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Contribution of Teaching Factory, Basic Knowledge, And Self Efficacy to Vocational Competence and Its Impact to Work Readiness

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Abstract: **This research uses quantitative approach with survey method. which aims to find the contribution of teaching factory, basic knowledge, self efficacy to vocational competence and its impact on job readiness. The results of this study indicate: (1) The contribution of teaching factory to work readiness of 10.7%; (2) Contribution of basic knowledge mastery to work preparedness 13,53%; (3) contribution of self efficacy to students work preparedness 30,9%; (4) Contribution of vocational competency control over work preparedness 17.73%; (5) The contribution of teaching factory to the mastery of vocational competencies13,43%; (6) The contribution of basic knowledge to the mastery of vocational competency is 23.73%; and (7) contribution of self efficacy to the control of vocational competency 62,41%.**

Keywords: **Teaching Factory, Self Efficacy, Basic Knowledge, Vocational Competency, Work Readiness.**

I. INTRODUCTION

Indonesia has entered the period of the ASEAN Economic Community (MEA). Anything in ASEAN countries can enter Indonesia including the workforce. Increased human resources quality must be done immediately. One way to improve the quality of human resources by improving the quality of education. The level of education that is expected to improve the quality of human resources is vocational secondary education. Vocational education is productive education with a social purpose to work ([1]; [2]). the purpose of vocational education can be divided into the personal goals and goals of society[3]. According Suryamin in February 2016 the highest open unemployment rate occupied by vocational graduates of 9.84%. The high number of unemployed SMK graduates indicate a problem, according to the ministry of industry due to lack of work and incompatibility of competence in schools with the world of work (Directorate of Vocational Guidance). Teaching factory is a model that provides improvements to students' knowledge and readiness in dealing with the real world or work they are working on [4], [5]. In general, problems in SMK are: (1) the number of unemployed vocational high school graduates who occupy the highest order of 9.05%; (2) Competency gap in SMK(vocational education indonesia) with factory; (3) Mastery of vocational competence is still less satisfactory; (4) Low self efficacy and (5) Low mastery of basic knowledge. In accordance with the identification of the above problems, this study will examine the contribution of teaching factory teaching strategy implementation, basic knowledge mastery, and self efficacy to the mastery of vocational competence as well as the effect of the above variables on job readiness, which develop students while teaching factory.

II. METHOD

The design of this study using quantitative methods with surveys. This study aims to generalize the population used with some samples that are part of the study. Selected survey method because the method has the advantage in terms of economics and speed in presenting research data. The data obtained will be processed by using path analysis. Path analysis is used to analyze the relationship pattern between variables with the aim to know the direct and indirect influence of free

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vaiabel (exogenous) to the dependent variable (endogen) .The variables in this study: (1) free: teaching factory (X1), basic knowledge (X2), and self-effiacy (X3); (2) Intervening variables: vocational competence (Y); (3) dependent variable: job readiness (Z). The population in this research is all students of class XII SMK Motorcycle Engineering Program (TSM) at SMK Muhammadiyah 7 (MUTU) Gondanglegi Malang Regency and SMK PGRI 3 Malang academic year 2016/2017. Of the schools that made the population obtained 170 students. From the calculation of the sample obtained 140 students. The research instrument is a tool of researchers in data collection. Teaching factory data, work readiness and self efficacy are obtained from questionnaires, mastery of basic knowledge and control of vocational competence using the test.

III. RESEARCH RESULT AND DISCUSSION

Simultaneous Testing Vocational Competence, Teaching factory, Basic Knowledge and Self Efficacy to Work Readiness (Sub Structure 1)

Tabel 1. Summary Anova

Model Summary[b]				
Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**
1	.862[a]	.743	.736	322.577
a. Predictors: (Constant), Vocational Competence, Teaching Factory, Basic Knowledge, Self Efficacy				
b. Dependent Variable: Work Readiness				

Tabel 2. Coeffisient Anova

		Coefficients[a]							
Model		**Unstandardized Coefficients**		**Standardized Coefficients**	**t**	**Sig.**		**Collinearity Statistics**	
		B	**Std. Error**	**Beta**			**Zero order**	**Tolerance**	**VIF**
1	(Constant)	39.918	4.053		9.849	.000			
	Basic Knowledge	.186	.051	.246	3.648	.000	0,553	.417	2.396
	Teaching Factory	.181	.069	.136	2.609	.010	0,739	.703	1.423
	Self Efficacy	.284	.068	.375	4.199	.000	0,824	.238	4.194
	Vocational Competence	.179	.054	.237	3.322	.001	0,748	.373	2.677
A. Dependent Variable: Work Readiness									

Equetion stucture1 :

Z = ρx1z+ρx2z+ρx3z + ρyz dan Rx1x2x3

= 0,136 + 0,246 + 0,375 + 0,237 dan 0,5

Simultaneous Testing Teaching factory, Basic Knowledge and Self Efficacy to Vocational Competency (Sub Structure 1)

Tabel 3. Coefficient

Coefficients[a]											
Model		**Unstandardized Coefficients**		**Standardized Coefficients**	**T**	**Sig.**	**Correlations**				
		B	**Std. Error**	**Beta**			**Zero-order**	**Partial**	**Part**	**Tolerance**	**VIF**
1	(Constant)	17.245	6.262		2.754	.007					
	Self Efficacy	.737	.087	.737	8.492	.000	.790	.589	.445	.365	2.740
	Teaching factory	.042	.110	.024	.383	.702	.447	.033	.020	.704	
	Basic Knowlwdge	.053	.081	.053	.660	.510	.625	.057	.035	.419	
a. Dependent Variable: Vocational Competence											

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Tabel 4. Summary

Model Summary[b]									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.792[a]	.627	.618	512.121	.627	76.042	3	136	.000
a. Predictors: (Constant), basic knowlege, Teaching factory, Self Efficacy									
b. Dependent Variable: Vocational Competence									

From result of F test, it is obtained F value equal to 76,042 with significance 0,00. Since the sinigfication value is less than or equal to 0.00, so the test can be continued individually. Improved substructure 2 with trimming method. The result of sub structure analysis 2 proves that 2 variables do not contribute significantly, sub structure 2 can be improved by using trimming method. The results can be seen in Table 5:

Tabel 5. Coefficient after Trimming model

		Coefficients[a]							
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics		
		B	Std. Error	Beta			Zero order	Tolerance	VIF
1	(Constant)	20.426	3.616		5.650	.000			
	Self efficacy	.790	.052	.790	15.161	.000	0,790	1.000	1.000
2	(Constant)	9.052	7.626		1.187	.237			
	Basic Knowledge	.531	.072	.531	7.396	.000	0,447	.809	1.236
	Teching factory	.379	.126	.215	2.999	.003	0,625	.809	1.236
a. Dependent Variable: Vocational Competence									

Tabel 6. Model Summary after Trimming

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.790[a]	.625	.622	509.527
2	.655[a]	.428	.420	631.201

Summary of Analysis Results:

Based on the results of path coefficients in sub-structures 1 and sub-structure 2, we can be described the overall empirical causal relationship between variables as shown below ini. Equation in sub-structures 1 and sub-structures 2 who have trimming mode as follows:

Y = ρx1y+ρx2y+ρx3y dan Rx1x2x3

= 0,215 + 0,531 + 0,790 dan 0,610

Z = ρx1z+ρx2z+ρx3z + ρyz dan Rx1x2x3

= 0,136 + 0,246 + 0,375 + 0,237 dan 0,5

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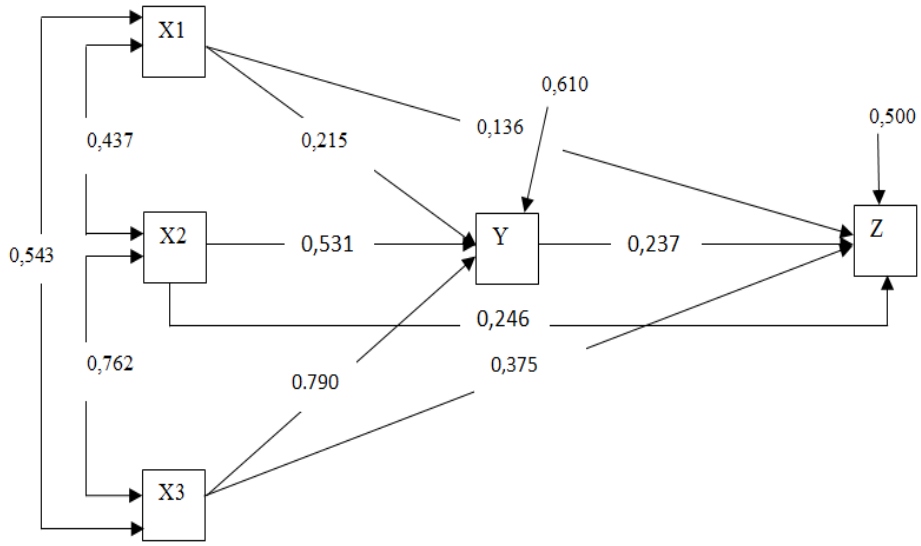

Fig.1 Corelation Coeficent

IV. DISCUSSION

Contribution of teaching factory to Work Readiness:

The contribution of teaching factory is 7.5%. The contribution of teaching factory to readiness of work can be categorized significantly, because in teaching factory program students are given more opportunities to do work as a worker [6]. So that there is an increase student knowledge by providing experience how to work in real activities [7].teaching factory provides experience to graduates about the field of production[8]. The advantages of teaching factory for students: (1) not only learning theory; (2) learning about teamwork and interpersonal skills; (3) future work experience [9]. the overall goal of the teaching factory is to improve the professional pass better by providing the leading concept in modern manufacturing[10]. Teaching factory contributed in preparing graduates in facing the world of work[11].

Contribution of Basic Knowledge to Work Readiness:

Mastery of basic knowledge contributes 13.53% to the readiness of SMK student. The basic knowledge contribute positively to the readiness of work with a contribution 9.9%[12]. practical experience, basic learning achievement of vocational and parent support to the work readiness in vocational education[13].

Contribution of Self efficacy to Work Readiness:

The contribution of self-efficacy to work readiness is 30.9%. Self-efficacy is able to deliver students at a high level of understanding so they can excel [14]. Self-efficacy is an assessment of the ability to execute decisions made after following the instructions [15]. Self-efficacy is useful for determining how they make decisions on the jobs they choose [16]. Self-efficacy gives effect to the readiness of student work[5]. In line delivered [17]Utami (2013) there is a relationship of self-efficacy with the readiness of work on vocational students. In line delivered by Stevani said self-efficacy has a significant influence on the readiness to enter the workforce. Research [18] mentions self-efficacy provides readiness work students become accounting teachers.

Contribution of Vocational Competence to Work Readiness:

Contribution of vocational competency control to readiness of vocational students 17.7%. competence is an integrated demonstration of a group of skills that are cognitive skills, technical skills and attitudes are observed and measurable to do a particular job[19]. The level of readiness of students working SMKN 2 Ciamis who have high learning productive learning outcomes, also has a high job readiness as well[20]. Other variable contribution is 32,7%, vocational competence (result of productive learning lesson) is 3,8%. Achievement of productive lesson in machineries giving 25,5% contribution to job readiness[21].

Contribution of Teaching Factory to Vocational Competence:

The contribution of teaching factory to vocational competency is 13,43%. This research is strengthened by [22] which states that teaching factory can improve the quality of learning and student competence. While [23] states that the model teaching factory can improve student competence. According to [24] mentions teaching factory with model TF 6 M can improve softskill and hardskill. According to[6], [25] mentioned Teaching factory improves students' ability. While [26]said teaching factory can be used in improving the quality of education in the field of engineering. Teaching factory SMK in Surakarta in terms of learning activities otherwise very well [27]. Teaching factory has an impact on the knowledge of peseta students[28]. Teaching factory has been developed to provide knowledge about the concept[7]. Teaching factory is effective in developing students' skills[29].

Contribution of Basic Knowledge to Vocational Competence:

The contribution of basic knowledge to the mastery of vocational competency is 23.73%. In line [30] mentioned that there is a significant difference in student learning outcomes between groups of high knowledge base with low knowledge base. Contribution of parental support and the mastery of basic knowledge, each directly to the achievement of vocational competence[31]. [32] mentions that basic knowledge largely determines the success of learning outcomes. Prior knowledge affects learners while receiving new information, organizing new knowledge, and linking new information with basic knowledge[33]. Theory of electricity has an effect on the ability to assemble electricity[34].

Contribution of Self-Efficacy to Vocational Competencee:

The contribution of self-efficacy to the control of vocational competence is 62,41%. There is influence of self efficacy and mathematical communication ability simultaneously to mathematics learning achievement[35]. There is a positive relationship of self-efficacy with student learning outcomes[36]. [14] Mentions that this study shows the relevance of self-efficacy and self-esteem to learning achievement. Maisaroh mentioned that self-efficacy and self-regulated learning control variables together influence learning achievement. The contribution of self-efficacy to student learning outcomes[37].

V. CONCLUSION

Based on the results of research and discussion, conclusions can be drawn as follows: 1) The contribution of factory teaching to the readiness of vocational students in Malang. 10.7% 2) Contribution of basic knowledge mastery to the readiness of vocational students in Malang by 13.53%; 3) The contribution of efficacy to the readiness of vocational students in Malang is 30.9%; 4) Contribution of vocational competence control over work preparedness of 17.73%; 5) The contribution of factory teaching to the competency of vocational competence is 13.43%; 6) Contribution of basic knowledge mastery to the control of vocational competence of 23.73%; 7) Contribusiself efficacy to the control of vocational competence of 62.41%.

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