DYNAMIC LEVEL ADJUSTMENT FOR DESCRIPTIVE WRITING WITH WEB SIMULATION IN EFL TEACHING

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Abstract: Concerning English as one of the essential factors to gain access to global information and knowledge of science and technology, the mastery of English writing skill is considered to be necessary in the world of communication. Learning media has an important role in English for Specific Purposes (ESP) context. This study aims to generate product in the form of application on web-based simulation. In this study, learning activity is done through web-based application. This application uses the Dynamic Level Adjustment method which is still Level-based so the further development is required to be able to adjust the level of user intelligence. Research and development (R&D) is a method used in this study. The research was conducted through several stages: (1) needs analysis, (2) production planning, (3) development of instructional media, (4) evaluation and revision, (5) field trial to students, (6) final revision. The development of this application is expected to be used as one of the effective teaching materials to facilitate teachers in the teaching and learning process and increase learners' motivation to write. Furthermore, this application has an important role to make learning activities more interesting, practical and accessible for students. Students will be trained to use apps appropriately.

Keywords: descriptive writing, web application, ESP

INTRODUCTION

English is one of the essential factors for gaining access to global information, science and technology. The rapid development of education in the field of technology and science in developing countries, such as Indonesia, affects the increasing need for English toward the work and the global market. In addition, the fact that English is a language commonly used to communicate at the international level, in politics, medicine, agriculture and many others, gives influence on the use of English as an academic language.

Regarding the needs in foreign language skills, English has been taught at all levels of education, from elementary school to university level. As stated in the Ministry of Education and Culture No.096/ December 12, 1967 (at Halim, 1981: 126) that English is very important to be taught as a means to master modern science and technology, most of which are still written in English.

Following up on the regulations and policies above, several universities require students to have English competence. The facts show that most students need English as the key to success in their discipline (Wilarjo and Smithies in Richards (ed), 1980; Els et al. 1984).

Considering that English is also taught for students in non-English majors, the content of learning materials is adjusted based on specific needs relevant to their field of study. The level of learning English in this case is aimed at students who need English for academic studies such as English for medicine, economics, agriculture, tourism, engineering and the like.

Hutchinson and Waters (1987) said that the development of activities that are specific, technical and economical makes English as an indispensable international language. Referring to these needs, ESP (English for Specific Purposes) teaching is emphasized on the preparation of relevant teaching materials in accordance with the needs of the students (Hutchinson in Chamberlain & J. Baumgardner, 1988).

A person's ability to use English as an oral and written communication tool is determined by their mastery of the English vocabulary. Writing is an important way to convey information through a language controlled by the writer and reader. After realizing the importance of English as one of the international languages in the era of globalization, people see the mastery of English writing skill as a skill needed in the world of communication. By writing English, one can convey messages to readers in various places and times (Cahyono, 2009). More specifically, Raimes (1983) asserts that writing is considered a tool in learning for three reasons. First, in the process of writing, students apply knowledge about grammar, idioms, and vocabulary. Second, they have the opportunity to be able to explain something through language. Third, they become involved with the new language used.

Technology in the context of education is not something new. Hanson-Smith (2000) states that discussions about the use of technology (the use of cassettes, tape recorders, etc.) in classrooms have begun in the 1960s. At that time technology was called a tool to facilitate the teaching of foreign languages. At present, technology in the classroom includes the use of cellular devices to support the teaching and learning process (Naish, 2005; O'Connell & Smith, 2007).

Teaching languages, especially foreign languages assisted by computers or CALL (Computer-Assisted Language Learning) and mobile devices or MALL (Mobile-Assisted Language Learning) are examples of how technology can be used to support learning objectives (Stockwell, 2010).

In this study, learning process is conducted through web-based learning application. Learning media is a component of the teaching delivery system that can be used to support the learning process. The development of media applications is based on the perception that learning will take place well, effectively, and entertaining if supported by learning media that can attract students' interest and attention. Therefore, developers need to understand the concepts, models, principles, design, and evaluation of multimedia learning.

This means that learning takes place anywhere and anytime. This is not a new way of learning language but as a complement in certain learning activities in the context of education (Venkatesh, Nargundkar, Sayed, & Shahaida, 2006; Martin & Ertzberger, 2013). This is done because not all learning content can be delivered through cellular technology (Taylor, 2007).

Learning applications on this web-based software are still progressive or level-based. So, development is needed. Dynamic Level Adjustment method is able to adjust the level with the level of user intelligence.

The content displayed in this web-based learning application will be made in stages and adjusted to the level of user ability. It is expected to provide feedback and revisions to the user. The development of learning media applications in this study will explore several things, namely basic necessities that include grammar and vocabulary, understanding data in graph, and essay outline. In this study the problem raised is how the Dynamic Level Adjustment method in web-based learning applications can train students' skills in descriptive writing.

METHOD

This research method is conducted with Research and Development method. Research Development is a process or steps to develop a new product or complete an existing product, which can be accounted for. The development steps carried out by the researcher refer to the model proposed by Borg and Gall.

In this study, the researcher carried out several steps including: collection of literature studies (understanding and comprehending the literature), collection of materials and data, application design, implementation, implementation of trials and evaluation, and conclusions. The explanation of the stages of work in this research are as follows.

The first stage of this research is needs analysis. The purpose of needs analysis is to identify problems faced by students, especially in the last semester in writing English. Needs analysis is also conducted to identify needs related to the development of web-based learning media applications with the Dynamic Level Adjustment method to practice writing skills. In this case the researcher also conducts a literature study to find out the description of the material to be compiled in the database about descriptive writing in media application. In this study, needs analysis focused on students of Politeknik Elektronika Negeri Surabaya.

In addition, at this stage there will be a study existing which is a reference search from various existing sources with similar media. The reference is obtained from any English language learning media in website and mobile-based. This stage is intended to look for weaknesses in existing applications to be revised in the following application.

At the stage of system design, it can be divided into application design, database design, and interface design.

The output of this stage is game design documents. The learning media developed in this study is a web-based software application that aims to achieve the ultimate goal of descriptive writing skills. In the descriptive writing requested, one is expected to be able to

a. Organize, present and compare data in the table, graph (bar, column, pie, line).
b. Explain the steps of a process or procedure
c. Explain an object
d. Explain an event
e. Explain a work procedure

There are 3 different levels in the Dynamic Level Adjustment method with following explanation:

a. Level A (Basic Skills Necessary)

Level A is intended to increase the number of vocabulary mastered by students. At this level students are asked to answer some basic questions related to their English competence. These questions include the language components used, including the structure of words or sentences, vocabulary, and punctuation.

b. Level B (Language Use in Descriptive Data)

Level B is intended to give students understanding about the context of using language components obtained from the first level. In addition, at this level students will be asked to understand the data used in descriptive writing.

c. Level C (planning essays and developing ideas)

At this level students will be asked to create a descriptive writing outline. In this case, students are asked to write the introduction and body paragraph according to the topic given.

The third stage of this research is the development of learning media. The output of this stage is an application in web-based software that is ready to be tested.

After the application has been developed, the next step is evaluation and revision. At this stage, the application will be shown to the expert team to assess the level of feasibility as a learning medium.

If the application developed is considered feasible to be a learning medium, the next stage is a field trial. The trial will be conducted to some students to find out whether the application that has been developed has an effect on student writing skills.

In field trials, there may be some weaknesses found. To overcome these weaknesses, a final revision will be made so that the product can be launched in a better version. This stage is also the documentation stage of all stages of the process above. The documentation is prepared in the form of a report containing the basic theory and methods used and the results obtained during the research.

FINDINGS AND DISCUSSION

This test is conducted to find out whether the system that has been made is on the track or not. After the testing process is complete, the results obtained will be analyzed.

The main menu is a menu that is first accessed by the user. In the main menu, you can see FUNTOLEARN as a button to go to the main menu. There is a profile button to go to the user's biodata. Register button to register and enter if the user is registered. If the user clicks on the list button, the user will be presented with a form to fill their identity before starting the game.

The picture is a display for the registration form, there are entries for name, email, password, address, date of birth, and education. If the user clicks on the enter button, the login popup will exit. Login is used if the user wants to play and has registered through the register. On the profile page there is a user biodata based on what we fill in the registration form. The following picture gives clear description for the main menu in web-based application.

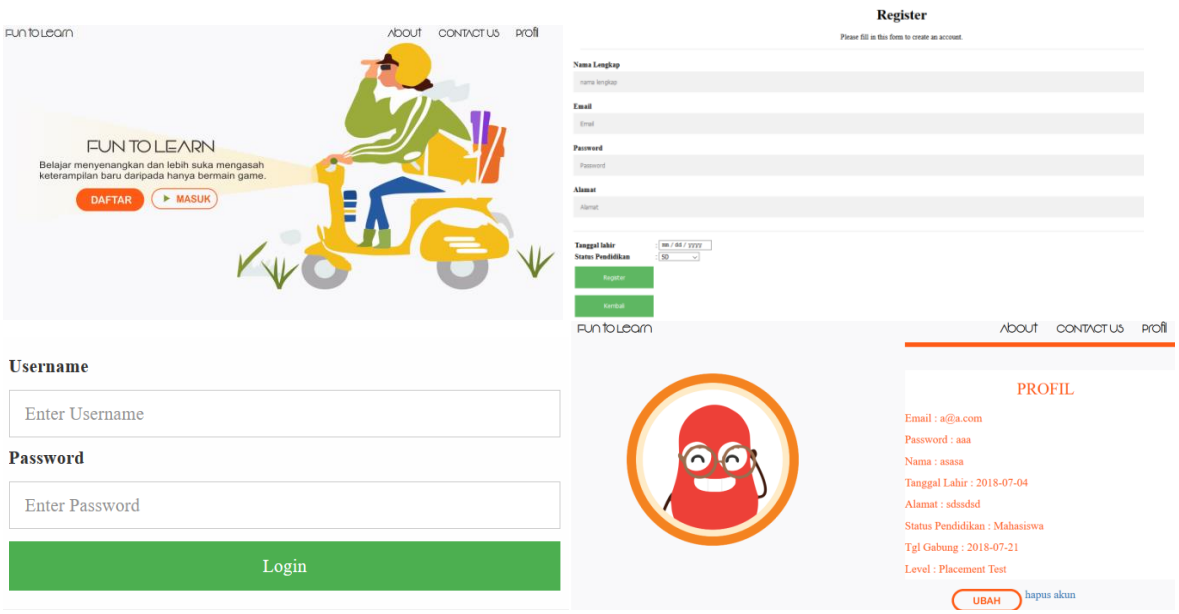


Figure 1. Registration Form

Pages before gameplay will display user levels before heading to gameplay. On that page, there is a start game button to start the game. In the gameplay page, the user will be given a display of certain questions that must be answered by the user. The following picture is one of the example.

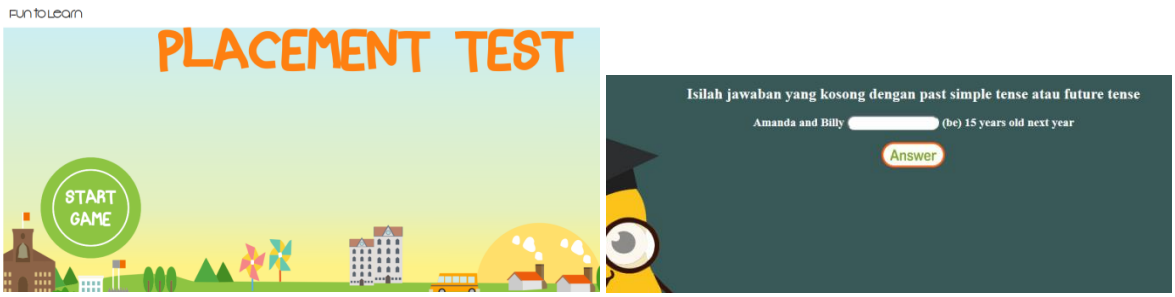


Figure 2. The Example of Gameplay Page

On the display of multiple choice questions, there is a picture as a support for the problem if it is in the database and text in the question section. The user is told to choose one of the correct answers. Answer options use a radio button so players only choose one of the available answers.

In the pair problem view, there is text in the question section. Then, there is a question below it. The user must match the answer with the available choices. Answer options using text that players can write according to the choices available.

In the order of the questions, there is a text in the part of the question that has been randomized along with the number. The user must choose the answer in the right order. Answer options using a radio button so that players choose according to the available options.

On the true false view, there is a text in the question section, then there is a choice below it. Users choose whether the sentence is true or false.

In the display of writing problems, there is an image on the left, then the user writes a sentence based on the picture on the side. When the user have finished writing, the user presses the answer button.

In the display of writing problems, there is an image on the left, then the user writes a sentence based on the picture on the side. When you have finished writing, the user presses the answer button.

In the gameplay results, there is a display whether the user successfully completes the the test or not. The picture below will appear for users who successfully solve all the questions correctly or for user who cannot solve all the questions correctly.

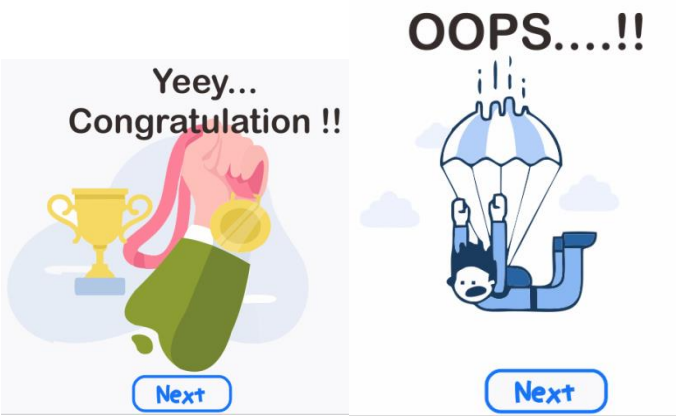


Figure 3. Display Picture in the Gameplay Result

In the field testing, the researcher tested the application. The parameters to be tested are about the user's competence to comprehend the description of a graph. This study aims to develop a learning media so that users can learn how to describe graph by writing.

Target users are students in politeknik Elektronika Negeri Surabaya. Before operating the application, the researcher gives a pre-test to find out the competency of the user. The data below shows the level of users'competences. From the results obtained, all users get scores above 50%. From these results it can be concluded that the understanding of the description of a graph is good enough. The pre-test data will then be compared in the post-test after testing the application of the users.

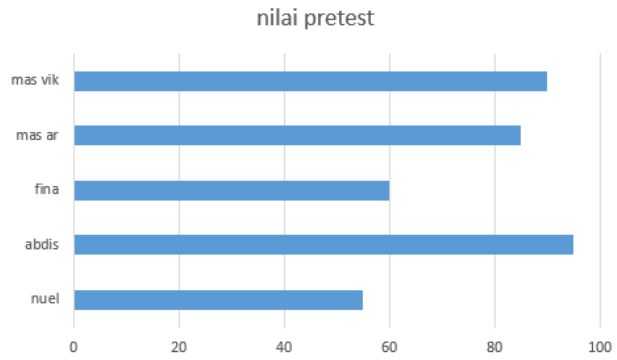
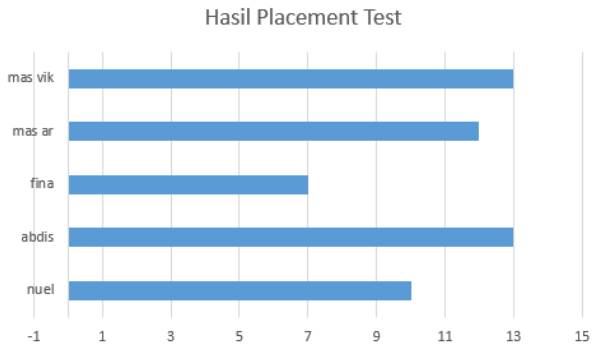


Figure 4. Pre-test Data

Test information in the application is a test found in the application section that will determine the user's level.

Tingkat Kesulitan	Target
Beginner	100%
Intermediate	100%
Advanced	100%



Nama	Level Awal
Nuel	Intermediate
Abdis	Intermediate
Fina	Beginner
Ar	Intermediate
Vik	Intermediate

After doing the posttest, the pretest and posttest results were compared. Based on the results above, it can be seen that the progress of the competency increase in describing a graph after passing several exercises in the application. After testing and analysing the program, it can be concluded that each feature in the application runs well. Users get positive results after doing the second test. The results of the implementation phase of the system will be analysed and maintenance will be conducted. The results of the analysis will be used as a reference by teachers to follow up on the improvement of learning outcomes.

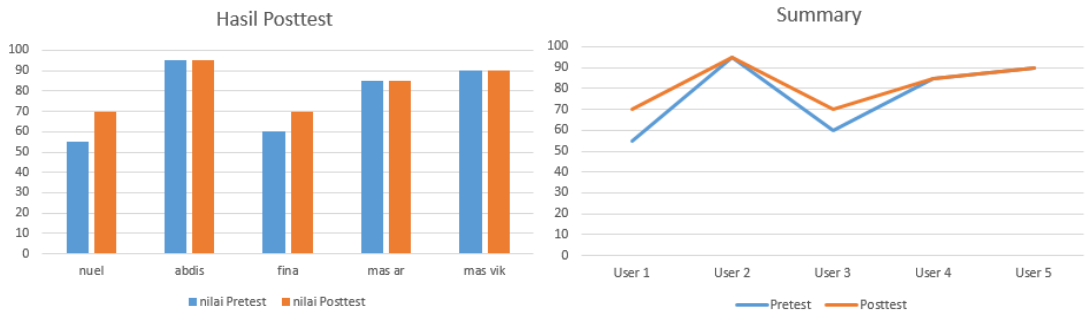


Figure 5. Graph showing user results before and after using the app.

CONCLUSIONS

The implementation of this application is far from ideal state due to many problems. The features in the application such as registers, logins, and level adjustments can be activated in offline state. However, it still takes time to synchronize the application with the hosting. Thus, the application cannot be activated in online state. More comprehensive studies are required to identify how the online application can be accessible and how it can foster learners' independent learning habits that will lead to autonomous learning.

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