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CONFIRMATORY FACTOR ANALYSIS ON STUDY RESULT EVALUATION ASSESSMENT (SREA) IN CURRICULUM OF 2013: A CASE STUDY OF VOCATIONAL HIGH SCHOOL (SMK) INDONESIA

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This study aims (a) to test validation with the confirmatory analysis factor approach on assessment instrument of study results of vocational high school (SMK) in implementing curriculum 2013 in Indonesia. (b) to know whether the guidelines of assessment instrument of SMK study results can be used as an assessment study results in general. Based on total in commonalities table, this research obtained that four variables (formats, the contents, language and benefits) of assessment instruments study results of vocational high school in implementing curriculum 2013 has commonalities value of > 0.5. This means that a whole values had strong ties by a developed factors.

Keywords: Confirmatory Factor Analysis, Evaluation Assessment, Curriculum 2013, SMK

INTRODUCTION

Performance assesments in SMK schools is procedure to obtain information about students understanding and skill or evaluation process of student skills to measure duty settlement procedures /demonstrate skill in work. According to Popham, performance assessments is procedures to obtain information understanding and skill or skill evaluation process for measuring duty settlement procedures[1](Popham, 1995). Assessment and measurement is two interconnected and quantitatively which comparing something with a particular instrument measurement.

According to Cronbach, the difficulty occurs because the measurements are designed by using unstructured stimulilus, therefore the individual makes his own interpretation on the stimulus and responds according to the affective aspect in himself. Through the measurement will be obtained information that is guaranteed the truth oriented to withdrawal conclusion or decision. Therefore the issue of measurement is an integral part of the learning process. Measuring must follow a commonly agreed set of rules and formulations (Cronbach, 1994)

Measurements in practice at smk not only use of various kinds of worksheets practices (jobheet) to obtain score. Score obtained through measurement are assessed in connection with other criterions, so score can tell us, how far the reached goals set in a lesson plans. With such appraisal practice at SMK by teachers could have un-optimal, inconsistent; and less objective to determine students achievement practices. The data in school showed there are still many students study results is

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weak meet the minimun completion criteria (KKM). The evidence based on the SMK school data survey results shows that study results practices three years back is still low under KKM. Hence it is needs to be viewed roots of the causes. This research is attempt to analyzes the way how to scoring in practice at SMK relted to Curriculum of 2013 in Indonesia. Practically. granting score be able to raise problems and difficulty, when educators in the study practices have different way or score techniques. Basically, there are two ways scoring techniques in school practices; analytical score and holistical score.

Basically, curriculum of 2013 and study result evaluation assessment has been applied, but validation and pilot test not applied yet. Therefore it is important to applied *Confirmatory Factor Analysis* of study result evaluation assessment in order to the criterions and guidelines of evaluation can be organized according to the objectives. Hence, this research intended to analyses the *confirmatory factor analysis* of study result evaluation assessment of SMK students in curriculum of 2013. Is it suitable to use? How to apply the *confirmatory factor analysis* in evaluation assessment of study result at SMK in curriculum 2013? What are the significant factors that have developed suitable with evaluation construction study result of SMK students according to curriculum 2013 practices?

RESEARCH METHODOLOGY

This research using *Confirmatory Factor Analysis* of study result evaluation assessment in order to the criterions and guidelines of evaluation can be organized according to the objectives. Under Maximum Likelihood (ML) analysis method, *Confirmatory Factor Analysis* approach used to test some factors which has theoretically organized or to examine hypothesis related to construct of existences. Also to test some factors extracted can be used to explain significant correlation between indicators.

Through this *Confirmatory Factor Analysis*, this research can obtain significances of *goodness of fit test* (Gable: 1987). Basically refer to Gorsuch (1983:2) the objective of *Confirmatory Factor Analysis* is to summarize correlation between variables, but in exactly meaning is to help in developing some understanding related to variables. This method applied by computerizes to assess same variables in a survey correlated in a factor. (Litwin, 1995). Analyzing factors can see if specifications of developed construct in theory were in line with the concept of underlying construct through the test in reality. So essentially, confirmatory factor analysis is a technique filter that analyzes correlation of variables instrument, in developing a psychological test, then the analysis factor is very relevant to test validity of construction. This technique done by analyzing variables instrument which having common factors which contained in several certain factors and combined into a new factors. In that analyzing, expected found are dimension indicators and strong variables which develop construction of tested variable. In

addition analyzing factor was expected to find new variables fewer than previous variables. According to Norusis (1993:52), there are four steps to apply analyzing factor, such as:

- Calculate all correlation matrices for each variable
- Extraction factors
- Rotation
- entitle every factor

Analysis of construct validity in this research is done by SPSS program. Extraction method used is component methods; factor rotation is done by varimax method, while the number of factors based on the amount of variance of each factor (eigenvalue). Determination of the number of variance is based on Guttman's opinion as quoted by Child is taking a factor that has eigenvalue greater than 1. The determination of factor load factor is based on Gorsurch's opinion, ie to determine the charge factor as the basis of grouping of variables in a factor can be done by looking at the critical value table r, the value is then duplicated. Each factor can be used as an indicator if the factor has an eigenvalue greater than 1.00 with a cumulative variance greater than 0.05 or 50%. Based on the data obtained by analytical requirements test results with Emperor Mayer Olkin Measure of Sampling Adequacy (KMOMSA) significance, this means that the correlation matrix obtained is good enough for further analysis. The result of factor analysis shows that the extraction of the indicator variable yields 2 assessment factors that have a factor variance greater than 1 (one). Each indicator has a price factor variance together for two factors is sufficient. Based on the calculation results analysis factor, there are two components whether results of extraction and results of rotation.

RESULT AND DESCRIPTION OF DATA ANALYSIS

Based on data analysis can be explained as follow; respondent are 28, with average is 3,14, median 3, mode 4, deviasion standart is 0,8 on varian 0,645, range 2, minimum score is 2, maximum score is 4. The description of data as shown as:

N	Valid	28
	Missing	0
Mean		3.1429
Std. Error of Mean		.15183
Median		3.0000
Mode		4.00
Std. Deviation		.80343
Variance		.646
Range		2.00
Minimum		2.00
Maximum		4.00

The data then presented in frequency distribution with class interval of 3, interval lenght is 1, as follow:

TABEL 2: FREQUENCY DISTRIBUTION OF RESEARCH DATA

		Frequency	*Percent*	*Valid Percent*	*Cumulative Percent*
Valid	2.00	7	25.0	25.0	25.0
	3.00	10	35.7	35.7	60.7
	4.00	11	39.3	39.3	100.0
	Total	28	100.0	100.0	

The table shows that there are 7 respondents or 25% is not too good, 35, 7% is good, and 39, 3% very good, but as cumulative is 60, 7%. The result shows that the performance assessment valuation is suitable in measuring study result of SMK at curriculum of 2013. To obtain clear result analysis, the result displayed in histogram as follow:

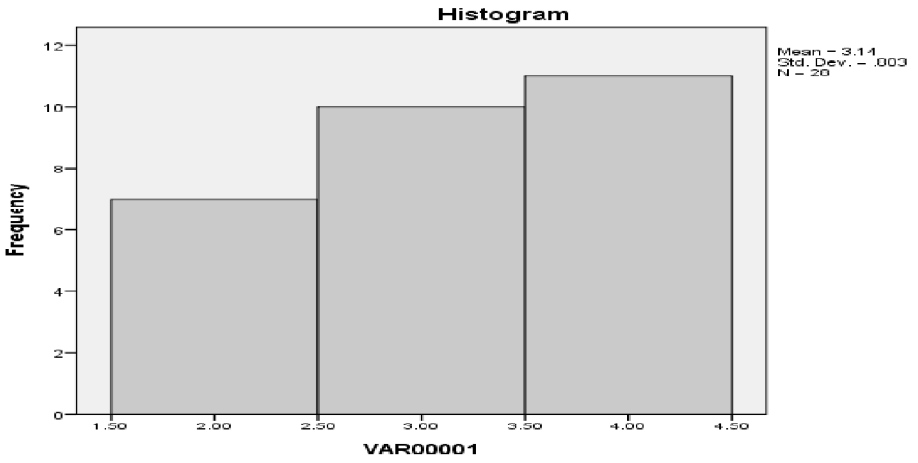

Figure 1: Histogram of result Analysis on Result Evaluation Assessments of Study at SMK in Indonesia

CONCLUSION

Based on all values in *communalities table*, found that the four variables have same value of communalities > 0.5. That means all variables used have significant correlation with constructed factors, as following:

– The intense of variable relationship to constructed factor of 0.889 means that there are closely relationship between constructing variable to constructed factors. Or it can also be said the variable contribution to the constructing factor of 88.1%.

- The intense of content variable relation to the constructed factor is 0, 723, that means the relationship of content variable to constructed factors is closely. Or it can also be said that contribution of content variable to the constructed factor equal to 72, 3%.
- The intense of language variables to constructed factors is 0, 490, that means relation between language variables to constructed factors is significant or can be said also that contribution of language variables to constructed factors is equal to 49%
- The intense of benefit variables to constructed factors is 0, 643, that means relation between benefit variables to constructed factors is significant or can be said also that contribution of benefit variables to constructed factors is equal to 64,3%
- Total Variance Explained shows that the percentage of total various which can explain by various constructed factors. Factor 1 has eigenvalue as 1, 636, and Factor 2 as 1,109. The value of various that can be explained by factor 1 is 40, 89%, and explained by factor 2 is about 27,732%. Based in these both eigenvalue values which more than 1 and cumulative percentage of both factors is 68, 27% shows that the both factors is good to represent the various origin variables
- Frequency distribution of analysis result presents that there are 25% is bad or not suitable, 35, 7% is good/ suitable and 39, 3% is very good. Hence cumulative values as 60, 7%. Shows that Result Evaluation Assessment (SREA) suitable for used in SMK as Result Evaluation Assessment (SREA) in curriculum of 2013.

Note

1. W. J. Popham, Classroom Assessment: What Teachers Need to Know (Boston: Allyn and Bacon, 1995), h.139.

References

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