

# Development of E-Learning Based E-Front Applications on Computer Skills and Information Management Subject

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## ABSTRACT

The effectiveness of e-learning is assessed with research and development methods that test validation, practicality and effectiveness so that applications are suitable for use in Vocational Schools. This study was carried out in X grade students at Nusatama Vocational School Padang. The development design chosen was a Four-D model to: (1) define, (2) design, (3) develop, and (4) disseminate. The validity of e-learning applications in KKPI subjects scored 80.14%, practicality scored 78.72% and effectiveness scored 75.42%. The overall results infer that e-learning is deemed effective, practical, and valid and therefore fit for use of teaching.

**Keywords:** *E-learning, E-front, KKPI*

## 1. INTRODUCTION

E-learning methods were developed to make learning easier, streamlining communication and interaction between teachers and students through the internet so it is now quicker than ever before. In today's age, the necessity for technology at the vocational high school level is increasing, especially as learning materials and information about lessons can now be obtained from the internet. The *E-Learning terminology* refers to all training activities that used electronic media or information technology (Effendi & Zhuang, 2005).

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## 2 MANUSCRIPT PREPARATION

### 2.1 E-Learning

*E-learning* is an educational tool that includes self-motivation, communication, efficiency and technology. Because there are limitations in social interaction, students must keep themselves motivated. *E-learning* is efficient because it is designed with the notion that it is accessible from anywhere at any point in time, distance is therefore eliminated. Media can be accessed from a computer terminal that has the appropriate technological

facilities to access a network or internet. (Bloomsburg, 2006 in Imam Ade Pamungkas and Nur Nafara Rofiq).

*E-Learning* is a combination of implementing web and computer-based learning in a virtual classroom. It is a form of electronic communication, education and training activity. The material must be supported by the correct information delivery, taking note of the teaching-learning techniques and the students' progress.

According to Koswara (2006), there are several teaching strategies that can be applied by using *E-learning* technology as follows:

- Learning by doing
- Incidental learning
- Learning by reflection
- Case-based learning
- Learning by exploring

### 2.2 E-Front

*E-front* provides more than 40 different languages that can be used on the platform, (Elpapath, 2012). The choice of *e-learning* platform must be made according to the characteristics and quality of the LMS that will be used. E-front is a platform open source or LMS specifically designed for learning, ranging from creating content, making tests, managing tasks, reports, chat, forums, etc. The table presents some support needs related to *e-learning* provided by E-Front.

### 2.3 Subjects KKPI

As explained by Destianingtyas (2013), Computer Skills and Information Management (CSIM) subjects are the basis of information technology knowledge, allowing each generation to follow the pace of global development. They are an effort to ensure that every child of the nation is technologically and information literate. Students learn how to use a computer and incorporate it into their daily lives according to work competency standards.

Understanding the subject is made through several steps: design, depiction, planning and sketching or arrangement of several elements that are separated into a single unit. System design can be illustrated in the form of a system flow chart as shown below:

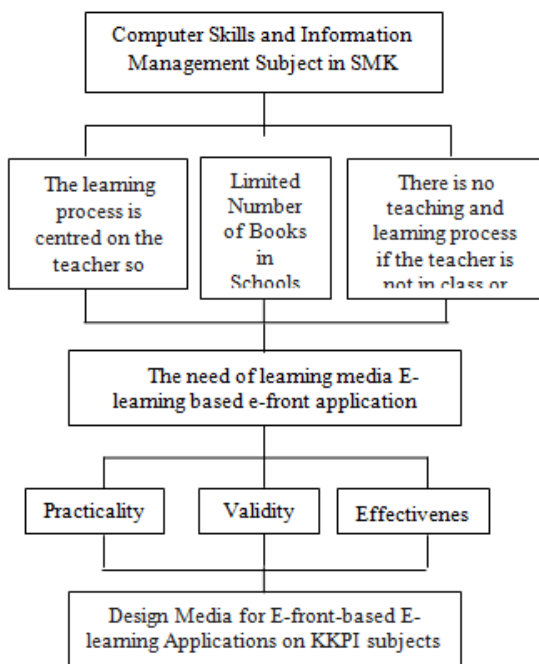


Figure 1: Framework for the development of E-front-based E-learning applications.

### 3. METHOD

The research and development (R&D) method was used in developing MISC subjects to test its effectiveness according to Sugiyono (2014: 407). Sugiyono (2008) developed a ten step research method as shown in the figure:

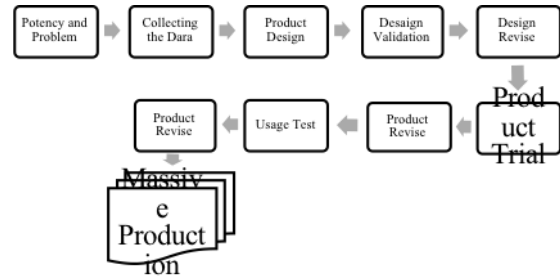


Figure 2: Chart Research and Development (R & D).

### 3.1 Subjects of the Research

On the application of efront-based applications as learning resources, the focus primarily lies on KKPI subjects. The application was only tested on 26 students in grade X at the Hospitality 4 Department in Nusatama Padang Vocational High School.

### 3.2 Type of Data

The type of data acquired in this study is primary data. The first, being the result of validation, where an *e-learning* application was created based on the effect given by the validator. The second data was obtained from the implementation of the trial, essentially the making of an online-based *e-learning* application. Data from the making of this application resulted in (1) observations on the efficiency of learning using this tool (2) the response of the teacher and students towards making an online based *e-learning* application that will be tested.

### 3.3 Data Analysis Techniques

Observations of this study was carried out using descriptive and practicality analysis to assess the validity of an online-based *e-learning* application, as well as analysis of the effectiveness of an online-based *e-learning* application.

Test Analysis Validity based e-learning application is effective. Purwanto (2010: 102)

$$NP = RSM \times 100\% \tag{1}$$

Description:

NP = Percentage value sought or expected

R = Raw score obtained by student

SM = Ideal Maximum score of the test in question (number of respondents x maximum scale)

100 = Numbers Fixed

- Practical Test based e-learning application e-front-based e-learning
- Analysis Effectiveness Analysis Test Effectiveness of applications

## 4 RESULT

### 4.1 The Design

Primary data is acquired through observing the effectiveness of user interface design as a learning resource. This design page highlights the interaction between humans and computers. The page design results can be explained in the following points.

#### 4.1.1 Introduction page

The introduction to the website is the first page that appears when you open an online *e-learning* application. The introduction page image is as follows:



Figure 3: Intro.

#### 4.1.2 Admin Login page

The admin login is the second page which enables administration access to the site. The page image is as follows:



Figure 4: Admin Login.

#### 4.1.3 Teacher Login page

This is the main page when logged in by the teacher. The page image is as follows:

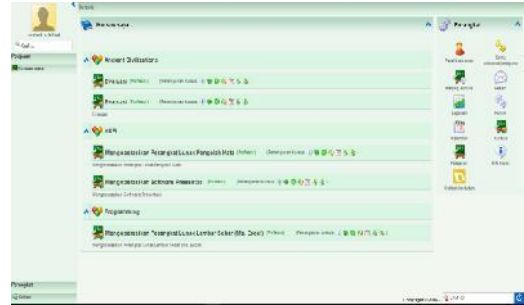


Figure 5: Teacher Login.

#### 4.1.4 Page Creation

Page creation is for creating a new student user account. The page image can be as follows:



Figure 6: New Account Create.

#### 4.1.5 Student Login page

This is the display page when students have successfully logged in to the account that they have created. Students will follow a free course. The page image is as follows:



Figure 7: Student Login.

#### 4.1.6 Start/ Material page

The material page is when students first begin the course. The page image is as follows:



Figure 8: Material Page.

#### 4.2 Discussion

*E-learning* application of CISM subjects have been made and validated to determine the feasibility of the media. After being validated, the application is trialled to students to measure practicality and effectiveness through computer assembly. The following is a discussion of each of the feasibility tests for the e-learning application.

Based on the explanation, it can be concluded that the *e-learning* application is good for computer-based learning, however it does not replace the necessity for a teacher. In line with what was stated by Wihardjo (2008): “Although computer use can improve student learning achievement, the computer cannot replace the overall role of the teacher, because the teacher's role cannot be replaced by any media including computers”.

The result of the research suggests that learning can be done with both computers or teachers. The development of *e-learning* application of CISM on the Computer Assembly subjects were made and then validated to assess media feasibility. Afterwards, it is tested on students to measure the practicalities and effectiveness. The results of the assessment of validity by 3 validators are reviewed from the aspect of content feasibility and linguistic, presentation and graphic components. The results of the assessment by Rini Sefriani, M.Pd, Popi Radyuli M.Pd and Silva Novianti, S.Kom as validators found: (1) Feasibility of content: 84.00%; (2) Linguistic components: 78.33%; (3) Presentation component: 82.22%; (4) Graphical component: 76.00%. The overall assessment of the validator test on the application media being tested totalled to 80.14%, the validity level can therefore be interpreted as Valid in class X SMK Nusatama Padang. It can be used in other schools according to the research conducted.

The results of the practicality test assessment are reviewed as (1) Conditions of Use: 78.83%; (2)

Effectiveness of Learning Time: 78.67%; (3) Benefits: 78.67%. The overall assessment of the practicality test is 78.72%, meaning the application can be interpreted practically for SMK Nusatama Padang. It can be used in other schools according to the research conducted.

The results of the effectiveness test are: (1) happy learning: 77.33%; (2) the existence of interesting teaching materials in learning: 73.50%. As a whole, the assessment of the effectiveness of the test on the learning media of application e-learning is 75.42%, so that the level of effectiveness can be interpreted to be used for Central Nusa Tenggara. It can be used in other schools according to the research conducted.

### 5. CONCLUSION

#### 5.1 Conclusion

Development of *E-learning* based E-front Application for CISM subjects follows the procedures and development of *Four-D* and (Research and Development) Sugiyono (2014: 298). Based on the description, data analysis, and the development of the application the summary is as The validity by the test assessment validator of e-learning applications in CISM subjects is 80.14%, so that the validity can be interpreted to be used, The practicality of the e-learning application in the CISM subjects is 78.72%, so that the practicality level can be interpreted practically used, and The effectiveness of the e-learning application in CISM subjects is 75.42%, so that the level of effectiveness can be interpreted as good to use.

#### 5.2 Suggestion

Based on the conclusions above, there are some suggestions that can be given as follows:

- For designers and makers of learning software, it is expected to do a plan designed and structured. Arrange the design plan neatly before the e-learning application is carried out. So that a neat and structured e-learning application will be produced.
- Do the correct data collection techniques to produce a valid feasibility test instrument.
- Develop and improve the contents of the e-learning application periodically, so that the material presented can be adjusted to the needs and demands of the curriculum.

### REFERENCES

Arsyad, A, 2014. *Media Pembelajaran*. PT RajaGrafindo Persada, Jakarta.

- Hamalik. 1984. *Media Pembelajaran*. Bumi Aksara. Jakarta
- Hastuti, dkk. 2015. Pengembangan Model IPA Terpadu berbasis Masalah Dengan Tema Pencemaran Lingkungan. *Jurnal Nasional Inkuiri*.4:112-119.
- Heni, N. 2014. Efektifitas Media Power Point Pada Mata Pelajaran Bidang Studi Bahasa Indonesia di SDN Ngelang 02 Kecamatan Maospati Kabupaten Magetan Tahun 2014/2015. *Jurnal Nasional*.2:106-113.
- Irianto, A, 1998. *Statistik Pendidikan*, Departemen Pendidikan dan Kebudayaan. Jakarta
- Jana, E.H., Laksana, T.G., 2012. Aplikasi e-learning berbasis web untuk meningkatkan motivasi pembelajaran (Studi Kasus : Sma Negeri 1 Talaga Kab.Cirebon). *Jurnal Online ICT STMIK IKM Vol.1-NO.2 Edisi Desember 2012*.
- Riza, A., Handayani. 2014. Pengembangan Handout Pengajaran Writing II Berbasis Process Genre-Based Approach Untuk Meningkatkan Kemampuan Menulis Teks Dalam Penulisan Tugas Akhir. *Jurnal Nasional* 6:120-134.
- Rusman. 2012. *Belajar dan pembelajaran Berbasis Komputer*. Alfabeta. Bandung.
- Rusman. 2012. *Pembelajaran Berbasis Teknologi Informasi dan Komunikasi*. PT RajaGrafindo Persada. Bandung.
- Safaat, A., Kartikadarma, E., 2012. Implementasi Efront untuk E-learning Smart English Berbasis Web.
- Sugiyono. 2014. *Metode Penelitian Pendidikan Pendekatan Kuantitatif, Kualitatif, dan R&D*. Alfabeta. Bandung.
- Yunis, R., Telaumbanua, K., 2017. Pengembangan E-learning Berbasis LMS untuk sekolah, Studi kasus SMA/SMK di Sumatera Utara. *JNTETI*, Vol. 6, No. 1, Februari 2017.