

Vocational Maturity in Terms of Vocational Self-Concept and Learning Independence of Vocational High School Students on Modelling and Building Information Design Competency in Gorontalo Province

Rawiyah Husnan*, Sunardi, Wiranto Bintelo, Marike Mahmud

Universitas Negeri Gorontalo

*Email: rawiyah@ung.ac.id

ABSTRACT

Self-concept is an important thing in life because a person's understanding of his self-concept will determine and direct behavior in various situations. Learning independence is the main demand of students in learning so that students can complete assignments, have confidence in their own abilities, and do not depend on others. Vocational maturity for students is very important, because one of the problems students experience after finishing school is related to choosing a career and work. Vocational self-concept and learning independence are thought to have an influence on students' vocational maturity. Vocational maturity for students is very important, because one of the problems students experience after finishing school is related to choosing a career and work. Vocational self-concept and learning independence are thought to have an influence on students' vocational maturity. . This research was conducted at a Vocational High School (SMK) Competency Design Modeling and Building Information in Gorontalo Province which aims to analyze (1) the effect of vocational self-concept on students' vocational maturity; (2) the effect of independent learning on students' vocational maturity, and (3) the simultaneous effect of self-concept and independent learning on students' vocational maturity. This study uses a quantitative approach with the type of ex-post facto survey by using a questionnaire for data collection. The population in this study were 147 students of class XII SMK with a sample of 108 students. The results of the study show that: (1) there is a positive and significant influence of vocational self-concept on the vocational maturity of DPIB Vocational High School students in Gorontalo Province of 5.2%; (2) the positive and significant effect of independent learning on vocational maturity of DPIB Vocational High School students in Gorontalo Province is 47.5%; and (3) the positive and significant influence of vocational self-concept and learning independence together on the vocational maturity of DPIB Vocational High School students in Gorontalo Province of 48.5%.

Keywords: *Self-concept, Learning independence, Vocational maturity.*

1. INTRODUCTION

Students at the Vocational High School (SMK) level are in the age range of 15-18 years old, which are teenagers. At this age, they tend to have improvement in some areas, including in their career, to prepare for their future. Adolescents who are ready to design, make choices, and make decisions at work are referred to as having vocational maturity. In regards to getting a job, individuals are required to have quality human resources to meet the requirements of a field of work and have good vocational maturity.

Vocational maturity for students is paramount due to one of the problems students face after finishing school is choosing a career and work. Self-concept is a primary thing in life because ones' understanding of their self-concept will determine and direct their behavior in various situations, Marsh [1]. Self-concept is a mental picture of oneself that consists of knowledge, expectations, and judgments about oneself. Epstein [2] explains that self-concept is an opinion or feeling or ones' image of themselves both physically and psychologically (social, emotional, moral, and cognitive). Adolescents

who have a positive self-concept will think carefully in making decisions. Learning independence is students' main demand in learning so that they can complete assignments, have confidence in their abilities, and not depend on others. Learning independence is a concept where individuals design their own learning according to their needs or goals, choose strategies and implement their learning plans, monitor their learning progress, evaluate their learning outcomes, and compare them with certain standards. Students who have an independent attitude will have the courage to decide matters relating to themselves, be beyond the influence of others, be able to take the initiative and develop creativity, and be able to do self-stimulation to achieve better.

The way people alleviate their problems can depict whether or not there is responsibility for themselves. The attitude of being responsible is one of the characteristics of one who has independence, likewise, students who are obliged to learning. If students have responsibility for their learning, understand their assignments well, and do not depend on others for their needs, then they can perform independent learning. The vocational maturity of vocational students is thought to be influenced by vocational self-concept, and learning independence is suspected of influencing students.

2. RESEARCH METHOD

2.1. Research Design

This study uses a quantitative approach, which is an approach whose information or data is in the form of numbers. This is correlational research with the ex-post facto aimed to examine events that have occurred. Correlational research is research that aims to detect the extent to which variations in a factor are related to variations in one or more other factors based on the correlation coefficient. This research is conducted to find out information about the influence of vocational self-concept (X1) and learning independence (X2) on vocational maturity (Y) of Vocational High School students in Modeling and Building Information Design Competency in Gorontalo Province.

2.2. Population and Research Sample

The population in this study is 147 students in Class XII of Modeling and Building Information Design Competency, academic year of 2021/2022. Due to the population being numbered more than 100, the sample is calculated and determined to be 108 students.

2.3. Population and Research Sample

Data collection techniques and instruments used questionnaires. The variables using the questionnaire were vocational self-concept (X1), independent learning (X2), and vocational maturity (Y). Respondents had to choose the answers that have been available from the existing statements.

Moreover, Likert scale was used to determine the alternative answer scores. The Likert scale used four alternative answers, namely SS (Strongly Agree) (Agree), TS (Disagree), and STS (Strongly Disagree).

2.4. Instrument Validity and Reliability

2.4.1. Validity Test

Validity test was used to measure the level of validity of an instrument. A valid instrument was derived from a valid measuring instrument used to obtain the data. The validity test used the product-moment correlation by Pearson, elaborated in the following paragraphs [3].

2.4.1.1. Content Validity

In the early stages of developing the instrument, the purpose of content validation was to reduce the variation of error potential for instrument making and to increase the possibility of obtaining a construct validity index in follow-up studies. The validity of this instrument was carried out by expert judgment from 3 expert lecturers.

2.4.1.2. Trial Validity

As an instrument trial, the data used in the validity test were 30 respondents who were not included as a sample from the study population. With a minimum number of 30 people, the value distribution would be closer to the normal curve. This trial was used on 30 Construction and Property Business Skill Competency students at SMK Negeri 3 Gorontalo.

2.4.1. Reliability Test

Reliability test was used to measure the consistency of the instrument. A good instrument is reliable if it shows consistent results despite being used many times. This reliability test used the Alpha Cronbach formula, elaborated as follow [3]:

The results of calculating r_{11} were then interpreted to know whether a test is reliable or not using the correlation coefficient guidelines [4].

Based on the correlation interpretation guidelines, the instrument is declared reliable if r_{11} is greater than or equal to 0.600. If it is less than 0.600, then it is declared not reliable.

The result of the instrument trial carried out on 30 students in class XII of Construction and Property Business Skill Competency at SMK Negeri 3 Gorontalo, shows that the reliability variables of Vocational Self-

Concept (X1) are 0,605, Learning Independence (X2) is 0,837, and Vocational Maturity (Y) is 0,910. This shows that these instruments have a very high level of reliability and meet the requirements for collecting research data.

2.5. Data Analysis

2.5.1. Description Analysis

Analysis of the research data included the mean, median, mode, and standard deviation, which were presented in the trend table for each variable.

The tendency of each variable was determined by categorizing the scores obtained using the ideal mean (M_i) and ideal standard deviation (S_{Di}), which were categorized as shown in **Table 1**.

Table 1. Variable Trend

Score Range	Category
$M_i \leq X < (M_i + 1.S_{Di})$	Very High
$M_i \leq X < (M_i + 1.S_{Di})$	High
$(M_i - 1.S_{Di}) \leq X < M_i$	Low
$X < (M_i - 1.S_{Di})$	Very Low

2.5.2. Prerequisite Analysis Test

The prerequisite test was carried out before analyzing the data obtained. The prerequisite test was used to know whether the data collected met the requirements for analysis. Analysis prerequisite test included:

2.5.2.1. Normality Test

The normality test was used to determine whether data were normally distributed. The normality test used the Kolmogrov-Smirnov formula. If the significance was >0.05 , the data were declared normal whereas if the significance was

2.5.2.2. Linearity Test

The linearity test was used to determine whether the independent variable (X) and the dependent variable (Y) had a linear relationship or not. This linearity test used the F test at a significance level of 5%. If the significant value was greater than 0.05, then the relationship between variables was linear. However, if the significance value was less than 0.05, then the relationship between variables was not linear.

2.5.2.3. Multicollinearity Test

The multicollinearity test was used to determine whether or not there was a high correlation between the independent variables. The independent variable must not be multicollinear. Look for this relationship by looking at the tolerance and Variance Inflation Factor (VIF) values. There was no multicollinearity if the tolerance value was > 0.10 . If the tolerance value was 10.00, there was multicollinearity, and if the VIF value was.

2.5.3. Hypothesis Testing

2.5.3.1. Test Hypotheses 1 and 2

Test Hypotheses 1 and 2 used a simple regression test. This was carried out to determine whether or not there was an influence between each independent variable and the dependent variable. The hypotheses were the influence of vocational self-concept on vocational maturity (hypothesis 1) and the influence of learning independence on vocational maturity (hypothesis 2). The steps to be taken were as follows:

Simple Regression Line Equations

1. Looking for simple linear equation with formulas as follows [4]: $Y = a + bX$
2. Looking for the Coefficient of Determination (r^2)

The coefficient of determination was used to show the accuracy of the regression line. Variables would have a significant effect if t_{count} was equal to or greater than t_{table} with a significant level of 5%. If t_{count} was smaller than t_{table} with 44 significant levels of 5% then it would have no significant effect.

3. Significance Test Using t test

T-test with a significant level of 5% was used to test the significance of partial coefficient. The trick was to compare the probability value (p-value) with a significance level of 5% or 0.05. If the result from the calculation assisted the SPSS computer obtains p value <0.05 , then H_0 was rejected and H_A was accepted. This meant that the variables X1 and X2 affected variable Y partially [5].

2.5.3.2. Hypotheses 3

Hypothesis 3 test used multiple regression. This was done to simultaneously identify the independent variables' influence on the dependent variable. The hypotheses were the influence of vocational self-concept (X1) and learning independence (X2) on vocational maturity (Y).

The F test was carried out to determine the independent variables contained in the model simultaneously with the related variables. This was done to identify the extent to which vocational self-concept and learning independence influence students' vocational maturity. This was carried out by comparing the p-value with a significance level of 5% or 0.05 [5].

If probability is > 0.05 then H_0 is confirmed

If probability is < 0.05 then H_0 is rejected

H_0 = Observation Hypothesis

H_A = Alternative Hypothesis

3. FINDINGS AND DISCUSSION

This study aims to examine the vocational self-concept and independent learning on the vocational maturity of vocational students at DPIB in Gorontalo Province. Based on the results of the analysis, the discussion is ultimately presented as follows:

Variabel description of vocational self-concept (X1)

Data on this variable were obtained through a questionnaire consisting of 9 statements that had been tested for validity and reliability using Likert scale consisting of 4 alternative answers, namely the lowest score 1 and the highest score 4.

Table 2. Vocational Self-Concept Tendencies

No	Category	Frequency	Percentage
1	Very high	6	5,56%
2	High	10	9,26%
3	Low	45	41,67%
4	Very Low	47	43,53%
		108	100%

Based on the frequency distribution above, it shows that vocational-self concept is in very low category, namely 43,53% (47 people), meaning that vocational-self concept in influencing in vocational maturity possessed by most respondent still tends to be very low.

Variabel description of Learning independence (X2)

Data on this variable were obtained through a questionnaire consisting of 11 statements that had been tested for validity and reliability using Likert scale consisting of 4 alternative answers, namely the lowest score 1 and the highest score 4.

Table 3. Learning Independence Tendencies

No	Category	Frekuensi	Percentage
1	Very high	27	25%
2	High	30	27,78%
3	Low	39	36,11%
4	Very Low	12	11,11%
		108	100%

Based on the frequency distribution above, it shows that learning independence is low category, namely 36,11% (39 people), meaning that the tendency for

learning independence to affect vocational maturity possessed by respondents is still not fully developed.

Variabel description of Vocational Maturity

Data on this variable were obtained through a questionnaire consisting of 11 statements that had been tested for validity and reliability using Likert scale consisting of 4 alternative answers, namely the lowest score 1 and the highest score 4.

Table 4. Vocational Maturity Tendency

No	Category	Frequency	Percentage
1	Very high	12	11,11%
2	High	30	27,78%
3	Low	48	44,44%
4	Very Low	18	16,67%
		108	100%

Based on the frequency distribution above, it shows that vocational maturity is in the low category, namely 44,44% (48 people). This means that the vocational maturity possessed by most respondents is still low.

3.1. The Influence of Vocational Self-concept on Vocational Maturity

The finding shows that there is a positive and significant influence of vocational self-concept (X1) on vocational maturity (Y), which can be seen that the correlation coefficient (r_{x1y}) is 0.229. A positive vocational self-concept means that if the vocational self-concept is high, the students' vocational maturity will also be high, vice versa. The coefficient of determination (r^2_{x1y}) of 0.052 indicates that students' vocational self-concept has an influence on vocational maturity of 5.2%.

The result of the tendency for the vocational self-concept variable is categorized into the low category of 43.53% (47 students), meaning that the tendency for vocational self-concept to influence vocational maturity possessed by respondents is lacking.

The result of the simple regression test shows that the coefficient value of the vocational self-concept variable is 0.277, meaning that there is a positive influence between vocational self-concept (X1) on vocational maturity (Y). The result of the t-test shows a significant result, which is the t-test value is less than 0.05 (Sig. 0.017 < 0.05), meaning that vocational self-concept (X1) has a significant influence on vocational maturity (Y). Therefore, vocational self-concept needs to be developed to improve and foster vocational maturity in students. The vocational self-concept and vocational maturity have

a positive and significant relationship. According to [7], self-concept is ones' feelings about themselves as a whole living entity with unique characteristics, so that one will be easily recognized as individuals with their own characteristics. Some suggest that self-concept is individuals' view or perception of themselves obtained through experience and interaction with others [8].

3.2. The influence of Learning Independence on Vocational Maturity

The finding indicates that there is a positive and significant influence of learning independence (X2) on vocational maturity (Y), which can be seen from the value of the correlation coefficient (r_{x1y}) of 0.689. The influence of positive learning independence means that if learning independence supports well and maximally, then the students' vocational maturity will also be high, vice versa. The coefficient of determination (r^2_{x1y}) of 0.475 indicates that student learning independence influences vocational maturity by 47.5%. The result of the tendency for the learning independence variable is categorized into the very low category of 36.11% (39 students). This means that the tendency for learning independence is very low because it does not fully support the increase of vocational maturity. The result of the simple regression test shows that the coefficient value of the vocational self-concept variable is 0.956, meaning that there is a positive influence between learning independence (X2) on vocational maturity (Y). The result of the t-test shows a significant result, which is the t-test value is less than 0.05 (Sig.0.000 <0.05). This means that learning independence (X2) significantly influences vocational maturity (Y). Therefore, learning independence needs to be maximally supported to improve and foster vocational maturity in students.

This is in accordance with Super's opinion [9] that someone is thought to have vocational maturity when this person is independent in making decisions. States that adolescents who can make decisions and be responsible for their decisions are independent adolescents[10]. The finding reveals that vocational self-concept and vocational maturity have a positive and significant relationship. Students with good learning independence can be observed directly from their behavior and attitudes. State that independence is usually characterized by several characteristics, including the ability to determine one's own destiny, be creative and initiative, regulate behavior, be responsible, be able to hold reacting, make decisions independently, and be able to solve problems without any influence from others [11]. This shows that one's learning independence can be described from attitudes, opinions, and behavior.

3.3. The Influence of Vocational Self-concept and Learning Independence on Vocational Maturity

The finding discloses that there is an influence of vocational self-concept and independent learning on the vocational maturity of vocational students on DPIB in Gorontalo Province.

Based on the multiple regression analysis, the correlation coefficient value $r^2_{y(1,2)}$ is 0.696. The correlation coefficient is included in the strong category.

The coefficient of determination ($r^2_{y(1,2)}$) is 0.485, meaning that vocational self-concept (X1) and learning independence (X2) simultaneously have a 48.5% influence on vocational maturity (Y) while the remaining 51,5% is influenced by other variables. Therefore, the effective contribution for vocational self-concept is 6,94% and learning independence is 62,66 %.

The result of multiple regression calculation shows that the vocational self-concept coefficient (X1) is 0,134, meaning that if vocational self-concept increases by one unit, vocational maturity (Y) will also increase by 0,134, assuming the learning independence variable (X2) remains constant. The learning independence coefficient is 1,027, meaning that if learning independence increases by one unit, vocational maturity will also increase by 1.027, assuming the variable of vocational self-concept (X1) remains constant.

Based on the findings, it can be concluded that vocational self-concept and learning independence simultaneously positively and significantly influence vocational students' vocational maturity on DPIB Skill Competence in Gorontalo Province. Therefore, vocational self-concept and learning independence must be considered to increase students' vocational maturity. The higher the vocational self-concept and learning independence, the higher the vocational maturity which can provide an optimal contribution.

The findings indicate that the vocational self-concept and vocational maturity have a positive and significant relationship. Adolescents who have reached vocational maturity will have the confidence to be able to have independent self-concept [12]. Also, independent learning needs to be owned by students in choosing the stage of self-preparation. Students who have self-concept and independence in their own abilities will be able to optimize the abilities they have that will support them in their work.

4. CONCLUSION

Based on the finding and discussion, it can be concluded that:

1. There is a positive and significant influence of vocational self-concept on the vocational maturity of Vocational High School students on DPIB in

Gorontalo Province of 5,2%. A positive influence is shown by the result of the coefficient of determination (r^2_{x1y}) of 0,052 and the correlation coefficient (r_{x1y}) of 0,229. The significant influence is shown by the result of the t-test significance, which is less than 0,05 (Sig.0,017 <0.05) at the 5% significance level.

2. There is a positive and significant influence of learning independence on vocational maturity of Vocational High School on DPIB in Gorontalo Province of 47.5%. The positive influence is indicated by the coefficient of determination (r^2_{x2y}) of 0,475 and the correlation coefficient (r_{x2y}) of 0,689. The significant influence is indicated by the result of the t-test significance which is less than 0,05 (Sig.0.000 <0.05) at the 5% significance level.
3. There is a positive and significant influence of vocational self-concept and learning independence simultaneously on the vocational maturity of Vocational High School on DPIB in Gorontalo Province of 48,5%. The positive influence is showed by the result of the determination coefficient $r^2_{y(1,2)}$ of 0.488 and the correlation coefficient $r_{y(1,2)}$ of 0.696. The significant influence is shown by the result of the F test, which is less than 0,05 (Sig. 0.000 <0.05).

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