The Effect of the Entrepreneurial Learning Design on Students' Entrepreneurial Competence in Vocational High Schools in Makassar

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ABSTRACT

This study aims at determining to what extent the entrepreneurial learning design influences students' entrepreneurial competence in the Vocational High School in the Makassar. To achieve that goal, then some data collection techniques were used namely documentation and questionnaires. The data were analyzed using several techniques namely descriptive analysis, validity and reliability test of the research instrument, classical assumption test consisting of normality test, multicollinearity test, and heteroscedasticity test, multiple linear regression analysis, and hypothesis testing consisting of t-test and f-test. Based on the results of regression analysis, it can be concluded that the entrepreneurial learning design has a positive and significant effect on students' entrepreneurial competence in vocational high school in Makassar. Therefore, the first proposed hypothesis is accepted.

Introduction

In recent years, The Vocational high school is required to produce professionals who have an entrepreneurial competence. It became one of the main pillars of national economic activity (National Educational Strategic Plan, 2010-2014: 60). Therefore, the entrepreneurial learning designs such as curriculum, learning strategies, teaching materials, learning assessment, learning objectives, and the teachers who teach the entrepreneurship subjects in vocational high school need to be reviewed.

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The entrepreneurial learning design toward students' entrepreneurial competence is very important. Therefore, the researchers interested in conducting research on vocational high schools in Makassar. Based on observations conducted by the researchers, it is found that there are some phenomena faced by every vocational high school in the implementation of entrepreneurial learning. It is recognized that many teachers who go into the classroom to teach without lesson planning and preparation. They reasoned that the delivered materials have been already mastered because the materials have been taught repeatedly. Teaching materials used in the process of entrepreneurial learning for every student in vocational high school are still less in which every teacher relies on textbooks or instructional materials prepared by other teachers. Thus, the entrepreneurial learning process is not consistent with the character building and competence demands.

Entrepreneurial learning design in vocational high school in Makassar is still poor. There is a disconnected link between what is taught in school and what happens in the field due to the lack of information and networking between the school and the business world. The gap could be connected with cooperation between the school and the entrepreneurial practitioners who master the information about entrepreneurship. The learning objective which refers to the standard of competence and basic competence are not achieved because in addition to learning strategies, measurement and evaluation of learning programs are not well planned. The assessment tends to be subjective and it does not have clear reference criteria. There is a lack of infrastructure and the learning media is not utilized maximally.

The inhibiting factor in the entrepreneurial learning process in vocational high school is the curriculum of entrepreneurship education. The curriculum in formal schools is not attractive. Based on its contents, the curriculum is only focused on the theoretical side. Practical activities are not managed in such a way to support the theory that is in fact, sufficient to assist learners as an entrepreneur. The curriculum is also not equipped with a variety of plans to make students more familiar with the entrepreneurial world practically.

Students' entrepreneurial competence is the knowledge, skills, and student behavior regarding the perception owned by the student after following the process of entrepreneurial learning in school. However, the provision of education, especially at the State Vocational High School in Makassar, is still oriented on cognitive aspects and the teachers are not in accordance with their competence. The teachers present a variety of information cognitively for the students, whereas the affective aspects are practically neglected. As a result, the students do not have a value system that can be used to form the mental and independent work ethic. Moreover, in the long term, many students know information, but they do not know how to behave and act with the information and knowledge they have. Hence, the factors that influence the low number of graduates who want to take part in entrepreneurship need to be investigated.

Method

Integrating This study was a quantitative method. According to Sugiyono (2011), the quantitative method can be interpreted as a method of research that is based on the philosophy of positivism. It is used to examine the population or a particular sample. Data collection was using research instrument. The data were

analyzed using statistical analysis with the aims at testing the predetermined hypothesis.

According to Danang (2013), research design is a framework to assess in detail the procedures that are planned to explain the information to answer the question and provide the information that is needed in decision-making. The design that was used in this research was explanatory that aims at examining the relationship between cause and effect. Data collection techniques that were used in this research was by distributing questionnaires to the respondents in which the respondents were the first grade, second grade, and third-grade students in vocational high schools in Makassar?

Results and Discussion

Science Teachers' Use of Computer in Classroom

This section will explain the descriptive data obtained from respondents. Descriptive data are presented in order to know the profile of the research data and the relationships that exist among variables that were used in this research. According to Sugiyono (2013: 209), descriptive data describes a general overview of the condition of the respondents as additional information to understand the results of the research.

The respondents in this study were the students in state vocational high schools in Makassar. Considering that there is a lot of the number of students, the researchers used the Slovin theory to obtain the samples of this research. Therefore, the samples were 97 students. Based on questionnaires filled out by respondents, the researchers obtained identity data of the respondents. Presentation of data on the identity of the respondent to provide an overview of the state of being of the respondents by gender, class and age can be described in detail as follows:

Respondents' Profile Based on Gender

Respondent data collected by gender can be seen through the following table:

Table 1. The sex of respondents

Sex	Frequency	Percent
Men	40	41,2
Women	57	58,8
Total	97	100,0

Sources: Primary data is processed in 2016

The description of respondents' profile based on gender is dominated by women respondents in which a number of women respondents is 57 students (58.8%), and the men respondents were 40 (41.2%). It can be concluded that most of the students in the vocational high schools in Makassar who become the sample of this study were women.

Respondents' Profile Based on Age

Respondent Age of respondents in this study can be classified into three groups. The first group is between 15-16 years old. The second group is between 17-18 years old. The third group is between 18-19 years old. Therefore, for more

details the researchers presented descriptions of respondents by age that can be seen in the following table.

Table 2. Respondents' age

Age	Frequency	Percent
15-16 years old	25	25,8
17-18 years old	41	42,3
18-19 years old	31	32,0
Total	97	100,0

Sources: Primary data is processed, 2016

From the above data, it can be illustrated that the highest age of the respondents in this study was between 17-18 years old and the number of respondents is 41 people (42.3%). It is followed by respondents age namely between 18-19 years old that consist of 31 people (32%). The lowest age is between 15-16 years old consisting of 25 people (25.8%). It shows that the average student of the vocational high school in Makassar that became the research samples are between 17-18 years old.:

Respondents' Profile Based on Class

Class in this study can be grouped into three parts namely class X, XI and XII. The table of respondents by class can be seen in the following table:

Table 3. Respondents' class

Class	Frequency	Percent
Class X	25	25,8
Class XI	41	42,3
Class XII	31	32,0
Total	97	100,0

Sources: Primary data is processed, 2016

The above table indicates that the highest number of respondents is from the group of respondents who are in class XI in which the number of respondents was 41 people (42.3%). It is followed by the respondents who are in class XII consisting of 31 people (32%). The lower number of respondents are the respondents who are in class X consisting of 25 people (25.8%). It shows that the average student of the vocational high school in Makassar that become the sample in this study is class XI.

Instrument Testing

The instrument testing for each variable was conducted in order to know the level of validity and reliability of indicators as a measurement variable. The instrument testing consists of validity and reliability.

Validity Testing

Validity testing was conducted to measure the validity of the indicators or a questionnaire by comparing r-calc and r-table. The value of r count correlation was the result of respondents' answers to each question in each of the variables which were analyzed by using SPSS and its output named corrected item correlation. Test analysis in this study is stated to be valid if it has a value of correlation which is higher than 0.30 (> 0.30). For more details, the results of the validity for each variable will be presented in the following table.

Table 4. The results of validity testing

Variables	Code	Corrected Item total correlation	$r_{standard}$	Conclusion
Entrepreneurial	$X1._1$	0,707	0,30	Valid
Learning	$X1._2$	0,647	0,30	Valid
Design	$X1._3$	0,664	0,30	Valid
	$X1._4$	0,683	0,30	Valid
	$X1._5$	0,681	0,30	Valid
Students'	Y_1	0,627	0,30	Valid
Entrepreneurial	Y_2	0,447	0,30	Valid
Competence	Y_3	0,579	0,30	Valid
	Y_4	0,581	0,30	Valid
	Y_5	0,654	0,30	Valid

Sources: Primary data is processed, 2016

The table above shows that from ten question items contained in the variable of entrepreneurial learning design and students' entrepreneurial competence, it is proven that all items are a valid statement because they have corrected item-total correlation value that is higher than 0.30.

The Results of Reliability Testing

Reliability testing was used to determine whether the indicators or questionnaires that were used are reliable or to be a measurement tool for the variables. The reliability of an indicator or questionnaire can be seen from the value of Cronbach's alpha (α). If the value of Cronbach's alpha (α) is greater than (>) 0.60, the indicator or the questionnaire is reliable, meanwhile, if the value of Cronbach's alpha (α) is smaller than (<) 0.60, the indicator or questionnaire is not reliable. For more detail, the results of the reliability test can be seen in the following table.

Table 5. The Results of Reliability Testing

Variables	Cronbach's Alpha	Reliability Standard	Notes
Entrepreneurial Learning Design	0,852	0,60	Reliable
Students' Entrepreneurial Competence	0,794	0,60	Reliable

Sources: Primary data is processed, 2016

The data above illustrate that the values of Cronbach's alpha for all variables are greater than 0.60. Therefore, it can be concluded that all indicators or the questionnaires used for the variable of entrepreneurial learning design and students' entrepreneurial competence are stated reliable to be a measurement tool for the variables.

Classic Assumption Test

Normality Testing

Normality testing aims at testing whether the residual variable has a normal distribution in the regression model. It is known that the t test and F test assume that the value of the residual variable follows a normal distribution. If this assumption is violated, the statistical test will be invalid. There are two ways to detect whether the residual variable distributed normally or not by usingg6 statistical analysis and graphical analysis.

Hence, one of the ways to detect normal data is by using one-sample Kolmogorov-Smirnov. Ghozali (2005: 56) reveals that Asymp Value Sig (2 - tailed) that is greater than 0.05 means that the data has a normal distribution, which can be seen in the following table:

Table 6. The Results of Normality testing with *One Sample Kolmogorov Smirnov test*

		Standardized Residual
N		97
Normal Parameters [a,b]	Mean	0E-7
	Std. Deviation	.98952851
Most Extreme Differences	Absolute	.056
	Positive	.041
	Negative	-.056
Kolmogorov-Smirnov Z		.555
Asymp. Sig. (2-tailed)		.917

a. Test distribution is Normal.
b. Calculated from data.

Based on the table of the results of normality test with the value sig = 0.917> 0.05, it can be concluded that the data used in regression testing has a normal distribution because the value is sig> 0.05. Then to detect whether the data were normally distributed in regression model or not it can be seen in the graph of normal probability plot comparing the cumulative distribution of actual data and the cumulative distribution of normal data. The normal distribution will form a straight diagonal line, and plotting the data will be compared with the normal. If the data were normally distributed, then the line that represents the actual data will follow a diagonal line.

Based on the results of SPSS output, it can be seen that the points spread around the diagonal line in the graph normal plot. Therefore, it can be inferred that data were distributed normally in the regression model. For more detail, it can be seen in the following Figure 1.
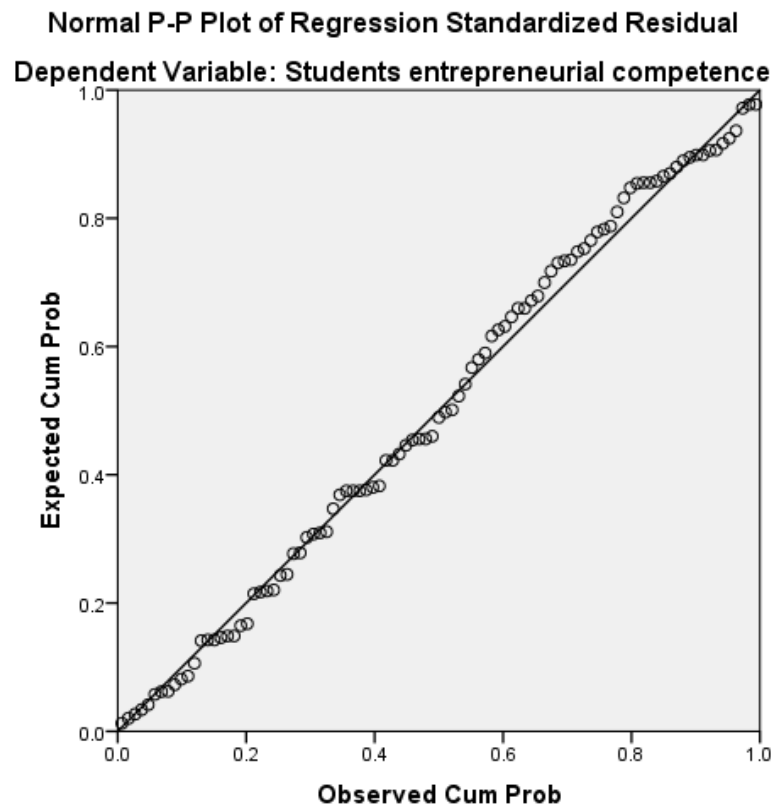
Figure 1. The Results of Normality Testing with *P-Plot of Regression*
Sources: Primary data is processed, 2016

Based on Figure 1, it is showed that P-Plot regression generally has spread around the diagonal line. Sugiyono (2010: 213) reveals that if the data is spread around the diagonal line and follow direction of the diagonal line, the regression model has met the assumptions of normality. If the data is spread far from the diagonal line and follow the direction of the diagonal line, the regression model do not meet the assumption of normality. Based on the opinion that have been expressed by Sugiyono, it can be concluded that the regression data have been already spread around the diagonal lines. It means that the regression data has met the assumptions of normality.

Multicollinearity Test

Multicollinearity test is performed to determine the attachment among the independent variables. In other words, each dependent variable can be explained by other independent variables. Therefore, to determine whether there is a collinearity in this study, it can be seen from the value of variance inflation factor (VIF). The value limit of VIF that is more than 10 shows a high collinearity, in case there is a multicollinearity symptom. One of the ways to improve the model

is by eliminating variables in the regression model. For more details, it can be presented in the following table.

Table 7. The Results of Multicollinearity Test

Variables	Collinearity Statistics		VIF Standard	Decision
	Tolerance	VIF		
Entrepreneurial learning design	0,994	1,006	10	There are no multicollinearity symptoms
students' entrepreneurial competence	0,994	1,006	10	There are no multicollinearity symptoms

a. Dependent Variable: students' entrepreneurial competence

From the above table, it can be seen that the value of tolerance for all independent variables almost reached 1, and the value of VIF is not more than 10. Thus, it can be inferred that there are no multicollinearity symptoms in the regression model for the variable of entrepreneurial learning design, and the regression model is feasible to be used.

Heteroscedasticity Test

Through the heteroscedasticity test, the assessment of regression coefficients becomes inefficient. The diagnosis can be conducted by paying attention to the predicted residual variables. If the distribution points in the plot are scattered around zero (0 on the Y axis) and do not form a particular pattern or trend lines, it can be said that the model does not meet the heteroscedasticity assumption. In addition, the regression model is stated to be eligible to predict. The heteroscedasticity is tested using scatterplot graph. The results of heteroscedasticity results can be shown in the following figure.
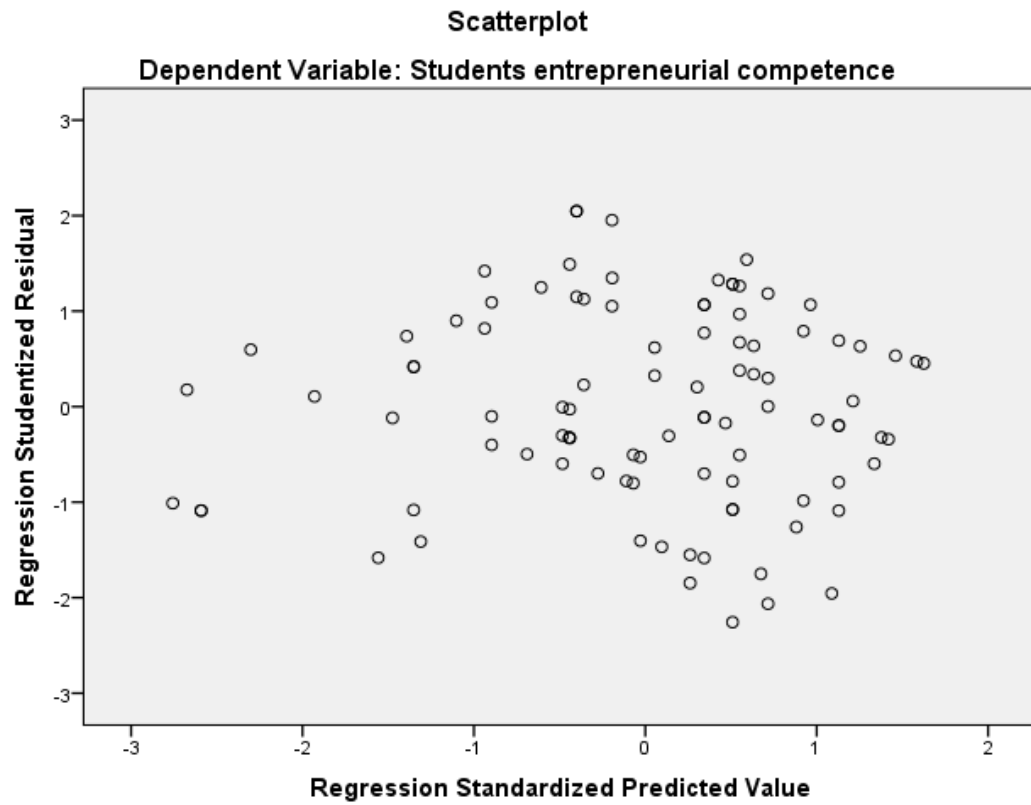
Figure 2. Scatterplot

The scatterplot graph presented in figure 2 shows that the dots randomly spread, and they spread both above and below the number 0 on the Y axis. Thus, it can be inferred that there is no heteroscedasticity in the regression. Therefore, the regression model is feasible to be used to predict the entrepreneurial learning design and students' entrepreneurial competence.

The Results of Data Processing of Multiple Linear Regressions on the Entrepreneurial Learning Design toward the Students' Entrepreneurial Competence

To analyze the effect of the entrepreneurial learning design on the students 'entrepreneurial competence in vocational high schools in Makassar, it can be conducted by using multiple regression analysis with a computerized system of release of SPSS 21. The analysis is based on the value of standardized regression coefficients between the results of entrepreneurial learning design and the students' entrepreneurial competence vocational high schools in Makassar.

The results of multiple regression data regarding the entrepreneurial learning design and the students' entrepreneurial competence vocational high schools in Makassar can be seen in the table below.

Table 8. The Results of Multiple Regression Analysis

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	5.820	2.570		2.264	.026
entrepreneurial learning design	.339	.100	.316	3.401	.001

Sources: Primary data is processed, 2016

Based on the results of the regression data, multiple regression equations can be formulated as follows:

$$Y = b_0 + b_1X_1$$

$$Y = 5.820 + 0.339X_1$$

The results of the regression equation can be explained as follows:

a) Constants b_0 = 5,820 means that with the entrepreneurial learning design, the students' entrepreneurial competence constant is equal to 5.820%.

b) The regression coefficient of entrepreneurial learning design (X1) has a positive value in which the value is 0.339. It suggests that each additional respondents regarding entrepreneurship learning design can be followed by an increase in students' entrepreneurial competence of 0.339%.

Based on the results of the regression coefficients, it is known that the variable of entrepreneurial learning design has a strong influence on the students' entrepreneurial competence because it has a high beta value. Meanwhile, to find out to what extent there is a relationship between the entrepreneurial learning design and the students' entrepreneurial competence, the detail results can be presented in the following table:

Table 9. Correlation Analysis and Coefficient of Determination

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.437[a]	.191	.174	3.41429

a. Predictors: (Constant) entrepreneurship learning design
b. Dependent Variable: students' entrepreneurial competence

Based on the results of correlation analysis, the R value is 0.437. It means that the entrepreneurial learning design has a weak correlation with the students' entrepreneurial competence which amounted to 43.7%. The coefficient of determination is 0.191 ($r2 = 0.191$) which shows that the percentage of the influence of students' entrepreneurial competence is influenced by the entrepreneurial learning design which amounted to 19.1%. Meanwhile, the remaining (80.9%) is influenced by other factors outside of the model of this study, such as curriculum, teachers' education level, teaching supervision, training program, favorable climate, facilities and infrastructure, the principal's leadership style, and welfare.

Hypothesis Testing

The t-test was used to prove the significant influence of each independent variable namely entrepreneurial learning design toward the students' entrepreneurial competence of vocational high school students in Makassar. It can be conducted by comparing the value of t-calc and t $_{table}$. If the value of t-calc is greater than t $_{table}$, the hypothesis is accepted. The value of t-calc can be seen in the results of the regression, and the value of t table is obtained through sig.α = 0.05 degrees of freedom (df) = n - k. Based on these data, it can be explained as follows:

The value of t-calc of entrepreneurial learning design toward the students' entrepreneurial competence is 3,401 and the value of t $_{table}$ with sig. α = 0.05 and df = n − k - 1, is 97 − 2 − 1 = 94. Therefore, t $_{table}$ of one side is 1,661. Because the value of t-calc (3,401) is greater than the value of t-table (1,661), it means that there is a significant and positive influence between the entrepreneurial learning design and the students' entrepreneurial competence in vocational high schools in Makassar.

Discussion

The discussion in this study is intended to describe the effect of the entrepreneurial learning design on the students' entrepreneurial competence, especially in the vocational high schools in Makassar. It is suggested that the factor that influences students' entrepreneurial competence in vocational high schools in Makassar is the entrepreneurial learning design. Based on field observations, empirical evidence is obtained that entrepreneurial learning design will increase students' entrepreneurial competence.

The results of regression test have shown that entrepreneurial learning design has a positive and significant influence on students' entrepreneurial competence in vocational high schools in Makassar. This may imply that the good preparation of entrepreneurial learning design carried out by the school will increase the students' entrepreneurial competence.

It is supported by the previous research conducted by Dermol (2013) which states that the learning design can increase the competence of each student. He suggests that approaches for further research on the relationship between the entrepreneurial model and constructs another condition need to be investigated. In addition, Jan Nab, Albert Pilot, S. Brinkkem-per, Hanne ten Berge (2012) reveal that the principles of entrepreneurial learning design can help in describing the intervention in entrepreneurship education in the study which will come to affect the students' competencies.

Furthermore, Feat, J. O. (2000) suggests that the role of educators in entrepreneurship education affects the entrepreneurial competence of students in educational institutions in developing countries. Dick and Carey (2015) support the assumption that the design of entrepreneurial learning is a process that can be learned that learners, learning objectives, learning strategies, teaching materials, and SSR assessment study are in a position to improve the competence of students. Sullivan (2005) states that entrepreneurial learning pattern contains at least the knowledge of the values, spirit, soul, attitude, and behavior so that learners have the entrepreneurial competence.

All of the previous research conducted by several researchers are in line with the present research conducted by the researchers that learning design can improve the competence of student in entrepreneurship that will prevent teachers and students from the learning activities that are monotonous and boring. Therefore, it is time for each teacher to design learning properly before performing the teaching and learning activities because it is a part of the task of professionalism. Professional teachers must not only have the ability and expertise but also the ability to design a process of transferring knowledge from the expert to students through learning activities. A proper learning design has expanded the students' understanding of entrepreneurship, and the students can develop their entrepreneurial skills and competencies in entrepreneurship. This study discusses the practical implications for the study of entrepreneurship in vocational high school in Makassar in guiding the students to have an entrepreneurial mindset that learning design significantly affects their competence.

Competence required by students to undertake entrepreneurship in this context entrepreneurial learning equip the students with the production and management techniques. In relation to this goal, the students should be equipped with the techniques of anticipation to various issues that may arise in entrepreneurship in the form of problems, issues and other risks as an entrepreneur. Direct experience in the form of internship or activities accompanied by a mentor will be used as a role model for vocational high school students in Makassar.

Conclusion

Based on the results and discussion that has been described and based on the basis of analysis of regression equation, it can be concluded that the entrepreneurial learning design has a positive and significant effect on the students' entrepreneurial competence in vocational high schools in Makassar. Therefore, the proposed hypothesis is accepted

Disclosure statement

No potential conflict of interest was reported by the authors.

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Arniati Muhe holds a PhD in science education and now a post-doc research fellow.

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