

DEVELOPMENT OF MANAGEMENT MODEL: VALIDITY OF MANAGEMENT MODEL TO INCREASE TEACHER COMPETENCE IN WRITING SCIENTIFIC PAPERS

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Abstract

Teacher professional competence is the ability possessed by a teacher to apply teaching methods, strategies and techniques, manage effective classes, to generate motivation, to measure learning outcomes, to perform accuracy of compiling and developing teaching materials effectively. This research aims at determining validity of management model to improve teacher competency. The research was development research. Data were collected by using the Delfi technique, involving 8 experts and total 25 elementary school teachers in Sleman Regency involved in empirical validity test. Test of validity of instrument employed in this research was by content validity. Research results indicate that the management model to improve the teacher competency has high validity. Results of calculating the validity of the expert judgment on the management model manual assessment instrument consisting of 28 statement items tested on 8 experts obtained the lowest score 3.63 and the highest score 4.00. The mean value for total validity is 3.89. These values are in the range of 3.20 to 4.00 with very valid conclusions. Based on the results of the validity test, it can be concluded that the management model guidebook is stated valid in terms of the physical appearance of the book, the substance of content elaborations, systematics, language, writing systematics, and general assessment. Overall, it can be concluded that all statement items are stated valid.

Keywords: Validity, Management Model, Teacher Competence.

INTRODUCTION

One of the most important components in the implementation of an efficient national, provincial, regional, and institutional education process in Indonesia is teacher professional competency. Teacher professional competence is also an important factor in implementing effective learning process in the classroom, creating a meaningful and enjoyable learning environment, and achieving measurable student learning outcomes in accordance with national education standards and institutional minimum standard criteria for completeness. Paying attention to the importance of teacher professional competence in administering national education, [1] state that all components of education, such as curriculum, facilities and infrastructure, costs, and time, will not function effectively if the true essence is in the process of administering education, as teacher professional competence does not meet the requirements.

A teacher's professional competence includes, in addition to the description of the teacher's professional competence stated above, the capacity to write academic articles. The reasoning above can be summed up as follows: professional competency of teachers is the ability of teachers to carry out their primary duties as professional teaching staff, one of which is to conduct research and write academic publications. According to [2], writing academic articles for teachers is part of the process of developing professional competence. As a requirement for advancement to functional roles, teachers are obliged to write academic articles in the form of papers, best practices, academic articles, and academic journals. The purpose of conducting

research in the classroom and creating academic articles is not only to improve learning practices in the classroom, but also as a requirement for the teacher's professional advancement. Increasing teachers' professional competency in writing academic articles is primarily intended to develop career path and functional positions, as well as teachers' professionalism in carrying out their duties [3].

Management function must consistently develop instructors' professional competency. This is significant because the nature of instructors in education plays a very critical role in enhancing education quality, which is the major key to school success, meeting school targets, and creating quality graduates [4]. Increasing teachers' professional ability in writing academic articles must be pursued through activities structured in accordance with sound management practices. Management functions include planning, organizing, performing, coordinating, and controlling [5]. The management functions described above can be used to manage seven organizational resources: people, tools, money, time, commodities, systems, and technology [6].

According to [7], efforts to improve the quality of education and the competence of school principals and other stakeholders require the formulation of development plans in the form of school strategic plans. In this instance, the principle (top management) plays the most strategic role in mobilizing all available resources. The school principal's competence to lead the professional competency education unit of the teachers in charge of the school he oversees. In this scenario, capability encompasses the principal's understanding as well as the principal's leadership style in managing an educational unit.

Research findings of [8] show that the principal's expertise effects a variety of characteristics, including teachers' professional competence in carrying out their primary responsibilities. According to additional research by [9], school principals who optimize their functions, such as consistently supervising teachers in the classroom while they are teaching, can improve teacher professional competence. The school head also has a visionary responsibility to guarantee that graduates are prepared to handle future developments [10]. In addition to the principal's insight and knowledge, the principal's leadership style influences the advancement of educational quality and teacher professional competence. The principal's leadership style influences teacher motivation and performance, which has an effect on student learning outcomes as a measure of educational quality [11].

Management issues contribute to the difficulty of enhancing teacher professional competence in academic writing. Since 2009, the Continuous Competency Improvement Program has served as the management model for enhancing teacher professional competence in academic writing. This program aims to improve teacher competency in compliance with the mandate of Law No. 14 of 2005 on teachers and lecturers. It was explained that increasing teacher competency must be done in an equitable, fair, long-term, democratic, and non-discriminatory manner. However, the above-mentioned law's mandate has not been met with optilam. The findings of [12] support this. Teachers have difficulty participating in training because they have not been supported by technological means both physically and non-physically because there is no preparation for mastering technology to attend training, according to the Continuing Professional Development Program.

The findings of the preceding study are consistent with the findings of [13], who found that the Continuing Professional Development Program was not adequately

implemented. According to the findings of this study, there is no special funding set out for the implementation of Continuing Professional Development, teachers' time is sometimes overlapped with other activities, and the internet network they use to carry out Continuing Professional Development has limits. The aforementioned impediments are the primary issues in carrying out teacher competency development. Furthermore, the problem of writing competency is based on the findings of [2], who discovered: First, the teacher's lack of expertise and understanding of academic work. At the very least. Second, there is a lack of writing motivation, as well as a lack of time to create academic papers. Most teachers consider writing to be a tough and boring task [14]. Third, there is a scarcity of reading material to use as a reference source when writing academic articles.

According to preliminary research completed in Sleman Regency at the Elementary School (SD) education level, there were 511 SD schools with 5.507 teaching personnels and 685 educational staffs. According to the findings of the documentation study, 33.1% of PAUD instructors do not have a bachelor's degree, 8.0% of elementary school teachers, 6.3% of junior high school teachers, 3.5% of high school teachers, 4.5% of vocational teachers, and 4.0% of special education teachers. Meanwhile, 35.1% of PAUD teachers, 51.5% of SD teachers, 43.1% of SMP teachers, 40.3% of SMA teachers, 48.0% of SMK teachers, and 42.9% of SLB teachers met the criterion for uncertified teachers. With 43.1% uncertified elementary school teachers, the degree of professional competence of teachers in Sleman District is not yet high.

Based on the findings of an online survey administered by researchers using Google form to 94 teachers. According to the survey results, 90.09% of teachers had received training in writing academic articles and conducting classroom action research (PTK) but did not do so on a regular basis. Schools permitted and even facilitated teachers' attendance at training, according to 93.06% of respondents. Furthermore, it was discovered that 87.7% of teachers comprehended PTK preparation, CAR methodology, and CAR data processing. Based on the theoretical construction and explanation of the actual challenges presented above; dialectical and academic efforts are required to establish a legitimate management model guidebook to improve teacher professional competency in academic writing.

METHOD

The study's design seeks to create a management model for developing teachers' professional competency in academic writing in Sleman Regency. The Borg and Gall Research and Development (R&D) model was employed for the research. The expert validation subjects comprised of eight experts that were knowledgeable about the model that would be created in this investigation. The subjects for the empirical validity test in this study were 25 teachers from Sleman Regency who served at the elementary school level. The empirical validity assessment is divided into two steps. The first step is to test and retest. The competency development management model handbook was tested twice on different days on 25 teachers. The empirical validity will be assessed in the second stage after collecting data from two studies. The data were analyzed by using content validity [15] used to calculate the content validity coefficient as the foundation for the findings of numerous experts' judgments of an item to determine how well the item represents the construct being measured. Data analysis methodologies empirically validate using statistical computations, and the average result is certified by [16]'s validity criterion.

RESULTS

A. Product Specification

The authors developed a management model for enhancing teacher professional competency in academic writing in the form of a guidebook based on data collected by seeing and researching many publications in the form of relevant journal articles and textbooks.

1. Name: Management model for improving teacher professional competence in academic writing.
2. Content: Guidelines for implementing the management model for increasing teacher professional competence in academic papers produced in this study using a management system consisting of Input, Process, Output (IPO) and in the process of using management functions namely, planning, organizing, directing, and control consisting of the physical appearance of the book, the substance of the elaboration of the contents, systematics, language, systematic writing, and general assessment.
3. Usability: The model produced in research is useful as a pattern for managing the improvement of teachers' professional competence in academic writing
4. Toolkit: The device used is a guidebook for the use of management models for increasing teacher professional competence in academic writing
5. Characteristics:
 - a. The management model for increasing teacher professional competence in academic writing produced in this study uses the Input, Process, and Output (IPO) management system.
 - b. In the process contained in the management model for increasing teacher professional competence in academic writing produced in this study, four management functions are implemented, namely planning, organizing, directing, and controlling.
 - c. The management model for increasing teacher professional competence in academic writing produced in this study is original, namely the work of the researchers themselves.
 - d. The management model for increasing the professional competence of teachers in current academic papers produced in this study is empirically tested.
 - e. The management model for increasing teacher professional competence in academic writing produced in this study is an effective model to run.

B. Content Validity

Analysis utilizing the Average Total Validity (RTV) methodology yields the following results: Item (1) the physical appearance of the book from the cover, systematics, writing format, and layout are in accordance with the manual with a value of V (3.88); Item (2) the substance of the elaboration of the contents of rationality, accuracy, conceptual, pattern, impact, presentation, and accuracy of management functions is in accordance with the average value of V (3.85); Item (3), with an average value of V (3.75), the systematics of the organization of the chapters, sub-chapters, and chapter contents already apply rational flow and logical thinking. Item (4): The language

utilized in terms of standards, formulations, and vocabulary selection is straightforward and corresponds to an average value of V (3.91); Item (5): The writing systematics of letter shape, size, color, grammar, punctuation, and writing styles are consistent with the average value of V (3.96); The overall general judgment of point (6) is consistent with the value of V (4). Table 1 shows the results of the validity analysis of the management model handbook in increasing the competence of the teaching profession in producing academic papers.

Table 1: Validity Analysis of the Management Model

Validator	Item 1	Item 2																Item 3		Item 4				Item 5			Item 6		
	1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	1	2	1	2	3	4	1	2	3	1	
1	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
2	3	3	4	4	4	3	3	4	4	4	3	4	4	3	4	4	3	4	3	3	4	4	4	3	4	4	3	4	4
3	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
5	4	4	3	4	4	4	3	4	4	3	3	4	4	3	4	3	4	4	4	4	4	4	3	4	4	4	4	4	4
6	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
7	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	3	3	3	4	4	4	3	4	4	4	4	4
8	4	4	3	4	4	3	4	4	4	4	4	4	3	4	4	3	3	4	4	4	4	4	4	4	4	4	4	4	4
Vi	3.88	3.75	3.75	4	4	3.75	3.75	4	4	3.875	3.75	4	3.875	3.75	4	3.75	3.625	3.875	3.75	3.75	4	4	3.875	3.75	4	4	3.875	4	
R	3.88	3.85																3.75		3.91				3.96			4		

The findings of calculating the validity of expert judgment on the management model manual assessment instrument, which consisted of 28 statement items assessed on 8 experts, yielded a score of 3.63 and a score of 4.00. Total validity has a mean value of 3.89. These numbers range from 3.20 to 4.00, with very valid implications.

DISCUSSION

Based on the validity test findings, it is possible to conclude that the management model manual is valid in terms of the physical appearance of the book, the substance of the elaboration of the contents, systematics, language, writing systematics, and general evaluation. Overall, it is possible to conclude that all statement elements are valid. According to [17], teacher competence primarily impacts teachers' performance in carrying out their tasks appropriately in any educational institution. Competence must always be acquired through education, occupation, training, or teaching experience. The greater the development of teacher competency, the higher the quality of the product. According to [18], teacher competency includes pedagogic competence, personal competence, social competence, and professional competence. Meanwhile, according to [19], teachers are part of an institutional system that requires supervision of five teacher skills. Personality, professional, pedagogical, social, and leadership are the five competences. In establishing teacher capabilities, these competencies must become strengths rather than weaknesses, and these competencies must become opportunities rather than impediments for teachers when confronted with external issues.

The 21st century teacher competency development model is a model that aids teachers in improving professional competence in order to meet the millennial age, which is becoming more technologically savvy by the day [20]. One of the challenges in increasing teacher professionalism thus far has been the issue of authoring and publishing academic papers in peer-reviewed journals [21]. According to [22], the teacher's concerns are related to the ability of writing academic papers in that teachers do not understand how to make academic work according to standards and instructors

do not know how to publish academic work. According to [23], the reasons impeding the implementation of human resource management were a lack of welfare for teachers and temporary employees, a lack of career clarity, and a lack of quality assurance.

As revealed by [24], developing teacher professional competence through writing academic papers can be accomplished by increasing teachers' willingness to write academic papers, increasing teachers' ability to write academic papers, and increasing teachers' ability to search for references in various sources. Furthermore, according to [18], efforts to promote teacher competency can be carried out by optimizing the function of the school principle as: educator, manager, administrator, supervisor, leader, work climate maker, and entrepreneur. According to the findings of [25] research, policies, planning, implementation, supporting and inhibiting variables, as well as the influence of teacher professional competency development, can progress in accordance with objectives and are planned by incorporating various stakeholders and forming teams. The government's strategy for improving teacher professional competence, as well as educator certification, and the policy of school principals by providing supervision and enabling teachers, all contribute to this. Planning for the development of teacher professional competence by mapping teachers' development requirements and designing programs to meet those needs. Implementation of professional development for teachers through training management, upgrading, workshops, and monitoring.

Management is a tool for building alignment of the concepts of competence, values, and teacher performance [19]. According to the findings of research [26], the construction of a training management model for developing teacher professional competence results in an increase in the average pretest score of 40.40 to 79.60. The average end value of training is at 87.60, and the average value of attitudes and skills is at 89.60. Furthermore, it is intended that after the training, teachers will perform better, assisting students, teachers, and schools in their pursuit of improved education. Meanwhile, the study's findings [27] reveal that management has an impact on teacher competency growth, as evidenced by an R² (R Square) value of 0.68. This demonstrates that 68% of teacher competency development management improves teacher performance.

According to the findings of [28] research, regression analysis revealed that teacher competence and teacher education chances in learning competency play an essential influence in adjusting teaching. Meanwhile, [29] discovered that teacher competence and commitment had a considerable favorable effect on professional teachers' performance. Teacher commitment mediates the relationship between teacher competency and professional performance. According to [30], universities and communities that support higher education institutions can participate in defining responsibilities for growing teacher professionalism to assist the improvement of teacher professional competence.

[31] investigated the model's validity in terms of developing teacher competency. The study discovered that the knowledge management system-based training approach had the potential to improve professional competence. The resulting model is written in syntax: a) introduction; b) demonstrations; c) discussion; d) implementation of training; and e) evaluation and training products, which consist of (1) training model books; (2) training manuals; (3) training material books; (4) user manual for user

administration and use; (5) implementation of knowledge management system. The validity analysis revealed that the training model was valid (0.85), the training model book was valid (0.89), the training manual was valid (0.89), the training material book was valid (0.86), the application instruction manual for valid administrators (0.89), and the use of valid user manual applications (0.89).

Other research from [32] shows that the dimensional structure proposed to increase teacher competence is theoretically very reliable which has four dimensions: 1) Didactic, curricular and methodological aspects; 2) Planning, organizing and managing digital technology resources and spaces; 3) Ethical, legal and security aspects; and 4) Personal and professional development. Furthermore, there was a substantial association between age and teacher self-evaluations of competency, with older pupils rating themselves as less competent than younger students. The findings of this study have the potential to provide teachers and educational institutions with a credible and reliable instrument for guiding their views and knowledge of teacher competency growth.

The Organization for Economic Cooperation and Development (OECD) policy from Italy identified the competency model as the main framework for understanding teacher professionalism and designing policies with teachers' Vocational Education and Training (VET) to improve teacher competence [33]. [34] conducted research on the establishment of teaching materials management models for boosting teachers' professional competency in Indonesia. Teachers can leverage the development of the teaching material management model to collect teaching materials, share knowledge, and discuss in order to increase their professional competence. The study's findings indicate that, depending on expert opinion, the concept is possible to implement. Individual evaluations, small group testing, and field tests reveal that 84.00% of the modules can be utilized appropriately by teachers both individually and in groups, and that they are very useful for learning activities.

According to some of the discussions that have been presented, the development of the management model based on the results of calculating the validity of the expert judgment on the management model manual assessment instrument consisting of 28 statement items tested on 8 experts obtained values in the range of 3.20 to 4.00, indicating that it is very valid for increasing teacher competence in writing academic papers.

CONCLUSION

The development of a management model consisting of (1) physical appearance of the book, (2) substance of the elaboration of the contents, (3) systematics, (4) language used, (5) systematics of writing, and (6) general assessment in increasing teacher competence to write academic papers is considered very valid based on the results of data processing and discussion. Thus, the model's development is acceptable and suited for application in increasing teacher competence in writing academic papers.

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