect implementation)

No	Project	Comments
1	 	Created in one project, all modules are included in the project. The resource is not separated. The research scope is not too broad, but at least the project is separated into games and quizzes. In addition, resources should be separated into folders appropriate for their function.
2	 	Created in one project, all modules are included in the project. The resource is separated by folder according to its function. The weakness in this project is only that the application is put together. The games module should be made a separate project. Its use is that if there is a change, we don't need to change all the project contents.

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3.3. Project example (correct implementation)

In multimedia theory, multimedia projects (Adobe Flash, Wondershare Quiz, Adobe Photoshop, and others) should be separated based on modules and their functions. To better understand the meaning of the correct project and file management, see Figure 3.

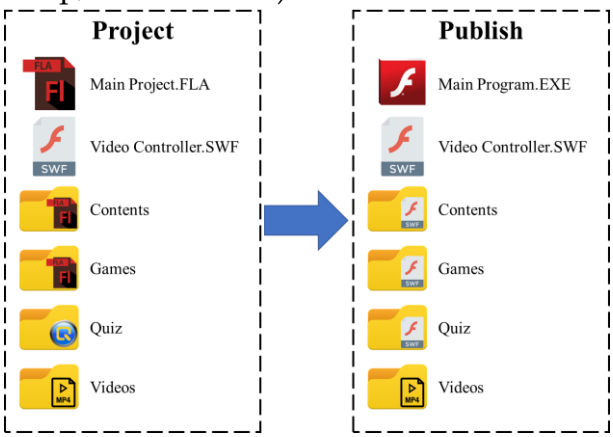

Fig. 3. Correct multimedia project and file management

On the left side (Project), only the main project and the video controller are in the main folder. In addition, all the contents of the application are separated based on their function. It is okay to use the module naming, for example, the "module 1", "module 2" folders, etc. The contents of the games are made using Adobe Flash and separated into different. FLA projects, the point is to make it easier if there is an update. Quizzes are created using the QuizMaker application (e.g., Wondershare QuizCreator). Videos are created using video processing software (e.g., Adobe Premiere, Sony Vegas, etc.).

On the right side (Publish), the main project is published in EXE format. The contents of the contents, games, and quizzes are published in SWF format. Videos are published in MP4 format. The point is to make them readable by our main project. The following is the Project example (correct implementation) shown in Figure 4 and Figure 5.

Fig. 4. Project example (correct implementation) (Effendi, *et al.*, 2017; Effendi, *et al.*, 2017; Effendi, *et al.*, 2016)

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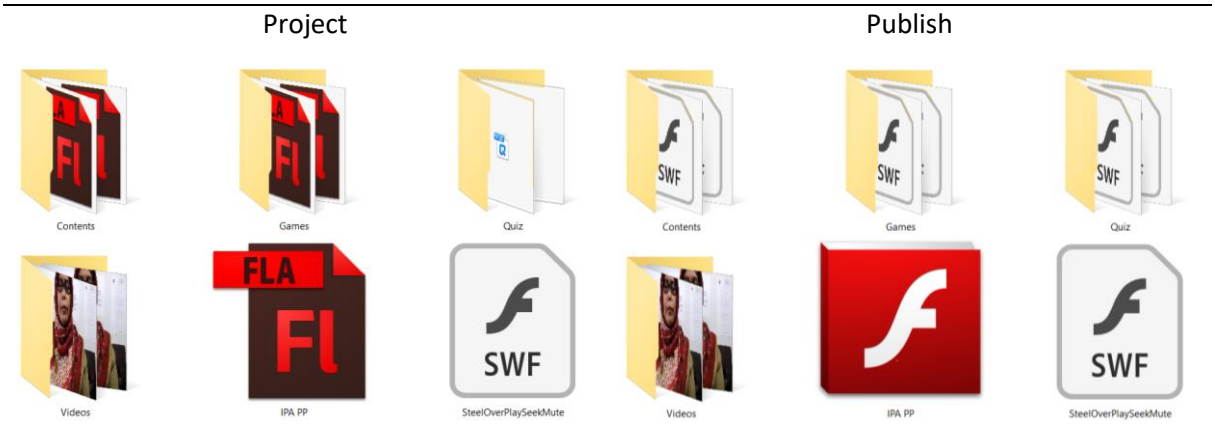

Fig. 5. Example of the correct multimedia project and file management

The example project above is one of the studies conducted by researchers. The project was done by ten people with different education levels (high school student, college student, bachelor, master) and multimedia expertise (programmer, video creator, quiz creator, animator). So why does the project become one unit? The answer is because it implements multimedia project management and files correctly according to multimedia scientific rules.

4. CONCLUSION

The conclusion reached from this preliminary research is the application of multimedia project and file management: (1) Facilitating multimedia content creators in making large-scale multimedia projects done by the team. (2) Make it easy for the multimedia project manager to combine all the application contents into one unit. (3) Make it easy for multimedia content creators to make revisions if there are updates.

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