

The Relevance Of Basic Competency Of Motorcycle Engineering On Vocational High School With The Need Of Motorcycle Technician In Jakarta

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ABSTRACT: *This study aimed to obtain information on the relevance of basic competency of motorcycle engineering on Vocational High School with the need of motorcycle technician in Jakarta. It is necessary to study the relevance of basic competency of motorcycle engineering on vocational high school and actual needs. Respondents were motorcycle technicians at authorized workshops of three brands of motorcycles are the most widely used in Indonesia using the interview for survey method. While determined by purposive sampling. Data were analyzed to obtain information regarding the percentage of basic competency of motorcycle engineering on vocational high school. From the results of research and testing, it can be concluded that in general there is the relevance of basic competency of motorcycle engineering on vocational high school (SMK) with the need of motorcycle technician in Jakarta, Indonesia. The other conclusion is obtained that the basic competency of motorcycle engineering on vocational high school according motorcycle technician who works in authorized workshops on three motorcycle brands most widely used is generally considered relevance with a percentage of 60%.*

KEYWORDS : *motorcycle engineering, Indonesia, SKKNI subsector motorcycle, competence work.*

I. INTRODUCTION

Education is one of the important factors advancement of civilization and culture. As mandated by the Constitution of 1945 Section 31 Paragraph 1 and 5. National Education serves to develop the ability and character development and civilization of dignity in the context of the intellectual life of the nation, aimed at developing students' potentials in order to become a man of faith and fear of God Almighty single, noble, healthy, knowledgeable, skilled, creative, independent, and become citizens of a democratic and responsible. (Law of the Republic of Indonesia No. 20 of 2003 Section 3).

The population of Indonesia is projected at 305.6 million in 2035. Along with the large population growth, Indonesia is predicted to experience a lot of problems in the economic aspect. This is in contrast to the amount of human resources available. Entering the era of ASEAN economic community throughout Indonesia's human resources are required to have competence in accordance with the occupied areas of work. For it to be effective vocational education, among others if:

The training environment is the working environment it self or a replica of the working environment. The training jobs are carried on in the same way as in the occupation it self. The trainee is trained specifically in the manipulative habits and thinking habits required in the occupation it self. Training is carried to the point where it gives the trainee a productive ability with which he can secure employment or hold employment. Training meets the market demands for labor whatever these may be in any given occupation. (C.A.Prosser&T.H.Quigley, 1950, p.217).

Motorcycle engineering on vocational high school in the learning process, provide students with the basic competencies that must be mastered. Competencies acquired in vocational high school must meet appropriate work with the world of work. Indonesian worker competency certification becomes necessary, so that Indonesia's human resources can compete fairly with other citizens in the world. To the Minister of Manpower and Transmigration Regulation of Minister of Manpower and Transmigration of the Republic of Indonesia Number 5 of 2012 on National Competence Standardization System. In Article 1 explained that the National Competence Work Standard of Indonesia, hereinafter referred SKKNI, is the ability of the formulation that includes aspects of knowledge, skills and / or skills and attitudes relevant to the job duties and terms of office are determined in accordance with the provisions of the legislation.

The question is, whether the basic competency of motorcycle engineering on vocational high school is in accordance with the competencies required by the authorized workshop technicians motorcycle?

1.1 Focus Research

It is necessary to study the relevance of basic competency of motorcycle engineering on vocational high school and actual needs. Therefore, this study aimed to obtain information on the relevance of basic competency of motorcycle engineering on vocational high school with the need of motorcycle technician in Jakarta

II. STUDY OF THEORY

2.1 Basic Competency of Motorcycle Engineering on Vocational High School

Basic competence is knowledge, skills, and attitudes minimum that must be achieved by the student to demonstrate that the student has mastered the competency standards that have been set, because that is the basic competence is the elaboration of competency standards (Wina Sanjaya, 2008, p. 171). Is the minimum criteria that must be owned by the students in the knowledge, skills, and attitudes that students are considered to have mastered the competency standards specified.

According to Annex Regulation of the Minister of Education and Culture of the Republic of Indonesia on the Framework and Structure Curriculum of Vocational High School (SMK)/Islamic Vocational High School (MAK), areas of technology and engineering expertise of automotive engineering skills program set are as follows:

Table 2.1 Structure Curriculum of SMK / MAK

SUBJECT		CLASS AND SEMESTER					
		X		XI		XII	
		1	2	1	2	1	2
Group A (Compulsory)							
1	Religious and Moral education	3	3	3	3	3	3
2	Pancasila and Citizenship Education	2	2	2	2	2	2
3	Indonesian	4	4	4	4	4	4
4	Mathematics	4	4	4	4	4	4
5	Indonesian History	2	2	2	2	2	2
6	English	2	2	2	2	2	2
Group B (Compulsory)							
7	Arts	2	2	2	2	2	2
8	Craft and Entrepreneurship	2	2	2	2	2	2
9	Physical Education, Sports and Health	3	3	3	3	3	3
Group C (Specialisation)							
C1. Basic Expertise							
10	Physics	2	2	2	2	-	-
11	Chemistry	2	2	2	2	-	-
12	Figure Technique	2	2	2	2	-	-
C2. Basic Skills Program		18	18	-	-	-	-
C3. Package Skills		-	-	18	18	24	24
TOTAL		48	48	48	48	48	48

Source : Annex Regulation of the Minister of Education and Culture of the Republic of Indonesia Number 70 Year 2013.

While the skill of motorcycle engineering, basic competencies defined by the Director General of Education, Ministry of Education and Culture of the Republic of Indonesia on the Subject Group Basic Skills Program (C2) and the Package Skills (C3) Vocational High School (SMK) / Islamic Vocational High School (MAK) is:

Table 2.2 Basic Competency of Motorcycle Engineering

CLASS	SUBJECT	BASIC COMPETENCY
XI	Maintenance Engine Motorcycles	Explains the basics and work steps according to SOP regarding regular maintenance machine mechanism
		Explains the basics and work steps according to SOP regarding ignition system maintenance.
		Explains the basics and work steps according to SOP regarding lubrication system maintenance.
		Explains the basics and work steps according to SOP regarding cooling system maintenance.
		Explains the basics and work steps according to SOP regarding

		fuel system maintenance.
		Explains the basics and work steps according to SOP regarding treatment clutch mechanism.
		Explains the basics and work steps according to SOP regarding maintenance gear mechanism.
		Explains the basics and work steps according to SOP regarding transmission treatment
		Explaining how the cylinder head according literature
		Overhaul motor block according to SOP
		Understand how the components of the cooling system
		Explaining how the lubrication system components
		Explain how the components of the drainage system of conventional gasoline fuel.
		Explaining how the carburetor
		Caring periodic machine mechanism.
		Caring periodic ignition system.
		Caring periodic lubrication system.
		Caring periodic cooling system.
		Caring for the fuel system periodically.
		Caring periodic coupling mechanism
		Caring periodic gear mechanism.
		Caring periodic transmission system
		Implement overhaul head sislinder
		Implement overhaul block sislinder
		Carry out the cooling system overhaul
		Implement lubrication system overhaul
		Fix the drainage system of conventional gasoline fuel
		Fixing a carburetor
	Maintenance Chassis Motorcycles	Understanding how to take care of periodic motorcycle shock absorbers according to SOP
		Understand how to care for motorcycle wheels periodically according to SOP
		Understand how to maintain regular brake system according to SOP
		Understanding the components of shock absorbers according to SOP
		Identify the wheel according to SOP
		Caring periodic shock absorbers
		Caring periodic wheel
		Caring periodic motorcycle brake systems
		Fixing mechanism shock absorbers
		Fix wheels
	Maintenance Electrical Motorcycles	Understanding charging system according to SOP
		Understanding the ignition system according to SOP
		Understanding the lighting and signaling system according to SOP
		Understanding the starter system according to SOP
		Repair the charging system

		Repair the ignition system
		Fix the lighting and signaling systems
		Fixing starter system
XII	Maintenance Engine Motorcycles	Understanding gasoline injection system according to SOP
		Understanding the clutch system according to SOP
		Understanding the components of the gear mechanism according to SOP
		Understanding the manual transmission system according to SOP
		Understanding the automatic transmission system according to SOP
		Understanding the mechanical ignition system according to SOP
		Fixing gasoline injection system
		Overhaul clutch
		Overhaul components gear mechanism
		Overhaul manual transmission
		Overhaul automatic transmission
		Fixing mechanical starter
		Maintenance Chassis Motorcycles
	Understanding the completeness of the chassis components (seat, fenders, etc.) according to SOP	
	Fix the braking mechanism	
	Fixing completeness chassis	
	Maintenance Electrical Motorcycles	Understanding regular maintenance motorcycle electrical system according to SOP
		Understanding the electric motorcycle
		Understanding managing repair business (management workshop) motorcycles
		Caring periodic motorcycle electrical system
		Repairing electric motorcycle
Managing motorcycle repair business		

Source : Appendix Decision of the Director General of the Ministry of Education and Secondary Education Culture of the Republic of Indonesia Number: 1464 / D3.3 / KEP / KP / 2014

2.2 Standard Competence Working

Standard is a certain size that is used as a benchmark (kbbi.web.id/standar-2). Is something that is used as a benchmark. According to the Law of the Republic of Indonesia on employment, stating that: "competence working is the ability of each individual that includes aspects of knowledge, skills and attitudes that work in accordance with established standards (Law of the Republic of Indonesia Number 13 of 2003 Article 1).

So the competence working is a benchmarks regarding the ability of each individual that includes aspects of knowledge, skills, and attitudes that work in accordance with the standards or benchmarks are set.

In an effort to equalize the work within the scope of national competence in the field of employment, the government set a national competence work standards. Regulation of the Minister of Manpower and Transmigration of work competence of national standardization system, stated that the National Competence Work Standards of Indonesia, hereinafter referred SKKNI, is the ability of the formulation that includes aspects of knowledge, skills and / or skills and attitudes relevant work with the duties and requirements position established in accordance with the provisions of the legislation (Regulation of the Minister of Manpower and Transmigration Republic of Indonesia Number 5 of 2012 Article 1).

National competence work standard of Indonesia within the scope of automotive jobs in particular motorcycle set in KEP.95 / MEN / IV / 2005 on the Indonesian National Competence Work Standard (SKKNI) on Subsector Motorcycle.

Table 2.3 National Competence Work Standard of Indonesia (SKNI) Subsector Motorcycles

SPECIFICATIONS	COMPETENCE WORK STANDARD
General	1. Following the procedure Occupational Health, Safety, and Environment
	2. Reading and Understanding Image Technique
	3. Using and Maintaining Equipment and Supplies in the Workplace
	4. Contribute Communication in the Workplace
	5. Manual Handling Operations
	6. Using and Maintaining Measurement
	7. Perform soldering technique
	8. Maintain Components Operation and Repair
	9. Installing Hydraulic System
	10. Maintain System Hydraulic
	11. Setting, Operate, and Controlling Engineering Specialty
	12. Maintaining and Improving Air Compressor and its components
	13. Perform Diagnosis Procedure
	14. Checking Security / Feasibility Vehicles
	15. Perform Diagnosis in Complex Systems
	16. Train Small Group
	17. Planning for Assessment of Competence Employees
	18. Conducting Assessment of Competence Employees
	19. Re-Assessment of Competency Assessing Officer
Engine	1. Maintain the following Engine Components
	2. Maintain and Improve Emission Control System
	3. Removing the Cylinder Head, Assessing Components and Assemble Cylinder Head.
	4. Maintain the following Cooling System Components
	5. Fix and Cooling System Overhaul following Doing Components
	6. Maintain System Fuel
	7. Fixing and Performing Overhaul Fuel System Components
	8. Assess Overhaul Engines and Components, Tolerance Checking and Testing Procedures Appropriate Conduct
	9. Fixing the following Engine Components
	10. Maintain Unit Manual and Automatic Clutch
	11. Overhaul Manual and Automatic Clutch following components Operation System
	12. Maintain System Manual Transmission
	13. Perform the following Overhaul Manual Transmission System Components System Operation
Chassis and Suspension	1. Maintain Brake System
	2. Assemble and Install the following Brake System Components
	3. Fix Brake System
	4. Checking Steering System

	5. Fix Steering System
	6. Checking Suspension System
	7. Fixing Systems Suspension
	8. Maintain Suspension System
	9. Removing, Installing and Setting Wheels
	10. Dismantling, Fix, and Installing and Foreign Tire Inner Tube
	11. Maintain chain / chain
	12. Replace the chain / chain
Electrical	1. Testing, Maintaining, and Replacing the Battery
	2. Repairs Light on circuit / Electrical Systems
	3. Improving the Electrical System
	4. Fixing Instruments and Warning System
	5. Fix the Starter System
	6. Improve Charging System
	7. Install, Test, and Fixing Systems Lighting and Wiring
	8. Improving Ignition System
	9. Install, Test, and Fixing the following Electrical Safety System Components
Special	1. Maintain Automatic Transmission Systems
	2. Automatic Transmission Overhaul System
	3. Improving and Changing Context of Motorcycles
	4. Maintain and Improve Engine Management System
	5. Maintaining and Improving Drive System Electronic Controls

Source : KEP.95 / MEN / IV / 2005 the Ministry of Manpower and Transmigration of the Republic of Indonesia.

III. METHODOLOGY

The method used in this study is a interview for survey method. Survey research is research conducted on large and small population, but the data is studied data from samples taken from the population, so find events relative, distribution and relationships between sociological and psychological variables (Sugiyono, 2004, p. 27). Respondents defined in this study is a motorcycle technician who works in authorized workshops on three motorcycle brands most widely used. While determined by purposive sampling, ie sampling technique with particular consideration (Sugiyono, 2009, p. 85). To analysis the data the researchers used a Likert scale. Statement on the questionnaire is the basic competency of motorcycle engineering. Then the answer is very relevance with a score of 4, it is relevance with a score of 3, is not relevance with a score of 2, and so no relevance with a score of 1. Instruments to collect data in this study is basic competency of motorcycle engineering on SMK with the item number is 68. Data were analyzed to obtain information regarding the percentage of basic competency of motorcycle engineering on vocational high school.

Table 3.1 Level relevance of basic competency of motorcycle engineering on vocational high school

Range	Level Relevance
76% - 100%	Very relevance
51% - 75%	Relevance
26% - 50%	Not relevance
0% - 25%	So no relevance

IV. DISCUSSION AND ANALYSIS

The data obtained were analyzed, resulting in the following information:

Table 4.1 Basic Competency of Motorcycle Engineering Research Results

BASIC COMPETENCY	VERDICT
Explains the basics and work steps according to SOP regarding regular maintenance machine mechanism	Not relevance
Explains the basics and work steps according to SOP regarding ignition system maintenance.	Not relevance
Explains the basics and work steps according to SOP regarding lubrication system maintenance.	Not relevance
Explains the basics and work steps according to SOP regarding cooling system maintenance.	Not relevance
Explains the basics and work steps according to SOP regarding fuel system maintenance.	Not relevance
Explains the basics and work steps according to SOP regarding treatment clutch mechanism.	Not relevance
Explains the basics and work steps according to SOP regarding maintenance gear mechanism.	Not relevance
Explains the basics and work steps according to SOP regarding transmission treatment	Not relevance
Explaining how the cylinder head according literature	Not relevance
Overhaul motor block according to SOP	Relevance
Understand how the components of the cooling system	Relevance
Explaining how the lubrication system components	Not relevance
Explain how the components of the drainage system of conventional gasoline fuel.	Not relevance
Explaining how the carburetor	Not relevance
Caring periodic machine mechanism.	Very relevance
Caring periodic ignition system.	Relevance
Caring periodic lubrication system.	Very relevance
Caring periodic cooling system.	Very relevance
Caring for the fuel system periodically.	Very relevance
Caring periodic coupling mechanism	Relevance
Caring periodic gear mechanism.	Relevance
Caring periodic transmission system	Relevance
Implement overhaul head sislinder	Relevance
Implement overhaul block sislinder	Relevance
Carry out the cooling system overhaul	Relevance
Implement lubrication system overhaul	Relevance
Fix the drainage system of conventional gasoline fuel	Very relevance
Fixing a carburetor	Very relevance
Understanding how to take care of periodic motorcycle shock absorbers according to SOP	Very relevance
Understand how to care for motorcycle wheels periodically according to SOP	Very relevance
Understand how to maintain regular brake system according to SOP	Very relevance
Understanding the components of shock absorbers according to SOP	Relevance
Identify the wheel according to SOP	Not relevance
Caring periodic shock absorbers	Not relevance
Caring periodic wheel	Not relevance

Caring periodic motorcycle brake systems	Very relevance
Fixing mechanism shock absorbers	Not relevance
Fix wheels	Not relevance
Understanding charging system according to SOP	Not relevance
Understanding the ignition system according to SOP	Not relevance
Understanding the lighting and signaling system according to SOP	Relevance
Understanding the starter system according to SOP	Relevance
Repair the charging system	Not relevance
Repair the ignition system	Relevance
Fix the lighting and signaling systems	Relevance
Fixing starter system	Relevance
Understanding gasoline injection system according to SOP	Very relevance
Understanding the clutch system according to SOP	Relevance
Understanding the components of the gear mechanism according to SOP	Relevance
Understanding the manual transmission system according to SOP	Relevance
Understanding the automatic transmission system according to SOP	Very relevance
Understanding the mechanical ignition system according to SOP	Relevance
Fixing gasoline injection system	Very relevance
Overhaul clutch	Relevance
Overhaul components gear mechanism	Relevance
Overhaul manual transmission	Relevance
Overhaul automatic transmission	Relevance
Fixing mechanical starter	Not relevance
Understanding the components of the braking mechanism according to SOP	Very relevance
Understanding the completeness of the chassis components (seat, fenders, etc.) according to SOP	Not relevance
Fix the braking mechanism	Very relevance
Fixing completeness chassis	Not relevance
Understanding regular maintenance motorcycle electrical system according to SOP	Very relevance
Understanding the electric motorcycle	Relevance
Understanding managing repair business (management workshop) motorcycles	Not relevance
Caring periodic motorcycle electrical system	Relevance
Repairing electric motorcycle	Relevance
Managing motorcycle repair business	Not relevance

Likert scale derived from calculations that generally Basic Competency of motorcycle engineering on reach percentage of 60% or relevance.

V. CONCLUSION

This study aimed to obtain information on the relevance of basic competency of motorcycle engineering on Vocational High School with the need of motorcycle technician in Jakarta, Indonesia.

From the results of research and testing, it can be concluded that in general there is the relevance of basic competency of motorcycle engineering on vocational high school (SMK) with the need of motorcycle technician in Jakarta, Indonesia. The other conclusion is obtained that the basic competency of motorcycle engineering on vocational high school according motorcycle technician who works in authorized workshops on three motorcycle brands most widely used is generally considered relevance with a percentage of 60%.

5.1 Suggestions

Based on the research that has been described, it is recommended that the Ministry of Education and Culture of the Republic Indonesia review the relevance of basic competency of motorcycle engineering on vocational high school (SMK) expertise with the needs of the business world. It is also recommended to the Ministry of Manpower and Transmigration of the Republic of Indonesia to the preparation of SKKNI subsector motorcycle more attention to the actual situation.

These two ministries are expected to always work together so that the integration can bring Indonesia triumphed in the world. Leading always Indonesia....

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