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Some factors that affecting the performance of mathematics teachers in high school in Rewa district

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Abstract
The research method is a method of surveying the number of respondents as many as 80 teachers of mathematics taken by stratified proportional random sampling. The research found there is a direct influence of organizational knowledge on achievement motivation, decision making, organizational commitment and the performance of math teacher respectively 16.4%, 13.2%, 12.3% and 4.54%. Achievement motivation, decision making, and organizational commitment have directly effects on the performance of mathematics teacher. The magnitude of changes in performance that can directly determine organizational knowledge, achievement motivation, decision-making and organizational commitment respectively are 10.25%, 12.33%, 3.43% and 2.93%. To teachers of mathematics, in order to improve the understanding of the knowledge of the organization, increase achievement motivation through desire superior achievement and improvement of organizational commitment. For heads and school inspectors, need to improve clinical supervision and foster good communication increases the openness and good cooperation with teachers of mathematics, and for the head of the city education field, is expected to give a briefing and training for teachers, race through the efforts competitions drafting paper development learning mathematics.

Keywords: organizational knowledge, commitment, need for achievement motivation, decision making, mathematic teacher's performance

Introduction

The low quality of education in a nation reflects to the poor performance of teachers and poor management of education systems in the nation. The success of an organization is reflected in the performance of the Human Resources (HR) is involved in the organization. Therefore in order to improve the human resources that reliable and able to compete in the era of globalization and regional autonomy, need to consider matters relating to the performance of teachers in achieving educational goals. The purpose of learning mathematics is to prepare the students to be able to face the changes in the world that is always evolving, through the practical of acting on the basis of logical thinking, rational, critical, care full, honest, efficient, and effective. Furthermore, according to the National Council of Teachers of Mathematics (2000) [1] that the purpose of learning mathematics is (1) learning to solving problem (2) study for the reasoning of proof (3) study for the ability to associate the idea of mathematics (4) learn to communicate mathematically (5) studying for the mathematical representation. Based on the quote's above, it can be concluded that the learning of mathematics is needed by all of the students. Related to the learning of mathematics in which mathematics refers to the goal of learning mathematics in elementary and secondary schools are connected in Permendiknas 22 of 2006 (Sinaga, 2007) [2], stating the student is able to:

1. Understanding the concepts of mathematics describes the relationship between concepts and apply the concept of flexible or logarithmic basis, accurate, efficient, and precise in troubleshooting.
2. Using the reasoning on the pattern and nature, perform mathematical manipulation in making generalizations, compile evidence or explain mathematical ideas and statements.
3. Problem solving that include the ability to understand the problem of designing a mathematical module, complete the model and interpret the obtained solution.
4. Communicate ideas with symbols, tables, diagrams, or the balance sheet to clarify the situation or issue.
5. Having respect to the usefulness of mathematics in life, namely curiosity, attention and interest in studying mathematics, as well as a tenacious attitude and confidence in problem solving that is an abstraction, logical, systematic, and full of symbols and formulas.

Teachers should have the competence to teach and be able to design learning process which are the responsibility of the advancement of learning outcomes. The improvement of the value in learning outcomes can't be separated from the role of teachers in transferring knowledge to the learners. A teacher is said to be competent, skilled, and skill full in teaching, when he mastered pedagogical competence. Therefore in the framework of the certification of teachers, pedagogic competence is tested.

In this study, the performance of the mathematics teacher is the teacher's ability in formulating the objectives, the selection/organizing of the teaching material, the selection of learning resources, instructional media, the selection of models, strategies, approaches, methods and techniques of teaching, assessment of learning. As for seeing this performance, observation is used in this indicator that focus on attention in the beginning process of learning, manage learning activities, organizing time, learners and learning facilities, giving assessments and put an end to the learning process. Bloom (1974) [3] suggests that knowledge is described as the behavior of the test situations that emphasize keeping in something or through recognition or recall. While Suriasumantri (2002) [4] said that knowledge is a product and part of a culture. This knowledge is developed by human

resources through the process of learning about various aspects of life. In philosophical, this knowledge is what is known to all humans whether it is religion, belief, art, morals, or science. The Criteria that differentiate knowledge from other knowledge or scientific disciplines from other disciplines is the basic of ontology, epistemology and axiology. The View of modern organization theory by Cleland and King (1969) [5], the organization is seen as a system. The system is described as an integrated assembly of the interaction between the elements that are designed to accomplish a function that is determined by means of cooperation (a system may be defined as an assembly of interacting integrated elements cooperatively designed to carry out a predetermined function). Based on the description above can be synthesized that theory of knowledge is knowledge of mathematics teacher organizations towards the basic principles of the Organization consisting of theory and practice of organization, understanding the organization, division of labor, the purpose of the organization, delegation of authority, work procedures, formalization, teamwork, preparation of job descriptions, organizational structure, span of control. The practice of organizational includes; technology application, coordinating resources, program planning, reward systems, inter-personal interaction, system analysis.

Warsanto (2002) [6] explains that the motivation comes from the Latin, movere means move. There are three aspects of motivation that can be identified, namely:

1. The power that drives or causes a person to behave in certain activities,
2. The existence of a strong purpose, and
3. Morale is maintained at all times.

It shows that a person who has power to be motivated to achieve goals and keep in applying to the task while Sasse (1981) [7], suggested that the motivation is the desire for someone to do the work, he acts and challenged so he was willing to work hard. McClelland (2000) [8] describes that the many needs of human beings, the most emphasized are: 1). Achievement, 2). Authority or Power, and 3). Cooperation. The Affiliation need is the encouragement of a person to perform his duties so that he can get the attention of other people (co-workers, or people in their environment) either through cooperation or friendship. From several studies conducted by experts proved that the motivation of employees is related to performance.

According to Robbins (1991) [9] stated that the commitment of the Organization is the orientation to the worker towards the organization in the form of loyalty to do the duty, the identification of the values and goals of the organization, and the involvement to the goals of the job. According to Bryson (1995) [10], the commitment leads to the unity of the working team and improving the skill and performance.

A job may require the interaction of the group, which acts as a reinforcement for a worker who is needed to join (Affiliation). Based on the statement, it is so clear that the commitment of the organization caused by the needs of autonomy to join. Based on the description above, it could be synthesized that the organizational commitment is the ability of the mathematics teacher to commit and accept the existences of the school as his/her life by doing all the procedures which related to his/her responsibility of the job that she or he has in the school in which there is a willingness to work hard, have a sense of responsibility, loyalty, proudly and concern for the job.

2. Methodology

The populations of the sample in this study were all the mathematics teachers of junior high school in Rewa district. The sample in this study consists of 102 people who use stratified proportional random sampling technique. Based on Cochran formula, it will be obtained proportions of public and private junior high school. This research was conducted through a survey method using questionnaires, pre-test and post-test, and observation as an instrument, meanwhile, to test the hypothesis used one way anova.

3. Results and discussion

Based on the data analysis of this study, there are five variables are found, namely (1) Organizational Knowledge variables, (2) Achievement Motivation variables, (3) Organizational Commitment variables, (4) Decision-making variables, and (5) Performance mathematics teacher variables. The results of questionnaires, tests and observation sheet can be seen in Table 1 below:

Table 1: Description of data analysis towards the variables of the research

	X_1	X_2	X_3	X_4	X_5
Sample (n)	80	80	80	80	80
Mean Total Scores	99.38	117.68	89.09	103.85	198.36
Mean on Scale 1-5	3.5	4.06	3.43	3.58	4.31
Levels of achievement	71%	81%	69%	72%	86%
Standard of deviation	8.54	9.84	9.12	8.05	14.49
Minimum scores	81	90	72	83	158
Maximum scores	118	134	110	121	223

Explanation:

X_1: Organizational knowledge,
X_2: Motivation achievement,
X_3: Decision-making,
X_4: Organizational commitment, X_5: performance of mathematics teacher

In accordance to the theoretical model in this experiment, there are seven hypothesis tested by Path Analysis.

By using the tools of computer program applications obtained a summary of the results of correlation analysis and path analysis between the exogenous variables as endogenous variables in Table 2 below.

Table 2: The results of the correlation and path analysis between exogenous and endogenous variables and the significance

Number of Hypothesis	Coefficient of correlation	Significance	Coefficient of Path analysis	T_{test}	Significance	Explanation
1	r12 = 0.404	0.000	ρ21 = 0.404	4.422	0.000	Significant
2	r13 = 0.362	0.000	ρ31 = 0.362	3.884	0.000	Significant
3	r14 = 0.349	0.000	ρ41 = 0.349	3.724	0.000	Significant
4	r15 = 0.481	0.001	ρ51 = 0.213	2.362	0.020	Significant
5	r25 =0.557	0.000	ρ52 = 0.3151	3.966	0.000	Significant
6	r35 = 0.392	0.006	ρ53 = 0.185	2.176	0.032	Significant
7	r45 = 0.372	0.003	ρ54 = 0.171	2.028	0.045	Significant

* All of the coefficients of path analysis have t-test bigger than t-table 5%, is 1.66. So that, all of the path analysis are significantly affect the variables.

Table 3: The table of the effects of direct and indirect of the organizational knowledge (X_1), achievement motivation (X_2), decision-making (X_3), and the organizational commitment (X_4) to the performance (X_5)

Variables	Achievement motivation (X_2)	Decision making (X_3)	Organizational commitment (X_4)
Organizational knowledge (X_1)	0.164	0.132	0.123

Based on table 3 above it can be seen that the direct effect of organizational knowledge (X_1) on Achievement motivation (X_2) of 0.164

In the same way organizational knowledge gained directly influence on decision making at 0.132. As for the organizational knowledge variable on the organizational commitment is equal to 0.123.

So the organizational knowledge (X_1) directly affect changes in achievement motivation (X_2), decision making (X_3) and organizational commitment (X_1), respectively amounted to 16.4%, 13.2% and 12.3%.

Furthermore, the calculations of the effects of direct and indirect of the organizational knowledge (X_1), Achievement motivation (X_2), Decision (X_3) and Organizational commitment (X_4) against performance (X_5) as shown in table 4.

Table 4: The table of the effects of direct and indirect of the organizational knowledge (X_1), achievement motivation (X_2), decision-making (X_3), and the organizational commitment (X_4) to the performance (X_5)

Variable	Direct effect to X_5	Indirect effect to X_5 by				Total of effects	Non-anova	
		X_1	X_2	X_3	X_4		S	U
X_1	0.0454		0.030	0.014	0.013	0.1025		
X_2	0.1232					0.1233	0,030	0,042
X_3	0.0342					0.0343	0,014	0,024
X_4	0.0292					0.0293	0,013	0,022
Jumla						0.2891	0,057	0,088

Explanation: S = Components of Spurious; and U = Components of Un-analyzed.

Based on the table 4 above, it can be seen that there is a direct effect on the Organizational Knowledge (X_1) to the Performance (X_5) is about 0,054. The Indirect effect of the Organizational Knowledge (X_1) to the Performance (X_5) by the Achievement Motivation (X_2) is about 0,030. The Indirect effect of the Organizational Knowledge to the Performance (X_5) by the Decision-making (X_3) is about 0.014.

The Indirect effect of the Organizational Knowledge (X_1) to the Performance (X_5) by the Organizational Commitment (X_4) is about 0.013. So, the total score of the direct and indirect effect of the Organizational Knowledge towards the Performance (X_5) is about 0.1025. Thus, the power of direct and indirect of the Organizational Knowledge (X_1) effects on the changes in the Performance(X_5) about 10.25%.

In the same way, the effects of the direct/indirect of X_2, X_3, and X_4 variables can be seen in the table above. Based on the findings of this study, it can be concluded that:

The performance of mathematics teacher in Rewa district is enough, because there are 33 people or 41.25% are in this category. While those who are in the category of less enough, there are 31 people or 38.75% and in low category there are 9 people or 11.25%. As for the high category just 7 persons or 8.75%.

The Organizational Knowledge of the mathematics teacher which include as the high category is about 36 persons (45.00%) and 15 persons (18.75%). While the category of low is about 16 persons (20.00%). The results above shows that the mathematics teacher still needs to be improved in understanding of the organization, understanding of the tasks given in teaching mathematics start on planning stage, implementation and evaluation stage to the success of the learning process.

The results of this study also shows that the distribution scores of Achievement Motivation category is only 14 persons (17.50%) are on the average class, while there are 35 persons (43.75%) are low from the average class. This Achievement motivation approach still needs to be improved through the motivation of Principals, Supervisors and the Head of the Education Department. The Results of this study supports the statement of Grifin (2004, p. 38) [11] which states that a person's performance is determined three things: motivation, ability and environment.

The findings of this study shows that there are 41 persons (51.25%) above the average, while 12 persons (15.00%) are under the average category. These results show that the understanding of the mathematics teacher to decision making still low, while the task of a mathematics teacher always make good decisions in the learning process involves the material aspects of mathematics as well as aspects of the learning process. Because of the mathematics teacher is a leader in the

classroom, the main point duty of the leaders is to make a decision. This findings support the statement/theory of: Mondy (1993, p. 344) [12] states that the effective leadership should involve the team in the decision making. It means that leaders who are always involve the team in making a decision will be more effective for the performance. Furthermore, the results of this study support the research of Ayu (2003, p. 45) [13] and Wahidil (2007, p. 34) [14] in which both studies concluded that it is significantly affect in decision-making process on the performance.

The Results of this research on the organizational commitment of mathematics teachers tend to be less, although there are still 47 persons (58.75%) are above the average grade and 9 persons (11.25%) are in the low grade

4. Conclusion

Based on the data analysis above, so the effects of exogenous and endogenous variables conclude that:

1. The Organizational Knowledge is significantly effects on Achievement Motivation of the mathematics teacher.
2. The Organizational Knowledge is significantly effects on making a decision of mathematics teacher.
3. The Organizational Knowledge is significantly effects on the Organizational Commitment of mathematics teacher.
4. The Organizational Knowledge is significantly effects on the Performance of the mathematics teacher. Meanwhile at the second part,
5. The Achievement Motivation is significantly effects on the performance of mathematics teacher.
6. The Decision-Making is also significantly effects on the Performance of mathematics teacher.
7. The Organizational Commitment is significantly effects on the Performance of mathematics teacher.

Based on the findings above, it can be concluded that the higher of organizational knowledge so the achievement motivation, decision making, organizational commitment and performance of mathematics teacher of junior high school is also higher in Rewa district, respectively was 16.4%, 13.2%, 12.3% and 4.54%. Furthermore, the higher of the achievement motivation, decision making, organizational commitment will make higher to the performance of the mathematics teacher, respectively was 10.25%, 12.33%, 3.43% and 2.93%. The Seventh conclusion of this study is a sub structure that forms a theoretical model for mathematics teacher's performance based on theory and empirical data support.

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