

# The Effect of Learning Styles on Students' Metacognitive Skills

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**Keywords:** Learning Styles, Metacognitive Skill.

**Abstract:** The facts show that there is low metacognitive skill in grade VIII of junior secondary school 10 Kendari (Southeast Sulawesi). This case was marked by learning process which is focused on concept mastery rather than developing high-level thinking potential. The purpose of research is to review the effect of learning styles on students' metacognitive skill in economic. This research applied descriptive and verification method. The data were analyzed using simple regression on SPSS 21.0. The data were gathered from 68 students of grade VIII of Junior Secondary School 10 Kendari as the sample of the research with was taken randomly from 215 total number of population. The result of this research which is supposed to test the hypothesis reveals that that there is any correlation between learning style with metacognitive skill; the regression equation is  $\hat{Y} = 54,320 + 0,595X$  and coefficient correlation is 0,713, and it gives strong correlation. According to the result of this research that learning style can be increasing student's metacognitive skill.

## 1 INTRODUCTION

Education is a very important need for the life of society in general, so it cannot be denied that all the progress that is obtained now is the result of the educational process. The problem of education in learning so far shows that there are many lessons that use the memorization system and do not have the meaning of learning so that the learning process is perceived not to empower students through metacognitive ability (Shen & Liu, 2011:2).

To Improving metacognitive skills to be an important impact in the learning process because the learning process can be said to be quality if students are consciously able to control the cognitive process that impact on learning outcomes (Wang, Haertel, and Walberg, 1990 in journal (Bahri & Corebima, 2015:2; Kristiani, Susilo, 2015:2; Shen & Liu, 2011:1)) and student achievement (Coutinho & Neuman, 2008:2), (Young dan Fry, 2008 in (Yunlu & Clapp-Smith, 2014:5)).

The approach used in addressing metacognitive problems is John Hurley Flavell's theory (Flavell, Shipstead, & Croft, 1980). Flavell 1979 explains that metacognitive is influenced by learners (self), tasks, strategies. Kanfer & Ackerman's theory (Kanfer, Ackerman, & Cudeck, 1989) explains that

metacognitive is influenced by intelligence, motivation, age, and self-efficacy.

Theory of Albert Bandura (Bandura, 1991), (Bandura, 1986, 1997 in (Pintrich, R. Paul, 2003: 43)) explains that metacognitive is influenced by self-efficacy and motivation. Theories of Gregory Schraw and David Moshman (Schraw & Moshman, 1995: 363) explain that metacognitive is influenced by learning styles, learning motivation, learning culture, individual construction, and peer interactions.

Caliskan & Sunbul (2011: 152) in their studies at high school in Turkey found that learning styles affect the metacognitive skills of learners. As a result emotional intelligence and learning styles are disrupted because students are less aware of metacognitive skills that exist in themselves. The purpose of research is to review the effect of learning styles on students' metacognitive skill in economic.

## 2 METHODS

Research design is a causal survey that applied descriptive and verification with simple regression techniques. The population of this research consist of 215 student (grade VIII of Junior Secondary School 10 Kendari) and the sample of this research, which was randomly taken from the population consisted of

68 students. The data were collected using metacognitive scale and learning style scale. The data were analyzed using simple regression on SPSS 21.0. Hypothesis in this research is there direct influence of learning styles to metacognitive skills in grade VIII of Junior Secondary School 10 Kendari (Southeast Sulawesi).

### 3 RESULTS AND DISCUSSION

#### 3.1 Results

There is a direct influence of learning style to the students' metacognitive skills of Grade VIII of Junior Secondary School 10 Kendari. To test the hypothesis of this research, a simple regression analysis was used to see the relationship between the two variables, learning style (X) with students' metacognitive skills (Y) and to see the correlation of the two variables was done by simple correlation analysis.

The test results were performed using SPSS 21 for Windows program. To see the regression coefficients can be presented in the following table:

Table 1: Coefficients simple regression analysis results.

Model	Coefficients <sup>a</sup>				
	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
Constant	54,32	9,40		5,78	0,000
<sup>1</sup> X	0,60	0,07	0,713	8,25	0,000

a. Dependent Variable: Y

The simple regression equation obtained from the coefficients table of the simple regression model between the learning style variables (X) and the students' metacognitive skills (Y) is:  $= 54.32 + 0.6X$ , it means that any increase for 1 in learning style score will increase the score of the students' metacognitive skills equal to 0,6 at constant 54,32.

Furthermore, to test the significance of the above regression can be seen in ANOVA table result of output of SPSS 21 for Windows follows.

Table 2: ANOVA simple linear regression analysis results.

Model	ANOVA <sup>b</sup>				
	Sum of Squares	f	Mean Square	F	Sig.
Regression	3715,52	1	3715,52	68,1	0,000 <sup>a</sup>
<sup>1</sup> Residual	3599,34	66	54,54		
Total	7314,87	67			

a. Predictors: (Constant), X

b. Dependent Variable: Y

From the ANOVA table above, with the F test, obtained significant value  $< \alpha = 0.05$ , which means the regression coefficient =  $54.32 + 0.6X$  significant. This suggests that the regression of metacognitive skills over learning styles is significant and their relationships are linear. Thus, the learning style is one of the predictors of students' metacognitive skills.

The simple correlation analysis between learning style variables (X) and students' metacognitive skills (Y) was performed using the SPSS 21 for Windows program. The results of the correlation analysis of the two variables above are shown in the following table:

Table 3: Simple correlation test result.

		Correlations	
		X	Y
X	Pearson Correlation	1	0,713**
	Sig. (2-tailed)		0,000
	N	68	68
Y	Pearson Correlation	0,713**	1
	Sig. (2-tailed)	0,000	
	N	68	68

\*\* Correlation is significant at the 0.01 level (2-tailed).

From the results of simple correlation analysis obtained correlation coefficient value of metacognitive skills with student learning style of 0.713. The value of sig 0,000  $< 0.05$   $H_0$  is rejected.

This means that any learning style score can be used to predict the students' metacognitive skills score. This result implies that learning styles is affected by student metacognitive skills by 50,8% while the remaining 49,2% influenced by other factors not examined by the authors in this study.

### 3.2 Discussion

The causal relationship between learning styles and metacognitive skills can be shown by significant correlation coefficients and regression coefficients. The result of significance test on correlation shows that the relation between learning styles with metacognitive skills of students is significant. The result of regression coefficient test shows that learning style has direct effect to students' metacognitive skill. It means that learning style is one of the predictors of students' metacognitive skills. In other words, a qualified learning style will improve students' metacognitive skills.

According to Hyland (2005: 43), learning styles perceptual dimension is a person's tendency to learn through the sense of sight (visual), or auditory (auditory, or touch (kinesthetic). According to Misbach (2010: 80-82), each of the learning styles consists of three types, namely: (1) visual type: visual text (more focus on letters, numbers, symbols, object and visual images) (2) auditory type: auditory linguistics (likes grammar, vocabulary, and interesting stories) and auditory music (happy to hear the tone, rhythm, and melodies); (3) kinesthetic types: kinesthetic type body (movement) that tend to practice operational motion of dexterity and body dexterity, and kinesthetic touch types that tend to touch of an object (fine motor).

Linvingston (1997: 43) states that metacognitive is a form of the ability to look at oneself so that what he does can be controlled optimally. Students who have metacognitive skills in being able to solve a problem use metacognitive strategies in solving a problem. Anderson and Krathwohl (2001: 43) state that metacognitive is the knowledge of cognition, in general the same as awareness and knowledge about one's self cognition. Hence it can be said that metacognitive is an awareness of what is known and what is unknown.

This finding is in line with the results of a study conducted by Gogus and Gunes (2007: 599) who found out that students' understanding of their own learning styles can affect awareness of their own learning abilities (metacognitive skills) which can further contribute to their responsibilities in learning. This happens because students need a cognitive strategy in learning, which is self-management. This cognitive strategy works well if students know what they can do in learning. Theories Gregory Schraw and David Moshman (Schraw & Moshman, 1995: 363) explain that metacognitive is influenced by learning styles, learning motivation, learning culture, individual construction, and peer interactions.

### 4 CONCLUSIONS

The result of learning styles has direct affect to students' metacognitive skill. It means that learning style is one of the predictors of students' metacognitive skill. In Other words a qualified learning style will improve students' metacognitive skill in Junior Secondary School 10 Kendari (Southeast Sulawesi).

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