

The Effect of Lecturer Pedagogical Competence on Learning Management Mediated by Learning Innovation

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Abstract

This study analyzes the effect of lecturers' pedagogical competence on learning management through mediation of learning innovation at Muhammadiyah University Jakarta. The purpose of this study is to improve learning management by strengthening lecturers' pedagogical competence and learning innovation by exploring learning management with factors that can influence it, namely lecturers' pedagogical competence and innovative learning. This research approach uses quantitative methods with primary data collection conducted through distributing questionnaires to 95 students of Universitas Muhammadiyah Jakarta as respondents. Data analysis was carried out by descriptive analysis and inferential analysis, using the Structural Equation Modeling (SEM) approach with the variance-based Partial Least Square (PLS) method. The results of this study indicate that the pedagogical competence of lecturers has a positive and significant effect on learning management, the pedagogical competence of lecturers has a positive and significant effect on learning management through the mediation of learning innovation.

Introduction

The professional duties of lecturers are special in improving future human resources. Therefore, improving the professional level of lecturers in the field of pedagogics and psychology of higher education is one of the most important tasks. Many researchers consider the professional competence of lecturers as a combination of knowledge and skills that determine the labor impact; the amount of skills to perform tasks; a combination of personal qualities; the direction of professionalization; theoretical and practical readiness for activities; the ability to complex culture that forms the type of action. Professional competence is an important topic in the academic context, although it is relatively unexplored, and described with contradictory conclusions regarding its characteristics. Scholars describe competencies as comprising a set of "groups of knowledge, skills and attitudes that are necessary for the performance of tasks and problem solving and to be able to function effectively in specific professions, organizations, jobs, roles and situations". (Di Battista, 2022). The competence of lecturers to plan, implement, evaluate, and follow up on learning outcomes in improving quality is known as pedagogical competence. In facing an era of increasingly fierce competition, these efforts are very important and strategic. Universities must meet national and international education standards and produce qualified and competitive graduates. To compete in the local, national and international job markets, graduates must master both hard and soft skills. Better quality graduates and a shorter waiting period for employment are expected as a result of improved learning implementation. Therefore, a lecturer must be proficient in planning, implementing and evaluating learning. In the field of education, some researchers argue that the term "competence" refers to the ability to apply knowledge, skills, personal, social and/or methodological abilities to address specific situations and problems. A competent lecturer is not only someone who has a wealth of knowledge, but also someone who is able to handle emergencies and knows how to use

their resources effectively in certain situations. The term "competence" is less universally accepted, and it identifies two main perspectives of competence in education, namely the theoretical perspective, where competence is described as a cognitive structure that facilitates certain behaviors. From an operational perspective, competence is seen as a set of skills and behaviors that represent. Problems that arise as external and internal factors that affect the learning process need to be properly identified. External factors include: instructors, materials, interaction methods, learning media and technology, learning situations and systems. Lecturers who have not mastered the material and assessed students need appropriate answers as stated above. In this case, students are not given the opportunity to think creatively. Lecturers also have limitations in accessing new information so that it inhibits them from realizing the latest developments in their field (state-of-the-art technology) and the possibility of further progress from what has been achieved today (knowledge frontier), and therefore sometimes conflict with lecturers so that students more quickly master technological developments (especially information technology). Another thing is that the teaching materials provided by lecturers are considered by students to be too theoretical and do not optimally utilize various media. Students are ready when they benefit from learning experiences that meet the needs of the world of work, thus reducing the gap between the world of education and the world of work. One of the weaknesses of the current education system in Indonesia is that it is difficult to provide training that can truly support a person's professionalism in a career, because current education places too much emphasis on theory rather than practice, because education is academic, it is difficult to prepare programs that meet practical rather than theoretical requirements.

Literature Review

Learning Management

Management comes from the translation of management, whose meaning in language is to take care of, organize, carry out, manage. According to Hakim (2014) management is the process of planning, organizing, leading, controlling organizational efforts and the process of using organizational resources to achieve predetermined organizational goals. In other words, management as a process because all managers, regardless of their expertise and skills, are involved in interrelated activities in an effort to achieve organizational goals, with the following activities: (1) Goal setting, (2) Planning, (3) Organizing, (4) Directing and (5) Controlling. According to Cavus (2014) learning management can help instructors to provide their students with learning materials and manage student enrollment and also provide a platform for this type of learning environment by enabling management, delivery, learning tracking, testing, communication, enrollment processes, and scheduling. Sardiman (2016) states that the duties and roles of teachers include: mastering and developing subject matter, planning and preparing daily lessons, controlling and evaluating student learning activities. The main aspects of learning management (Buchari, 2018) which he calls the "learning management cycle" include: (1) Preparation, namely library learning activities to study research results, mastery of science and technology, and socio-cultural information; studying the latest results. (2) Planning, namely setting goals, selecting and determining teaching materials, and determining learning methods. (3) Organization, which is organizing students for classical and group learning. (4) The learning process takes place through demonstration and mastery of teaching materials using appropriate methods/techniques until completion. (5) Supervision, namely supervision activities to

improve the teaching and learning process. (6) Evaluation and tracking, namely formative evaluation and summative evaluation.

Lecturer Pedagogical Competence

Competence is related to a person's ability, meaning that whoever the person is, where he works, or what position he holds, the main element that must be possessed is competence or professional knowledge and skills. Competence is also a requirement that society considers a person capable of carrying out tasks in certain fields of work. Competence is achieved through a series of intelligent actions that are the responsibility of the individual, enabling work to be done effectively and efficiently. Hutapea and Thoha (2008) state that competence is defined as a description of what a person must know or do in order to do their job well. The competencies in question are technical competencies or functional or also known as hard skills or hard competencies. Wibowo (2007) says competence is an ability to carry out or perform a job or task based on skills and knowledge and supported by the work attitude demanded by the job. Lecturers' pedagogical competence in managing learning, including; (1) understanding the educational foundation, (2) understanding of students, (3) curriculum / syllabus development, (4) learning design, (5) educational and dialogical learning, (6) utilization of learning technology, (7) evaluation of learning and learning outcomes, (8) developing students to develop their potential (Mulyasa, 2007).

Learning Innovation

Human behavior is defined as an individual response or reaction to a stimulus or environment, this means that behavior will arise if there is something needed to generate a response called a stimulus or stimulus, which will result in certain behaviors. This is clarified by Feist (2009) that behavior is the result of interactions between (1) humans including cognition and physiological processes; (2) the environment including interpersonal relationships and socio-economic conditions and; (3) behavioral factors including previous experience with reinforcement. According to Klaijnsen (2017) innovative is defined as "the intentional creation, introduction, and application of new ideas within a work role, group or organisation, in order to benefit role performance, the group or the organisation. According to Rogers (2003) innovations are ideas, practices, or objects that are perceived as new by individuals or other units of adoption. It is not important, as far as human behavior is concerned, whether an idea is "objectively" new or not as measured by the lapse of time since first use or invention. An individual's perceived novelty of an idea determines his or her reaction to the idea. If an idea appears new to the individual, it is an innovation. The characteristics of innovations, as perceived by individuals, help explain the different adoption rates among them: (1) Relative Advantage is the extent to which an innovation is considered better than the idea it replaces, (2) Compatibility is the extent to which an innovation is considered consistent with the existing values, past experiences, and needs of potential adopters. (3) Complexity is the extent to which an innovation is considered difficult to understand and use. (4) Trialability is the extent to which an innovation can be tried on a limited basis. (5) Observability is the extent to which the results of an innovation can be seen by others.

Method

This research uses a quantitative survey with numerical descriptions. Quantitative research is a scientific and scientific method because it meets scientific standards such as concrete or empirical, objective, measurable, rational, systematic, and rational. In addition, the use of quantitative is intended to test current data and variables with

numbers and conduct statistical analysis to generate new knowledge. The population in this study were students of Universitas Muhammadiyah Jakarta with a total population of 108 people. Determination of the number of samples was carried out by proportional random sampling so that a total sample of 85 was obtained.

A hypothesis is a temporary conjecture on a problem, therefore it must be proven. The author determines the hypotheses tested in this study are as follows:

H1: There is a direct positive effect of lecturer competence (X1) on learning management (Y).

H2: There is an indirect positive effect of lecturer competence (X1) on learning management (Y) through innovative learning (X2).

RESULT AND DISCUSSION

Result

This study used a quantitative approach and a partial least squares structural equation model (PLS-SEM) to analyze the hypotheses and test the influence of mediators and direct effects. The model analyzed the reliability and validity of the proposed measurement scale using a two-stage approach: measurement model analysis and structural model analysis (Hair et al., 2017).

The confirmatory factor analysis table for the measurement model, shows the findings and conclusions of the standardized factor loadings of the model items. All standardized factor loadings are greater than 0.5; with numbers that are in the range of 0.484 to 0.826, so there are still those below 0.5 (0.484) Furthermore, the AVE values for all constructs are between 0.452 to 0.490. According to Hair et al. (2017), all percentages are greater than the limit value of 0.5. The composite reliability values for all varied between 0.873 and 0.886, and as can be seen, all values were more than 0.7, as recommended by Hair et al. (2017).

Table 1 Cronbach's Alpha and Convergent Validity

Variable	Items	Loading	Cronbach's Alpha	Composite Reliability	AVE
Lecturer Pedagogical Competence	LC1	0.809	0.867	0.879	0.490
	LC2	0.812			
	LC3	0.588			
	LC4	0.552			
	LC5	0.656			
	LC6	0.484			
	LC7	0.743			
	LC8	0.687			
	LC9	0.629			
	LC10	0.751			
Learning Innovation	LI1	0.769	0.863	0.873	0.452
	LI2	0.648			
	LI3	0.665			
	LI4	0.656			
	LI5	0.580			
	LI6	0.697			
	LI7	0.738			

Variable	Items	Loading	Cronbach's Alpha	Composite Reliability	AVE
	LI8	0.680			
	LI9	0.509			
	LI10	0.738			
Learning Management	LM1	0.791	0.870	0.886	0.464
	LM2	0.669			
	LM3	0.667			
	LM4	0.705			
	LM5	0.626			
	LM6	0.574			
	LM7	0.686			
	LM8	0.572			
	LM9	0.674			
	LM10	0.807			

Based on the table above, there are factor loading values that are still below 0.5 (0.484), so they must be recalculated

Convergent validity is used to ensure that each statement item describing each latent variable is understood by respondents. statements that describe each latent variable are understood by respondents. This is denoted by the loading factor value of all indicators for each variable. each variable meets the minimum criteria. The path diagram that has been made is then estimated and the correlation results of the indicators with the latent variables are obtained in the form of loading factor scores. The validity test results are shown with a path diagram through the SmartPLS 4.0 data processing application in the following figure.

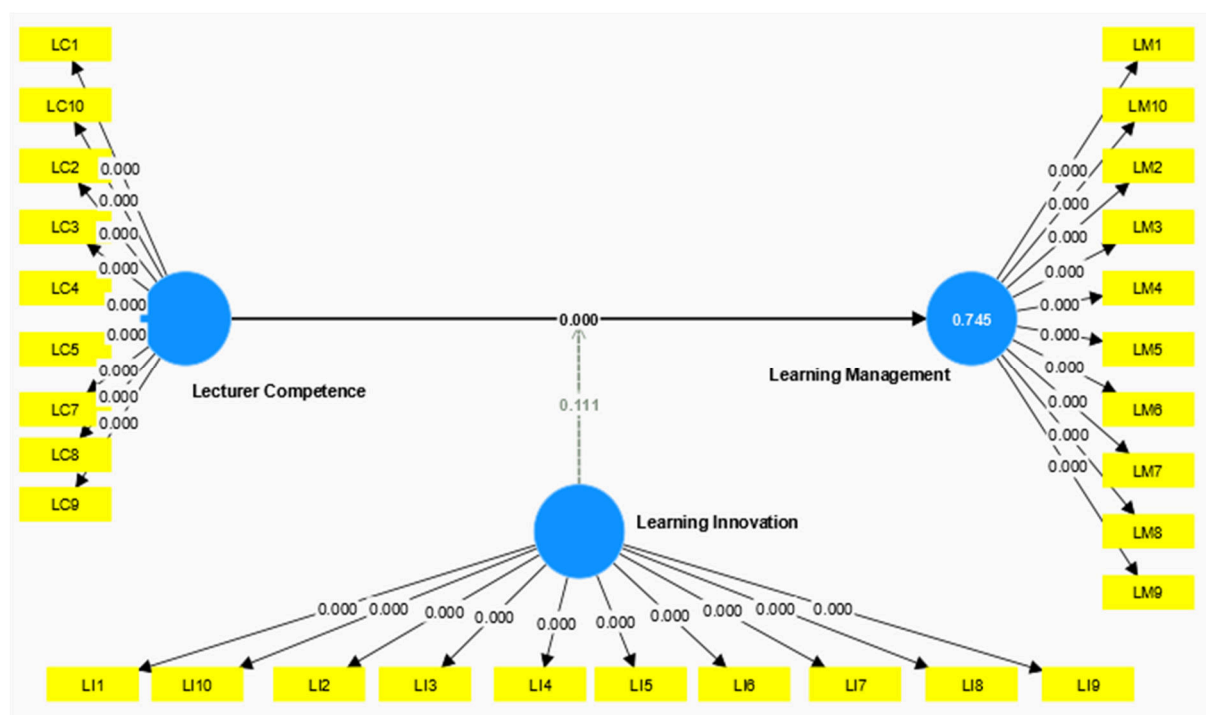


Figure 1 Path Model Results (p-value)

Measurement Model

Convergent Validity

The convergent validity value is indicated by the loading factor for each construct indicator. The loading factor value must be more than 0.5 for the research to be considered confirmatory. Based on the picture above, the variables of lecturer pedagogical competence, learning innovation and learning management have a loading factor score of more than 0.5 in all indicators. It can be said that all research variables have valid instruments.

Discriminant validity

Based on the Fornell-Lacker criteria, discriminate validity can be recognized if the square root value of the AVE is greater than the correlation value of the latent variable compared to all other latent variables. compared to all other latent variables

Tabele 2 Discriminant Validity

Variable	Learning Innovation	Learning Management	Lecturer Pedagogical Competence
Learning Innovation			
Learning Management	0.913		
Lecturer Pedagogical Competence	0.914	0.895	
Learning Innovation x Lecturer Pedagogical Competence	0.280	0.181	0.288

To test the reliability of the construct, it is proven reliable if the composite reliability output value is higher than the value of 0.7 (composite reliability > 0.7). According to Hair et al. (2017), that composite reliability should exceed 0.7 (CR > 0.7), so that a construct can be declared consistent

Table 3 Reliability

Variable	Cronbach's Alpha	Composite Reliability	Description
Learning Innovation	0.863	0.891	Reliable
Learning Management	0.870	0.895	Reliable
Lecturer Pedagogical Competence	0.867	0.895	Reliable

Inner Model

Inner model is a model that connects one latent variable with another latent variable. This test is carried out to show the strength of the relationship between exogenous (independent) and endogenous (dependent) constructs that have been hypothesized previously. The inner model is tested by checking the R-Square, Q-Square, path coefficients, and t-statistic values. t-statistic.

R-Square

R-Square has a value ranging from 0 - 1 with the information that if the value approaches the value of 1, the greater the contribution of exogenous variables to endogenous variables. Based on the statement of Hair, et al (2017), there are three categories of R-

Square values, namely the strong category if it has a value of 0.75, the moderate category if it has a value of 0.50 and the weak category if it is worth 0.25. The results of the value of R-Square research in the following table

Table 4 R-Square

Variable	R - Square	R – Square Adjusted	Category
Learning Management	0.745	0.735	Moderate

Path Coefficients

After analyzing the R-Square value, the next thing to do is to checking the direction of the variable relationship (positive direction and negative direction) with pay attention to the value of the path coefficients. The path coefficient value is in the range -1 to 1.

Table 6 Path Coefficients

Variable	Learning Innovation	Learning Management
Learning Innovation		0.514
Learning Management		
Lecturer Pedagogical Competence		0.420
Learning Innovation x Lecturer Pedagogical Competence		0.106

The table above shows the direct effect of learning innovation on learning management of 0.514 with a positive effect. the direct effect of lecturer pedagogical competence on learning management is 0.420 with a positive effect and the indirect positive effect of learning innovation on learning management through learning innovation is 0.106 with a positive effect.

Testing Hypothesis

Hypothesis testing is carried out to determine the significance of the effect of the relationship between exogenous (independent) and endogenous (dependent) variables. The model obtained from the bootstrapping test results. to test the significance of a hypothesis, it can be seen in the T-values on the variable, namely if the value is higher than the t-table (T-values > t-table), with t-table = 1.96. Can also use p-value. If the p-value <0.05, it can be said that the hypothesis is significantly different

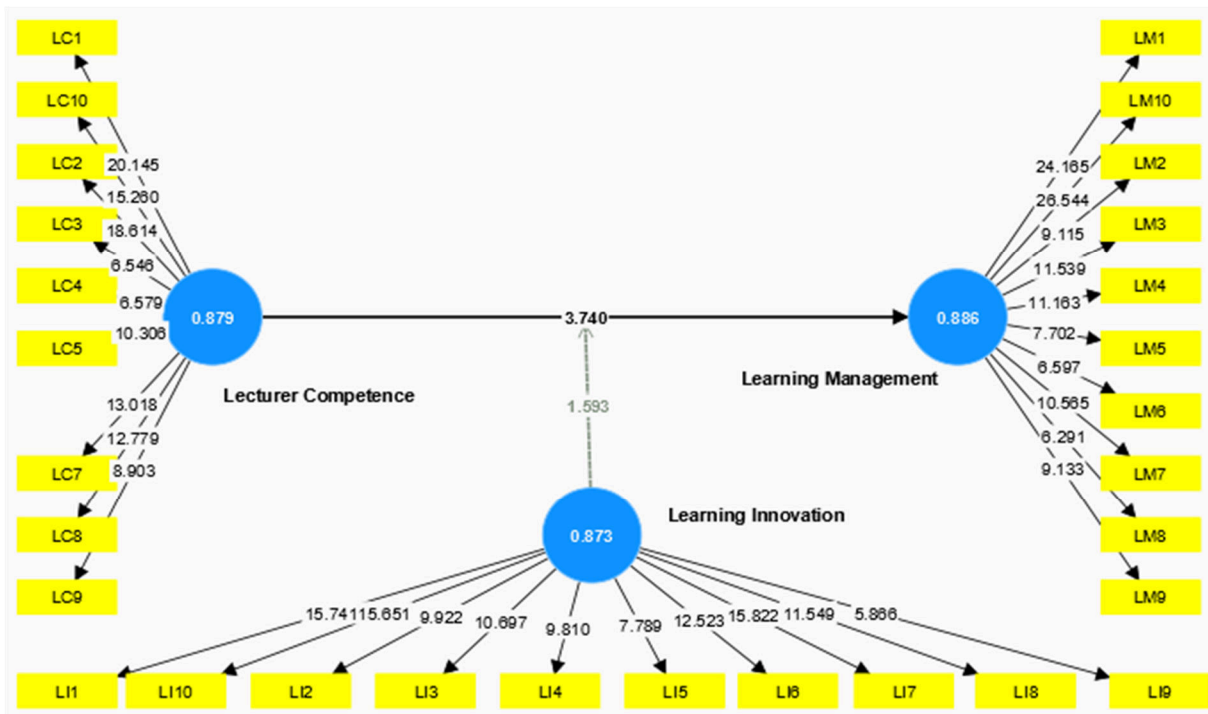


Figure 2 Path Model Results (T-value)

Hypothesis 1 Testing

The first hypothesis proposed is that lecturer pedagogical competence has a direct and significant positive effect on learning management. From the results of testing the inner model, the T-values of 3.740 are higher than the t-table of 1.96 and the p-value of 0.000 which is lower than 0.05. Thus the first hypothesis of this study can be accepted.

Hypothesis 2 Testing

The second hypothesis proposed is that lecturer pedagogical competence has a positive indirect and significant effect on learning management through learning innovation. From the results of testing the inner model, the T-values of 1.593 are lower than the t-table of 1.96 and the p-value of 0.111 which is greater than 0.05. Thus the second hypothesis of this study can be rejected.

Discussion

Effect of lecturer pedagogical competence on learning management

Based on the results of the study, lecturer pedagogical competence has a direct and significant positive effect on learning management. This can be seen in the results of the tcount value of 3.740 greater than 1.96 (tcount 3.740 > ttable worth 1.96), p-value of 0.000 smaller than 0.05 with a confidence level of 95%, which means that the relationship between these two variables is positive, namely lecturer pedagogical competence will help learning management to be better at managing student learning. When viewed from the respondents' answers to statements related to the indicators on the lecturer pedagogical competence variable, the average respondent's response has shown high results in preparation, planning, organization, the learning process, supervision and evaluation and tracking. For the mean value of indicators with a very high category, namely the learning process indicator in the LC2 statement with a mean of 4.035, the statement reads "I teach students according to the plans that have been made", so that with good planning in learning, the following steps will be easy to implement which is

expected to improve learning management. Empirical evidence shows that the work behavior of lecturers in the classroom is good so that the learning process is also good. Research conducted by Mardiani (2015) states that lecturers are people who play a very important role in organizing the learning process in the classroom, expecting that students can understand their social world, develop self-confidence and always improve their quality. An optimal learning condition can be achieved if the lecturer is able to organize students and learning facilities and control them in a pleasant atmosphere to achieve learning goals. The results of the calculation with the Spearman correlation can be a correlation coefficient value of 0.505 with a P-value or Sig of 0.001. Indicates that there is an influence of lecturer pedagogical competence on student classroom management.

The effect of lecturer pedagogical competence on learning management through learning innovation

Based on the results of the study, lecturer pedagogical competence has an indirect and significant positive effect on learning management through learning innovation. This can be seen in the results of the tcount value of 1.593 less than 1.96 ($t_{count} 1.593 < t_{table} \text{ worth } 1.96$), p-value of 0.111 greater than 0.05 with a confidence level of 95%, which means that the relationship between these two variables is indirectly positive, namely lecturer pedagogical competence will help learning management through learning innovation to be better at managing student learning but not effective. In other words, the improvement of learning management cannot be done jointly between lecturer pedagogical competence and learning innovation.

Conclusion

Based on the results of data testing and discussion that has been presented in the previous chapter regarding the effect of lecturer pedagogical competence on learning management through learning innovation, it can be concluded that lecturer pedagogical competence has a positive and significant effect on learning management. This shows that the lecturer pedagogical competence of an educator includes indicators: (1) understanding the educational foundation, (2) understanding of students, (3) curriculum/syllabus development, (4) learning design, (5) educational and dialogical learning, (6) utilization of learning technology, (7) evaluation of learning and learning outcomes, (8) developing students to develop their potential has an influence on improving learning management. Improved learning management is based on the assumption that if the organization makes some adjustments, especially regarding the learning process, it will make it easier for lecturers to carry out learning activities in the classroom, because the pedagogical ability of lecturers determines the sustainability of the learning process.

Learning innovation as a mediator variable has an indirect and significant positive effect on learning management. This shows that to improve learning management cannot be done by lecturer pedagogical competence and learning innovation together.

References

- Arief, Armai dan Adlan Fauzi Lubis. (2020). Inovasi Pendidikan Islam; Teori, Konsep dan Implementasinya. Yogyakarta: Deepublish
- Arief, Armai. (2020). Supervisi dan Penjaminan Mutu. Jakarta: Dhifa

- Avidov-Ungar, O., & Forkosh-Baruch, A. (2018). "Professional Identity of Teacher Educators in The Digital Era in Light of Demands of Pedagogical Innovation". *Teaching and Teacher Education*, 73, 183-191
- Buchari, Agustini. (2018). "Peran Guru Dalam Pengelolaan Pembelajaran". *Jurnal Ilmiah Iqra' Fakultas Tarbiyah dan Ilmu Keguruan [FTIK] IAIN Manado Volume 12 Nomor 2* 2018
- Cavus, Nadire, and Muhammed Sharif Alhih. "Learning Management Systems Use in Science Education." *Procedia-Social and Behavioral Sciences* 143 (2014): 517-520
- Conde, Miguel A., et al. "Perceived Openness of Learning Management Systems by Students and Teachers in Education and Technology Courses." *Computers in Human Behavior* 31 (2014): 517-526
- Csikszentmihalyi, M. (2012). *The creative personality*, Journal of psychology of academic research library,
- Hair, J. F., Hult, G. T. M., Ringle, C. M., and Sarstedt, M. (2017). *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)*, 2nd Ed., Thousand Oaks: Sage
- Hutapea, Parulian dan Thoha, Nurianna. *Kompetensi Plus*. Jakarta: Gramedia. 2008
- Klaeijnsen, Andrea, Marjan Vermeulen & Rob Martens. (2017). "Teachers' Innovative Behaviour: The Importance of Basic Psychological Need Satisfaction, Intrinsic Motivation, and Occupational Self-Efficacy". *Scandinavian Journal of Educational Research*
- Mardiani, N. (2015). Pengaruh kompetensi pedagogik dosen terhadap pengelolaan kelas. *Jurnal Kesehatan*, 6(2), 733-739.
- Mulyasa, E. 2014. *Manajemen dan Kepemimpinan Kepala Sekolah*. Jakarta: Bumi Aksara
- Mulyasa, E. *Kurikulum Berbasis Kompetensi: Konsep, Karakteristik, dan Implementasi*. Bandung: PT Remaja Rosdakarya. 2003
- Naway, Fory A. 2016. *Strategi Pengelolaan Pembelajaran*. Gorontalo: Ideas Publishing
- Palan, R. *Competency Management*. Jakarta: PPM. 2003.
- Pishghadam, R., Nejad, T. G., & Shayesteh, S. (2012). Creativity and its relationship with teacher success. *BELT-Brazilian English Language Teaching Journal*, 3(2).
- Rogers, Everett M. 2003. *Diffusion of Innovations*. New York: Free Press