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# FOSTERING PEDAGOGIC COMPETENCE OF ELECTRICAL ENGINEERING VOCATIONAL HIGH SCHOOL TEACHER IN FACING ASEAN ECONOMIC COMMUNITY

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#### Abstract:

This paper explores the development of website portal for Electrical Engineering teachers in Vocational High School. The website portal for Electrical Engineering teachers in Vocational High School aims at providing information and as a channel for Electrical Engineering teachers in Vocational High School to discuss important issues and problems related to teaching and learning in Electrical Engineering. The development of the website, basically, is conducted to facilitate and enhance pedagogic competence of Electrical Engineering teachers in Vocational High School in facing AEC. This present development study employed a development model suggested by Branch called ADDIE. The development model consists of five steps namely Analysis, Design, Development, Implementation, and Evaluation. The developed website was evaluated by the Electrical Engineering teachers in Vocational High School in Manado. The result of this development research indicated that the developed website obtained 88.0 score and categorized as appropriate. There are some features that are provided by the website to support communication vocational teachers electro, ie the automatic update feature information from the world of education from 4 countries, translator on the automatic update feature information about the world of education, the adjustment of the display (responsive) based devices accessed, automation features to retrieve information from Forums to put in other websites, and integration of educational calendars.

**Keywords:** pedagogic competence, AEC, electrical engineering, teaching, vocational high school

#### 1. Introduction

In recent days, Indonesia, as a member of ASEAN, has entered ASEAN Economic Community (known as AEC). The implementation of AEC begins in 2015 and is concerning on four major points includes ASEAN as a prominent market and production, Communal Economic Development, Economic Equality, Competitiveness Strengthening, including competent worker (Wuryandari, 2014:14).

The main factor required in facing AEC is to prepare a reliable and potential human resources. As emphasized by Prasetyo (2015, 2) the presence of free and open goods and service market will cause foreign workers easily enter into Indonesian and work. This, in addition, will create a tough competition of employment in Indonesia (Prasetyo, 2015). Furthermore, Wuryandari (2014:13) argues that a raising and fundamental issue regarding AEC implementation is a readiness of Indonesian workers. Wuryandari (2014:13) also believes that it is important and necessary to prepare Indonesian workers to be able to keep up and compete in AEC, particularly employment competition. It is further expected that the human resources should be able to qualify themselves as how the neighbouring ASEAN countries' workers qualify themselves (Setuju, 2015:3).

In order to face the challenges of AEC, thus, all field and discipline, including vocational teachers of Electrical Engineering department are required to prepare and qualify themselves. If they are not preparing and qualifying themselves, they will not be able to keep up with the current development of AEC. In general, insight, education takes a prominent role in qualifying human resources. In assent with the current condition, Indonesian education system indeed is required to be strengthened. This is in line with the argument proposed by Setuju (2015), pursuant to the implementation of AEC, education serves as important and essential element which is need to be prioritized by the government. Further, as imposed by the founding father of Indonesian Education, Ki Hadjar Dewantara, education is an attempt to promote character, intelligence building and children growth within society in which every single part within is inseparable (Setuju, 2015:2).

Vocational High School Students majoring Electrical Engineering in Indonesia are required to be prepared in order to be able to keep up with Electrical Engineering engineer from neighbouring countries involving in AEC. To face the competition of labor in facing AEC, it needs to prepare strategy which in further its implementation can be systematic and reliable. Kresna, emphasized that the strategy of implementing the improvement of national competitiveness and preparation of the implementation of the 2015 MEA namely, the development of manpower through Increasing the

competitiveness of labor and increasing the competence and productivity of labor Kresna, 2015: 24).

To achieve this, Vocational teachers, particularly Electrical Engineering teachers, are highly required to have pedagogic competence that can produce graduates of graduate which is undoubtedly and serves as reliable human resources. If the Electrical Engineering Vocational Teachers do not have the expected pedagogic competence, it will be difficult to expect the graduates to be competent human resources. Conversely, if the teacher has pedagogic competence, it is undoubtedly that it will allow students or vocational high school graduates can compete with workers from neighbouring countries incorporated in ASEAN. If Indonesia possesses a qualified human resources, through the implementation of AEC, Indonesia can obtain a positive outcomes, particularly in regard with the labor absorption in Indonesia. Asian Development Bank (ADB) Report informs that AEC can create 14 million additional employment or it increase 41% in 2015 due to the increasing free movement of skilled labor (Wuryandani, 2014: 14).

The above-mentioned explanation concludes that it is absolutely important for Vocational High School teachers to possess excellent pedagogic competence. Furthermore, for the need of comparison, below is the characteristic of pedagogic competence of neighbouring countries involving in AEC which include Malaysia, Singapore, and Philippine.

#### 2. Malaysian Teacher Competence

- a) Knowledge and Competence
   Malaysians teacher possess a competence and knowledge to improve students achievement continuously.
- b) Proficiency Malaysians teacher possess an ability to utilize and use (ability to use in practice) their obtained knowledge and proficiency in fulfilling their assignment as a teacher.
- c) Personal Attributes and Behavior Malaysians teacher possess excellent personal attributes and behaviors which is frequently applied within their daily life.

#### 3. Singaporean Teacher Competence

Singapore is considered as a country which succeeds in improving the quality of teacher. Singaporean teacher is demanded and required to be productive, creative, and progressive. Each school in Singapore possesses teacher's assessment. The moment the school's principal considers that the teacher is unable to teach, then the teacher is not eligible to continue his or her career as teacher. The individual, in the future, will be not able to pursue his or her career as a teacher in any school in Singapore.

#### 4. Philippines Teacher Competence

Education in the Philippines is based on the American education system. High school system of the Philippines (Philippines: *High na Paaralan*) has not changed much since achieving independence from the United States in 1946. Technical and Vocational Education (TESDA) is a body that oversees post-secondary education of technical and vocational education, including skills orientation, training and development of out-of-school youth and the community. Vocational schools typically do not have entrance exams, only accepting records of study forms from previous schools. It is no less important, teachers need to master pengelolahan class. This may affect teaching and learning activities. In addition, Electrical Engineering teachers are required to try to develop themselves in the sense of improving the system of better teaching and learning. In addition, the discipline of teachers is also highly determined, in which vocational teacher describes the attitude in carrying out the task. Vocational teachers are required to contribute to the vocational schools.

According to the above-mentioned explanation, it is believed that the lackness of Indonesian teacher's competence. The lackness is dealing with the insufficient pedagogic competence of teacher which does not meet the requirements standard. In addition, teacher remains unable to establish an effective and efficient condition of classroom. The teacher is also unable to create an enjoyable learning for both teacher and students. This issues make students are less interested in what teacher discuss or explain and eventually the learning objective is not achieved.

To resolve several issues regarding the lackness on pedagogic competence within Electrical Engineering teacher and enable the teacher to face AEC, several attempts have been conducted such as school partnership training and gradual and special training. School partnership training is conducted and cooperated by school and state institution or private institution for specific discipline and field. While gradual and special training are conducted in P4TK or LPMP or other institution which was given an authority by

the school to conduct a training. The training is designed gradually begins from basic level, intermediate, and advanced level.

This internal training is carried out by the principal and teachers who have the authority to foster through official meetings, the rotation of teaching duties, the provision of additional internal tasks, discussions with colleagues and the like. In addition, internal training also includes discussion of educational issues. These discussions are held regularly with topics according to the problems experienced at school. In addition to discussion of educational issues, seminars are also held. Teachers' participation in seminars and scientific publishing activities can also be a continuous model of teacher professional development in improving teacher competence.

Teachers are required to work responsibly in school, if it is often out for interteacher meetings then negative effects can occur both for school and students and the community's view. Another thing is also possible to spend a considerable cost, while the benefits are very limited.

Based on the things mentioned above, the meeting between the Electrical Engineering teachers through the virtual world is considered more effective and efficient today. Virtual world is meant here is through the international website. Electrical Engineering teachers can communicate openly in accordance with the time and place possible. It can develop the competency of Electrical Engineering vocational teachers in Indonesia generally and in Manado and surrounding areas in particular.

#### 5. Methodology

The research and development model used in this research is the ADDIE model. ADDIE development model development consists of five steps: (1) *Analysis*, (2) *Design*, (3) *Development*, (4) *Implementation*, and (5) *Evaluation*.

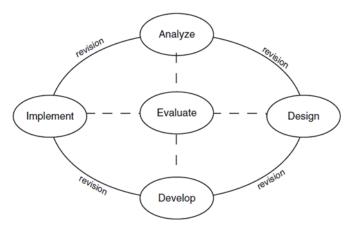


Figure 1: ADDIE Research and Development Model (Branch, 2009: 2)

The ADDIE development model is commonly used in the development of learning models. Research development that aims to produce materials in the form of websites. Additionally, the ADDIE development model is chosen because it has simple steps that are easy to learn and apply. Simple steps make it possible to carry out the research with the shortest possible time by giving maximum results.

#### 6. Findings and Discussion

Products developed in this study are a website portal that integrates vocational education information *online* discussion forum. The website will also feature information from the education world of four countries at the same time, namely the Directorate of Vocational Education of Indonesia, the Education Office of Malaysia, the Department of Education of Singapore, and educational information Philippines. The website can be accessed through *a browser* that already exists on the device *desktop computers, notebooks, tablets,* and *smartphones.* The website address that is developed is <a href="http://musyawarahguruelektro.org">http://musyawarahguruelektro.org</a>. The results are shown in the following table.

Table 1: Findings on Website Testing

		C		O		
No	Aspects		$\sum \mathbf{x}$	∑xi	P(%)	Criteria
1	Software Engineering		793	900	88,1	Appropriate
2	Learning Design		1114	1260	88,4	Appropriate
3	Visual Communication Design		1103	1260	87,5	Appropriate
Total			3010	3420		
Average					88,0	Appropriate

Table 1 above is the final data of the research obtained from the Electrical Engineering teacher. In table 1 above can be seen that from the three aspects tested on the development of information portals website and Electrical Engineering teacher forums obtained an average of 88 points. Thus, the website portal information and forum of Electrical Engineering teachers developed in this study fall into the appropriate category.

For more details, the results of each aspect tested will be explained in the following explanation:

All subjects are of the opinion that in the software engineering aspect, the website is relatively easy to use and operate, as appropriate for the Electrical Engineering communication vocational teacher communication and clear instructions for use. There are indicators on this aspect that the percentage is less than the maximum than the other indicators contained in this aspect, the indicator is the clarity of

documentation relating to the ease understand *error* messages. That is because there are subjects who find it difficult to understand the *error* message with Ingrris language. The total percentage in this aspect is 88.1%, so it belongs to a category worthy to use.

All subjects are of the opinion that in the design aspects of learning from developed websites it is appropriate to improve the communication of Electrical Engineering vocational teachers, in accordance with current developments (actual), in order to achieve the goal of facilitating communication of Electrical Engineering vocational teachers, and the clarity of the language used. When compared to other indicators, the indicator of completeness and quality of relief materials get the smallest percentage among other indicators in this aspect. This is because the subject felt the documentation of the website that poured in the manual usage of the website is not complete. The total percentage in this aspect is 88.4%, so it belongs to a category worthy to use.

The whole subject found visual communication aspects of a website developed already communicative as there are elements of the forum, has a corresponding audio element, has a corresponding mobile media element, and has an easy to understand *navigation icon*. When compared to other indicators, the visual indicator gets the smallest percentage among other indicators in this aspect. This is because the subject felt the website interface design developed less easy to understand and the element of the letters less easy to read. The total percentage in this aspect is 87.5%, so it belongs to a category worthy to use.

#### 7. Conclusion

The results of this research and development in the form of website as a means of communication for Electrical Engineering teachers in Vocational High School to face the ASEAN Economic Community (MEA). The main purpose of this development is to create a website portal that can include information from various countries in Southeast Asia (Indonesia, Malaysia, Singapore, and Philippines), there is also a forum that can be used Electrical Engineering teachers in Vocational High School in discussing several topics to provide information to teachers To face the MEA. It is hoped that with the website Electrical Engineering teachers in Vocational High School can share information related actions that should be done to face the MEA.

There are some features that are provided by the website to support communication vocational teachers electro, ie the automatic *update* feature information from the world of education from 4 countries, translator on the automatic *update* feature information about the world of education, the adjustment of the display (responsive)

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based devices accessed, automation features to retrieve information from Forums to put in other websites, and integration of educational calendars.

Based on activities that have been done early in the development, the website has been able to meet the main objectives of this research development, namely:

- a. The website can be accessed via *notebooks*, *desktops*, and *smartphones*.
- b. Websites can retrieve educational information published by the media from each country (Indonesia, Malaysia, Singapore, and Philippines).
- c. Websites belonging to *cross-platform* (can be displayed on any other type of operating system).
- d. Relatively fast website loading time.

#### 8. Suggestion

To optimize the utilization of the developed app, a few things to look out for are:

- a. We recommend that visitors make *a bookmark* and *subscribe* website, so always get the latest information from the website.
- b. Other website developers can take *RSS feeds* from forums to disseminate information automatically.
- c. Although it is traditional media, websites can be used not only exchange ideas on academic matters, but rather related to the electro vocational development of other sectors (industry outlook, the market needs, and others).

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