

Teacher's Innovation Improvement through the Development of Organizational Climate and Emotional Intelligence Using Correlation Statistical Analysis and Sitorem Method

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Abstract—Teacher's innovation is an important element related to the achievement of educational goals, namely to produce good quality human resources, both in terms of science, knowledge, skills and personality. From the initial survey, it was shown that the teacher's innovation was still not as expected. Therefore, the teacher's innovation is interesting to be studied. The study was conducted using correlation statistical methods to determine whether other variables, namely organizational climate and emotional intelligence, had a positive relationship with the teacher's innovation. Based on these results, an analysis is performed using the Sitorem Method to make recommendations and determine the priority sequence of improvements that need to be done. The Population in this research was teachers of civil servants in the city of Bogor, amounting 250 people with sample determined from population randomly amounted to 154 people. The results of the research showed that there was a positive relationship between organizational climate and the teacher's innovation with correlation coefficient $r_{yx1} = 0.515$ and there was a positive relationship between emotional intelligence and the teacher's innovation with the correlation coefficient $r_{yx2} = 0.552$. This shows that the teacher's innovation can be improved through the development of organizational climate and emotional intelligence and from the components of the teacher's innovation itself. The results of the Sitorem Analysis show that the components of organizational climate, emotional intelligence, and teacher's innovation that are found to be good and only need to be maintained include: 1) emotional recognition of others, 2) physical condition of the workplace, 3) leadership, 4) management policies, 5) management practices, and 6) use of learning media. Components that still need to be increased are 12 components with the following priority sequence of improvements: 1) fostering social relations, 2) self-control, 3) self-motivation, 4) accuracy in problem solving, 5) facilities to work, 6) relationships between organizational members, 7) school relations with the community, 8) reward system, 9) idea creation, 10) acceptance of new ideas, 11) implementation of ideas in learning, and 12) evaluation of implementation results.

Keywords—*teacher's innovation; organizational climate; emotional intelligence; sitorem analysis*

I. INTRODUCTION

Innovation has become the main instrument to achieve and deliver competitive advantage. Qualified teachers have the characteristics of having high innovativeness in carrying out learning. Therefore, the higher innovation of teacher, the more creative teacher in managing learning activities. The more creative teacher in managing learning, the more effective learning outcomes he will get.

Teachers in carrying out their duties need to have good innovation capabilities to improve the quality of learning. This requires a positive attitude from the teacher towards the changes that occur in carrying out their duties. The learning process that occurs in the classroom must be improved continuously, so that routine work patterns need to be improved into innovative work patterns in an effort to face and anticipate global changes that also occur in the world of education.

Teacher's innovation is an important element related to the achievement of educational goals, namely to produce good quality human resources, both in terms of science, knowledge, skills and personality. From the initial survey, it was shown that the teacher's innovation was still not as expected. Therefore, the teacher's innovation is interesting to be studied.

The purpose of this study was to find ways to improve teacher innovativeness. The study was conducted by examining the relationship of other variables with teacher innovativeness. Other variables are organizational culture and emotional intelligence.

II. THEORY REVIEW

A. Innovation

According to Joshua D. Detre, Aaron J. Johnson, and Gray innovativeness is an attitude or activity that shows the level or level of innovation possessed by someone [1]. In this case, innovativeness shows changes in the behavior of a person and can be observed how often the innovation is carried out by that person.

Hunt, Osborn, and Uhl-Bien suggested that innovation is the process of creating new ideas and putting them into practice [2]. It is a creative way to improve customer service or organizational productivity. Innovation is an action to create new ideas and apply these ideas into practice. This means that the new ideas applied will contribute to improving service to the community and increasing organizational productivity.

Wood, et al. states that "innovation is the process of creating new ideas and putting them into practice". Innovation is the process of creating new ideas and applying them in practice [3].

Uhl-Bien et al. states that innovation is the process of creating ideas and putting them into practice [2]. Here we will examine it as a product and process innovation from process innovation. The factors in innovation are process innovation and product innovation. So Innovation is the process of creating new ideas and applying them to practices that are separate processes and products, namely Product innovation and process innovation.

From the description of the theory above, it can be synthesized that innovation is a person's activity to change new ideas or modify existing ideas into new products, processes, and services which are then applied to provide benefits. Innovation indicators include a) acceptance of new ideas, b) creation of new ideas, c) implementing new ideas in learning, d) multimedia use in learning, and e. evaluating changes in learning.

B. Organizational Climate

Robbins states that organizational climate is a shared perception of organizational members regarding their organization and work environment [4]. (2015500-501). Whereas Mullins argues that organizational climate is the perception of organizational members regarding the internal environment that influences the behaviour of members of the organization which directly impacts on their performance [5]. Organizational climate is influenced: (1) the dimensions of the social environment, namely the relationship (cooperation) between members of the organization, and (2) the dimensions of management systems, namely the system of reward for performance.

Schermerhorn et. al. states that "Organizational climate represents shared perceptions of members regarding what organizations are like in terms of management policies and practices" [6]. While Bateman and Snell say that organizational climate is a pattern of attitudes and behaviour that shapes a person's experience in the organization [7]. Dimensions that influence organizational climate are: (a) Dimensions of management systems, namely conflict management, clear performance standards, clarity of the role of organizational members, leadership management, and reward systems for performance, (b) Dimensions of social environment, namely relations between superiors and subordinates and relationships between members of the organization.

Saungweme and Gwandure suggest that "Organizational climate is a set of characteristics that (1) distinguishes the organization from other organizations, (2) relatively enduring

over time, and (3) influence the behaviour of people in organization" [8]. Organizational climate is influenced by dimensions: (a) social environment dimensions, namely interpersonal relations and (b) management system dimensions, namely conflict management, reward systems for performance.

Keith and Newstrom suggest that organizational climate is the perception of organizational members on the environment and atmosphere of organizational members in doing work [9]. The dimensions of the organizational climate include: (1) the dimensions of the physical environment, namely the conditions of the workplace, facilities and infrastructure, and (2) the dimensions of the social environment, namely the relationships between organizational members.

Based on the theories stated above, it can be synthesized that the organizational climate is a collection and pattern of environment with members of the organization regarding the organization (environment, policies, and management practices) that influence the behaviour of organizational members and have an impact on their performance. Indicators: (a) physical condition of the workplace, (b) facilities and infrastructure, (c) leadership, (d) relationships between members of the organization, (e) relations between schools and communities, (f) Management policies, (g) management practices, and (h) reward system for performance.

C. Emotional Intelligence

Goleman suggests that emotional intelligence is a person's capacity to motivate themselves and survive facing frustration; controlling impulses and not excessive when facing excitement, regulating moods and keeping the stress burden from paralyzing the ability to think, empathize and pray [10].

Zeidner et al. suggests that each person has a different level of emotional intelligence, to understand the characteristics of the level of intelligence required several complex and varied criteria that can be obtained from the data characteristics as follows [11]: 1) Can be detected through facial expressions, voice intonation when speaking, attitude when sitting or standing. 2) Able to control emotions in accordance with the atmosphere. 3) Able to regulate negative emotions such as when angry or sad.

Patton states that Emotional intelligence includes all traits such as: 1) self-awareness, 2) mood management, 3) self-motivation, 4) controlling impulsiveness (heart pressure), 5) skills in controlling others [12].

Based on the description of the theory, it can be synthesized that emotional intelligence is a person's capacity to control and control emotions, motivate themselves, recognize the emotions of others (empathy) so as to create emotional relationships with their environment, solve problems in the right way, to overcome the demands of work with indicators: a. self-control, b. self-motivation, c. know the emotions of others, d. fostering social relations, e. solve the problem in the right way.

III. RESEARCH METHODS

The study was conducted using correlation statistical methods to determine whether other variables, namely

organizational climate and emotional intelligence, had a positive relationship with the teacher's innovation.

Based on these results, the analysis is performed using the Sitorem Method to make recommendations that need to be done as stated by Hardhienata, S [13]. Sitorem stands for Scientific Identification Theory to Conduct Operation Research in Education Management, which is a Scientific Introduction Theory for conducting Operations Research in Education Management.

The basic consideration used is to establish recommendations and order of priority for handling improvements. There are 3 (three) criteria used, namely: (a) the strength of the relationship between the independent variable and the dependent variable, (b) the order of priority indicators of the variables studied, (c) the value of indicators obtained from the results of research in the field.

The strength of the relationship between the independent variable and the dependent variable is obtained from the results of data analysis using correlation statistical methods. The order of priority indicators is made based on input from expert opinion and analysis from the researcher. Indicator values are obtained from the calculation of data from the results of the answers to the research respondents.

The Population in this research was teachers of civil servants in the city of Bogor, amounting to 250 people with sample determined from population randomly amounted to 154 people.

IV. RESULTS AND DISCUSSION

A. Relationship between Organizational Climate (X1) and Teacher Innovation (Y)

The results of the study indicate that there is a positive relationship between organizational climate and teacher innovativeness. This is indicated by the correlation coefficient (r_{y1}) of 0.515 and stated to be very significant. The contribution of the organizational climate to teacher innovativeness is 26.6% which is expressed by the coefficient of determination ($r^2_{y.1}$) of 0.266. The partial correlation coefficient of organizational climate (with emotional intelligence controlled variables) is 0.294 and is stated to be very significant.

Based on a simple linear regression equation $\hat{Y} = 52.889 + 0.597X_1$, it is predicted that each increase in one unit's organizational climate score will cause an increase of 0.597 teacher innovativeness score units at a constant of 52.889. The results of this study conclude that the organizational climate owned has a positive contribution that has a significant effect on teacher innovativeness. Therefore, the development of an organizational climate can increase teacher innovativeness.

The results of this study are in line with the theory of Bateman and Snell which says that organizational climate is a pattern of attitudes and behavior that shapes a person's experience in the organization [7]. It is also in line with the results of Scott G. Isakson and Hans J Ackerman's research in the Journal of Creative Behavior, entitled "Creative Climate: A Leadership Lever for Innovation" which concluded that there

was a significant positive relationship between organizational climate and innovation, with a correlation coefficient of 0.602 at a significant level of 0.05.

Based on this, there is relevance that shows that in order to be able to innovate well, a climate of supportive organization is needed. Teachers need a good physical environment, social environment, and management system to develop their potential. With complete infrastructure facilities, relationships between members of a good organization, as well as a supportive management system, are very influential for teachers to be able to innovate in creating new ideas in the learning process so that there will be fun learning activities. Teachers who work with a competitive work climate, mutual assistance, mutual respect, harmonious working relationships open, clean, orderly environment, and adequate infrastructure, will be easier to develop (innovate).

Based on the results of the above research it can be stated that there is a very significant positive relationship between organizational climate and teacher innovativeness which is also supported by previous research and theories about organizational climate and innovation. Therefore, it can be stated that to increase the innovativeness of teachers by folding is done by developing an organizational climate.

B. Relationship between Emotional Intelligence (X2) with Teacher Innovativeness (Y)

The results showed that there was a positive relationship between emotional intelligence and teacher innovativeness. This is indicated by the correlation coefficient (r_{y2}) of 0.552 and stated to be very significant. The contribution of emotional intelligence to teacher innovativeness is 30.5% as indicated by the coefficient of determination ($r^2_{y.2}$) of 0.305. Partial correlation coefficient of emotional intelligence (with controlled organizational climate variables) is equal to 0.369 and stated to be very significant.

Based on a simple linear regression equation $\hat{Y} = 42.230 + 0.672 X_2$, it is predicted that each increase in one unit of emotional intelligence score will cause an increase of 0.672 teacher innovativeness score units at 42.230 constants. The results of this study concluded that emotional intelligence possessed a positive contribution that had a significant effect on teacher innovativeness.

The findings obtained in this study indicate that teacher emotional intelligence is able to influence teachers in terms of increasing teacher innovativeness because someone who has emotional intelligence means having effective ways to develop interpersonal relationships because they can control their emotions for those interests and can express their emotions and know-how and treat people to do good.

This is in accordance with the theory put forward by Goleman suggesting that emotional intelligence is the ability to motivate oneself and survive facing frustration; controlling impulses and not excessive when facing excitement; regulate mood and keep stress loads from paralyzing thinking skills; empathize and pray [10].

This means that the higher the level of emotional intelligence of the teacher, the higher the level of teacher

innovation. Thus the findings of facts and data in the analysis of this study further support the previous findings regarding the existence of a positive relationship between teacher emotional intelligence and teacher innovativeness.

C. Relationship between Organizational Climate (X1) and Emotional Intelligence (X2) together with Teacher Innovation (Y)

The model of the relationship between organizational climate and emotional intelligence together with the innovativeness of teachers can be expressed in multiple linear regression equations $\hat{Y} = 37.534 + 0.242X_1 + 0.470X_2$. This means that if the value of organizational climate (X1) and the value of emotional intelligence (X2) increase by one unit, then the innovative value of teacher (Y) will increase by 0.242 and 0.470 units with a constant of 37.534.

The multiple correlation coefficient (r_{y12}) is 0.567 which means that there is a positive relationship between organizational climate and emotional intelligence together with the innovativeness of the teacher. The contribution of the

organizational climate and emotional intelligence together is shown by the multiple coefficient of determination ($r^2_{y1.2}$) of 0.322, which means 32.2%.

The results showed that there was a positive relationship between organizational climate and emotional intelligence together with the innovativeness of teachers, meaning that the stronger the organizational climate and the higher the emotional intelligence together, the more innovative the teacher will be.

D. Sitorem's Analysis to Determine Recommendations for Research Results

Furthermore, Sitorem's analysis was carried out to determine the recommendations and order of priority for handling improvement as was done in Hardhienata, S. [13]. There are 3 (three) criteria used, namely: (a) the strength of the relationship between the independent variable and the dependent variable, (b) the order of priority indicators of the variables studied, (c) the indicator values obtained from the results in the field as shown in Figure 1.

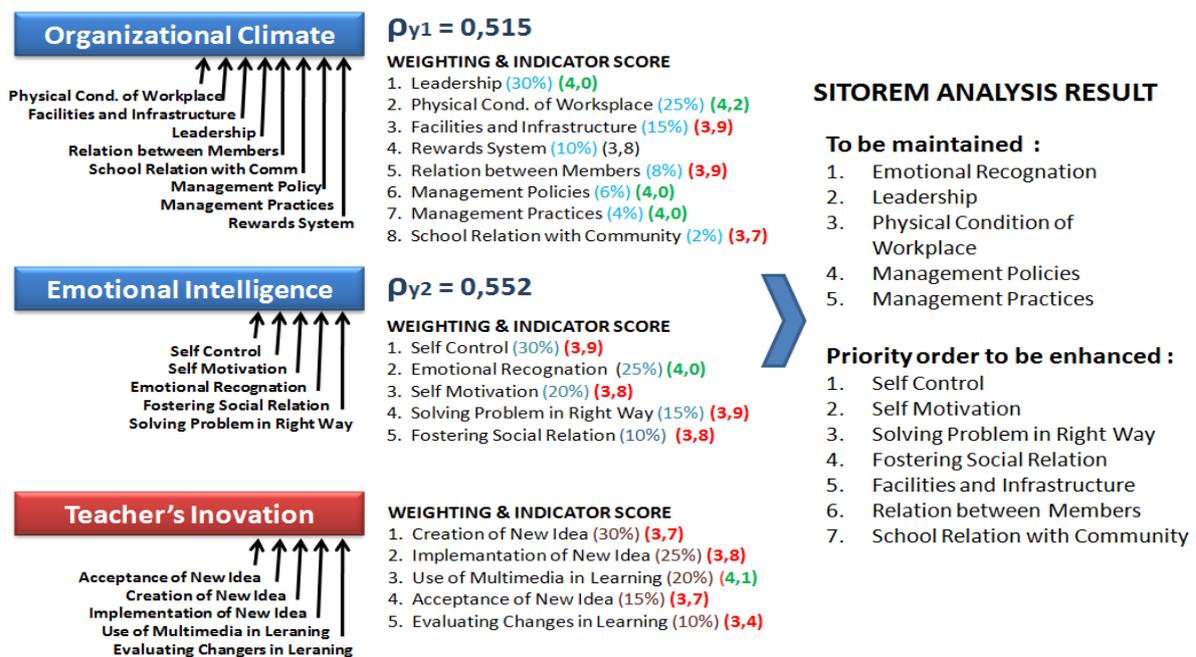


Fig. 1. Results of Sitorem's analysis of the determination of recommendations.

V. CONCLUSIONS AND RECOMMENDATIONS

From the results of the discussion described above, the following can be concluded:

There was a positive relationship between organizational climate and the teacher's innovation with correlation coefficient $\rho_{yx1} = 0.515$.

There was a positive relationship between emotional intelligence and the teacher's innovation with the correlation coefficient $\rho_{yx2} = 0.552$.

There was a positive relationship between organizational climate and emotional intelligence together with the innovativeness of the teacher. The contribution of the organizational climate and emotional intelligence together is shown by the multiple coefficient of determination ($r^2_{y1.2}$) of 0.322, which means 32.2%.

This shows that the teacher's innovation can be improved through the development of organizational climate and emotional intelligence and from the components of the teacher's innovation itself.

The results of the Sitorem Analysis show that the components of organizational climate, emotional intelligence, and teacher's innovation that are found to be good and only need to be maintained include: 1) emotional recognition of others, 2) physical condition of the workplace, 3) leadership, 4) management policies, 5) management practices, and 6) use of learning media.

Components that still need to be increased are 12 components with the following priority sequence of improvements: 1) fostering social relations, 2) self-control, 3) self-motivation, 4) accuracy in problem solving, 5) facilities to work, 6) relationships between organizational members, 7) school relations with the community, 8) reward system, 9) idea creation, 10) acceptance of new ideas, 11) implementation of ideas in learning, and 12) evaluation of implementation results.

To obtain a broader picture of the relationship of other variables it is recommended to develop further research by examining the relationship of other variables that have not been studied on Teacher's Innovation.

REFERENCES

- [1] Joshua, D. Detrer, A.J. Johnson, and A.W. Gray, "Innovativeness and innovation: implications for the renewable materials supply chain," *International Food and Agribusiness Management Review*, vol. 14(2), pp. 17-34, 2011.
- [2] S. Hunt, Osborn, and Uhl-Bien, *Organizational Behaviour*, United State of America: John Wiley & Sons Inc, 2010.
- [3] Wood, W. Zeffane, S. Hunt, and Osborn, *Organizational Behaviour: A Global Perspectives*, Seventh Edition, Sydney: John Wiley & Sons Australia Ltd, 2013.
- [4] S.P. Robbins and M. Coulter, *Management*, Twelfth Edition, England: Pearson Education Limited, 2014.
- [5] L.J. Mullins, *Management and Organization Behaviour*, Seventh Edition, Spain: Mateu-Cromo, Artes Graficas, 2005.
- [6] J.R. Schermerhorn, R.N. Osborn, M. Uhl-Bien, and J.G. Hunt, *Organizational Behaviour*, International Student Version, United State of America: John Wiley & Sons Inc, 2012.
- [7] Bateman and Snell, *Management: Leading & Collaborating in a Competitive World*, New York: McGraw-Hills Education, 2015.
- [8] Ruvarashe, Saungweme, and C.Gwandure, *Organisational Climate and Intent to Leave among Recruitment Consultants in Johannesburg*, South Africa, *J Hum Ecol*, vol. 34(3), pp. 145-153, 2011.
- [9] K. Davis and J. Newstrom, *Perilaku Organisasi*, Terjemahan Agus Dharma, Jakarta: Gelora Aksara Pratama, 2008.
- [10] D. Goleman, *Kecerdasan Emosional: Mengapa EI lebih penting daripada IQ*, Jakarta: PT. Gramedia Pustaka Utama, 2009.
- [11] M. Zeidner, G. Matthews, and R. D. Roberts, *What We Know about Emotional Intelligence "A Bradford book,"* Includes bibliographical references and index, 2009.
- [12] A. Patton, "Modelling Asymmetric Exchange Rate Dependence," *International Economic Review*, vol. 47, pp. 527-556, 2006.
- [13] S. Hardhienata, "The development of scientific identification theory to conduct operation research in education management, IOP Conference Series: Materials Science and Engineering, vol. 166, 2017.