



The Effectiveness of Si Sagu (Teacher Academic Supervision System) in Academic Supervision Process for Teachers at 3T Area

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Abstract: The purpose of this study was to determine the effectiveness of the SI SAGU Academic Supervision (Information System for Teacher Academic Supervision) model in the academic supervision process in the 3T (Foremost, Outermost, Disadvantaged) area in Bengkayang Regency, West Kalimantan Province. The research method used in this research is a quantitative research method by testing the SI SAGU Academic Supervision model used in the academic supervision process in the 3T area. The research subjects in this study were teachers, principals, and school supervisors in Bengkayang Regency. The instruments used in the study were practical questionnaires and interview guidelines. The instrument used has gone through validation and testing by expert validators, so it is feasible to be used in the research process. The data collection technique in this study was documentation of the results of observations, then giving a perception questionnaire to the SAGU SI users consisting of teachers, school principals, and school supervisors. The results showed that the Teacher Academic Supervision Management Information System (SI SAGU) was effectively used in the academic supervision process in the 3T area, namely Bengkayang Regency. Through SI SAGU, the supervision process can be carried out even though there are some geographical constraints and access to each school. The findings in this study are the effectiveness of the application of SISAGU in the 3T area in the academic supervision process, supported by the active participation and enthusiasm of all relevant stakeholders, namely teachers, schools, principals, school supervisors, and the education office.

Keywords: academic supervision, 3t, education quality

Recommended citation: Sanoto, H., Paseleng, M. C., & Kusuma, D. (2022). The Effectiveness of Si Sagu (Teacher Academic Supervision System) in Academic Supervision Process for Teachers at 3T Area. *Journal of Innovation in Educational and Cultural Research*, 3(4), 548-553.

INTRODUCTION

Education is changing one's attitudes and behavior to mature humans through learning and training (Hudojo, 1988). Through education, humans who do not understand and learn something new make humans more mature and have the abilities needed in their life processes (Alpian et al., 2019). Efforts to obtain good education should be accompanied by efforts to get quality and quality education. Quality education is expected to produce qualified and competent human resources. The need for quality resources is essential in achieving the goal of the 2045 Golden Indonesia generation. The 2045 Golden Indonesia is the government's effort to prepare Indonesia's young age who are superior and competitive in welcoming global competition. The condition of Indonesia, which is predicted to experience a demographic bonus in 2045, with 70% of them in the productive age (15-64 years), is an opportunity but can also be a scourge if not prepared properly.

The steps of concern are to prepare the Indonesian generation with good education to produce people who have the competence to compete with other countries. Education is the main factor in shaping and preparing the young generation of Indonesia. Through education, Indonesia's young generation is given the capital to compete and compete both nationally and internationally. Achieving good education requires periodic monitoring and evaluation so that the quality of education can be monitored and corrected if deficiencies exist. One of the processes of evaluation and supervision of learning is academic supervision.

Academic supervision is a periodic program carried out every semester or twice in one academic year. Academic supervision is a learning evaluation process carried out periodically and aims to carry out a process of systematic improvement and evaluation (Özcan, 2020; Sanoto et al., 2021). The academic supervision process is a supervisory process carried out by school supervisors and principals to monitor the learning process by teachers to produce quality and quality learning (Muhajirin et al., 2017; Ndapaloka et al., 2016) so that the role and influence of academic supervision are essential in the education process to produce quality learning for students.

The implementation of academic supervision is carried out from the local education office, with school supervisors responsible for carrying out the academic supervision process in assigned areas. In addition, the supervision process can be carried out by the principal to the teachers who are in his school. Implementing academic supervision includes the operation of observation, preparation of learning tools, assessment of the

learning process, evaluation, and follow-up. Through supervising, teachers get input, suggestions, and guidance in conducting learning in the classroom.

The process of academic supervision in every region in Indonesia has various challenges and obstacles, considering the outer areas of Indonesia. One of the areas that experienced several obstacles in the academic supervision process was Bengkayang Regency, West Kalimantan Province, which was included in an area with 3T criteria (Front, Outermost, Disadvantaged). The problem is the geographical location of Bengkayang Regency, which is so broad, 5,396.30 km², making the distribution of elementary schools (SD) far from one another, and the number of supervisors is not proportional to the number of schools (21 supervisors, 301 schools spread across 17 schools). sub-district) so that it takes a longer time and costs a lot to supervise teachers throughout the school; (2) Operational and transportation costs in supervising elementary schools from the local government are still very low, namely Rp. 350,000/month; (3) The pattern of communication between supervisors and teachers is very lacking, and if there is communication, it will only be limited to school visits without any follow-up; (4) Various information related to the implementation of supervision is not well documented and even incomplete due to delays in implementation; (5) The supervision model that the supervisor has carried out has not been effective and is felt by all elementary school teachers in Bengkayang Regency; (6) the security factor is also an obstacle for school supervisors considering the wide-area and criminal threats and even supervisors often spend the night at people's homes on their way home after carrying out supervision; and (7) Local culture and wisdom are still related to how to carry out supervision in the Bengkayang Regency area. Based on the regulations, supervisors should regularly supervise all elementary school teachers at least twice a year and have close relationships with teachers to help improve teacher competence. Still, the academic supervision management model for elementary school teachers in Bengkayang Regency has not been deemed appropriate. Effective by elementary school teachers.

On the other hand, the need for the implementation of academic supervision is vital for teachers in the Bengkayang Regency area; this is based on the results of the Bengkayang Regency teacher competency test (UKG) in 2016 showing that the teacher's achievement score in Bengkayang Regency is still below the national standard of 5.8, as well as for the value of the national competency test, which is 6.00. The results of the UKG scores certainly affect the achievement of SD national exam scores, and the UKG results are also undoubtedly influenced by the academic supervision management model, so it is essential to find an appropriate and effective academic supervision management model by taking into account the problems, challenges and teacher needs for supervision in the district. Hang on all this time.

The teachers' need to implement routine academic supervision and the provision of recommendations and improvements makes the learning process experience continuous improvement and improvement. The geographical challenges and regional conditions that occur in Bengkayang Regency significantly impact the process of implementing academic supervision, especially in carrying out adequate academic supervision. Efforts to overcome problems related to the implementation of academic supervision problems, a digital-based academic supervision system was compiled to facilitate the supervision process, which was hampered by the geographical location of Bengkayang Regency. The development of the system aims to answer the problems experienced in the supervision process in the Bengkayang Regency area, which has several fundamental issues. With the help of technology, these obstacles will be quickly resolved. The system developed is the Teacher Academic Supervision Management Information System (SI SAGU) which is a system that accommodates the entire academic supervision process, including the initial observation process, learning observation, assessment of learning devices, evaluation, reciprocity, and there is a consultation feature from the teacher to the supervisor and head schools conducted by video conferencing.

Another aspect that supports using the Teacher Academic Supervision Management Information System (SI SAGU) is that Bengkayang Regency has good internet access even though it is included in the criteria for the 3T area. Through the Telecommunications and Information Accessibility Agency (BAKTI), the Ministry of Communication and Informatics collaborates with DTP, an experienced telecommunications company that uses the Very Small Aperture Terminal (VSAT). VSAT provides internet and communication services using satellites. Until 2017, an internet connection with VSAT was installed in 984 schools spread across 3T areas in Indonesia (Kusnandar, 2018). To equalize national development in the 3T region, especially in the education aspect, Information and Communication Technology (ICT) can be used. This technical support helps implement the Teacher Academic Supervision Majeman Information System (SI SAGU). The use of technology in the educational process, especially academic supervision, can increase the achievement of academic supervision while providing follow-up actions that can improve the quality of education (Alam et al., 2021; Duruh, 2018; Paulsen & Schmidt-Crawford, 2017). Research Perera-Diltz & Mason shows that involving technology in the academic supervision process can increase the effectiveness of academic supervision (Perera-Diltz & Mason, 2012). The impact of the academic supervision process can improve the quality of education so that the link between the supervision process and supporting technology becomes inseparable (Susanti et al., 2020). Based on this description, this research is entitled Effectiveness of SI SAGU (Information System for Teacher Academic

Supervision Management) in the supervision process in the 3T area. Explaining the background, problems, importance of research, a brief literature review that relates directly to research or previous findings that need to be developed, gap analysis, and ended with a paragraph of research purposes. A balance must be kept between the pure and applied aspects of the subject.

METHODS

This study aimed to test the effectiveness of the SAGU SI (Information System for Teacher Academic Supervision) in the academic supervision process in the 3T area, especially Bengkayang Regency, West Kalimantan Province. The research method used in this research is quantitative research. Quantitative research is a quantitative research method that is defined as a research method used to examine the condition of an experimental object (unnatural) on a particular population or sample. Data collection using instruments and data processing using statistical tests are used to test hypotheses (Sukestiyarno, 2020).

The subjects in this study were teachers, principals, and school supervisors in Bengkayang Regency. The instrument in this study was a questionnaire on the perceptions of the SAGU users (Information System for Teacher Academic Supervision) regarding the use and effectiveness of the academic supervision process, interview guidelines, and documentation. The instrument used has gone through validation and testing by expert validators, so it is feasible to be used in the research process. The data collection technique in this study was documentation of the results of observations, then giving perception questionnaires to SI SAGU users consisting of teachers, school principals, and school supervisors.

Data analysis systematically searches and compiles data obtained from interviews, field notes, and documentation from sources by organizing data into categories, describing them into units, synthesizing, compiling them into patterns, and choosing which ones are important. Moreover, what will be studied and make conclusions so that they are easily understood by themselves and others (Sugiyono, 2008). The quantitative analysis model consists of three stages: testing the instrument's validity and reliability consisting of observation sheets, interview guidelines, and perception questionnaires. Then test the effectiveness by using a comparative test before and after using the SAGU SI in the academic supervision process.

RESULT AND DISCUSSION

The Condition of Elementary School Teachers in Bengkayang Regency

The condition of Bengkayang Regency, West Kalimantan, which has a comprehensive area coverage with the distribution of elementary school teachers in sub-districts directly bordering Malaysia or specifically included in the 3T area, is shown in table 1 below.

Table 1. Distribution of elementary teachers in the district bordering Malaysia in Bengkayang regency

Districts	Number of schools	Total number of teachers		Number of supervisors	Area Percentage
		PNS	Non-PNS		
Suti Semarang	10	34	37	1	5,2%
Lembah Bawang	7	29	26	1	3,48%
Siding	12	55	45	1	10,44%
Jagoi Babang	19	84	71	3	12,14%
Sungai Raya Kepulauan	18	154	41	2	7,3%
Sungai Betung	12	66	42	1	3,82%
Total	78	422	262	9	42,38%

*PNS: government employees

Based on Table 1, it can be seen that 42.38% of the Bengkayang Regency area of West Kalimantan borders the State of Malaysia and consists of 6 sub-districts, namely Suti Semarang District, Lembah Bawang District, Siding District, Jagoi Babang District, Sungai Raya Islands District, and Sungai Betung District. The number of elementary school teachers in the six sub-districts is 684 teachers, of which 61.7% of primary school teachers have civil servant status, while 38.3% of those have not had civil servant status. To monitor the performance of these elementary school teachers, the Bengkayang Regency Education and Culture Office appointed nine school supervisors.

The educational background of the principals of primary schools in these six sub-districts is not all S1 Elementary School Teacher Education graduates, and even most of them are SPG graduates. Likewise, these elementary school teachers have various educational backgrounds, and a small number are graduates of S1

Elementary School Teacher Education from multiple universities. There were only eight active school supervisors in this research and one retired school supervisor. In these eight school supervisors, two supervisors also serve as the head of the UPTD. The phenomenon in the 3T area is that most school principals do not want to serve as school supervisors considering the lack of school supervisor allowances, which is not following the field conditions they face. The distance between one elementary school and another is very far; some even take half a day from the UPTD office to get to several elementary schools. So with the development of the Teacher Academic Supervision Management Information System (SI SAGU), it can solve the problem of supervision in the 3T area, especially in Bengkayang Regency, West Kalimantan Province.

The Teacher Academic Supervision Management Information System (SI SAGU) was implemented in 6 sub-districts, and the implementation process involved 42 research subjects: teachers, principals, and school supervisors. The purpose of the BinteK is to provide direction and training in the system's operation and academic supervision system using SI SAGU. Before the academic supervision process using the SAGU SI, each user's training and technical guidance were first carried out.

Perception Test Results of Academic Supervision Management Model in 3T Region Bengkayang Regency

The effectiveness of this study was measured using a questionnaire/questionnaire of supervisor and teacher perceptions of the use of the Teacher Academic Supervision Management Information System (SI SAGU) in academic supervision activities. The perception questionnaire was filled in before and after using the Teacher Academic Supervision Management Information System (SI SAGU). The normality, homogeneity, and average difference of perception data before and after using the Teacher Academic Supervision Management Information System (SI SAGU).

Table 2. Perception data normality test results

Tests of Normality						
	Kolmogorov-Smirnov			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Initial Score	.096	42	.200*	.979	42	.609
Final Score	.102	42	.200*	.976	42	.518

Based on the results of the normality test of user perception data before and after using the Teacher Academic Supervision Management Information System (SI SAGU) for academic supervision, it was found that the significance value of the initial perception data was 0.200. The final perception data significance value was 0.200, where both Kolmogorov-Smirnov significance values Are > 0.05 , meaning that the initial and final perception data are typically distributed. Furthermore, a homogeneity test was carried out to determine the data variance.

Table 3. Homogeneity test results

Levene's Test for Equality of Variances		
Equal variances assumed	F	Sig.
Equal variances not assumed	1.189	0.279

Table 3 shows that the significance value of the homogeneity test of perception data before and after using the Teacher Academic Supervision Management Information System (SI SAGU) is $0.279 > 0.05$, which means that the perception data before and after using the Teacher Academic Supervision Management Information System (SI SAGU) is homogeneous. or have the same variance.

After the prerequisite test, namely the normality and homogeneity test, it showed that the perception data were normally distributed and homogeneous, then continued with the mean difference test using the One-Sample T-Test test on the application by SPSS 26 data. The results of the mean difference test are shown in table 4.

Table 4. Test results of different means of perception data before and after using the si-sagu model

T-Test for Equality of Means			
	t	df	Sig. (2-tailed)
Equal variances assumed	-14.133	82	0.000
Equal variances not assumed	-14.133	78.360	0.000

The test results show that the significance value of the difference in the average perception data before and after using the Teacher Academic Supervision Management Information System (SI SAGU) is $0.000 < 0.05$, which means that there is a difference in the average perception data before and after using the Teacher Academic Supervision Management Information System (SI). Furthermore, an average difference test to

determine the difference in perception before and after using the SISAGU is shown in [table 5](#).

Table 5. Descriptive statistics of perception data before and after using the teacher academic supervision management information system (si sagu)

Code	N	Group Statistics		
		Mean	Std. Deviation	Std. Error Mean
Initial Perception	42	133.8333	5.88059	.90739
Final Perception	42	154.3095	7.32016	1.12953

[Table 5](#) shows that the average value of the initial perception data is 133.833, and the average value of the final perception data is 154.3095. The mean value of the final perception data is higher than the mean value of the initial perception data. This means that the perception of supervisors and teachers after using the Teacher Academic Supervision Management Information System (SI SAGU) in academic supervision activities is higher than before using the Teacher Academic Supervision Management Information System (SI SAGU) in academic supervision activities.

The implementation of academic supervision was attended by six school supervisors (all supervisors in 6 sub-districts of 3T Bengkayang Regency), 12 principals, and 24 teachers. At this stage, also to determine the effectiveness of the application of the model. At this stage, evaluate the effectiveness of the application of the model. The product effectiveness test was measured by filling out a perception questionnaire. Based on the results of filling out the perception questionnaire before and after using the SI-SAGU Model, it was found that the significance value of the difference in the average perception data before and after using the Teacher Academic Supervision Management Information System (SI SAGU) there was a difference in the average perception data before and after using the Management Information System. This can be seen from the average perception value before using the Teacher Academic Supervision Management Information System (SI SAGU) 134,375. This is lower than the average perception value after using the Teacher Academic Supervision Management Information System (SI SAGU) of 154,089. Therefore, after using the Teacher Academic Supervision Management Information System (SI SAGU), the perception is better than before using SI-SAGU.

Improving the achievement of academic supervision results is supported by implementing academic supervision that utilizes technology in the academic supervision process ([Sugiyono et al., 2019](#)). The role of technology in the academic supervision process facilitates the assessment and evaluation of learning carried out by teachers and school supervisors ([Komariah et al., 2019](#)). Pahlevie research shows that the role of technology is a differentiator in the academic supervision process in-class visits. The advantage of the technology-based academic supervision process is the use of internet access, making it easier to access and can be carried out online ([Pahlevie et al., 2014](#)).

Research by [Sanoto](#) (2021) states that by using technology assistance, the education management process, especially in the supervision process, becomes more helpful in terms of implementation and effectiveness in the field. Using technology-based systems or programs in the supervision process encourages performance to run according to the expected targets and achievements ([California, 2015](#); [Saylor et al., 2018](#)). It is achieving an effective supervision process that linearly affects the quality of teachers and gradually improves the quality of education ([Ndapaloka et al., 2016](#); [Sanoto & Sugito, 2020](#); [Slameto, 2017](#)). Support from particular technological aspects in implementing academic supervision is a differentiator from the constraints experienced by areas with limitations, such as the 3T area. This is in line with research by [Yanuarti and Rusman](#) (2019), which states that the role of IT (Information Technology) is mandatory in the world of education and can answer existing limitations. The findings in this study are the effectiveness of the application of SISAGU in the 3T area in the academic supervision process, supported by the active participation and enthusiasm of all relevant stakeholders, namely teachers, schools, principals, school supervisors, and the education office.

CONCLUSION

This research concludes that the Teacher Academic Supervision Management Information System (SI SAGU) is effectively used in the academic supervision process in the 3T area, namely Bengkayang Regency. Through SI SAGU, the supervision process can be carried out even though there are some geographical constraints and access to each school. The use of technology in the academic supervision process makes the academic process more accessible, more efficient, and easier to implement, especially in areas with limited access, such as areas included in the 3T area criteria. The shortcomings of the geographical aspect can be overcome by the presence of technology with internet access so that the academic supervision process can be carried out anywhere and anytime.

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