



BIOLOGICAL TEACHERS' MOTIVATION BASED ON PERSONALITY AND SELF EFFICACY

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Abstract:

Motivation needs to be owned by any biological teacher to achieve success in learning related to personality factors and self-efficacy. Therefore, the purpose of this study was to investigate the correlation between personality and self-efficacy with biological teacher motivation. This study used quantitative method by using correlational approach. The research used 135 high school biology teacher in Karawang as sample. There were three instruments developed to measure teacher motivation (34 items) with a reliability of 0.94; personality (34 items) with a reliability of 0.25; and self-efficacy (17 items) with reliability of 0.881. Data were tested through regression and correlation analysis. The results showed that personality and self-efficacy positively and significantly correlated with biological teacher motivation. These findings mean to strengthen biological teacher motivation, factors such as personality, especially big-five personality and self-efficacy could be taken into account.

Keywords: Biological Teacher Motivation; Personality; Self-Efficac; Correlation.

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1. Introduction

The teacher as an important element in a learning process, acting as a facilitator, motivator with creativity and innovation in order to create a fun learning environment for students. Creativity and innovation of a teacher are formed because there is a desire in the teacher to succeed, in this case the achievement of learning objectives. This desire, by the experts referred to as motivation. Teacher motivation plays an important role in learning activities, without motivation, teachers will not be compelled to educate and achieve the desired goal. Colquitt (2015) defined motivation is an energy boost which initiated the effort to determine the direction, intensity and persistence [6]. Intensity refers to the degree to which (how hard) someone tries to meet needs. The second component refers to the direction in which the effort is channeled so that the needs are met. Lastly, the motivation has dimensions of this persistence is a measure of the duration (how long) one can maintain the effort [24]. Teachers are motivated to know how to master classes, try a variety of teaching techniques and consistent in pursuing achievement of learning goals.

Motivation is categorized into two types, namely intrinsic and extrinsic motivation [1]. Intrinsic motivation is defined as the natural inclination of people towards learning and integration [7]. Instead of extrinsic motivation is when an activity is done to achieve a separate [9]. Teachers are motivated to get involved in educating through distinctiveness, interest or pleasure or to achieve personal academic goals and their own [1]. Intrinsically motivated teachers who will not need rewards or incentives to start or complete a task, whereas extrinsic motivation educating teachers to gain an appreciation or to avoid some punishment [10].

The strength of the teacher's motivation depends on his personality. Teachers with friendly personalities will have the desire to be able to communicate well with students, as well as creative teacher will always have a desire to innovate with a variety of learning techniques appropriate to the situation and conditions of the students, so that learning objectives can be achieved. One's personality will emerge when faced with a problem. To strike a balance between the issues facing with internal and external conditions, attitude arises in order to adjust to the problems at hand. Personality is what encourages teachers to determine the attitude and achieve the desired goals.

The teacher's personality will shape the patterns of teacher behavior which means the response shown by every individual to situations closely related to personality of the individual [24]. Personality traits determine a person's thinking pattern, feel and act towards the situation in the neighborhood. Teachers who interact in the learning environment required to determine the manner and attitude toward students according to the learning objectives. Personality is divided into five personality traits, namely extraversion, agreeableness, conscientiousness, neuroticism and openness experience, into the model of the Big Five Personality [12].

In addition to personality, other factors affecting teacher motivation is self-efficacy. Self-efficacy makes the teacher believe in the ability he has to educate students by interacting through a variety of learning methods to achieve the goals that have been set [4].

When teachers are faced with the difficult tasks and activities, high self-efficacy helps create a sense of calm. Conversely, teachers with low self-efficacy tend to believe things that are more difficult than they really are and cultivate anxiety, stress, depression, and a narrow vision on how best to solve the problem [25].

Self-efficacy is needed especially by teachers in presenting the material, in this case the biological material. Teachers who believe the quality of the knowledge they have to be able to speak candidly and vigorously so that the material will be easily understood biology students and learning objectives will be achieved. When the teacher has self-efficacy, would be convinced that he is able to overcome all the challenges in learning that automatically motivate the teachers will be encouraged.

There are four (4) sources of self-efficacy according to Colquitt and Fred Luthans consists of past experience, other people's experience, verbal approach, and internal state of self-physiology [6]. the four sources are the origin of the formation of self-efficacy in a person.

Based on this, the purpose of the writing of this research is to analyze: (1) The correlation between personality and motivation of biology teachers, (2) The correlation between self-efficacy and motivation of biology teachers and (3) The correlation between personality and self-efficacy together with the motivation of biology teachers

2. Materials and Methods

This study uses a type of quantitative research with a correlational study approach with a survey method. The level of correlation here is expressed by the correlation coefficient. The study involved 170 public high school biology teachers in Karawang district as respondents with a composition of 35 teachers as respondents to instrument testing and 135 teachers were selected as research sample by using a "simple random sampling". There are three instruments developed to measure motivation, personality and self-efficacy whose validity is measured using the formula "Pearson Product Moment" and reliability using Cronbach Alpha.

Instrument for measuring biological teacher motivation consisted of 34 items statement were measured by the scale of biological teacher motivation 5-4-3-2-1 (always - often - sometimes - rarely - never), with a reliability of 0.94. The instrument for measuring personality consisted of 34 items measured using a 5-4-3-2-1 (very accurate - accurate - not - opinionated - inaccurate - very not accurate) with reliability of 0.253. The instrument for measuring self-efficacy consisted of 17 items measured on self-efficacy scale of 5-4-3-2-1 (strongly agree - agree, do not argue - disagree - strongly disagree) with reliability of 0.881. Analysis of the data in this study started from the test for normality using the Kolmogorov-Smirnov test and homogeneity test using Bartlett test. After the data were normally distributed and homogeneous hypothesis test through F test simple and multiple regression, and a correlation test to determine the strength of the correlation between variables using SPSS version 23.

3. Results and Discussions

Based on the analysis of data by the instruments that have been completed by 135 teachers of biology, personality variable data charging instrument consisting of 34 items with a statement obtained sample of 135 teachers score range 69, average score of 115.84, median 116, mode 109, standard deviation 11.56 and variance 133.764. The variable data of self-efficacy with the instrument consisting of 17 items of statements obtained a score range of 35-90, average 63.7, median 64, mode 64, standard deviation 8.719 and variance 76. Motivation variable data with the instrument consists of a 34 points statement obtained by the range of scores 97, average score 107.83, median 107, mode 101, standard deviation 14.67, and variance 215.35. Normality and homogeneity test of teacher motivation on personality and motivation of teachers on self-efficacy obtain significant results and the normal.

Based on the results of the regression analysis simple correlation between personality with the motivation of the teacher obtained a price of 29,774 and b of 0,674 then the regression model can be formulated as follows $\hat{Y} = 29,774 + 0,674X_1$ (Table 1). Simple regression analysis with the motivation of self-efficacy of teachers obtained a price of 39.704 and 1.069 b of the regression model can be formulated as follows $\hat{Y} = 39,704 + 1,069X_2$ (Table 2), Last multiple regression analysis of personality and self-efficacy with the teacher's motivation a_0 value is obtained at

21,408, the price of b_1 is 0.286, and b_2 is 0.836, then the form of regression equation is obtained $\hat{Y} = 21,408 + 0,286X_1 + 0,836X_2$ (Table 3).

Based on the significance test and linearity using the F test in the ANOVA table shows that the regression equation $\hat{Y} = 29,774 + 0,674X_1$, $\hat{Y} = 39,704 + 1,069X_2$. dan $\hat{Y} = 21,408 + 0,286X_1 + 0,836X_2$. is significant and linear.

Results of correlation coefficient analysis on the personality of teacher motivation was obtained the correlation coefficient (r_{y1}) amounted to 0,531, while t_{count} 7.228 is greater than t table (0.01) (133) = 2.32, then the correlation coefficient is significant at $\alpha = 0.01$. While the personality partial correlation coefficient value with the motivation of the teacher if self-efficacy is controlled at 0.231. determination coefficient (r_{y1})² amounted to 0,282, which means a 28.2% variation personality contributes to the variation of teacher motivation, (Tabel.1). This result means there is a positive correlation between personality and motivation of teachers, which means that the more accurate the stronger personality of teacher motivation.

The results of the regression equation correlation coefficient analysis $\hat{Y} = 39,704 + 1,069X_2$ obtained power of self-efficacy correlation with teacher motivation (r_{y2}) amounting to 0.635. Because $t_{count} > t_{table}$ is $9.489 > 2.32$ then the correlation coefficient is very significant at $\alpha = 0.01$. While the partial correlation coefficient with the motivation of self-efficacy of teachers if the personality is controlled acquired 0,462 (Table. 2). The coefficient of determination (r_{y2})² amounted to 0,404, which means 40.4% of the variation of self-efficacy contributes to the variation of teacher motivation. These results mean that there is a positive correlation between self-efficacy and teacher motivation, meaning that the higher the self-efficacy, the stronger the teacher's motivation.

The results of the analysis of multiple correlation coefficient regression equation $\hat{Y} = 21,408 + 0,286X_1 + 0,836X_2$ amounting to 0.660 with the price of $F_{count} = 50.8894 > F_{table} (0.01) (2) (132) = 4.82$, the strength of the correlation of personality and self-efficacy with teacher motivation was very significant at $\alpha = 0.01$ (Table 4). The coefficient of determination (r_{y12})² = (0.660)² of 0.435 which indicates that 43.5% of the variation that occurs in the motivation of the teacher is determined jointly by the personality and self-efficacy through multiple linear regression models $\hat{Y} = 21,408 + 0,286X_1 + 0,836X_2$.

Table 1: ANOVA Table for Regression Model of $\hat{Y} = 29,774 + 0,674X_1$,

Model	Unstandardized Coefficients		Standardized Coefficients	t_{cal}	$t_{tab} (0.01)$	Correlations		
	B	Std. Error	Beta			Zero-order	Partial	Part
1 (Constant)	29.774	10.852		2.744				
Personality	.674	.093	.531	7.228**	2.32	.531	.231	.531

** : $p < 0.01$

Table 2: ANOVA Table for Regression Model of $\hat{Y} = 39,704 + 1,069X_2$.

Model	Unstandardized Coefficients		Standardized Coefficients	t_{cal}	$t_{tab} (0.01)$	Correlations		
	B	Std. Error	Beta			Zero-order	Partial	Part
1 (Constant)	39.704	7.246		5.479	.			
Self- Efficacy	1.069	.113	.635	9.489**	2.32	.635	.462	.635

** : $p < 0.01$

Table 3: ANOVA Table for Regression Model of $\hat{Y} = 21,408 + 0,286X_1 + 0,836X_2$

Model	Unstandardized Coefficients		Standardized Coefficients	t_{cal}	t_{tab} (0.01)	Correlations			
	B	Std. Error	Beta			Zero-order	Partial	Part	
1	(Constant)	21.408	9.761		2.193				
	Personality	.286	.105	.226	2.722	.531	.231	.178	
	Self- Efficacy	.836	.140	.497	5.987	2.32	.635	.462	.392

** : $p < 0.01$

Table 4: Correlation Coefficient personality and self-efficacy with biology teacher motivation

R_{y12}	df	F_{cal}	F_{tab}	
			0,05	0,01
0.660	132	50,894**	3.00	4.82

** : $p < 0.01$

The results of the analysis of the first hypothesis test indicates that there are positive and significant correlation between personality and motivation biology teacher. Thus the more accurate the teacher's personality will become stronger motivation of teachers. Teachers who are confident in conditioning class, friendly in communicating with students, entering class on time, and always try different methods of learning appropriate will tend to have a passion in his duties consistently.

The results of this study are supported by research Bosanoglu & Sepanci (2015) which states that the dimension of personality has links with some aspects of motivation [5]. The findings were reinforced by Koseoglu (2014) that the difference in the level of teacher motivation can be attributed to differences in basic personality [19]. Also Ariani (2013) research that personality contributes positively to motivation [2], for example, teachers with different personalities show a different motivation [18]. The results of the harmonious research were also put forward by Viari et al (2012) where sub-dimensions consisting of personality explains about 16% of the variation in teacher motivation [28].

Each dimension of personality basically has a correlation with the motivation of the teacher with the different correlation coefficients for each dimension. Several correlation motivation personality dimensions described in the research Raza and Shah (2017) that teachers will feel extroverted remain happy in the learning environment and have a strong motivation to teach [24]. In addition, extraversion showed enthusiastic teacher, have a high energy level so that they have more desire to condition class [23].

Teachers are open to the experience will gain easy access to the developing related task to be done [2]. Related neurotism Hart et.al (2007) found neurotism teachers tended to be selfish and worry, for it is them that have a high motivation to intensify their efforts to prevent it [4]. Therefore, paying attention to each dimension of personality can strengthen the teacher's motivation.

The second hypothesis test results of the analysis indicate that there is a significant correlation between self-efficacy and motivation of teachers. The higher the self-efficacy of teachers the

more powerful motivation. Teachers who believe in himself that he was able to convey the material well, condition the classroom and create a pleasant atmosphere of teaching and learning that has strong motivation, so it will always be the spirit and enthusiasm in teaching consistently. The findings in this study are in line with previous research by Kheirkhah, et.al (2017) which confirms that self-efficacy has a strong correlation with motivation [17]. Research Baddaren, et al (2014) also found that self-efficacy was the only significant predictor of motivation [3]. Besides efficacy as a determinant of the success of teachers in learning is reinforced by studies of Tenaw (2013) that the confidence in the ability of self is a determinant of their motivation to achieve success [27]. Another study explained that teachers with a level of self-efficacy higher more successful in completing tasks and achievement [12].

It is important for teachers to foster the efficacy of himself, because with high self-efficacy, when the teacher is faced with a difficult task, self-efficacy gives a sense of calm and trust to form the drive to achieve success. The more teachers believe the potential he has, the more will be stimulated to learn and develop themselves. This explains the importance of determination and perseverance, efficiency in achieving academic success and academic achievement than others [14], In other words, the teacher of efficient self-set high goals for themselves, exerting a lot of effort, last longer when faced with obstacles, have a great interest in the task and showed resilience in the face of failure [15].

By paying attention to the factor of self-efficacy, it will be easier for the principal to determine the appropriate treatment to strengthen the motivation of the teacher. Therefore, self-efficacy has a great effect on teacher learning and motivation [22]. In the motivation of teachers, self-efficacy has a strong role and can be realized through the assignment of tasks, the use of strategies, metacognitive and self-regulation [16]. This is done because the higher the self-efficacy the stronger the motivation, conversely the lower the self-efficacy the weaker the teacher's motivation.

The results of the analysis of the third hypothesis testing, indicating that there is a significant correlation between personality and self-efficacy together with the motivation of teachers. Teachers with an accurate personality and high self-efficacy has a strong motivation in teaching. So that the teacher is on time to go to class to teach and convinced that he is able to condition the class with a nice atmosphere would have a strong spirit and enthusiasm to carry it out, instead of teachers who are lazy and will create the class into gloomy atmosphere so that there is no passion in teaching. Therefore, to increase teacher motivation, it is necessary to consider the personality and self-efficacy aspects of the teacher.

This finding is supported by a previous study conducted by Ersanli (2015) suggests that personality variables and self-efficacy is a factor that must be considered to increase teacher motivation [11] and McGeown (2014) through his research to get results that are personality factors and self-efficacy contributes to motivation [21]. Self-efficacy and personality consistently show their ability to predict teacher motivation. Teachers with a strong self-efficacy will still be in a failed state, and it immediately rose to an end [20]. Likewise, with the teachers are friendly, sociable, open and stable emotions will be readily accepted in the neighborhood and motivated in teaching [22].

Personality and self-efficacy is a factor to indicate the strength or weakness of teacher motivation. Teacher with a personality that is not accurate and low self-efficacy, have a weak motivation, instead of teachers with accurate personality and high self-efficacy, the motivation will be stronger. Therefore, to increase motivation, teachers need to consider personality factors and self-efficacy [28].

4. Conclusions and Recommendations

Based on the explanation above, it can be concluded that the motivation of the biology teacher in terms of his desire to always succeed in conditioning the class during the teaching and learning process, then that motivation biology teacher becomes more uniform and to minimize variations in the biology teacher motivation, factors such as the teacher's personality and teacher's self-efficacy are considered to be empowered, especially in its influence on biology teacher motivation.

Based on the findings in this study, we can consider the following suggestions: (1) For the government and principals need to set policy with regard to a set of psychological tests to measure the teacher's personality and measure the extent of self-efficacy of teachers (2) For subsequent researchers, expected to involve more variables associated with the motivation of teachers in further research.

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