

Online-Based Academic Supervision System in 3T Regions

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Abstract

The purpose of this research is to develop an Online-Based Academic Supervision System to facilitate the academic supervision process which is constrained in the 3T area (frontier, outermost and least developed regions). The development process uses the Borg and Gall development model. The academic supervision system was developed based on the need for the academic supervision process in the 3T area. The process begins with field research related to the academic supervision process in the 3T area, and the result is that the academic supervision process is constrained by distance, cost and access to the location. In addition, the number of school supervisors is still less than the number of schools that must be supervised. Based on the results of the preliminary research, a plan was made to create an academic supervision system that could provide solutions to the limitations of distance, cost, access and the number of school supervisors. The planning stage resulted in an online-based academic supervision system, thus making it easier for access to the academic support process. In addition, the online-based academic supervision system has additional menus to complement the academic supervision process such as academic supervision evaluations, teacher needs sheets and consultations to school supervisors and school principals.

Keywords— Academic supervision, 3T area, education quality

Introduction

Academic supervision is a major part of the educational process. Academic supervision becomes an evaluation tool for teachers in making improvements in the learning process in the classroom. Academic supervision is a process that aims to improve teaching by developing teachers (Altun&YenginSarkaya, 2020). Teachers are the main actors in creating quality education in schools. Quality education begins with quality teachers. The quality of the teacher greatly affects the quality of learning and directly affects the quality of education (Green et al., 2018). Research states that quality learning affects student achievement (Ambussaidi& Yang, 2019; Mhlauli, 2014; Sirait, 2016). The teacher must be able to understand what each student can do and what

they need to do next. Students need constructive feedback about things they are doing well and where further attention or improvement is needed.

Improving teacher quality is by increasing teacher competence, both on a national, regional and global scale (Ballesteros-Regana et al., 2019; Chiang & Trezise, 2021). Competence is an integrated set of individual characteristics, knowledge, skills and attitudes needed for effective performance in various teaching contexts (Julia et al., 2020; Sulistiyo et al., 2019). Teacher competence in Indonesia is regulated in the National Education Regulation (Permendiknas) No. 16/2007 concerning Academic Qualification Standards and Teacher Competencies, it states that there are 4 (four) competency standards for SD / MI (elementary school) class teachers, namely: (1) pedagogic

competence; (2) personality competence; (3) social competence; (4) professional competence. With these competencies, teachers are expected to improve their performance and become professional teachers.

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Academic supervision in Indonesia, especially in basic education, is carried out at least 2 times a year. The purpose of academic supervision is to evaluate the learning process that has been carried out by the teacher (Ali, 2013). Assessment of academic supervision includes the stages of observation, interviews, assessment of the learning process, assessment of learning documents and assessment of teacher competence in teaching (Karim & Ahmad, 2016; Saliba, 2014). Academic supervision is carried out in all schools in Indonesia, including in the 3T (frontier, outermost and least developed regions) areas. 3T area is an area in the territory of Indonesia which is at the outer boundary of the territory of Indonesia which directly borders with other countries. Based on research

(Sanoto&Kardoyo, 2020) in one of the areas included in the 3T area, namely Bengkayang Regency, West Borneo Province, obtained data that the academic supervision process in the 3 T area has not met the recommended minimum standards, the academic supervision process in the 3T area is constrained by Very wide coverage area with distance between schools and school supervisors that are far away, as a result it requires high time and money. There are even some teachers who are not supervised due to these limitations. Apart from this, the problem of supervision in the 3T area is the improper implementation of academic supervision. For example, there is no evaluation process from school supervisors to teachers who are supervised / assessed, which results in teachers not knowing weaknesses and measures that need to be improved. Feedback from school supervisors is still lacking and the supervision process that has been running is only administrative in nature with less attention to the main purpose and function of supervision, namely improving teacher quality.

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where further attention or improvement is needed.

The problems that occur in the 3T area continue to occur because the problems cannot be resolved because based on the results of observations, there are no other innovations that can be a solution to the limited distance and the supervision process that has not met the standards and objectives of academic supervision. Based on the above description, it is necessary to develop a supervision system that can facilitate a proper, efficient and effective supervision process to be applied in the 3T area. Based on management George Terry's theory known as POAC, which means Planning, Organizing, Actuating and Controlling. Education requires a management process, namely educational management. The role of education management in the academic supervision process in the 3 T area.

Method

Research Goal

The purpose of this research is to develop a design management model for academic supervision that can be applied in the 3T area

Sample and Data Collection

The research subjects used were elementary school supervisors and teachers in 6 sub-districts in Bengkayang Regency which were included in the 3T area. The selection of the research subjects used a purposive sampling technique. The criteria used in the selection of this subject are elementary school teachers in the outermost sub-districts located on the Indonesia-Malaysia border with the status of civil servants (PNS), a minimum education level of undergraduate (S1), and technology literate or have IT skills. which is good enough.

This research is a development research where qualitative and quantitative approaches are used so that the data to be collected is both qualitative and quantitative. The data collection techniques used were interviews, observation, documentation, and the use of a questionnaire.

The description of data collection and instruments used is described in Table 1

Table 1

Data collection techniques and instruments

Technique	Instrument	Description
Documentation	List of needed documents	Supervision implementation plans (schedule and list of supervisors), reports on the implementation of teacher supervision, policy documents and mechanisms for implementing academic supervision, teacher learning tools for photos of school conditions and 3T areas in Bengkayang
Interview	Interview guidelines	Interviews were conducted to obtain in-depth information and complete the results of documentation, observations, and questionnaires. The interviews conducted involved:

Technique	Instrument	Description
		<ul style="list-style-type: none"> ● teachers and supervisors to explore their experiences regarding academic supervision, perceived benefits, challenges and obstacles and expectations. ● Principals, staff of the education office to obtain information on what support has been provided by the school and the office in the implementation of academic supervision in Bengkayang. ● Experts in the field of education management, supervisors, and educational IT. It aims to explore opinions / views on the feasibility of the academic supervision management model being developed in terms of a conceptual framework.
Observation	Guidelines and observation sheets, observers (researchers)	Observations were made on a preliminary study to obtain an overview of the condition of the school and the 3T area and the process of implementing supervision was carried out.
Questionnaire	Teachers' and supervisors' questionnaire	<p>The questionnaire given to teachers and supervisors consists of:</p> <ul style="list-style-type: none"> ● Questionnaire 1 was given at the preliminary study stage to determine the description of the implementation of academic supervision and teacher expectations of future supervision. ● Questionnaire 2 is given after the application of the SIM-assisted academic supervision model (limited and wide-ranging trials) is applied to measure the effectiveness and suitability of the model to user needs.

Data Analysis

This research is a development research using the Borg and Gall method. Borg development research consists of ten steps consisting of 2 main objectives, namely (1) developing the product, and (2) testing the effectiveness of the product (Sukestiyarno, 2020). In this study, the researcher focused on the goal of developing academic supposition products to be applied in the 3T area. So that the stages taken in this study

are Research and information collecting, planning, and developing preliminary forms of product.

Result

Data collection

At this stage the researchers conducted initial research related to supervision activities that had been carried out in the 3 T area, namely in the Bengkayang Regency area, West Kalimantan

Province. Based on preliminary research, it shows that (1) the geographical location of Bengkayang Regency is so wide, namely 5,396.30 km², making the distribution and location between schools very far apart and the number of supervisors that is not proportional to the number of schools (21 supervisors, 301 schools spread across 17 Districts) so that it takes longer time and costs a lot to be able to supervise teachers in all these schools. (2) The pattern of communication between supervisors and teachers is very lacking and even if there is communication it is limited to school visits without any follow-up; (3) Various information related to the implementation of supervision is not well documented and even incomplete due to obstructed implementation; (4) The model of supervision that has been carried out by supervisors has not been effective and felt by all elementary school teachers in the district; (5) there is internet access service in every 3T area, namely the existence of VSAT.

Based on the results of the initial research, a system that can facilitate the academic supervision process is needed. Because the Bengkayang Regency area has good internet access by having VSAT in each of its sub-districts, this advantage can be utilized in helping the process of academic support. Supervision that can be carried out is not only based on direct visits to class but can be carried out with technology assistance (Keane et al., 2020; Merdah, 2015). The use of technology in the academic supervision process is also called

E Supervision or online-based academic supervision (Habibi et al., 2020). Online-based supervision has several benefits, such as (1) being able to carry out real-time monitoring, provide feedback and evaluation, and conduct direct assessments (Han, 2014).

Based on the weaknesses in the 3T area, namely limited access and also with a wide area coverage that is not balanced with the number of supervisors, the online support system can provide solutions and is appropriate to use. In addition, the internet access that already has in the 3T area can be useful and used as a medium for conducting online supervision.

Planning

The planning stage is the stage of designing a supervision model that suits the needs of the 3 T area. Based on preliminary research, it shows that the 3T area has obstacles in a very large area and limited access for school supervisors to carry out school visits. In addition, the academic supervision process that has been carried out in the 3T area, especially Bengkayang Regency, is still lacking, and there is no evaluation process from school supervisors or teachers of the supervision process that has been running. By looking at some of these aspects, a support program is compiled that can facilitate distance limitations for both supervisors and teachers by compiling an online-based academic supervision design. The following is a schematic diagram of the supervision process.

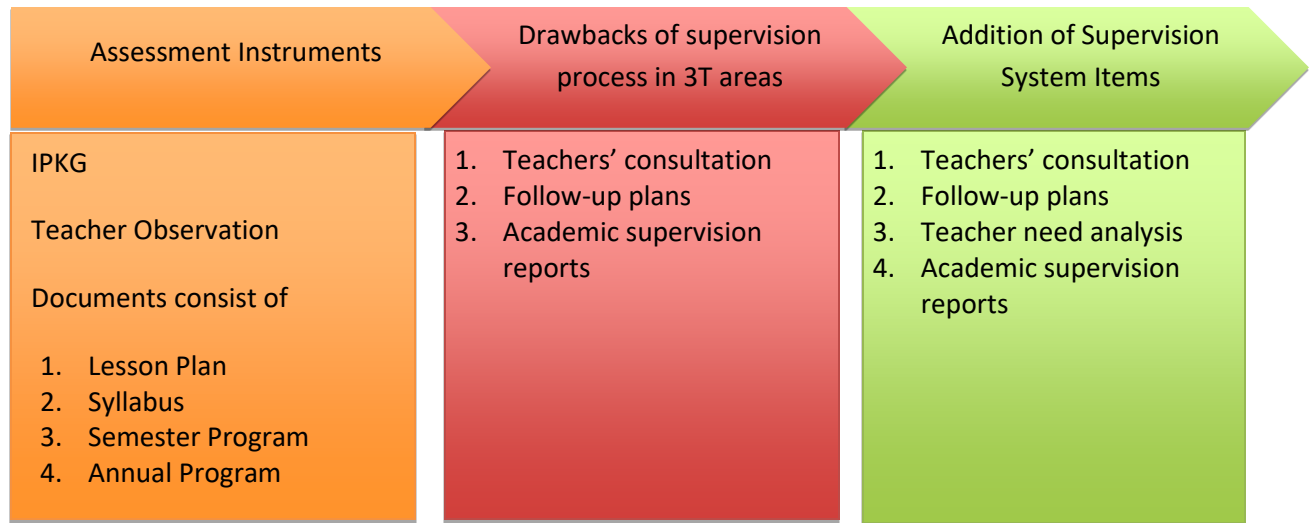


Figure 1. Flowchart Supervision Framework

Develop Preliminary Form of Product

The Develop Preliminary Form of Product stage is a product development stage by applying the design plan that was made in the previous stage. The development process begins with arranging the need for academic supervision in the 3T area and is manifested in the form of an academic supervision system. The system being developed is an academic supervision system that can be accessed online using the internet network. The development stage of an online-based academic supervision system is divided by admin users, school supervisor users, school principal users

and teacher users. Each user has their own function and purpose in the academic supervision process. The following is a description of each user in the academic supervision system.

The Academic Supervision System that was developed based on online is designed by utilizing web media, so that users can access directly from the web. The following is the appearance of the online-based academic supervision system web see Figure 2 and Figure 3.

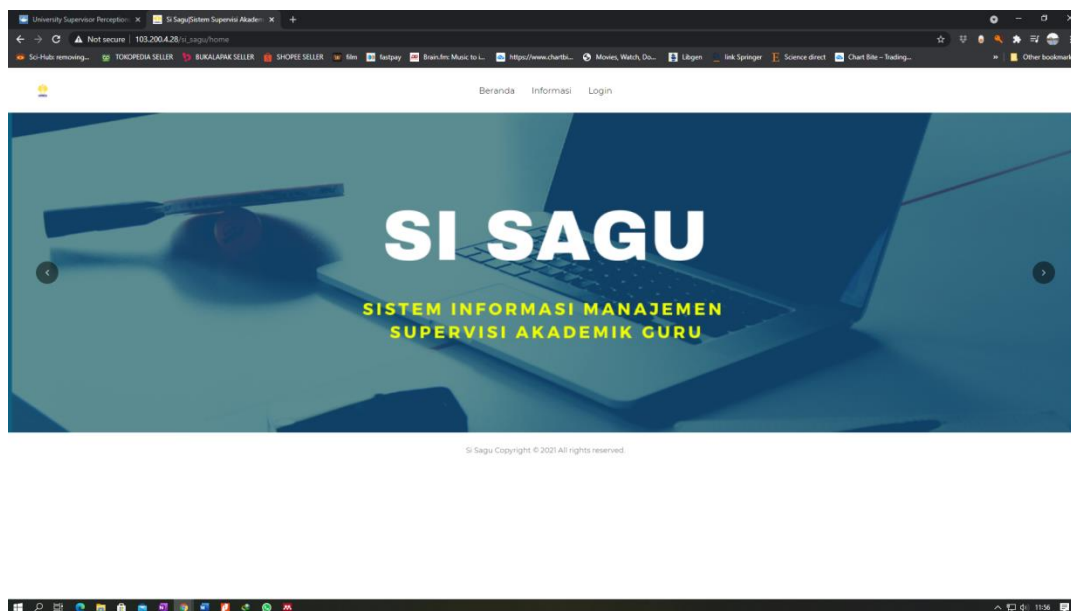


Figure 2. Main Display

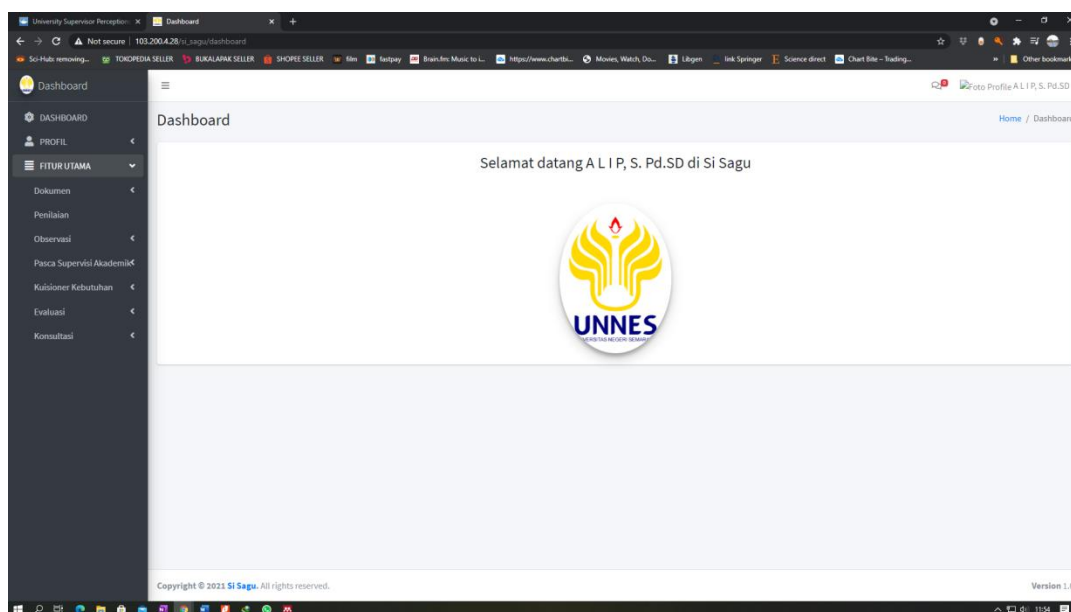


Figure 3. Dashboard Display

An online-based academic supervision system was developed to complement the deficiencies in the supervision that has been carried out in the 3T area. One of the shortcomings in the academic supervision process in the 3T area according to (Sanoto&Kardoyo, 2020) is the absence of evaluation and feedback provided by school supervisors to teachers. As a result, there is no significant improvement in the teaching

process of teachers in the classroom. Online-based Academic Supervision System provides improvements to these weaknesses in the supervision system, which is provided an evaluation menu after academic supervision activities. In addition, in the online-based academic support system, there is a consultation menu that can be carried out by teachers to school principals and school supervisors. The

academic supervision system was also given the addition of teacher needs analysis items which functioned to accommodate the needs of teachers in carrying out the learning process. The purpose of the teacher needs analysis is to obtain teacher data needs both in terms of training and also facilities that support the learning process.

Discussion

Development of an online-based academic supervision system using the Borg and Gall development model. The development process starts from Research and information collecting, which is initial research related to the academic supervision process that has been running in the 3T area. Based on the results of preliminary research, it shows that the 3T area in Bengkayang Regency has a wide area coverage with a limited number of school supervisors, so that the supervision process is hampered by long distances besides it requires a long time and large costs. As a result, the supervision process which is normally carried out at least 2 times a year can only be carried out once and there are also areas that do not even carry out the supervision process due to long distances constrained. Research (Sanoto&Kardoyo, 2020) states that the ongoing supervision process has several shortcomings, one of which is the absence of evaluation or feedback from school supervisors to teachers. Even though one of the goals of academic supervision is to evaluate both related agencies and teachers, with the aim of having a change impact in terms of the learning process for the better (Haris et al., 2018; Ketner et al., 2017; Nevenglosky et al., 2019;). The important role of academic supervision in the process of improving the quality of education makes supervision mandatory as an effort to control and evaluate the educational process (Ismail, 2018; Rahabav, 2016a).

Based on the results of preliminary research on academic support in the 3T area, an academic supervision system was compiled that provides alternative solutions to the problem of distance limitations and the limited number of school supervisors. The design designed is an online-based academic supervision system, which can be accessed by the education office, supervisors, school principals, and teachers. The design designed is an online-based academic supervision system. Online-based academic supervision systems can facilitate remote or remote supervision processes (Fendi et al., 2021; O'Neil et al., 2017). By using process supervision technology it becomes more effective and efficient because it is not limited to distance (Augustsson&Jaldemark, 2014; Minton & Hightower, 2020). The condition of the 3T area with a wide area coverage and there are VSAT internet facilities and other telecommunications networks that facilitate internet access in each region are the basis for the development of an online-based academic supervision system.

The online-based academic supervision system design adds important aspects that were previously lacking in the academic supervision process, namely the evaluation of academic supervision, teacher needs questionnaires, and consultation. These menus are designed so that the supervision process can accommodate complete information so that the impact of supervision is better for the development and improvement of the learning process. Research (Luthfiyani et al., 2021; Rahabav, 2016b; Rismita, 2020) states that evaluation in the supervision process is very important, so that the teaching process carried out by the teacher experiences a process of improvement and improvement. The academic supervision system developed was added to the aspect of teacher needs analysis which functions to facilitate teachers to express opinions related to the needs in the learning process including teacher

competency training, technology mastery training and the need for facilities that support the learning process. Teacher opinion is related to training and aspects of learning facilities that can increase teacher professionalism (Aseeri, 2015; Creasy, 2015; Sayi, 2018). Analysis of teacher needs is a superior aspect of the academic supervision system program, because previously the teacher's opinion had not been facilitated regarding the needs in the learning process. Analysis of teacher opinions is an important aspect in the process of improving education because the deficiencies experienced by teachers can be conveyed directly and become a consideration for designing policies from the government (Khasanah et al., 2019). The academic supervision system developed, especially in the teacher opinion analysis menu, which functions to record all teacher opinions and suggestions in terms of improving the quality of learning. The teacher opinion analysis menu has a simple training feature consisting of training in the preparation of learning instruments, training in the use of learning technology and provided modules that can support teacher training activities. The academic supervision system directly provides solutions related to the weaknesses of teachers by providing training videos, modules, and later the opinions conveyed by the teachers are conveyed by the education office and become advanced policies so that training or additional facilities are provided. In addition, well-executed supervision is effective in improving the quality of education (Carlisle et al., 2017; Göker, 2017; Khun-inkeeree, 2019). With the development of an online-based academic supervision system, it is expected to be one of the solutions to the problems of academic supervision in the 3T area which aims to improve teacher competence and learning quality in the 3T area.

Conclusion

The online-based academic supervision system is a breakthrough in the problem of the academic supervision process in the 3T area. The limitations of distance, cost, time and the limited number of supervisors can be overcome with an online-based academic supervision system. The lack of academic supervision that has been implemented in the 3T area is given a solution, namely by adding menus and features that can be directly used by admin users, school supervisors, school principals and teachers. Online-based supervision has been developed in many countries and has good effectiveness (Han, 2014; Hossain, 2018; Patel et al., 2021). The online-based academic supervision system is a form of refinement of the previously used academic supervision system

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