Application of Academic Supervision Model Using Website-Based Staff Meeting Techniques to Improve Teachers‘ Pedagogic Competence of SMK Negeri 1 Kutalimbaru

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Abstract. This research aims to enhance teachers' pedagogical abilities at SMK Negeri 1 Kutalimbaru by introducing an internet-accessible model for academic supervision during staff meetings. Employing the Plomp model through development research methodology, the study reveals two key findings. Firstly, teachers demonstrate a relatively low pedagogical competence in utilizing Pedagogical Content Knowledge Technology (TPACK), primarily due to a lack of conditioning. Secondly, a model feasibility test involving school principals and supervisors yields a highly favorable result of 91.6%, indicating that the website-based staff meeting technique is deemed very good and suitable for implementation. Despite some teachers acknowledging prior TPACK workshops, implementation hurdles persist without corresponding school policies. Consequently, this study emphasizes the necessity of integrating information technology, specifically digitalization systems, into the teaching and learning process. The academic supervision model proposed herein addresses teachers' needs, fostering TPACK recognition and application, ultimately improving instructional competence. The research concludes that implementing a programmatic staff meeting technical supervision model is recommended to systematically enhance teachers' professional competence in pedagogical skills..

Keywords: academic supervision, website, staff meeting and pedagogic competence

1 Introduction

One of the problems faced by the government in the education sector during Covid-19 is the implementation of the teaching and learning process where activities tend to be almost completely carried out online, of course for vocational technology teachers who prioritize capable students in the skills aspect, this becomes a problem in the teaching process, obstacles that may be felt by instructors. is that their inability to teach using IT is related to student

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characteristics that are not visible as in offline (face-to-face) learning, this condition indicates the need for coaching action on teacher pedagogical competence, namely the teachers‘ ability in all aspects of life, including moral, emotional and intellectual , the appropriate action to use is through educational supervision, based on findings in the field after school principal researchers and supervisors conducted discussions in the field and found that only 14 people (19%), teachers who had prepared lesson plans and the results of pedagogical competency tests were 25 people or 35.2% were in the insufficient category, there are at least 16 teachers who have competence or 22.5%, in the sufficient category there are 30 people or 42.2%, the condition of supervision (coaching) in the field.

Teachers‘ pedagogy is very difficult to carry out where the number of supervisors is still lacking, then not all school principals are able to master pedagogical competencies [1], after discussions with the principal and supervisors they are asked to carry out supervision, respond to conditions and limitations in carrying out training (supervision) it is necessary. An appropriate supervision model was implemented, namely the application of a website-based staff meeting technical academic supervision model to improve the pedagogical skills of teachers at SMK Negeri 1 Kutalimbaru.

The essence of supervision according to [2] contains two words, "super" means "above", and vision means watch, see, or point according to [3], the process of providing assistance to teachers in the field of education to improve teachers' abilities in the learning process, [4] found that directors of educational institutions can supervise activities and can improve the performance of class teachers. [5] found that Competence benefits from the implementation of teacher pedagogical academic supervision, further [6] found that supervision using workshop techniques can improve teachers' abilities in developing lesson plans. [7]found that supervision is pedagogical assistance and guidance for teachers in implementing instruction. [8] found that the application of the clinical supervision model with a collaborative approach could improve the ability to make lesson plans for senior high school teachers. [9] stated that developing website-based collegial supervision is one of the best ways to supervise.

Furthermore, [10] found that at primary school, the teacher's ability in learning. [11] found that there was an influence of supervision on teacher performance. [12] found that the application of the academic supervision model could increasing teacher competency in making lesson plans secondary schools. Then, [13] confirmed that through research the development of a website-based collegial supervision model can improve the pedagogical competency of teachers. Next, [14] stated that pedagogical competence is related to the nature of students seen from various perspectives, the ability of teachers to master learning theories, and the ability of teachers to assess their own learning activities. According to Minister of National Education Decree 045/U/202 Teachers' ability to master pedagogy, master motivation theory, master making lesson plans, know learning evaluation knowledge, and know the community environment.

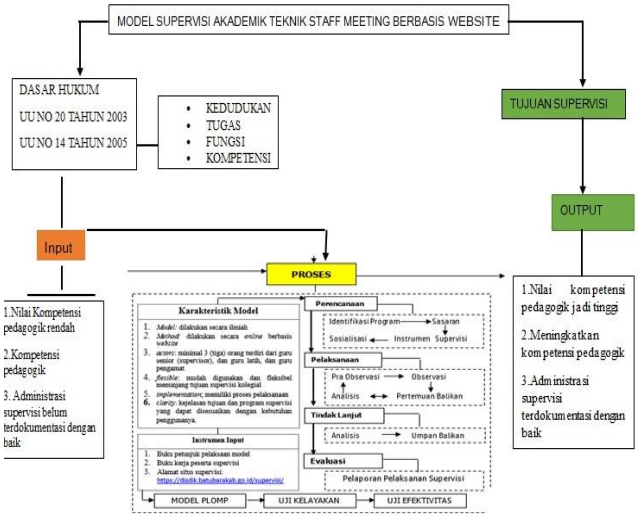

Fig. 1 Research roadmap for academic supervision of website-based staff meeting techniques

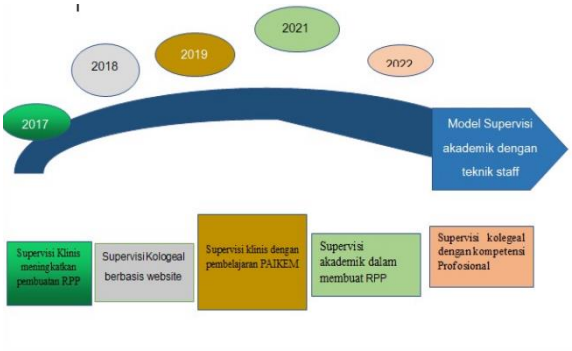

Fig. 2 Research roadmap

Research proves the role of school principals as principals. Further, [15] study found that principal supervision positively influenced teacher performance. However, [16] study found that the principal's exclusive supervision contributed 1.8% of teacher performance. Based on research conducted by [17], coordination is needed for supervision of school leaders. However, principal leaders in schools often do not work together and approach tasks from multiple perspectives. As a result, supervision is ineffective and makes it difficult for teachers to set appropriate standards to improve the quality of learning.

Thus, principal supervision is not enough to improve teacher quality. On the other hand, schools continue to use individual supervision, namely watching and observing teachers teaching, which includes preparation, implementation, and assessment or evaluation of activities.

It is paradoxical that supervision is considered more of a daily ritual activity to fulfill formal aspects and predetermined plans. In addition, despite strict procedures, supervision still scares some teachers. This occurs even though supervision must conform to standards that have been established over many years.

If supervision is carried out in a relaxed and enjoyable way, it will definitely make the teacher feel comfortable being the object of supervision. Teacher comfort during No matter how supervision is carried out, it is important that if the results do not improve teacher quality, the supervision is considered less successful.

Data collected from principals and principals shows that, despite the fact that academic supervision is still carried out in writing and face-to-face, teachers who are disorganized will not be ready to be supervised. The ability of teachers and poor educational services for students will be affected if these findings are left unchecked. The result is that student results do not meet the expected goals.

So far, supervision has used a classic approach, where a school principal visits educational facility and speaks directly with the teachers they train to discuss problems related to the learning process. One of the most common problems is what if the principal or teacher cannot complete their duties on the specified date because they are unable to attend.

Is supervision then postponed or cancelled? How long will we survive with this culture of uncertain routines? If supervision is carried out classically, the answers to the questions above will definitely not be available. On the contrary, supervision must be carried out with modern, developing technology. This confirms again that a school director ultimately cannot resolve all problems that arise during supervision. To ensure supervision activities meet expectations and without causing inconvenience to school leaders or frightening those being supervised, IT or web-based educational supervision is very important.

2 Method

The model method created by Plomp (1997) is used in this research for development research (R&D). The Plomp model was chosen because it is suitable for use in development research that requires solving educational problems. The Plomp model has five stages in the development process (1) initial investigation step (2) development stage (3) implementation stage and (4) evaluation and test revision phase, and (5) the final stage is implementation [18]. This research was carried out at SMK Negeri 1 Kutalimbaru. The subjects in the research were all teachers (71 people, adaptive and normative productivity teachers).

Collecting research data to develop a model for academic supervision of Website-Based Staff Meeting Techniques in Improving the Pedagogical Competence of Teachers at SMK Negeri 1 Kutalimbaru was carried out through: (1) Expert/Expert Validation, (2) Interviews, (3) Observation sheets on the implementation of Academic Staff meeting supervision , (4) Test, and (5) Documentation.

The theoretical studies and thought framework discussed in the second chapter were used as a basis for creating research instruments. Next, several indicators are selected and combined to form the part of the instruction to be implemented.

In this research, several instrument grids serve as data sources, namely: (a) Teacher Pedagogical Competency, (b) Implementation of Supervision (old model), (c) Element assessment method for media experts, (d) Evaluation Component Instruments for Material Experts, and (e) Implementation of website-based Staffmeeting Academic Supervision.

Data analysis is used to evaluate the website-based Academic Staffmeeting supervision model. The research results are used to improve research product materials. This study analyzes using descriptive quantitative and qualitative methods. Descriptive quantitative analysis describes research findings using percentages and frequency distributions, then analyzes the data. Qualitative descriptive analysis organizes and groups data to provide a real picture. The following is the method used to analyze the results of this research as follows:

2.1 Normality test

Before the data is processed using the proposed research model, a normality test is carried out. The data normality test is carried out to determine the data distribution for one variable to be studied. Shapiro-Wilk test and used as a normality test. According to [19], the following are the basis for decision making based on probability:

(1) The population is normally distributed if the probability value is more than 0.05.

(2) The abnormal population is considered if the probability value is less than 0.05.

2.2 Homogeneity Test

The homogeneity test is used to determine whether the variance of a particular population is the same or not. The significance level $\alpha = 0.05$ is used. According to [19], the interpretation of the Levene test is as follows:

(1). Variations in two or more population groups of data may not be the same if the calculated value is less than 0.05.

(2). The variations of two or more data populations must be the same if the calculated value is more than 0.05. This shows that this is true.

2.3 T-test

In this study, the paired t test was used to determine whether there was a significant mean difference between two paired samples. Two samples that have the same subjects but receive two different treatments are known as paired samples.

2.4 Normalized N-Gain

Normalized Gain or N-Gain score is used to find out how effective a technique or treatment is in One Group pretest posttest design research. The following is the formula used by [20] to calculate normality gain and the categorization of N-Gain score results refers to Table 1.

Table 1. Category interpretation of N-gain effectiveness

Percentage (%)	Interpretation
> 75	Effective
56 – 75	Effective enough
40 – 55	Less effective
< 40	Ineffective

Testing the feasibility of an instrument is carried out by asking for opinions and recommendations from experts, a process known as expert decision. So, the suitability of the material and media content is the right type of suitability. The suitability of the test instrument to the aims and objectives of the research are two aspects that are evaluated. The first step is to show the research instrument to three predetermined instrument expert lecturers. Then, instrument expert lecturers gave their opinions about the research instruments that had been prepared. The next stage is to improve the instrument according to the advice of the instrument expert lecturer.

Table 2. Model feasibility/practical criteria

Percentage	Validation Criteria
81 – 100	Very worthy
61 - 80	Worthy
41 - 60	Moderate
21 - 40	Not feasible
< 20	Totally Not Worth It

For this research, the author will use a Single Group Pretest-Posttest Design. This means that this research only tested one class. Pre-test and post-test are ways to measure the success of research. As a result, there is no control or comparison group used for measurement. One of the design groups before and after the test is shown below.

Table 3. One group pretest-posttest design research design

Pretest	Treatment	Posttest
O1	X	O2
O3	X	O4

Description:

O1 = Markpretestteacher (trial I) before being given treatment

O3 = Markpretestteacher (trial II) before being given treatment

O2 = Markposttestteacher (trial I) after being given treatment

O4 = Markposttestteacher (trial II) after being given treatment

X = Website-Based Staffmeeting Academic Supervision

Pretest and posttest data were collected before being processed for processing. This was done using version 22 of the Statistical Product and Service Solutions (SPSS) program.

3 Result and Discussion

Based on preliminary research findings and interviews with school principals and supervisors, supervision has been carried out in order to ensure that the learning process is of high quality and teacher development and has been carried out through stage 1 of planning the supervision program, and implementing supervision and evaluation, but has not yet reached follow-up activities. This is due to several obstacles between other conditions and the 2019 Covid conditions so that for 2 years supervision activities tend not to be optimal [21]. Through this research, the results obtained are (1) that teachers' pedagogical competence in using Technological Pedagogical Content Knowledge (TPACK) as part of their pedagogical competence is relatively low, This happens because so far teachers have not been conditioned by the results, (2) Test the feasibility of the model with school principals and supervisors (2) With a result of 91.6 percent, it can be concluded that the academic supervision model uses website-based staff meeting techniques in State Vocational Schools. 1 Kutalimbaru is included in the very good category and is suitable for use. Applying information technology, especially with digitalization systems in the teaching and learning process.

This research supports research conducted by [22] which found that technical supervision of staff meetings was very important in improving the ability to make lesson plans for Indonesian language teachers Vocational High Schools. These findings support the findings of [23] who found that the development of a website-based academic supervision model is feasible and can be used for vocational school teachers.

4 Conclusion

Investigation of the development model for academic supervision of website-based staff meeting techniques through several steps, including: (1) Factual model of academic supervision based on research and interviews, (2) The model development or draft preparation stage is based on the results of the technical academic examination of staff meetings, (3) Expert Recognition, (4) Improvements to model 1 are based on expert review, (5) Some trials have been reduced, (6) Evaluate model projects created by school principals and supervisors (FGD), and (7) Improve products resulting from Focus Group Discussion activities.

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