Developing E-Module for English Specific Purpose Based on Computer Application for Vocational High School Students

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Abstract

Developing E-Module for English Specific Purpose based on computer application is carried out in the development stage based consisting of Four-D Model which are define, design, develop and disseminate. The E-module application developed is aimed to be accessible for teachers and students in the process of teaching and learning English in the classroom. It is designed attractively and innovatively since it is equipped with images, animations and audio, exercises as well as providing immediate and instant feedback for students to learn English. This module also provides simulations for students in using computer applications. The practical test of e-module application is used to determine the practicality level of the use of e-modules computer application by users. This test was carried out by e-module computer application users, namely students and teachers in three selected schools, which consisted of: 75 students and 3 English language teachers. The practicality of the test results shows that the practicality’s score in the use of e-module computer application is 76.4%.

Keywords  
Application, E-Module, English Specific Purpose, Design, Disseminate

1. Introduction

Mastering English language skills is an important component to achieve due to the world’s economic competitiveness, both at the individual and national levels. Global free trade and market policy among countries in the world makes economic sector is a very significant aspect that influence successfully a country to be developed. This phenomena has made so the competitiveness among countries in the world in trade or economy sector is getting higher and higher compared to other sectors. To survive in this economy and trade
competitiveness, unquestioned relies on how a country including Indonesia, to have individual of its human resources has good ability in the use of English skills since English is a international language that is used to communicate to build international trading network, business and economy relationship among countries in the world.

However, the research findings from EF's (Education First) in 2016 regarding mastery of skills in English language showed that Indonesia was only ranked 32nd out of 72 countries that had been studied and only achieved a score of 52.94, of which it is categorized as the middle or average level of ability in language proficiency in English. Pethetically, this score is lower than the other 3 ASEAN countries, namely Singapore in the 6th place (with score 63.52 which is considered having very high level of ability level), Malaysia in 12th place (with score 60.70 which is considered also having high level of ability), and Philippines in 13th place (with score 60.33 which is also a very high level of ability). Compared with Vietnam, the score of Indonesian English ability is even lower, which is one level above Indonesia or ranked 31st (with score 54.06). Looking at this pathetic findings, the need for hard working and effort from various parties to increase the level of English language skills of the Indonesian people is at least a high category level.

In addition, major academic fields such as mathematics, literacy, and English are very important skills and are recognized to have high demand for skills in English. For example, graduates of Vocational Schools (SMK) need to get life skills (i.e. critical thinking and problem solving skill), behavioural skills (i.e. communication, organization, working in teams, and leadership), as well as computer skills which are all considered as basic skills that are required to innovate and increase economic knowledge (OECD 2015).

The research findings from this Education First (2006), which comes to the list of countries showing the rank and the level of English skill and proficiency, also show that English has become a core skill. It comes to a conclusion that English must be taught and tested at a level which is equivalent to reading skills in one’s mother tongue and mathematics. More importantly, looking at how crucial English use in the last 20 years as international language for science and technology, business and economy, therefore; strong knowledge of this language will become increasingly important as secondary school and vocational graduate as well as university enter the workforce.

However, up to now, English is still considered as a difficult and frightening subject to learn for most students in Indonesia. Meanwhile, students receive the same amount and content of English language lessons each everyday. They are also taught by teachers who have the same qualifications and curriculum structure year by year.

According to Sumarmi (2011), learning English in Vocational Schools still uses taught with conventional methods. Conventional learning is learning that is more teacher-centered and prioritizes effective learning strategies to expand the information on teaching materials. On other words, the learning and teaching process in classroom by this method still uses makeshift media and frequently only uses text and student worksheets with minimal practices. This is one of the causes of students’ lack of interest in learning English which has an impact on their low English language skills.

Meanwhile, English for Specific Purpose (ESP) focuses on developing English language communication skills in specific disciplines, such as learning English for academic purposes and needs. However, in practice, ESP is not used in schools, especially Vocational Schools. In fact, ESP is very beneficial to improve students’ English skills. Therefore, this ESP needs to be used in English learning. With the English Specific Purpose (ESP) e-module in English subjects, it is expected that teachers and students can use it in the teaching and learning process of English at school.

The English for Specific Purpose (ESP) E-module on English subjects is expected to attract students’ interest in learning English at vocational schools. This E-module is designed attractively and innovatively by providing images, learning animations, audio, and exercises where at the same time feedback immediately and instantly is given. So, these will make individual learners know which parts they have mastered and which ones haven’t. In addition to this, e-module is also expected to facilitate teachers in teaching English lessons because this e-module will reduce their time when they have to manually correct the exercises given to students. Last but not least, teachers can use the efficient time as possible to improve the quality of learning, for example; by conducting classroom action research, etc.

Based on the above conditions, the research is entitled “Effectiveness of the Application of English Specific Purpose (ESP) E-module to increase students’ interest in learning English Subjects at vocational school”. This
research needs to be done in order to find out whether the e-module of English Specific for Purpose (ESP) that will be designed and implemented can improve students' interest and ability in English skills.

2. Review of Literature

2.1 Student Interests and Learning Outcomes in English Language Subjects

The Education First (2016) research shows that English is the key to the economic development of a country. The findings come to list that some countries have low or medium English proficiency and a high level of development. Moreover, English proficiency is positively related to National Net Income per capita of a country. Having English proficiency is related to salary increases. In many countries, higher English proficiency is associated with low unemployment rates among young people. The Human Development Index which measures educational attainment, life expectancy, literacy rates, and living standards of people in one country indicates that there is also positively correlated with English proficiency.

Learning interest is basically a mental state or mental condition that becomes the driving force in achieving a particular goal, in this case, the learning objectives. It is a starting point in successful teaching a new language that is to arouse students' interest in learning through stimuli in order to trigger and maintain their interest in learning a language. Basically, the interest in learning has been inherent within students, but the role of the teacher is very large in providing a high learning stimulus, maintaining and arousing interest in language learning. Moreover, learning interest is influenced by two factors, namely, internal factors (in students) and external factors (outside students). Particularly, external factors are related to the role of a teacher in providing a positive influence, maintaining and triggering students' interest in learning language besides parents and social environment (Ardhisan 2014).

The results of student interviews conducted at Muhammadiyah 1 Surakarta Senior High School showed that almost all students lacked interest in English subjects both male and female which resulted in students' low achievement in English subject under the KKM 75.00. In addition, the lack of students' interest leads to laziness feeling and boredom in doing and completing exercise and tasks given by the teacher. They intend to do what they like to do and not focusing on how to successfully get knowledge in language in the classroom. It is realized that this students' low interest in English language learning is caused by various factors and constraints. Factors such as individual motivation, learning facilities, teacher abilities, individual learner's low ability and proficiency in English are considered as the main factors that affect negatively to successfully learn a new language for specific purposes.

2.2 English for Specific Purposes

The term of English for Specific Purpose (ESP) emerged in the 1960s because of the awareness of school and university graduates need to learn English that meets to the demand of business, entrepreneurship and industry world since English is learnt and mastered as formal curriculum in language course alone in conventional formal school is not enough to face the challenge. For example, in some countries like Albania learn English to meet curriculum requirements, for Standard English language proficiency tests, or to get a promotion at work (Bracaj 2014). Also, the rapid development of English in various fields such as business, media technology, medicine, education, and research, has triggered ESP's demand even higher especially in countries where English is used as an instrumental goal.

English for Specific Purpose (ESP) focuses on developing English language communication skills in specific disciplines, such as finance, marketing, management, human resources, engineering, and strategic thinking. Broadly speaking, ESP is divided into two, namely EAP (English for Academic Purposes) and EOP (English for Occupational Purposes). If the purpose of EAP is to learn English for academic purposes and needs, then EOP is learning English for work goals and needs and training. In addition, ESP is basically built on the basis of EGP (English for General Purposes) and is designed to prepare English language learners used in certain disciplines and occupations in order to achieve certain goals (Bojovic 2016).

Frankly speaking, students learning English not because they are interested in the language or in the culture of English itself, but because they need to study English actually for work or job’s purposes. As Lamri (2016) stated “ESP, English is learned not only for its own sake or for general education, but to facilitate entry or efficiency in a larger linguistic environment in the academic, professional, or work environment”.
3. Method of Research

3.1 Population, Sample Research, and How to Withdraw Sample

Population is a collection of all individuals whose survey must be exploited (Lemeshow 1990). The population in this study were all Vocational High Schools (SMK) having availability in Audio Visual majors in Padang City and Pariaman.

Technique of collecting the data was by using purposive sampling technique with the consideration to the availability of school’s audio visual majors. After the letter of permission was issued by the Provincial Education headquarter, three schools with Audio Visual majors were obtained and were willing to be used as research sites, namely: SMK 1 Padang, SMK 4 Padang, and SMK 4 Kota Pariaman. The samples of this study were teachers and students in the three selected schools, which consisted of class X students who were the subject of experimentation and control students.

3.2 Research Stages and Module Development Models

According to Sugiyono (2006), development research is a research used to produce and measure the effectiveness of certain products. Based on this, the development model of English Specific Purpose (ESP) e-module on English subjects is designed for this purpose. This module used “Four-D Model made by Thiagarajan et al. (1974). This model consists of 4 stages of development, namely Define, Design, Development, and Disseminate.

![Figure 1. English Specific Purpose Development E-module Stages](image-url)

<table>
<thead>
<tr>
<th>Define</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Concept analysis: referencing curriculums to English subjects to find out competency standards, basic competencies and what indicators must be achieved by students</td>
</tr>
<tr>
<td>2. Student Analysis: to find out the characteristics of students that are in accordance with the design of the development of the English Specific Purpose (ESP) e-module</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Design</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Compilation of test standards: preparation of the test of learning outcomes. The developed tests are adjusted to the level of cognitive abilities and are used for evaluation tools.</td>
</tr>
<tr>
<td>2. Selection of media in accordance with material characteristics and learning objectives: to optimize the use of teaching materials in the classroom learning process</td>
</tr>
<tr>
<td>3. Selection of formats: designing or designing the contents of the English Specific Purpose (ESP) e-module both learning material, selection of strategies, approaches, learning methods, and learning resources.</td>
</tr>
<tr>
<td>4. Make a preliminary design according to the format chosen: conduct an initial trial and evaluation before the module is applied to students and teachers</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Development</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Validation by experts / practitioners: validation is carried out by lecturers who are experts in the field of learning modules with stages: assessment by experts and improvement of recommendations from researchers.</td>
</tr>
<tr>
<td>2. Trial of the implementation of the English Specific Purpose (ESP) e-module by teachers and students in selected Vocational Schools and improvement of the results of the application tests.</td>
</tr>
<tr>
<td>3. Measurement of the effectiveness of the application of English Specific Purpose (ESP) e-modules by students in selected vocational schools.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Disseminate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Promote English Specific Purpose (ESP) e-modules to be acceptable to users (teachers and vocational students in Audio Visual in all regions of Indonesia, especially West Sumatra.</td>
</tr>
<tr>
<td>2. Propagation of English Specific Purpose (ESP) e-modules</td>
</tr>
</tbody>
</table>

Figure 1. English Specific Purpose Development E-module Stages
4. Result of the Research

4.1 Design and Display of the Use of E-Modules

The E-module was developed in order to be able to be assessed by teachers and students. Therefore, to facilitate the teacher in accessing this e-module, a procedure for usage was made. The following are the procedures for using and displaying the results of using e-modules.

a. The ESP E-module Display Form

1. Open the E-MODUL ESP folder on the local Disk.
2. Double click on the E-module program.

Then the display will appear as below.

2. Click the “Start” button
b. Display of Results of the use of E-Module

Images of print out e-mails received from participants can be seen in the following picture. In the e-mail, the teacher can see the detail answers from the participants.

4.2 Validity Test Results

Validity tests were conducted to see whether the design of e-module English for Specific Purpose (ESP) is valid to be assessed. The validator was an English lecturer from Andalas University and a Professor of Information Systems Universitas Putra Indonesia. The validator gave feedback concerning with assessment, input and commentary on the given ESP e-module design.

The ESP e-module validation test were carried out through 4 aspects, namely: Physical Quality / Display, Material Quality, Quality of Purpose and Role, and Instructional Quality. The validation test results show that overall ESP e-modules are very valid to be used by students and teachers indicated by a score of 89.5% gained. This is seen in all aspects which are assessed, namely: Physical Quality / Display with a score of 90.5% (very valid), Material Quality with a score of 87.5% (very valid), Quality of Goals and Roles with a score of 94.4% (very valid), and Instructional Quality with a score of 85.7% (very valid).

<table>
<thead>
<tr>
<th>No</th>
<th>Aspect</th>
<th>Validity Test Results by Experts</th>
<th>Score (%)</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Physical Quality / Display</td>
<td></td>
<td>90,5</td>
<td>Very Valid</td>
</tr>
<tr>
<td>2</td>
<td>Material Quality</td>
<td></td>
<td>87,5</td>
<td>Very Valid</td>
</tr>
<tr>
<td>3</td>
<td>Quality of Goals and Roles</td>
<td></td>
<td>94,4</td>
<td>Very Valid</td>
</tr>
<tr>
<td>4</td>
<td>Instructional Quality</td>
<td></td>
<td>85,7</td>
<td>Very Valid</td>
</tr>
<tr>
<td></td>
<td>average</td>
<td></td>
<td>89,5</td>
<td>Very Valid</td>
</tr>
</tbody>
</table>

4.3 E-module Praticality Test

Practical test e-module is used to determine the practicality of using e-modules by users. This test was carried out by e-module users, namely students and teachers in three selected schools, consisting of 75 students and 3 English teachers. The results of the practicality test showed that the practicality score of using the English Specific Purpose e-module was 76.4%. This means that e-modules are very practical to be used by teachers and students, both in terms of easy usage, material and media.

<table>
<thead>
<tr>
<th>No</th>
<th>Aspect</th>
<th>Score (%)</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Ease of Use</td>
<td>78,0</td>
<td>Very practical</td>
</tr>
<tr>
<td>2</td>
<td>Material</td>
<td>77,2</td>
<td>Very practical</td>
</tr>
<tr>
<td>3</td>
<td>Media</td>
<td>74,1</td>
<td>Practical</td>
</tr>
<tr>
<td></td>
<td>average</td>
<td>76,4</td>
<td>Very practical</td>
</tr>
</tbody>
</table>
Practicality Test Results by the Teacher

Practicality tests by the teacher are assessed based on three aspects, namely: (1) Aspects of Ease of Use; (2) Material Aspects; (3) Media Aspects. The results of the practicality test showed that based on the teacher assessment, the English Specific Purpose e-module was very practical to use indicated by a total score of 79.8%, achieved. This is shown from the practicality assessment on the aspects of use (score 81.0%), material (83.3%), and media (75.0%).

<table>
<thead>
<tr>
<th>No</th>
<th>Aspect</th>
<th>Teacher</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Ease of Use</td>
<td>81,0</td>
</tr>
<tr>
<td>2</td>
<td>Material</td>
<td>83,3</td>
</tr>
<tr>
<td>3</td>
<td>Media</td>
<td>75,0</td>
</tr>
<tr>
<td></td>
<td>average</td>
<td>79,8</td>
</tr>
</tbody>
</table>

Practicality Test Results by Students

As with teachers, practicality tests by students are also assessed based on three aspects, namely: (1) Aspects of Ease of Use; (2) Material Aspects; (3) Media Aspects. Practicality test results by students show that this English Specific Purpose e-module is practically used indicated by a total score of 73.1%, achieved. This is shown from the practicality assessment on aspects of use (score 75%), material aspects (71.0%), and media aspects (73.2%).

<table>
<thead>
<tr>
<th>No</th>
<th>Aspect</th>
<th>Student</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Ease of Use</td>
<td>75,0</td>
</tr>
<tr>
<td>2</td>
<td>Material</td>
<td>71,0</td>
</tr>
<tr>
<td>3</td>
<td>Media</td>
<td>73,2</td>
</tr>
<tr>
<td></td>
<td>average</td>
<td>73,1</td>
</tr>
</tbody>
</table>

5. Closing

5.1 Conclusion

The findings of the research are concluded as follows:

1. The ESP e-module validation test results are carried out through 4 aspects, namely: Physical Quality / Display, Material Quality, Quality of Purpose and Role, and Instructional Quality. Validation test results show that overall ESP e-modules are very valid to be used by students and teachers indicated by achievement of score 89.5%.

2. The results of the practicality test showed that the practicality score of using e-module of English for English Specific Purpose e-module was 76.4%. This means that e-modules can be practically used by teachers and students, both in terms of ease use, material, and media.

5.2 Recommendation

As for suggestions from the results of this study, as follows:

1. Seeing the enthusiasm of the teacher and students towards the module in assisting the learning of English, this module should be developed, especially the modules are made in each lesson chapter

2. Since this module cannot be accessed on smart phones, further research is needed to develop this e-module into an application that can be downloaded and used on smart phones, so the use of modules can be accessed anywhere and anytime by students and teachers.

6. References


Ardhisan, G. D., Hubungan antara minat belajar terhadap kualitas hasil belajar siswa jurusan teknik otomotif di SMK Negeri 3 Yogyakarta, [skripsi], Yogyakarta (ID), Universitas Negeri Yogyakarta, 2014

© IEOM Society International


Hartono, R. N. A., Hubungan Antara Minat Belajar dan Kemandirian Belajar dengan Prestasi Belajar Bahasa Inggris Siswa SMA Muhammadiyah 1 Surakarta, [skripsi], Surakarta (ID), Universitas Muhammadiyah Surakarta, 2016

Kountur, R., Metode Penelitian untuk Penulisan Skripsi dan Tesis, Jakarta, PPM, 2003


Purwanto, Evaluasi Hasil belajar, Yogyakarta, Pustaka Pelajar, 2010


Sugiyono, Metode Penelitian Kuantitatif, Kualitatif, dan R&D, Bandung, Alfabeta, 2013

Sukardi, Metode Penelitian Pendidikan Kompetensi dan Praktiknya, Jakarta, BumiAksara, 2003


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