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Research paper

Characteristics of Electricity Competency Test at Vocational High School

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Abstract

One of the requirements to be able to enter the business world and industry in the electricity sector is the existence of an electricity competence certificate. The electricity competency certificate is obtained after passing the electricity competency test. The electricity competency certificate is given by the Vocational High School in recognition of students who are declared competent to conduct electricity work through the electricity competency test process conducted by creditable education units and professional certification bodies. Expert competence test or often referred to as UKK is one part of the National Examination that aims to; (1) measure the achievement of students' competencies in accordance with the competencies taken; (2) facilitate students who will complete their education for graduation from education units; (3) optimizing the implementation of competency certification oriented to the achievement of vocational graduation in accordance with the Indonesian National Qualification Framework; (4) and facilitate business and industry cooperation so that the competence of graduates is in accordance with what is needed by the business world or the industrial world. The results of the competency test become indicators of the graduate competency standards contained in the Minister of National Education Regulation No. 28 of 2009, while for stakeholders will be used as information on the competencies of the workforce or vocational high school graduates. This study has following objective; (1) describe competencies in competency testing, (2) describe criteria for competency skills testing programs that are more effective, efficient, so that graduates in the Vocational High School receive full recognition from the business and industrial world.

Keywords: *Vocational High School; Electricity Competency; Expertise Competency Test.*

1. Introduction

The Act on National Education System article 3 states that vocational education is secondary education which prepares students after graduation to work and can contribute to the country. To achieve these objectives, competency tests are conducted. Expert competence test or often referred to as UKK is one part of the National Examination that aims to; (1) measure the achievement of competencies of students according to the competencies taken; (2) facilitate students who will complete their education for the graduation of education units; (3) optimizing the implementation of competency certification oriented to the achievement of vocational high school graduation in accordance with the Indonesian National Qualifications Framework; (4) and facilitate business and industry cooperation so that the competencies of graduates are in line with those needed by the business world or industry. The Vocational High School competency test uses two competency tests which include competency tests for practical competency tests and theoretical competency tests. Practical competency tests are used to measure students 'skills abilities while theoretical competency tests are used to measure students' knowledge and understanding [2]. The value of expertise competency test combines the value of Vocational Theory and Vocational Practices with a composition of 30% Vocational Theory and 70% Vocational Practices, for graduation criteria combining the value of Vocational Theory and Vocational Practices with a minimum score of 70. The implementation of competency tests must be supported by adequate facilities and infrastructure. The implementation of the competency test must be in accordance with the standards set by the Directorate of PSMK, both the equipment and equipment for competency testing and the vertification of the place where the competency test is carried out. The results of the competency test become indicators of graduate competency standards, while for stakeholders will be used as information on the competencies possessed by workers or graduates of SMK [1]. Based on observations at Singaraja Vocational School 3 Middle School and Denpasar State Vocational High School 1 found a place of expertise competency testing for Electric Power Installation Engineering in Bali no one had a competency test as required by the professional certification institution (LSP). The quality of the students' competencies written on the expertise competency certificate has not shown true competency [3]. For example, (Vocational High School), although various competency skills test models have been implemented, but have not given a significant positive impact. Stakeholder trust is still low on the quality of the competence of Vocational High School students especially those graduating from Higher Education / Vocational Education, the quality of graduates' competency is unclear, this seems to be the absence of competency certificates, unstandardized examinations and many other things, which reflect less attention with truly. Considering the importance of conducting electricity competency tests to prepare vocational school graduates' abilities or competencies in

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accordance with those expected by the business and industry world and so that the industrial world obtains candidates for professional and competent workforce, it is necessary to conduct literature research on the characteristics of comparative tests. electricity tension in Vocational High Schools. This study aims to (1) describe competencies in competency testing, (2) describe criteria for competency skills testing programs that are more effective, efficient, so that graduates in the Vocational High School receive full recognition from the business and industrial world.

2. Methodology

The research method used is literature study with literature study. The theories and ideas contained in things that are abstract are used to explain, analyze and revive new ideas to answer the problems surrounding the implementation of the electricity competency test in Vocational High Schools.

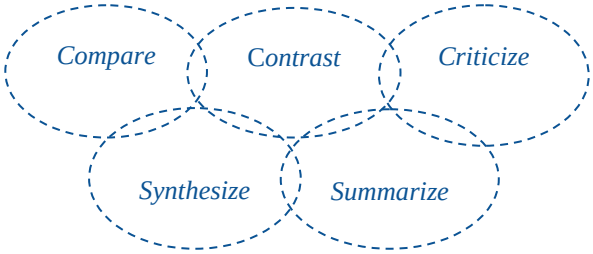


Fig. 1: The research method used was a literature review

3. Results and Discussion

Expert competence test or often referred to as UKK is one part of the National Examination that aims to; (1) measure the achievement of students' competencies in accordance with the competencies taken; (2) facilitate students who will complete their education for graduation from education units; (3) optimizing the implementation of competency certification oriented towards the achievement of vocational graduation in accordance with the Indonesian National Qualification Framework; (4) and facilitate business and industry cooperation so that the competence of graduates is in accordance with what is needed by the business world or the industrial world. The results of the competency test became an indicator of graduate competency standards set out in the Minister of National Education Regulation No. 28 of 2009 [1], while for stakeholders will be used as information on the competencies of workers or graduates of vocational schools. Vocational competency testing uses two competency tests which include competency tests for practical competency tests and theoretical competency tests. Practical competency tests are used to measure students 'skills while theoretical competency tests are used to measure students' knowledge and understanding. The value of expertise competency test combines the value of Vocational Theory and Vocational Practices with a composition of 30% Vocational Theory and 70% Vocational Practices, for graduation criteria combining the value of Vocational Theory and Vocational Practices with a final score of at least 70 [2]. The implementation of competency tests must be supported by adequate facilities and infrastructure. The implementation of the competency test must be in accordance with the standards set by the Directorate of PSMK, both equipment and competency testing equipment and vertification of the place for conducting competency skills testing. The implementation of competency tests can be held in collaboration with partner institutions in this case the business world or the industrial world or can be implemented in schools in accordance with the implementation guidelines and the implementation of competency tests published by the Directorate of PSMK. The implementation of competency tests for schools that do not meet the eligibility requirements for the competency test place to carry out competency skills testing can work with other schools that already have a competency test or with the industry. The implementation of expertise competency tests in addition to vertification of the implementation of competency tests must also be a vertification of expertise competence testing equipment, standardization of testers from industry / productive examiners and draft budget for the cost of competency skills testing. The nature of expertise competency education in the Engineering of Electric Power Installation to print workers who are competent in the field of electricity. One of the requirements to be able to enter the business world and industry in the electricity sector is the existence of an electricity competence certificate. The electricity competency certificate is obtained after passing the electricity competency test. The electricity competency certificate is given by the Vocational High School in recognition of students who are declared competent to conduct electricity work through the electricity competency test process conducted by accredited education units and professional certification bodies.

3.1. Vocational High School

Vocational education is an educational program designed by the government to produce workers in all types of work based on the suitability of the needs of the community and prepare students to determine jobs that are in accordance with the ability of students [4]. Vocational education as follows. ... the conceptualisations of vocational education are relate to skills in using tools and machines, vocational education is identified as a number of variables in these underlying assumptions. These include general knowledge versus specific knowledge.; theoretical understanding versus practical / functional knowledge; conceptual under-standing versus reproductive abilities; ratio of intellectual skill versus physical skills; preparation for life versus preparation for work [5]. The above opinion can be interpreted that vocational education is closely related to skills in using tools and machines, vocational education is identified in the assumption of dichotomy, namely general knowledge versus special knowledge; knowledge of theory versus knowledge of practice; understanding concepts versus thinking skills; creative ability versus reproductive ability; intellectual skills versus fictional abilities; preparation for life opponent preparations for work. Vocational education is education aimed at; (1) meet the community's need for labor; (2) improve education choices for each individual; and (3) fostering motivation for lifelong learning [6]. Vocational education is education for work-any kind of work where individual finds and for which society has need [7]. Vocational education as education designed to develop skills, abilities, understandings, attitudes, work habits, and appreciations needed by workers to enter and make progress in employment on useful and productive bases [8].

The tradition of vocational education is to prepare students for success in careers and jobs [5]. In line with this thought according to [7] "education must strengthen hard skills (hard skills) also must be involved in the development of soft skills (soft skills)". Soft skills now and in the future the stronger the percentage in developing one's career, because of various the types of hard skills are increasingly made easily by using various computer software. Based on the above statement, it can be concluded that vocational education in this case is a vocational high school level vocational education that prepares and prioritizes the development of competencies, attitudes and knowledge of students. is education to develop the growth of culture in schools as a work culture, which prioritizes students' competencies according to their interests and talents, so that they can maintain a good life by working in the industrial / business or independent sectors by building a business. , needed an effort to make student competencies relevant to stakeholders and have a match with the industry. Student competency test is one of the efforts to develop the competence of vocational students in order to meet the needs of the workforce.

3.2. Electricity Competence

Graduates must have competencies that are relevant to the business world and industry. Competence is the capacity of a person in conducting a demonstration, namely having the knowledge, skills

and personal characteristics needed to meet specific demands or requirements in certain situations. Based on this opinion it can be concluded that competence includes four criteria, namely: (1) broad knowledge, (2) adequate ability or skill, (3) a person's attitude is part of the personality of each individual who is relatively stable and can be seen and measured from his behavior and (4) work creativity [9]. Competency is multi-dimensional and so vertical of performance alone does not necessarily constitute sufficient evidence to certify competence [10] Competence in the context of vocational education research, which focuses on individual skills and competencies needed to master the job tasks proficiently and independently [11]. Competence in the world of work can be translated into three major groups: first, basic competencies (fundamental competencies), namely the competencies that must be shared by all cross-sector workers. Second, functional competence (functional competencies), namely the competence that leads a worker to be able to carry out his current task effectively. Third, personal competencies, namely competencies that support the achievement of individual goals and prepare themselves to reach a higher level of work or the future [12]. In the industrial context, the quality of labor depends on the quality of the system that a person has with appropriate skills, habits, and attitudes in every step of his life before entering the workforce, during work, and between work and career [14]. During the career preparation process, first of all it is very important to pay attention to the fundamental skills consisting of basic skills (listening, reading, writing, speaking, math), thinking skills (how to learn, create, solve problems, make decisions, etc.), and personal qualities (Responsibility, integrity, self-confidence, moral, character, loyalty, etc.). Fundamental skills are very important and fundamental in one's career development at work. Above fundamental skills are generic work skills, industry specific skills, and company / employer specific skills such as Figure 2.

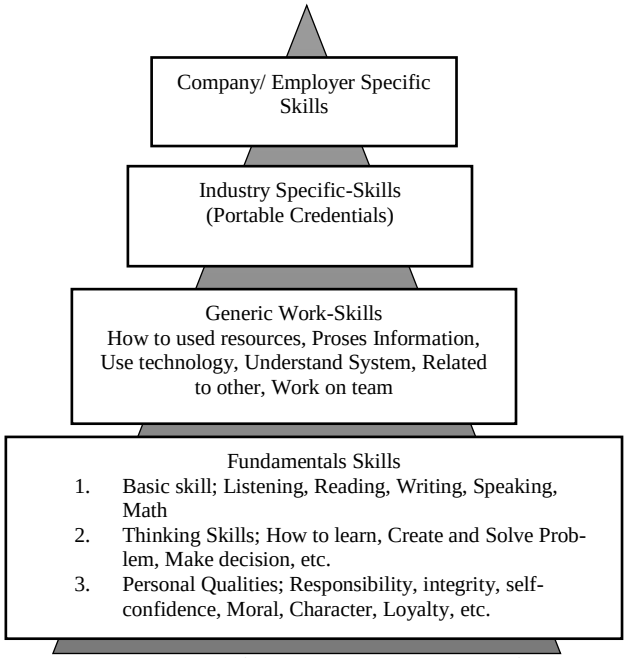


Fig. 2: Structure of Education Skills and Training for Work [14]

Electricity competence focuses on the ability of individuals to do their work or work as well as possible. A person's ability to follow up on knowledge, skills, and attitudes that are reflected in the habit of thinking and acting consistently and continuously to do certain jobs professionally. Competence of graduates of electrification skills of electricity engineering is said to have competence (competent) in certain fields, when graduates with all their knowledge, skills and attitudes to complete their tasks or work properly in accordance with the demands of professionalism. To describe the skills and knowledge that a person needs to operate effectively in the workplace, a competency is required for a competency standard. Competency standards describe the skills and knowledge required to operate effectively in the workplace. They are defined by industry, are nationally recognized and form the basic [15]. Competency standards describe the skills and knowledge needed for a person to operate effectively in the workplace. Competency standards are defined by industry, and competency standards are used nationally. According to LSP the electricity competence standard is a measure or benchmark of knowledge, skills, and work attitudes that must be possessed by someone to do work or tasks in accordance with the performance needed in the world of work. Ministerial Decree Number Kep. 115 / Men / 111/2007 stated that by mastering these competencies by someone, the person concerned has the following abilities [17].

1) doing a job or job
2) organize it so that the work can be carried out
3) do when something happens that is different from the original plan
4) using their abilities to solve problems or work on tasks with different conditions.

3.3. Criteria for Implementation of Electricity Competency Test

Competency testing is needed to know one's ability or competence (competence) in accordance with professional standards. To be accepted to work in the world of work, a person must be competent, among others, proven by a competency certificate through competency testing. Recognized by employers and enterprises with regard to concrete decisions or modules. Too rarely have these competencies been fully recognized by employers and enterprises with regard to concrete decisions about hiring, salary and promotion [15]. Certification is recognition of competence. This competence has been fully recognized by the company and is related to decisions regarding recruitment, salary and promotion. The competency test aims to ensure that student competency indicators are met and can be further developed. According to the UNESCO competency test is intended to assess work skills [17]. The purpose of the National Examination is to encourage students to aspire to higher academic achievement and as a means of assessing whether the school has done its job in educating students [13]. Based on Technical Guidance (Juknis) for the implementation of Vocational National Examination (2018) the aim of the National Examination is to assess the achievement of national graduate competencies in certain subjects in groups of subjects in science and technology, in order to achieve national education standards. The implementation of teacher competency tests and the business world or the world of industry is very important in assessing the competencies of students. In the assessment of competency tests the teacher is an internal assessor who must meet the established criteria, while the business world or the industrial world functions as an external who must meet the criteria that have been established and have the competence in the field tested [18]. The implementation of the expertise competency test conducted at Singaraja Vocational High School 3 should be adapted to the prevailing curriculum at Singaraja Vocational High School 3, available facilities and infrastructure, school principals' commitment to carry out expertise competency tests, teacher commitment to support the implementation of competency tests expertise, objectivity of external parties in conducting assessments, as well as students' readiness to participate in the expertise competency test program [19]. The implementation of productive competency tests is carried out well if (1) the implementation of UKP must meet the requirements contained in the guidelines for its implementation, (2) The field / type of work taken by the Vocational High School is in accordance with the guidelines, (3) Equipment and materials should be provided by school, (4) Competency assessment is carried out by internal and / or external assessors. (5), vertification of the competency test site [20]. Dit PSMK [2] characteristics of the implementation of competency skills test (1) Vocational Practice Test in the form of project / assignment held by the Junior High School in collaboration with partner institu-

tions, (2) Cheese Test Theory in the form of written tests carried out in the National Examination with 2 (two) media, namely paper-based tests and computer-based tests, (3) Vocational Schools that can carry out the Expertise Competency Test are accredited education units based on decisions from the National School Accreditation Agency / Madrasah (BAN-S / M), (4) Vocational Middle School administrators of Expertise Competency Test who collaborate with partner institutions have fulfilled the requirements as a Competency Test Place through vertification of eligibility by a team formed by the Office of Education, (5) Vocational Secondary School organizers Expertise Competency Test in collaboration with LSP (Professional Certification Institute) has fulfilled the press yaratan as a Competency Test Site through vertification of feasibility by a team formed by LSP (Professional Certification Institution), (6) Expertise Competency Test organized in collaboration with partner institutions, in this case the business world and industry (DUDI) or Professional Association, (7) Expertise Competency Test held by LSPP1-SMK which has been licensed by BNSP (National Professional Certification Agency) for the parent Vocational School students and other Vocational Schools included in the LSPP1-SMK network. (8) Examiners who come from productive industries / teachers according to the requirements for the implementation of Expertise Competency Test or BNSP certified Competency Assessor (National Container for Professional Certification), (9) Expertise Competency Test Certificate. The following is the Expertise Competency Test Scheme.

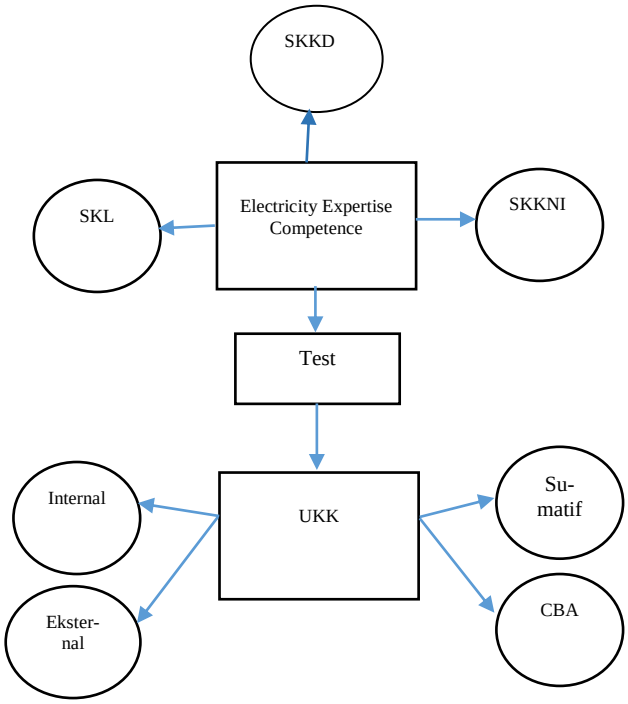


Fig. 3: Expertise Competency Test Scheme

SKL = Graduation Standard
SKKNI = Indonesian National Work Competency Standards
SKKD = Standards for Vocational Competencies and Basic Competencies
CBA = Competency Base Test
Test = affective, cognitive, psychomotor test material
UKK = Expertise Competency Test

4. Conclusion

Expert competence test or often referred to as UKK is one part of the National Examination that aims to; (1) measure the achievement of students' competencies in accordance with the competencies taken; (2) facilitate students who will complete their education for graduation from education units; (3) optimizing the implementation of competency certification oriented towards the achievement of vocational graduation in accordance with the Indonesian National Qualification Framework; (4) and facilitate business and industry cooperation so that the competence of graduates is in accordance with what is needed by the business world or the industrial world. Competency test results become indicators of graduate competency standards, while for stakeholders will be used as information on the competencies possessed by workers or graduates of Vocational High Schools. Vocational competency tests use two competency tests which include competency tests of practical competency tests and theoretical competency tests, practical competency tests are used to measure student skills while theoretical competency tests are used to measure students' knowledge and understanding. The value of expertise competency test combines the value of Vocational Theory and Vocational Practices with a composition of 30% Competency Theory and 70% Vocational Practices, for graduation criteria combining the value of Vocational Theory and Vocational Practices with a minimum score of 70. Implementation of a good Competency Test must have the characteristics of (1) Vocational Practice Exams in the form of projects or assignments held by Vocational High Schools in collaboration with partner Institutions, (2) Vocational Theory Exams in the form of written tests carried out in the National Examination with 2 (two) media namely paper-based tests and computer-based tests, (3) Vocational High Schools that can carry out the Expertise Competency Test are accredited education units based on decisions from the National School / Madrasah Accreditation Board (BAN-S / M), (4) Vocational High School of Expertise Test Holders who collaborate with partner Institutions have fulfilled the requirements as a Competency Test Place through vertification of feasibility by a team formed by the Education Agency, (5) Vocational High School organizers of Competency Expertise Test in collaboration with LSP (Professional Certification Institute si) has fulfilled the requirements as a Competency Test Site through vertification of feasibility by a team formed by LSP (Professional Certification Institution), (6) Expertise Competency Test held in collaboration with partner institutions, in this case the business world and industry (DUDI) or Professional Association, (7) Expertise Competency Test held by LSPP1-Vocational School that has been licensed by BNSP (Professional Certification National Agency) for students of their parent Vocational Schools and other Vocational Schools included in the LSPP1-SMK network. (8) Examiners who come from productive industries / teachers according to the requirements of the Expertise Competency Test or BNSP certified Competency Assessor (National Bandan Professional Certification), (9) Expertise Competency Test Certificate. Ideally competency test products must be marketable, so the reliability of competency test products must be adjusted to the demands and needs of the community. Competency certificates from official institutions (LSP) can be proof of the competence of test participants to gain recognition from the world of work and industry. the problem of funds to be able to obtain a certificate from the LSP so that it can be allocated, assisted from the APBN (State Revenue and Expenditure Budget) or APBD (Income, and Regional Expenditure Budget).

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