Contribution of Planning, IT Based Communication, Implementation and Follow Up Supervision in Elementary Schools

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Abstract: The quality of learning is expected to continue to improve, but supervision management continues to decline. This research aims to identify strategic factors involved in implementing supervision at the elementary school level. Quantitative methods were applied in this research using a census design, where 250 teachers were asked to fill out a questionnaire via the Google Form platform. However, because some teachers were unfamiliar with technology, only 213 teachers responded. The collected data was then analyzed using the Structural Equation Modeling (SEM) method. The findings from this research show that there is a direct influence between supervision planning, IT-based communication and implementation of supervision on supervision follow-up. while supervision planning and IT-based communication influence supervision follow-up through the implementation of supervision

Keywords: Follow-up; IT-based Communication; Planning; Supervision

Introduction

Education is the main foundation in the development of a nation, and the role of teachers in realizing quality education is very important. Teachers act as learning facilitators who have a big influence on students' intellectual, social and emotional development. As agents of change in the classroom, teachers are required to master various effective learning methods and strategies in order to be able to achieve learning goals and increase student competence (Anridzo et al., 2022). Challenges in the learning process in elementary schools cannot be ignored. In this era of rapid technological development and globalization, teachers are required to continue to follow developments and innovations in the field of education (Budiharto, 2023). Teachers sometimes experience difficulties in carrying out their duties. Among the difficulties experienced by teachers are in preparing learning plans, developing interesting learning

activities, preparing assessments, using media in implementing learning models, preparing scientific learning and so on (Dewi et al., 2019). The problems faced by teachers cause the quality of learning to not be optimal, so that students' needs are not met (Serain, 2023). However, teachers often experience confusion in finding solutions to overcome these problems. Therefore, one approach that can be used to improve teacher competence is through supervision management in schools (Mulloh & Muslim, 2022).

Supervision is a form of assistance and guidance provided by the supervisor or school principal to teachers in the learning process in the classroom (Hasibuan, 2023). This approach includes direct observation of teaching practice, providing constructive feedback, and providing support and training to help teachers improve the quality of learning (Kusumawati, 2020). Supervision management aims to encourage and facilitate improvements in teaching practices, so that it can produce more effective and relevant learning for students (Kurnia, 2022).

The characteristics of supervision according to La Sulo in Sugiyah (2023) include several important points. First, supervision provides guidance as assistance, not in the form of orders. Second, the teacher and supervisor agree on the skills to be supervised. Third, supervision instruments are also determined together. Fourth, observations only focus on skills that have been agreed upon. Fifth, feedback is provided quickly after observation. Sixth, the teacher analyzes his performance first. Seventh, the supervisor really listens carefully. Eighth, create an intimate and open atmosphere in the supervision process. Ninth, supervision is carried out in a cycle of planning, observation and feedback. And tenth, the results of supervision are used to improve teaching skills (Nurcholiq, 2018). In the characteristics of supervision proposed by Sahertian in Saharuddin (2022), there are several additions, such as mutually determined supervision time, initiative taken by the teacher, as well as a supervision focus that includes aspects of the teacher's personality, not just teaching skills.

This research describes the results of the analysis of several variables that have been explored related to educational supervision. These variables include supervision planning, technology (IT)-based communication, implementation of supervision, and follow-up actions taken by the school. The aim of this effort is to implement effective supervision management practices to improve the quality of education and learning processes in the school environment.

Supervision planning in an elementary school environment is a very important initial stage in ensuring the effectiveness and success of the supervision process. In this stage, the school principal or supervisor must design a clear and structured supervision plan (Wandra et al., 2021). This plan must include supervision objectives, implementation schedule, as well as methods and instruments that will be used in supervision. According to Asrowi (2021) in planning supervision, it is important to consider the special needs and challenges of each teacher or employee who will be supervised.

IT-based communication in supervision in elementary schools plays a vital role in facilitating interaction between school principals and teachers. Through platforms such as email, WhatsApp messaging applications, or online conference platforms, supervisors can easily share directions, provide feedback, and schedule supervision meetings efficiently. Prilianti (2020) using technology also allows supervisors to hold remote supervision sessions, facilitate collaboration between teachers, and provide up-to-date resources or information that supports teacher professional development at the elementary school level. This expands the scope of supervision, allows faster and more flexible access, and supports the

effective exchange of information in support of improving the quality of education in the primary school environment (Dewi et al., 2023).

Implementing supervision is an important step in implementing the supervision plan (Zuldesiah et al., 2021). Supervisors must carry out supervision according to a predetermined schedule and use previously planned methods and instruments (Ubabuddin, 2020). When supervising, they must maintain a professional attitude and provide necessary support to the teacher or staff being supervised.

Follow-up supervision is the final step in the supervision process in elementary schools. Supervisors must design concrete follow-up plans to assist teachers or staff in addressing identified problems or deficiencies. This plan should include specific steps, deadlines, and necessary support (Hasanah & Kristiawan, 2019). The supervisor must also follow the progress of the implementation of the follow-up plan and provide guidance if necessary. In the entire supervision process in elementary schools, collaboration and approaches that support the professional development of teachers and staff are very important (Riyanto et al., 2021). Effective supervision can help improve the quality of education in primary schools and provide long-term benefits for students and the entire school community.

Some previous research related to supervision in schools is research Rugaiyah et al. (2021) with the title "The Improvement of Elementary School Teachers Through Web-Based Supervision", which explains that supervision consists of five stages following research and development procedures, such as preparation initial, observation, interpretation, post-observation meeting, and return meeting. The supervisor assessed that the web-based model of clinical supervision was very effective and efficient considering that teachers had to be trained in one target area, good communication between supervisors and teachers in the target area, because they could use the website and even upload videos of teachers teaching in class. Another research related to supervision is (Maisyaroh et al., 2021) which explains that effective supervision techniques for schools will have a good impact on schools. Apart from that, research (Noor et al., 2020) shows that supervision follows procedures (planning, implementation, reporting and follow-up on supervision results) as monitoring guidelines. However, in its implementation, all processes in these guidelines were not carried out well, due to the heavy burden of school duties carried by the school principal. In research Nurhayati et al. (2019) the research results show that teacher administrative supervision has been programmed, scheduled and running well. The teacher's administrative equipment is also functional. The implementation of principal supervision is greatly influenced by the principal's

ability to manage time and busy work as well as the teacher's readiness to be supervised.

This research is important to conduct because it provides an in-depth understanding of the effectiveness of the supervision system in improving the quality of learning. Well-planned supervision can help identify strengths and weaknesses in teaching practices, enable teacher professional development, and improve student learning outcomes (Ahmad, 2023; Ayubi et al., 2020). By exploring aspects such as supervision planning, IT-based communication, supervision implementation, and supervision follow-up, this research can provide critical insights needed to improve the basic education system. Apart from that, this research can also help schools to be more responsive to changes in educational policies and leadership environments, ensuring the continuity of quality education despite the dynamics and challenges within it. By focusing on improving supervision practices, this research contributes to the creation of an educational environment that supports student development and the achievement of educational goals.

In accordance with the supervision cycle proposed by Cogan who identified eight stages in the supervision cycle, including building a relationship between the supervisor and teacher, planning with the teacher, planning observations, carrying out observations, analyzing the learning process, planning meetings, holding meetings, and planning the next meeting. Overall, the supervision cycle usually includes the initial meeting, observation, and return meeting stages (Sari et al., 2023). For this reason, in this article the researcher takes the title contribution of planning, IT-based communication, implementation, and supervision follow-up. The aim is to complement previous research and to prove whether supervision in elementary schools in Ngemplak Boyolali subdistrict has been carried out according to the stages, as well as the impacts and obstacles faced in the field.
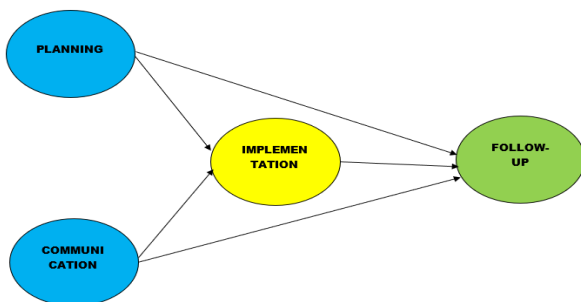

Figure 1. Research Variable Relationship Scheme

Method

Research Design

This research uses an ex-post facto quantitative approach as the main methodology. In this approach,

research aims to test the cause-and-effect relationship between variables that have occurred in the past (Sekaran, 2011). To test the proposed hypotheses, this research utilized the Partial Least Square Equation Modeling (PLS-SEM) method using the SmartPLS application version 3.29. The data analysis process in this research consists of two stages. The first stage is reflective evaluation, which is used to test the validity and reliability of the indicators used in the research. Validity refers to the extent to which the indicators truly reflect the concept to be measured, while reliability assesses whether the indicators can be relied upon in measuring the variables studied. The second stage is formative evaluation, which is carried out to assess the significance of the relationship between variables and to determine whether the proposed hypotheses can be accepted or rejected (Sujarweni, 2012). In this stage, the researcher examines the extent to which the formative variables influence the dependent variable and whether these relationships are statistically significant. Through a combination of an ex-post facto quantitative approach, PLS-SEM analysis with SmartPLS 3.29, as well as two evaluation stages which include reflective and formative, this research has a strong framework for exploring and analyzing the required data. This approach allows researchers to answer research questions in a systematic and scientific way, and to test their hypotheses comprehensively.

Participants

This research took the research population from a number of teachers who taught in 33 elementary schools located in Ngemplak District, Boyolali Regency, Central Java, Indonesia. This population is the main focus of this research. To narrow the number of respondents who will be the sample in the research, a non-probability method called purposive sampling was used. At the sample selection stage using the purposive sampling method, the researcher determined specific criteria that became the basis for selecting respondents. These criteria are based on certain considerations that are relevant to the research objectives. After these criteria were determined, 213 teachers who met these criteria were selected as the research sample.

### Data collecting technique and instruments

Data collection was carried out using a questionnaire with a Likert scale. The questionnaire consists of four variables: supervision planning, IT-based communication, implementation of supervision, and follow-up. The entire questionnaire has been tested, and all items are considered valid and reliable, as presented in Tables 1 and 2. Table 1 shows that a construct is said to be reliable if Cronbach's alpha and the composite reliability score are greater than 0.70

(Creswell & Creswell, 2018; Wijaya, 2019). Apart from that, it is valid if the average variance extracted (AVE) is greater than 0.50. Validity and reliability show that each indicator can explain the relevant variables (Mertens, 2009; Wiyono, 2011).

Table 1. Construct validity and reliability

Parameters	Cronbach's	Rho	Composite	(AVE)
Comm	0.91	0.91	0.93	0.75
Foll	0.88	0.88	0.92	0.75
Impl	0.87	0.87	0.90	0.66
Plan	0.81	0.82	0.87	0.58

The Heterotrait-Monotrait Ratio (HTMT) test is an important tool in research used to measure discriminant validity, which measures the extent to which a construct differs from other variables. The results of this test will illustrate the extent to which the variables included in the construct are truly different and do not have a high correlation with other variables in the research. In general, if it meets the criteria, the HTMT value must be less than 0.9 (Ghozali & Latan, 2015). This indicates that the variables contained in the construct are truly different and have good discriminant validity. The results of the HTMT test can be found in Table 2. This table contains data that describes the extent to which the constructs used in this research meet the criteria for discriminant validity. If the HTMT value is less than 0.9, this will confirm that the construct used is discriminantly valid and reliable in subsequent data analysis (Wiyono, 2011). This data is very important in ensuring that the constructs used do not overlap or have high correlation, so that research results can be interpreted accurately and precisely.
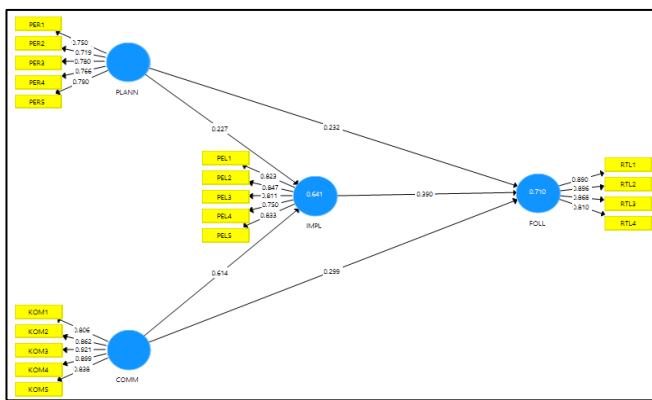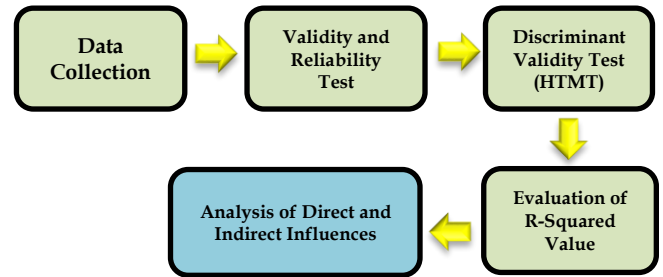
Figure 2. Measurement Model Assessmen

Table 2. Heterotrait-monotrait ratio

Parameters	Comm	Foll	Impl	Plan
Comm				
Foll	0.86			
Impl	0.87	0.88		
Plan	0.87	0.85	0.81	

Analysis Data

Data were analyzed using PLS-SEM. Meanwhile, the hypothesis is tested using the path coefficient. Accepted if the t-statistic evaluation is above 1.96 and the p-value is below 0.05 (Wijaya, 2019).

Figure 3. Research Flow

Result and Discussion

Results
Evaluating the R-squared value

R-squared is the ability of exogenous variables to explain endogenous variables. The R-squared value is categorized into three. If the R-squared is 0.75, then the model is substantial (strong); if 0.50 means moderate, and if 0.25 means weak. The evaluation R-square value is presented in Table 3. The test results show that planning and communication (IT) can explain the implementation of supervision by 0.641 or 64.1%, which shows that the model is moderate. Likewise, planning, communication (IT) and implementation were able to explain follow-up by 0.710 or 71% (medium).

Table 3. R-Square

Parameters	R square	Adjusted r-square
Foll	0.71	0.70
Impl	0.64	0.63

Direct effect test

In the hypothesis evaluation process, the Partial Least Squares Structural Equation Modeling (PLS-SEM) method is used by applying the bootstrapping technique to the path coefficient analysis. Bootstrapping is a resampling approach that is useful for producing a sampling distribution of a statistic, thus allowing a more robust and stable evaluation of the analysis results. In this context, a hypothesis is considered accepted if the t statistic obtained through bootstrapping exceeds the value of 1.96 and the p value is less than 0.05. This criterion indicates the level of significance at 95% confidence. The results of the direct effect test are presented in Table 4. The path coefficient results in Table 4 show five findings. First, supervision planning contributes to the implementation of supervision with a t-statistic of 2.839 and a p-value of 0.005 (p<0.05). This

means that supervision planning has a direct influence on the implementation of supervision. Second, supervision planning contributes to supervision follow-up with a t-statistic of 3.055 and a p-value of 0.002 (p<0.05). This proves that supervision planning has a direct effect on supervision follow-up. Third, IT-based communication contributes to the implementation of supervision, with a t-statistic of 7.758 and a p-value of 0.000 (<0.05), this shows that there is a direct influence of IT-based communication on the implementation of supervision. Fourth, IT-based communication contributes to supervision follow-up, with a t-statistic of 3.461 and a p-value of 0.001 (<0.05), meaning that IT-based communication has a direct effect on supervision follow-up. Fifth, the implementation of supervision contributes to follow-up supervision, with a t-statistic of 4.734 and a p-value of 0.000 (<0.05). This shows that there is a direct influence of the implementation of supervision on the follow-up of supervision.

Tabel 4. Path coefficients/direct effect

Parameters	Sample	Mean	Stdev	T-statistics	P-value
Comm -> Foll	0.29	0.30	0.08	3.46	0.00
Comm -> Impl	0.61	0.60	0.07	7.75	0.00
Impl -> Foll	0.39	0.38	0.08	4.73	0.00
Plan -> Foll	0.23	0.23	0.07	3.05	0.00
Plan -> Impl	0.22	0.23	0.08	2.83	0.00

Indirect Effect Analysis

Indirect influence analysis tests the influence of exogenous variables on endogenous variables which are mediated by intervening variables. The exogenous variables in this research are IT-based planning and communication, while the intervening variable is the implementation of supervision. Meanwhile, the endogenous variable is follow-up supervision. The significance criteria are met if the t-statistic value is above 1.96 and the p-value is less than 0.05. The results of the indirect influence analysis are presented in Table 5. Supervision planning through the implementation of supervision contributes to supervision follow-up because the t-statistic is 2.334 (>1.96) and the p-value is 0.020 (<0.05), which means that the supervision planning variable has an influence indirectly through the implementation of supervision towards follow-up supervision. Then IT-based communication through the implementation of supervision contributes to follow-up supervision because the t-statistic is 4.026 (>1.96) and the p-value is 0.000 (<0.05), which means that the IT-based communication variable has an indirect effect through the implementation of supervision. no further supervision.

Table 5. Results of indirect influence analysis

Parameters	Sample	Mean	Stdev	T-statistics	P-values
Comm -> Impl -> Foll	0.24	0.23	0.06	4.02	0.00
Plan -> Impl -> Foll	0.08	0.09	0.03	2.33	0.02

Discussion

Based on the data obtained and after analysis, there were seven hypotheses which were declared accepted. Consisting of five hypotheses that have a direct influence and two hypotheses that have an indirect influence, the five hypotheses that are accepted and have a direct influence are as follows: i) supervision planning contributes to the implementation of supervision ii) supervision planning contributes to supervision follow-up, iii) Communication IT-based contributes to the implementation of supervision, iv) IT-based communication contributes to follow-up supervision, and v) implementation of supervision contributes to follow-up supervision. Meanwhile, two hypotheses that are accepted and have an indirect influence are vi) supervision planning through the implementation of supervision contributes to supervision follow-up, and finally vii) communication through the implementation of supervision contributes to supervision follow-up.

The first hypothesis is accepted because the t-statistic value is 2.839 and the p-value is 0.005 (<0.05). This shows that there is a direct influence of supervision planning on the implementation of supervision. According to Asrowi (2021), in his research, supervision planning begins with the stage of identifying clear needs and goals, which involves an in-depth analysis of school conditions, curriculum, teaching methods and individual needs of teachers. Fathih (2022) and Noor et al. (2020) also explains that careful planning provides structured guidance for the implementation of supervision, ensuring that these activities focus on aspects that have been previously identified. In addition, supervision planning also allows school principals to develop strategies that suit teacher needs, create effective follow-up plans, and provide appropriate support. The relationship between supervision planning and implementation of supervision in elementary schools has a crucial role in improving the effectiveness and quality of learning. In other words, supervision planning creates a solid foundation for the implementation of effective supervision. During supervision, school principals can utilize planning guides to provide more specific and relevant guidance. Thus, the relationship between supervision planning and implementation in elementary schools forms a

dynamic cycle that supports improving the quality of learning and professional development of teachers.

The second hypothesis shows that supervision planning influences supervision follow-up. The path coefficient produces a t-statistic value of 3.055 and a p-value of 0.002 (<0.05). According to research Nurhayati et al. (2019), supervision planning acts as an initial phase that helps identify the needs and problems faced by teachers and schools. From the results of this planning, certain recommendations or directions emerge which become the basis for follow-up supervision. Research Diana (2023) states that follow-up supervision should include concrete steps that must be taken by the teacher or school to overcome obstacles or improve certain aspects of learning. In addition, follow-up should also consider teacher professional development, adjustments to teaching methods, and implementation of necessary changes to improve the quality of education. In other words, follow-up supervision is a clear roadmap for teachers and schools in responding to suggestions or recommendations from supervision. The relationship that exists between supervision planning and follow-up creates a dynamic cycle, where continuous evaluation of the implementation of the plan can again become input for subsequent supervision planning.

The third and fourth hypotheses prove that IT-based communication contributes to the implementation of supervision and follow-up supervision. The contribution of communication to the implementation of supervision reached a t-statistic of 7.758 and a p-value of 0.000 (p<0.05), while follow-up supervision provided a t-statistic of 3.461 and a p-value of 0.001 (p<0.05).

According to Wiyono et al. (2022) the use of information technology, such as instant messaging applications, email and online platforms, can speed up and increase the efficiency of the communication process between school principals and teachers. In research Fauzi & Fahruddin (2022) and Purba et al. (2023) it is explained that technology-based communication allows the delivery of supervision results to be faster and more effective, reducing delays in disseminating information. In addition, technology can also facilitate more intensive two-way communication between school principals and teachers, creating an environment that supports professional growth. With online forums or collaborative applications, teachers can easily share experiences, obtain feedback, and discuss improvement strategies. The implementation of supervision can also be documented electronically, making it easier for school principals to access and analyze supervision data.

The relationship between information technology (IT)-based communication and the implementation of supervision and follow-up supervision in elementary schools has a significant impact in the context of modern education. Information technology plays an important role in organizing follow-up supervision by providing a platform for organizing follow-up plans, monitoring progress, and providing direct feedback. Thus, the integration of IT-based communication in the implementation of supervision in elementary schools creates an ecosystem that is connected, efficient, and supports sustainable growth in education.

The fifth hypothesis proves that the implementation of supervision contributes to follow-up supervision. The contribution of the implementation of supervision to follow-up supervision gives a t-statistic of 4.734 and a p-value of 0.000 (<0.05). The relationship between the implementation of supervision and follow-up supervision in elementary schools has very important implications in directing improvement and development in the world of education. According to research Halmaida et al. (2022; Ningsih & Santoso (2022); Silfatman et al. (2022), the implementation of supervision begins with observation, evaluation and providing feedback to teachers. The results of this implementation are the main basis for developing constructive follow-up plans that suit needs. The process of implementing effective supervision allows school principals to identify strengths and weaknesses in teaching practices, as well as understand the needs of individual teachers. Furthermore, in research Riyanto et al. (2021) follow-up supervision is a critical stage for translating supervision findings into concrete improvement steps. Follow-up plans should be designed in a clear and targeted manner, including improvement strategies, additional training, or necessary support. Implementing this follow-up creates an iterative process where the results of previous supervision evaluations can be used as a basis for continuous improvement. Therefore, the relationship between the implementation of supervision and follow-up supervision in elementary schools creates a cycle that helps improve the quality of learning, strengthens teacher professional growth, and ensures the implementation of continuous improvements in the education system.

Testing the indirect influence hypothesis, namely hypotheses six and seven, obtained the following results. The sixth hypothesis is that the t-statistic is 2.334 (>1.96) and the p-value is 0.020 (<0.05), which means that the planning variable has an indirect effect through the implementation of supervision on follow-up supervision. Then the seventh hypothesis with a t-statistic of 4.026 (>1.96) and a p-value of 0.000 (<0.05), which means that IT-based communication variables have an indirect effect through the implementation of supervision on follow-up supervision.

The indirect relationship between supervision planning and information technology (IT)-based communication through the implementation of

supervision can play a key role in shaping supervision follow-up in elementary schools. In research Rugaiyah et al. (2021) it is explained that thorough supervision planning, which includes clear identification of needs and goals, can provide structured direction for the implementation of supervision. In this context, the use of information technology as a communication tool can facilitate the process of implementing supervision more efficiently and responsively. Research Fauzi & Fahruddin (2022) explains that IT-based communication allows school principals to convey supervision results quickly and effectively to teachers via online platforms. This creates an environment that supports teacher professional growth and allows for two-way dialogue. The implementation of technology-assisted supervision allows for more accurate and structured documentation, providing a strong basis for planning follow-up supervision.

With the existence of information technology, follow-up supervision can be designed more precisely and in accordance with the findings of supervision results. The use of online platforms or collaborative applications allows the preparation of follow-up plans that are measurable and can be accessed flexibly by the entire education team. IT-based communications also facilitate real-time follow-up monitoring and evaluation, allowing principals to provide additional support or adjust strategies over time. Therefore, through the integration of information technology, supervision planning and communication that occurs during implementation can indirectly form more focused and responsive follow-up supervision in the elementary school environment. Thus, this relationship creates a more dynamic system, accelerates the improvement process, and optimizes efforts to improve the quality of learning in elementary schools.

Conclusion

In this research article, it can be concluded that supervision planning and IT-based communication play a crucial role in increasing the effectiveness of supervision implementation and follow-up implementation in elementary schools. The results of data analysis show that the seven hypotheses proposed are acceptable, with five hypotheses showing direct influence and two hypotheses showing indirect influence. Supervision planning has been proven to contribute positively to the implementation of supervision and supervision follow-up. IT-based communication also makes a positive contribution to the implementation of supervision and supervision follow-up. Apart from that, the implementation of supervision has been proven to have a positive contribution to the

follow-up of supervision. Meanwhile, for indirect effects, it is proven that supervision planning and IT-based communication through the implementation of supervision contribute to follow-up supervision in elementary schools.

References

Ahmad, S. (2023). Implementasi Supervisi Manajerial Pengawas dalam Meningkatkan Kinerja Guru PAI di Min 4 Aceh Tenggara Era COVID-19. *Mudabbir Journal Reserch and Education Studies2023*, *1*(1), 21–31. https://doi.org/10.56832/mudabbir.v1i1.3

Anridzo, A. K., Arifin, I., & Wiyono, D. F. (2022). Implementasi Supervisi Klinis dalam Penerapan Kurikulum Merdeka di Sekolah Dasar. *Jurnal Basicedu*, *6*(5), 8812–8818. https://doi.org/10.31004/basicedu.v6i5.3990

Asrowi, A. (2021). Perencanaan Dan Pelaksanaan Supervisi Pendidikan Serta Ugensinya. *E-Jurnal Aksioma Al-Asas*, *2*(1). https://doi.org/10.55171/jaa.v2i1.602

Ayubi, U. Y., Syahmuntaqy, M. T., & Prayoga, A. (2020). Implementasi Supervisi Akademik Kepala Sekolah dalam Meningkatkan Kinerja Pendidik. *Manazhim*, *2*(2), 118–130. https://doi.org/10.36088/manazhim.v2i2.706

Budiharto. (2023). Peningkatan Kompetensi Merancang Pembelajaran Proyek dengan Supervisi Edukatif bagi Guru Sekolah Dasar. *Jurnal Penelitian Pendidikan Indonesia (JPPI*, *8*(2), 2477–2240. Retrieved from https://i-rpp.com/index.php/jpp/article/view/1450

Creswell, J. W., & Creswell, J. D. (2018). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches* (5th ed.). SAGE Publications, Inc.

Dewi, M. M. W. S., Dwikurnaningsih, Y., & Waruwu, M. (2023). Academic Supervision Model Based on

Edmodo Application. *Journal of Education Technology*, *7*(1), 109–120. https://doi.org/10.23887/jet.v7i1.52794

Dewi, Y. K., Zamroni, & Kadir, I. M. (2019). Peran Kepemimpinan Kepala Sekolah dalam Peningkatan Kinerja Guru di Sekolah Menengah Kejuruan (Smk) Miftahul Ulum Samarinda. *Jurnal Penelitian*, *6*(3). https://doi.org/10.21093/twt.v6i3.3169

Diana, S. Y. (2023). Tindak Lanjut Supervisi Akademik dalam Penyusunan Instrumen Penilaian di Madrasah. *Jurnal Pendidikan Tambusai*, 7, 2614–6754. https://doi.org/10.31004/jptam.v7i2.6851

Fathih, M. A. (2022). Meninjau Kembali Prinsip dan Perencanaan Supervisi Pendidikan Sebagai Pengawasan dalam Pendidikan yang Bersifat Pembinaan. *Al-Idaroh: Jurnal Studi Manajemen Pendidikan Islam*, *6*(2), 142–157. https://doi.org/10.54437/alidaroh.v6i2.384

Fauzi, S., & Fahruddin. (2022). Pelaksanaan Supervisi Akademik Berbasis Teknologi Informasi dan Komunikasi (TIK. *Jurnal Praktisi Administrasi Pendidikan (JPAP)*, *6*. https://doi.org/10.29303/jpap.v6i1.495

Ghozali, I., & Latan, H. (2015). *Partial Least Squares Konsep Teknik dan Aplikasi dengan Program Smart PLS 3.0*. Universitas Diponegoro Semarang.

Halmaida, H., Yusrizal, Y., & Niswanto, N. (2022). Implementation of Academic Supervision and Teacher Performance Assessment. *AL-ISHLAH: Jurnal Pendidikan*, *14*(3), 4209–4216. https://doi.org/10.35445/alishlah.v14i3.2249

Hasanah, M. L., & Kristiawan, M. (2019). Supervisi Akademik dan Bagaimana Kinerja Guru. *Tadbir : Jurnal Studi Manajemen Pendidikan*, *3*(2), 97. https://doi.org/10.29240/jsmp.v3i2.1159

Hasibuan, R. A. (2023). Supervisi Klinis Bagi Guru untuk Meningkatkan Kemampuan Memanfaatkan Lingkungan Sekolah Sebagai Sumber Belajar. *Jurnal Mitra Indonesia : Jurnal Pendidikan, Sosial, Humaniora, Dan Kesehatan*, *2*(1), 57–68. Retrieved from https://jurnal.mitrasmart.co.id/index.php/jm/article/view/39

Kurnia, A. (2022). Supervisi Tenaga Kependidikan di Madrasah Aliyah Negeri 5 Jakarta Utara. *Manajerial: Jurnal Inovasi Manajemen Dan Supervisi Pendidikan*, *2*(1), 55–64. https://doi.org/10.51878/manajerial.v2i1.1102

Kusumawati, G. A. (2020). Penerapan Supervisi Klinis untuk Meningkatkan Komitmen Kerja Guru. *Jurnal Penelitian Dan Pengembangan Pendidikan*, *4*(1), 117. https://doi.org/10.23887/jppp.v4i1.24985

Maisyaroh, B. W., B., H., Valdez, A. V, Mangorsi, S. B., & Canapi, S. P. T. (2021). The implementation of instructional supervision in Indonesia and the Philippines, and its effect on the variation of teacher learning models and materials. *Cogent Education*, *8*(1). https://doi.org/10.1080/2331186X.2021.1962232

Mertens, D. M. (2009). *Research and Evaluation in Education and Psychology: Integrating Diversity with Quantitative, Qualitative, and Mixed Methods* (3rd ed.). SAGE Publications, Inc.

Mulloh, T., & Muslim, A. (2022). Analisis Peran Supervisi Pendidikan dalam Meningkatkan Profesionalitas Guru. *Journal Publicuho*, *5*(3), 763–775. https://doi.org/10.35817/publicuho.v5i3.29

Ningsih, S., & Santoso, Y. (2022). Proses Pelaksanaan Supervisi oleh Kepala Sekolah. *Journal of Educational Administration and Leadership*, *3*(2), 87–91. https://doi.org/10.24036/jeal.v3i2.350

Noor, I. H., Herlinawati, & Sofyaningrum, E. (2020). The Academic Supervision of the School Principal: A Case in Indonesia. *Journal of Educational and Social Research*, *10*(4), 81. https://doi.org/10.36941/jesr-2020-0067

Nurcholiq, M. (2018). Supervisi Klinis. *Journal Evaluasi*, *1*(1), 1. https://doi.org/10.32478/evaluasi.v1i1.62

Nurhayati, T., Masnun, M., Udin, T., & Arifuddin, A. (2019). Implementation of Principal Supervision as an Effort to Fulfill Teacher Administration at Islamic Elementary School. *Universal Journal of Educational Research*, *7*(8), 1826–1831. https://doi.org/10.13189/ujer.2019.070822

Prilianti, R. (2020). Model Supervisi Akademik Berbantuan Elektronik bagi Pengawas Madrasah di Provinsi Jawa Tengah. *SEMINAR NASIONAL PASCASARJANA 2020, 3*(1), 671-682. Retrieved from https://proceeding.unnes.ac.id/snpasca/article/download/610/529

Purba, S., Hasan, A., Panjaitan, K., & Maruli, B. (2023). Digital Supervision and Team Work of Science Education at Vocational School. *Jurnal Penelitian Pendidikan IPA*, *9*(SpecialIssue), 533–538. https://doi.org/10.29303/jppipa.v9iSpecialIssue.6404

Riyanto, M., Sasongko, R. N., Kristiawan, M., Susanto, E., & Anggereni, D. T. (2021). Manajemen Kepala Sekolah dalam Melaksanakan Perencanaan, Implementasi, Penilaian dan Tindak Lanjut Supervisi Akademik. *Journal Of Administration and Educational Management (ALIGNMENT)*, *4*(1), 21–30. https://doi.org/10.31539/alignment.v4i1.2144

Rugaiyah, R., Kustandi, C., Rahmawati, D., & Fadhillah, D. N. (2021). The Improvement of Elementary School Teachers Through Web-Based Clinical Supervision. *International Journal of Web-Based Learning and Teaching Technologies*, *16*(5), 158–170.

https://doi.org/10.4018/IJWLTT.20210901.oa9

Saharuddin. (2022). Peningkatan Kemampuan Guru dalam Manajemen Pengelolaan Kelas Melalui Supervisi Klinis. *Edu Learning: Journal of Education and Learning*, *2*(2), 74–82. Retrieved from https://internationalinstituteofresearch.org/journal/index.php/EL/article/view/9

Sari, L. A., Bafadal, I., Nurabadi, A., Husna, A. F., Lesmana, I., Unsa, F. F., & Akhbar, A. F. (2023). Pelaksanaan Supervisi Klinis Sebagai Upaya Peningkatkan Kualitas Guru di Sekolah Dasar. *Proceedings Series of Educational Studies, 1*(1). Retrieved from http://conference.um.ac.id/index.php/pses/article/view/7877

Sekaran, U. (2011). *Research Methods for business* (Jakarta: S).

Serain, N. (2023). Upaya Meningkatanmutu Guru Dalam Proses Pembelajaran Melalui Penerapan Supervisi Klinis Kepala Sekolah. *Journal of Innovation Research and Knowledge*, *2*(11), 4467. https://doi.org/10.53625/jirk.v2i11.5492

Silfatman, Y., Lilianti, L., & Nurzaima, N. (2022). Pelaksanaan Supervisi Kepala Sekolah dalam Meningkatkan Kinerja Guru di Sekolah Dasar. *Jurnal Pendidikan Dan Pengajaran (JPP), 3*(1), 21–29.

Sugiyah, S. (2023). Supervisi Klinis Berkelanjutan Mampu Meningkatan Kompetensi Guru Dalam Penerapan Pembelajaran Project Based Learning. *Ideguru: Jurnal Karya Ilmiah Guru*, *8*(2), 337–345. https://doi.org/10.51169/ideguru.v8i2.559

Sujarweni, V. P. E. (2012). *Statistika untuk Penelitian*. Graha Ilmu.

Ubabuddin, U. (2020). Pelaksanaan Supervisi Pembelajaran Sebagai Upaya Meningkatkan Tugas dan Peran Guru dalam Mengajar. *Nidhomul Haq : Jurnal Manajemen Pendidikan Islam*, *5*(1), 102–118. https://doi.org/10.31538/ndh.v5i1.512

Wandra, D., Marsidin, S., & Rifma, R. (2021). Peranan Supervisi Pengawas Madrasah dalam Meningkatkan Mutu Pendidikan. *Edukatif : Jurnal Ilmu Pendidikan*, *3*(6), 3647–3653. https://doi.org/10.31004/edukatif.v3i6.977

Wijaya, A. (2019). *Metode penelitian menggunakan smart PLS 03*. Yogyakarta: Innosain.

Wiyono, B. B., Samsudin, I., A., & Arifin, I. (2022). The Effectiveness of Utilizing Information and Communication Technology in Instructional Supervision with Collegial Discussion Techniques for the Teacher's Instructional Process and the Student's Learning Outcomes. *Sustainability*, *14*(9), 4865. https://doi.org/10.3390/su14094865

Wiyono, G. (2011). *3 in One Merancang Penelitian Bisnis dengan alat Analisis SPSS dan SmartPLS*. Unit Penerbit dan Percetakan STIM YKPN Yogyakarta.

Zuldesiah, Z., Gistituati, N., & Sabandi, A. (2021). Kontribusi Gaya Kepemimpinan dan Pelaksanaan Supervisi Kepala Sekolah terhadap Kinerja Guru-guru Sekolah Dasar. *Jurnal Basicedu*, *5*(2), 663–671. https://doi.org/10.31004/basicedu.v5i2.791