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Development of Electrical Engineering Teacher Competency Model Facing ASEAN Economic Community

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ABSTRACT

The main factor facing the ASEAN Economic Community (MEA) is prepare a reliable Human Resource (HR), if not prepared carefully will be missed and citizens of Indonesia can be a guest at home. The objectives of this research are (1) to describe the competency model of vocational electrical engineering teacher to face the ASEAN Economic Community (MEA), (2) develop electrical engineering vocational model with website approach, and (3) Show feasibility level of websites when used to develop the competence of vocational high school electrical engineering teachers. Based on the validation results obtained the final data of 95% of material experts, 96.4% of media experts, and 88% of teachers. Based on the average results obtained from the test of material experts, media experts, and teachers obtained a percentage of 93.1%, so it can be concluded the website developed is valid and feasible to use.

KEYWORDS
Electrical Engineering, Competency Model, ASEAN

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Introduction

Indonesia must enter the ASEAN Economic Community (MEA) for now. This can have a positive impact, but on the other hand there are also a few negative impacts can arise. Prasetyo (2015) says "Indonesia's readiness is needed against MEA if it does not want the State of Indonesia will become other ASEAN country market". Wuryandari (2014) says there are four important things when implementation of MEA in 2015, (1) ASEAN as market and single production. (2) mutual economic development, (3) the economic equity, (4) strengthening competitiveness, including the importance of competent workers.

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Electrical Engineering Vocational High School (SMK) need to be prepared carefully so that electric or electro power graduates do not miss the electric power from countries joined in MEA. Currently, Indonesia's electric power is still far behind when compared with countries classified as MEA. Kuntandi (2015) said that the power plant in 2011, electrification ratio in Indonesia only 72.95%, far behind compared to Singapore with electrification ratio of 100%, Malaysia and Brunei about 80%.

State Electricity Company (PLN) electricity prices are quite expensive because it still uses fuel and coal whose price continues to increase (Kuntadi, 2015:11). To face the competition of labor in facing MEA need to prepare strategy so that its implementation can be systematic and reliable. Kresna (2015) emphasized that the implementation strategy of improving national competitiveness and preparation of the implementation of MEA 2015 namely, the development of manpower through "Improving the competitiveness of labor and increasing the competence and productivity of labor".

Referring Indonesian law in Undang-Undang Nomor 14 tahun 2005 Chapter IV article 10, which emphasizes that a teacher is said to be compotent when it has mastered four basic competencies, namely pedagogic competence, personality competence, social competence and professional competence. Saud (2009) emphasized that these four competencies are not independent, but are interconnected and interdependent and have a hierarchical relationship, meaning each other's mutual-one competence underpins other competencies.

Research Methodology

This application development model uses ADDIE development. The ADDIE development model consists of 5 stages: (1) Analysis, (2) Design, (3) Develop, (4) Implement, and (5) Evaluation. The website will be validated with expert judgement (material and media) before implement to electrical engineering teachers in Manado, Indonesia. The subject of material and media expert is Dr. Muladi, S.T., M.T. and Dr. Eddy Sutadji, M.Pd. from Universitas Negeri Malang, Indonesia. Type of data obtained in the form is quantitative and qualitative. The data collection instrument used is a closed questionnaire which referring of instructional media criteria from Wahono (2006).

Research Result

The result of this research is information and forum website with 5 main feature. The Domain Name Server of website is http://musyawarahguruelektro.org/. Feature of website is (1) automatically give updated education information in 4 country (Indonesia, Malaysia, Singapura, and Philippines) which show in Figure 1, (2) translate the website to make it easier to understand the website content which show in Figure 2, (3) support responsive view for notebook, smartphone, and tablet device which show in Figure 3, (4) RSS Feed feature for automatic dissemination of information from the forum which show in Figure 4, and (5) Integrate with calendar (we can insert Indonesia academic calendar for give information to forum member) which show in Figure 5.

Figure 1. Education Information from Indonesia

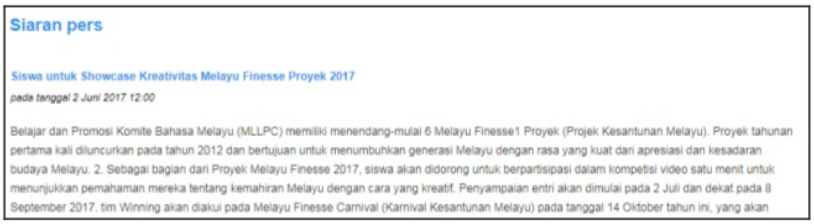

Figure 2. Translate Education Information from Indonesia

Figure 3. Responsive View in Smartphone

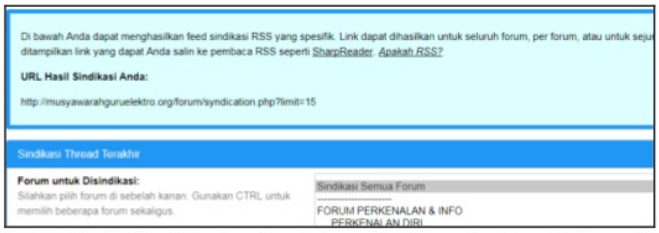

Figure 4. RSS Feed Feature for Automatic Dissemination of Information

Figure 5. Forum Calendar

In validation step, there are minor revision from material and media expert before website is implement to teachers. The result percentage of data processing from expert judgement and teachers this research show in Figure 6.

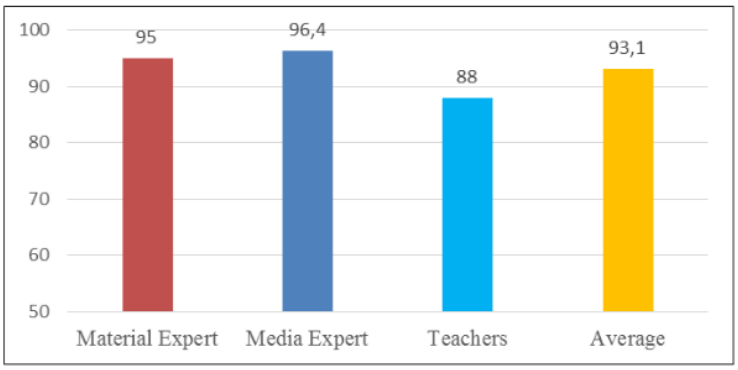

Figure 6. Result of Data Processing

Conclusion

Based on the result of this reseach, we can answer the goal of this research, (1) There are several websites in the form of information and forums to facilitate teachers in communicating. The first product is The informatic engineering vocational high school teacher forum developed by Elmunsyah (2014) and the second is the discussion website portal of Central Java developed by Amin (2014). Based on the two websites, the development of communication model of electrical engineering teachers to face the MEA is adapted from each of the advantages of each website to be combined into a whole product. (2) Has been developed website of electrical engineering teacher to facing MEA, where the website not only features as an information portal, but also there is a forum that can be used by teachers to exchange ideas. Based on the validity test of the website by the material experts and media experts, the final data were obtained by 95% of the material experts and 96.4% of the media experts, both of which were valid and testable to the teachers. (3) website have percentage 88% from teachers trial result, so the website of electrical engineering teacher communication forums to facing the MEA is included in the category worthy.

Disclosure statement

No potential conflict of interest was reported by the authors.

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