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Developing Interactive E-Learning Module of English Teaching to Support the Distance Education Program at EEPIS

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Abstract: *E-learning has emerged in the world of distance education. It supports valuable aid to many kinds of educational purposes through the use of technology of information and communication. EEPIS as one of institutions conducting distance learning with English class as one of the subjects needs to develop an e-learning system which can represent the presence of real language teacher into virtual language teacher. This paper tries to addresses how this kind of interactive teaching media was developed through Research & Development research and has resulted a yielding interactive e-learning module for language teaching as it contains teaching performance video and is completed with evaluation tasks. This multimedia supported learning module is able to provide independent learning service to the students of distance education. Furthermore, the interactive e-learning becomes the mediation teachers and learners to stay in touch virtually as if they were in the class conducting the teaching and learning process.*

Keywords: *interactive e-learning , distance learning, tutorial video, Research & Development.*

I. Introduction

The system of teaching and learning has evolved as the world adapted to the rapidly changing lives of human beings. It is resembled in how people are educated and how they find education. No doubt, as information and communication technology rapidly grows, the internet and distance learning have created a new business and a new teaching pedagogy [4].

Distance education has become widespread in the past 10 years. Universities and corporations are seeking to become involved in this ‘‘re-invented’’ form of education. The total enrollment in courses delivered through various forms of distance education between 1997 and 1998 has been estimated at 1.6 million students [1]. Higher education has become a booming business with annual revenues of 225 billion dollars in 1999. It appears that universities, corporations, and governments are profiting from this new learning environment [6].
This happens in Indonesia. There are more people are pursuing a second degree after earning a baccalaureate, and more full-time employees are seeking to advance their careers by taking training courses. This virtual education market will continue to grow as we find at Electronic Engineering Polytechnic Institute of Surabaya (EEPIS).

In its early days, distance learning consisted of correspondence education, televised courses, collections of videotapes, and cassette recordings. Slide projectors, microfilm, and microfilm allowed students to recall history via photo negatives. The Internet, Intranets, and the creation of local area networks (LAN) and wide area networks (WAN) have given students the opportunity to experience distance learning beyond pre-recorded classes and films [7].

One of the offered courses in the distance education program enrolled by EEPIS is English. The program offers sixteen meetings in each semester. However, this sixteen-meeting’s materials ought to be presented in four meetings where students and teacher meet face to face. This is not effective teaching management. Hence, this is supported by Standby Lecturer program where lectures or teachers stay online and have online classroom with the students. This is to support whenever the students need assistance from the teachers. Teachers then can give additional materials in forms of soft files such as power point presentation, pdf, and doc.

Problems then appear because giving such soft files written documents and video tutorials does not provide in-class-learning environment sense. Reading pdf files does not provide students with interactivity. Students read the given files without assistance to control their progress. Those kinds of material forms do not support evaluation. Thus, integrated multimedia-materials are required to be presented in such a way that the participants of distance learner can learn with the teacher virtually and support evaluation method embedded in an interactive e-learning module.

Based on the problems discussed, this paper reports the development of interactive e-learning module for teaching English at EEPIS.

II. Previous Works

Tutor, one of e-learning supports developed at the University of Hradec Kralove, Czech Republic, provides e-learning course which is slightly similar to that of at EEPIS where students and teachers meet face to face by three meetings to give introductory tutorial, a mid-course tutorial, and the final tutorial. Teachers then

give assignment where students do the assignments and have written correspondence with the teacher whenever they find difficulties in doing the assignment. Problem arises when students forget about what has been presented by the teacher during the face-to-face meeting and thus the student want to retake the explanation. Hence, the developer suggests using recorded video on the teacher's teaching performance so that the students can access the videos of the class sessions whenever they need them [5].

Instituto Politecnico Nacioal, Mexico, Mexico has been developing tools to support its project named EVA, a kind of virtual learning spaces in distance education. EVA is projected to facilitate the moves from traditional model of teaching where students have to go to the classroom, to the library, and have to participate at the time the teaching is delivering his lecture, into modernized education called virtual universities. Compared to Tutor, EVA seems to be rather advanced as Tutor offers how students interact with their teachers for specific subject while in EVA, students have access to a larger scope, say universities, where students not only deal with classroom teacher but also other parties in virtual university like that of in a real universities. EVA is now developing real time video conferencing by utilizing video-receiving devices via phone lines using powerful compression algorithms. This effort is to enable students reach the speaker in real time. All of the subjects taught in this virtual university are followed by quizzes and move to a new current state of knowledge after they pass the previous one [3].

Based on the review of both researches mentioned, this paper presents a research on developing an interactive e-learning module of English for Distance Education Program at EEPIS. The module is incorporating only two elements of both previous works, the availability of video tutoring and evaluation sections for each chapter of the subject.

III. Research Method

This research utilized Evaluative Research & Development. This method is to evaluate the process of developing a product. The product developed in this research was based on the potential problems. The problem in this case is the demand on interactive e-learning module for teaching English. The designed product was then validated through *Desk Evaluation* by some experts related to the project. After the product is revised based on the result of the *Desk Evaluation*, the product was put on an experimental research to see how significance this product made changes, and finally revising the product based on the finding of the experimentation. This Research & Development method is circular where the product is developed through some cycles until it met the need. However, to begin making the product, the seven-first-step is enough. The first seven-step is starting by formulating the problem, gathering the data of the problem including library research, designing the product, validating the design through *Desk Evaluation / Expert Validation*, Revising the design based on the *Desk Evaluation*, experimenting the product/ *Preliminary Field Testing*, and Revising the product based on the suggestion after the *Preliminary Field Testing* [2].

3.1. Research & Development Cycle.

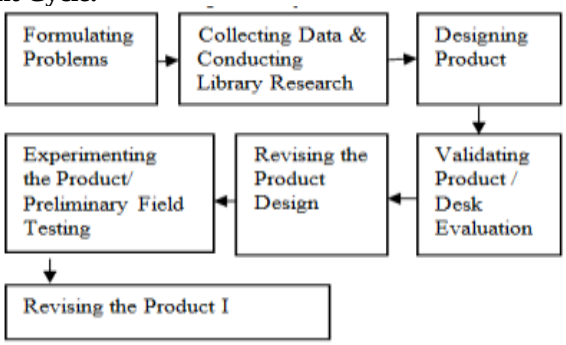

Figure 1. Research & Development Cycle [8].

Figure 1 represents that the research problems were that the existing e-learning module for English class was in form of spreadsheet documents like ppt, pdf, and doc. It needs the presence of integrated multimedia e-learning module which support video tutorial of live teaching, interactivity, and evaluation system.

Subsequently, the researcher collected the data related to the problem through interview and questionnaire. The respondents were the participant of EEPIS distance education and the lecture. The students reported that they found difficulties in learning the English material only by reading the ppt, doc, and pdf files. They sometimes got bored of this kind of assignment and often ended up leaving the files. The students needed to have access to the teachers' explanation. The teacher expected to have an automatic system which can monitor the students' learning progress so that teacher does need to spend time checking and correcting students' work.

To supplement the data collection, the researcher conducted library research to review related literature and to find conceptual suggestions and theory based on some previous work so that the researcher could narrow the work and to put them as consideration in developing the module. After the library research, the researcher began developing the first design of the module using Adobe Captivate 5.5. The first design of the module is shown as follows.

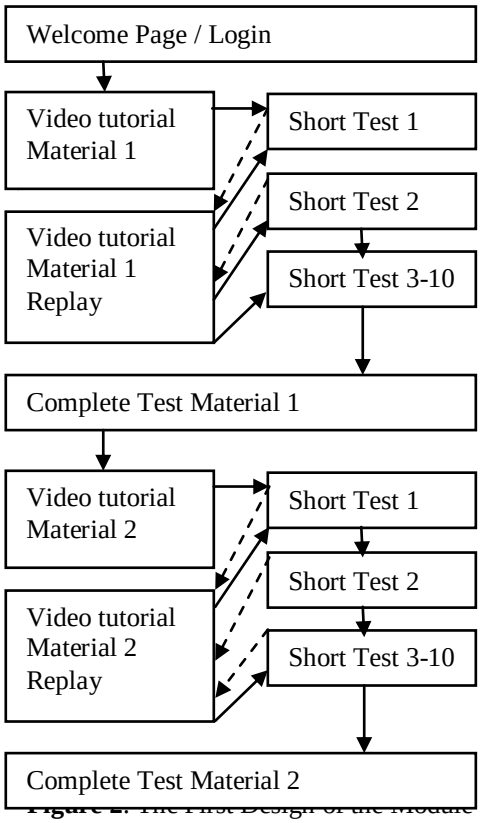

Figure 2. The First Design of the Module

Figure 2. Says that the users of the module would enter the welcome page and would have to login by inserting student's ID. Successfully logging in, the users would watch the video tutorial, and then go to the short test 1. If the users fail to answer the question correctly, the users will have to watch the video tutorial again and go back to the first short test until they answer correctly and continue to short test 2, and repeat the step until short test 10. After 10 exercises, the users will be given 10 questions of material 1 complete test. The score would be stored in database for later report. Then, the users could move to the next chapter, material 2, and do the same steps as that of in material 1.

The next step was to validate the first design of the model. There were three experts to validate based on three categories, the teaching, the quizzing, and the setting of the module interface and system. Subsequent to the *Desk Validation* or validation by some experts, The first design of the module was then revised and will be put on trial in an experimental research. The data during the experimental research would be acquired through interview and questionnaire to the respondents. The gathered data would then be used to revise the module.

IV. Findings

The findings are focused on reporting the development of the interactive e-learning module for teaching English materials. After the *Desk Validation*, the experts suggested revising the following items:

1. The button used was still the default button. This kind of button was not interesting. The expert suggested using image based button or flash based button as there are numerous beautiful buttons to support the look of the slide.
2. The evaluation system, especially the short test after each material should be not only in form of multiple choices because within multiple choice tests the users have four opportunities to select the options. That means although the users are redirected to the video tutorial to watch again when they fail to answer correctly, they possibly choose away one until they choose the best answer. There should be another kinds of test like close gaps where user input an answer to the question. By using this close gaps question, we will know whether the users are really able to answer the questions.
3. When the users fail to answer the short test correctly, and that they have to go back to the previous slide to watch the video, it is better that users do not get control over the video timeline. The users should be forced to

watch the entire video. That also means that the button to go back to the short test must appear when the video tutorial is finished. To accomplish this, the video should be set to automatically playing back when the slide is starting.

4. The teaching performance in the video tutorial was slightly boring because the backdrop used was only classroom wall and the board. It is alright to try to represents how real classroom is emerged in this video tutorial, but the main goal is to keep the users interested and not easily get bored of. By that consideration, a little adjustment is required. Taking the scene in outdoor setting is recommended.

5. The background used in the slides of the modules was only using one style background, green. The master slide should have more variations to keep the appearance eye catching for the users.

The interactive e-learning module was then revised based on the suggestions by the experts. The module was put on trial in which the students of EEPIS's distance Education tried to use the module. The data about their response toward the module was collected through unstructured interview and questionnaire.

It was reported that more than 70% users agreed that they could learn better using the interactive e-learning module. However, there were still flaws to be revised. The students suggested some improvements for the module:

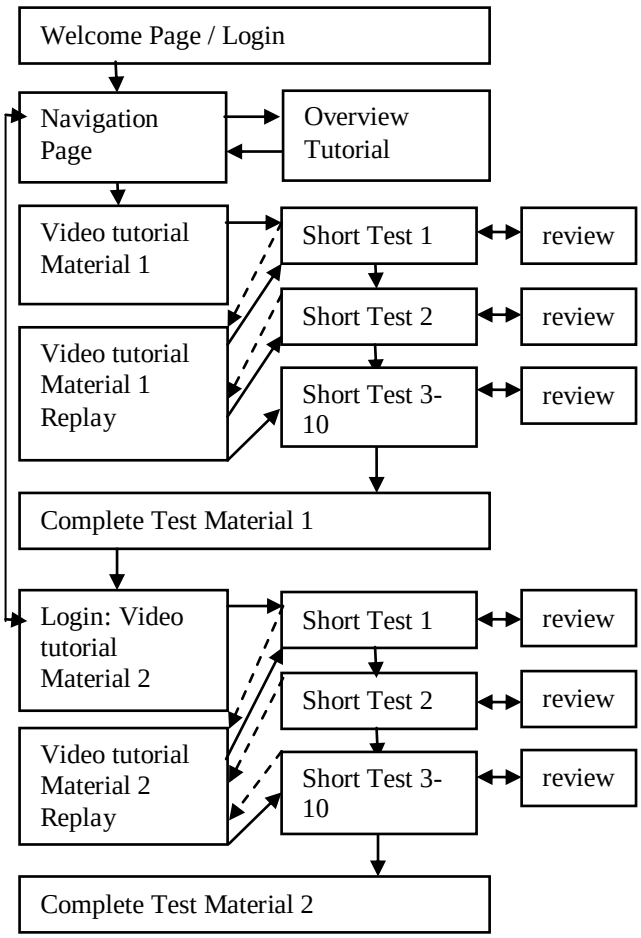

Figure 3. Revised Design from Preliminary Field Testing.

1. There was no instruction on how to use the module. There ought to be a general overview about the module so that users can map what they can do and explore within the module.

2. After users answered the short test, there was no a kind of feedback for the users about why an option is the correct answer while the others are incorrect. The students demanded another video tutorial which explains the answers.

3. Users who have finished the first material are unable to continue to the next level/material another time. That means that users have to take the first lesson again. Students need to be able to continue directly to the next level lessons without retaking the previous lessons.

4. The teaching performance was too formal or stiff. Students need a more interesting and entertaining teaching style by inserting some jokes while delivering the materials.

V. Conclusion

The interactive e-learning module for English Lesson has the following improvable features:

The general flow of the module is that it starts with a main login page which gives access to navigation page. In the navigation page, there are menu to navigate to the instruction page/overview tutorial on how to use the module, and menus to navigate to certain chapter of the materials. To enter each material, users will need to enter the given password. The password of each chapter is given when user has finished the preceding chapter. Every chapter is coming with video tutorial, short test, which is accompanied by explanatory video, and complete test. There are two types of test implemented in the module; multiple choices and completion/short answer.

To meet the need of the users, some features should be considered. The teaching performance in the video tutorial should varied by formal and informal teaching style. The page slide should be decorated such a way with combination of layout, images, and colors appropriately to attract users' interest.

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