Curriculum Evaluation based on AUN-QA Criterion for the Case Study of the Electrical Engineering Vocational and Educational (EEVE) Study Program

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Abstract. Educational Quality, of producing graduates along with the expectations of the community such as, personal quality, morality, knowledge, and work competency is an absolute requirement for the global community adjustment in sustainability. In ensuring it happened, it is required to apply a qualified program which is focus in an effort to satisfy all components of the educational activities. Improving the quality requires a standard, carried out in one clear work procedure, strategy, and collaboration among the stakeholders continuously. This paper introduces the program conducted by the EEVE study program in achieving the goal to certificate by AUN-QA throwing an evaluation approach of the curriculum. The curriculum is mapped based on the competency level required by the stake holders. There are three criterion of the competency mapping i.e. basic, vocation, and elective courses. Therefore, this research results a curriculum development of EEVE, as answer of a basic needs for the graduate and appropriate with the standard of AUN-QA as well.

1. Introduction

ASEAN University Network (AUN) is a neighbourhood network among dominant universities around major countries in ASEAN. AUN-Quality Assurance, known as AUN-QA, is a sub-coordinator of AUN to ensure the educational quality assurance among universities in ASEAN always in the same level and perspective. AUN-QA guides the universities by providing eleven standardized criterion as a guidance to improve and maintain quality at university. The eleven criterion ensure that input-process-output of the quality assurance is always prevented along university run all elements include in each criterion [1]. Figure 1 shows the eleven element required by AUN-QA from university that want to be acknowledged having the same level and standard with the established universities around ASEAN countries.

The basic requirement asked by AUN-QA is the involvement of stakeholders to help university-study program-curriculum to improve its quality in every aspect. All the time, it is knowledgeable that curriculum is as the sum of learning activities and experiences that student is under direction and guide of the school. So, curriculum is just a part of a learning place. However, according to the AUN-QA criteria, curriculum is as a request of stakeholders to the learning place to be able to provide an appropriate curriculum that is relevant with the need of professional arena where the graduate of the learning place implements their competency gotten all this time and certainly being able adopted with its social environment.
For instance in EEVE, as a vocational and educational institution, curriculum of EEVE should accommodate the need of education subjects and engineering subjects as well [2]. Literally, vocational and education technology (VET) could be analogous like an atom with core, integument, and orbit. Core contains the identity knowledge of someone such as engineering, medical, science, constabulary, etc. Integument has substance an educational knowledge such as pedagogy, educational philosophy, learning evaluation, curriculum, learning media and model, and so on. These two conditions mean that someone who has his/her identity knowledge knows how to share his/her knowledge to the other by following the educational perspective [3].

![Figure 1. Eleven Criterion of AUN-QA](image1)

This research evaluate the curriculum of EEVE based on the initial requirement of AUN-QA scilicet stakeholders needs of the curriculum. So, the graduate of the study program has been equipped by a curriculum that is approved by the professional of that working field.

2. Methodology
This research implements curriculum planning procedural that has been introduced by Finch and Crunkilton [4]. This method intentionally is designed by them especially for vocational and educational technology (VET). There are three procedures to complete to evaluation and improve the curriculum as mentioned by figure 2.

![Figure 2. Curriculum Development in Vocational and Educational Technology](image2)
The procedural of the curriculum development of VET in principle is not different with educational profession study. The uniqueness is placed on the substance and contain of each procedure. The curriculum development process usually include the specifying the graduate profile and learning outcome, compiling study material, arranging study subject-curriculum structure, and arranging learning planning. It is pictured in the next figure.

**Figure 3.** Diagram of Curriculum Organization in Higher Education providing by the Ministry of Research, Technology, and Higher Education

### 3. Data and Analysis

Before conducting research, according to the division of informants who are divided into: 1) Alumni who have worked in the industry. 2) EEVE Lecturer. 3) Teacher or Head of Vocational School. 4) EEVE students, and 5) Fresh Graduated Alumni who have worked at DUDI. The researcher first sought out informants from students and alumni who had just graduated by using the type of One-on-one interview and focus group interview for other conditions with the number of informants not more than 3 people.

Alumni who have graduated for a long time and have worked in the ministry, researchers have the opportunity to direct interviews in an event held by alumni ties in 1993. The head or teacher of the SMK majoring in electricity is interviewed by first meeting with the head of administration to submit a research permit has been managed before on campus and in the West Sumatra education office. Lecturers who taught at EEVE were interviewed by asking permission first, conveying their intentions and objectives and then interviewing them with the type of One-on-one interview. The lecturers who became respondents consisted of department heads and 2 lecturers at EEVE. The alumni were interviewed in a direct and also via e-mail for those who were far away. Respondents were no more than 3 people.

The data obtained relating to the interpretation of the profile of EEVE graduates in determining the Study Program Outcome of the Study Program researchers presented the results of the study in the form of: 1) Competence of EEVE Graduates. 2) EEVE curriculum. 3) Scientific Application of EEVE, and 4) Performance of EEVE Graduates.

1) Competence of Electrical Engineering Education Study Program Graduates

Graduates' competencies or abilities are very important things to have as selling points and capital competing in the world of work. The development of technology and information requires many new types of work. The EEVE competency that must be possessed is based on the results of an interview with Mr. H, one of the EEVE lecturers on May 7, 2018 that: "The ability or competency that must be possessed is to understand all the fields concerning electricity. That competency should be possessed by every graduate in both education and industry."

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In addition, based on the results of an interview by one of the teachers who taught at Miss VW Vocational School on April 29, 2018, the ability that must be possessed is: "The ability that must be there is first, being able to apply the knowledge acquired in college, in the world of work. Second, being able to collaborate and be creative with technological advancements. Knowledge must exist. Firstly, it is being able to apply onto theory and practice. Secondly, being able to see the development of knowledge related to study programs in the future must be more creative "(HW6, dated April 29, 2018)

The ability that graduates must possess in addition to the basic capabilities of both theory and practice is the ability to develop knowledge related to EEVE in the future. Furthermore, based on the opinions of one student, student knowledge is still left behind by technological developments and the need to develop a business spirit. The results of the interview with MR, one of the 2014 students on May 4, 2018, stated that:"The knowledge that must be possessed by graduates of all theories when studying in lectures is a lot left behind so it needs a lot of knowledge that must be added and developed especially in industries related to the latest technology. Ability that must be possessed masters the concept of teaching in education, you are applying the knowledge of the arts. Then it is able to develop its business spirit in the field of engineering."(HW23, 04 May 2018)

Furthermore, based on the results of an interview with RA, one of the alumni on April 30, 2018, professionally the abilities that must be possessed by EEVE graduates are:"The basics of electricity must understand, if it is a matter of professionalism it must understand three things, namely; electric machines, control systems and generating systems arrived at distribution. Education must be able to teach in accordance with the equipment owned. "(HW8, April 30, 2018)Apart from the professional abilities that have been mentioned, the important ability is being able to teach according to the device. Making learning devices becomes an important reference for the learning process to run smoothly or not. At the same time based on the results of the interview with RA, one of the alumni on April 30, 2018 mentioned that:"The ability to solve problems around the education of electrical engineering if seen now is still minimal starting from the existing curriculum tools. Analysis of devices and so on in making devices is still not able to make it as determined by the vocational school taught. It is better if learning MMK should be taught how to make K13 learning devices according to what the school or field requires. Then it must be corrected in practice making it wrong."(HW8, April 30, 2018)

4. Conclusions
Based on the research, it can be concluded that the recent curriculum of EEVE does not accommodate thoroughly the basic need required by the stakeholders. Therefore, the competency held by the graduate is not adapted perfectly with the field they work. It is important to be done by the runner of the study program that is to re-evaluate the curriculum and improve it based on the input from the stakeholders.

Reference
[1] AUN-QA 2017 Guide to AUN-QA Assessment at Programme Level (Bangkok: Thailand)
[2] Mukhaiyar R 2016 Studi Kajian Pengreorganisasian Kurikulum Prodi-Prodi di Jurusan Teknik Elektro UNP sebagai Acuan Kebijakan bagi Universitas LPTK Lainnya In Proceeding of KONASPI VIII 2018 pp 97-102
[3] Mukhaiyar, Utari S, and Mukhaiyar R 2016 English as a Second Language for an International Nursery Student in United Kingdom In Proceeding of The 4th UPI International Conference on Technical and Vocational Education and Training pp 107-114
[4] Curtis RF and Crunkilton 1984 Curriculum Development in Vocational and Technical education: Planning, Content, and Implementation (Allyn and Bacon Inc)