

Utilization Of Technology In Academic Supervision

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ABSTRACT

Abstract: The use of technology has now penetrated all aspects, including the education aspect. Education Supervision as education quality assurance has also used technology in the process. This article aims to find out the technology used in academic supervision, as well as to explore the advantages of that technology. The research method used is a literature review; the data source is scientific articles from the Google Scholar database. Data retrieval using the help of the Publish or Perish (harzing) application. The research results found that the technologies used in the supervision of education were: Google Form Applications, Zoom Meeting Applications, Google Spreadsheet Applications, Web-Based Technology, E-Quality Supervision Applications, and Online Internet-Based Technologies. Many advantages are found in the use of this technology, namely: effective and efficient supervision process, supervision can be done online, the collected data can be accessed online, and the data is appropriately archived. The results of this study recommend the use of technology in academic supervision in order to achieve effective and efficient academic supervision.

Abstrak: Pemanfaatan teknologi saat ini sudah merambah seluruh aspek, tak terkecuali aspek Pendidikan. Supervisi Pendidikan sebagai penjaminan mutu Pendidikan juga sudah menggunakan teknologi dalam prosesnya. Artikel ini bertujuan untuk mengetahui teknologi yang digunakan dalam supervisi akademik, serta mengeksplorasi keunggulan dari teknologi tersebut. Metode penelitian yang digunakan berupa *literature review*, sumber data berupa artikel ilmiah yang diambil dari *data base google scholar*. Pengambilan data menggunakan bantuan aplikasi *Publish or Perish (harzing)*. Hasil penelitian ditemukan teknologi yang dimanfaatkan dalam supervisi Pendidikan berupa: Aplikasi *Google Form*, Aplikasi *Zoom Meeting*, Aplikasi *Google Spreadsheet*, teknologi Berbasis *Web*, Aplikasi E-Supervisi Mutu, dan Teknologi Berbasis Internet *Online*. Banyak keuntungan yang ditemukan dalam pemanfaatan teknologi ini, yaitu: efektif dan efisiennya proses supervisi, supervisi dapat dilakukan secara daring, data yang terkumpul dapat diakses secara *online*, serta data-data tersimpan dengan baik. Hasil penelitian ini merekomendasikan untuk penggunaan teknologi dalam supervisi akademik, demi tercapainya supervisi akademik yang efektif dan efisien.



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A. INTRODUCTION

To realize good performance for a teacher, there must be supervision activities to provide assistance and services to improve the quality of teachers teaching in the classroom. This is done as a form of developing the potential and quality of teachers. Improving the quality of learning and professionalism in its performance is closely related to supervision services (Ramadhan, 2017). The purpose of supervision is to provide qualified help and direction to teachers. At the same time, they carry out their

duties as educators to enhance learning and teaching through ongoing stimulation, coordination, and direction for both individuals and groups (Fauzi, 2020). In order to help teachers and other members of the school staff efficiently perform their duties, supervision is a coaching activity. In order to assist instructors, leaders must give supervision. Following the advancements in science in general and in education in particular, these individuals are guided toward becoming competent teachers (personnel) to improve the efficiency of educational institutions' teaching and learning process. According to a more dynamic definition, teaching supervision is a sequence of activities that aid teachers in strengthening their capacity to direct processes toward accomplishing learning goals (Ibrahim, 2017; Saiful Bahri, 2014). With academic supervision, teachers will find it more helpful to overcome problems during the learning process.

The implementation of academic supervision is directed at fostering and developing aspects of the learning process. The teacher is a component that is directly involved and responsible for the classroom's learning process, so the main focus or target of academic supervision is related to the teacher. (Sandholtz, 2002). The teacher is the target of academic supervision, which includes the preparation of lesson plans and the syllabus, the choice of learning strategies, methods, and techniques, the use of media and information technology in learning, the assessment of the learning process and results, and classroom action research (Sandholtz, 2002). The capacity or infrastructure of a country (such as power and the internet) to implement new information technology tools in schools is correlated with the use of information technology in education. (Fitriyadi, 2013), forms of information technology currently neglected or prioritized concerning usability and affordability, distribution of IT resources across the nation, equal usage of IT among boys and girls, and teacher preparation for IT use in the classroom.

In the era of globalization, science and technology, which is a source of material to be studied, develop so fast. In such conditions, demands for the quality of educated human beings, intellectual abilities, vocational abilities, and a sense of responsibility for society, humanity, and nationality also increase following the development of society. The heterogeneity of students in various dimensions (intellectual, cultural, and economic); the continued development of science and technology as learning objects; The continuous change of society with its demands, is a factor that makes teachers must have and be professional (Effendy, 2019). Today, many developments in the world of education aim to improve the quality of student learning outcomes. Information about it is obtained from various literature, textbooks, magazines, journals, news from various mass media, and the results of information and communication technology, such as computers with the internet (Mahdum et al., 2019). Every development or progress achieved is an alternative for teachers to seek to improve the quality of the learning carried out; from the various alternatives, it can be chosen which alternative will be used. For teachers who follow various developments and progress achieved in the world of education, following these developments is a need to improve work performance. In addition, the teacher in question considers this kind of thing as additional knowledge

that can enrich insight. Accompanied by high motivation and innovative attitude, various information obtained not only enriches choices to carry out tasks (Mahdum et al., 2019) but can also be the basis for making creations from a combination of various alternatives, which are adapted to the situation and conditions of the work environment. This means he has also made a significant contribution to the world of education and made efforts to improve the quality of education.

One form of technology that can be used in conducting supervision activities is virtual supervision (internet). (dos Santos & Cechinel, 2019). Constraints are the lack of direct interaction between supervisors and teachers, the time and place for the implementation of supervision which has been an obstacle (Fitria et al., 2021; Munastiwi & Puryono, 2021), which will be quickly resolved with this system. The virtual-based supervision model is particularly successful and efficient since a supervisor may monitor his foster teacher's activities without being in school or constrained by time, location, or distance. Additionally, this model can give teachers more freedom to express goals or input regarding the standard of learning without having to interact personally with a supervisor. With virtual-based supervision, a supervisor can manage numerous teachers in various schools from a single location (Mahlopi, 2022). This, of course, cannot be done if you still use the conventional method, where in one place, the supervisor can only serve the teachers in the school. It is anticipated that collaboration between supervisors and teachers from various schools will result in several studies that will improve the standard of learning. From this explanation, this article aims to discuss the use of technology in academic supervision and explore its advantages.

B. RESEARCH METHODOLOGY

This article uses the literature review method. A literature review can broadly be described as a more or less systematic way of collecting and synthesizing previous research (Baumeister & Leary, 1997; Tranfield et al., 2003). A thorough and helpful overview of research methods lays the groundwork for knowledge expansion and the development of theories (Webster & Watson, 2002). A literature review can provide answers to research issues with advantages that no single study can by incorporating conclusions and viewpoints from numerous empirical data (Snyder, 2019). The data source in the form of literature comes from articles in the Google Scholar database. Search articles using the help of the publish or perish application. Search articles using "academic supervision", technology, and applications. The article search was conducted in October 2022. The research questions that will be answered are; (1) What is a technology, and how is it used in academic supervision?; (2) What are the advantages of using technology in academic supervision?

C. RESULTS AND DISCUSSIONS

Utilization of Technology in Academic Supervision

1. Google Forms Application

When Madrasah supervisors experienced a variety of field challenges relating to the size and quantity of Madrasah buildings, an alternative course of action was

employed: to use the Google Form application. The benefits of using Google Forms for daily tasks include: 1) real-time distribution and tabulation; 2) real-time cooperation; and 3) safety; saving crucial files or academic work may be done without worrying about being lost, destroyed, or infected by viruses. Additionally, Google Form is a free program that is simple to use even for new users (free to pay). In order to make the application simple to use and the results of the data presentation organized in an excel file. The following is a succinct summary of how to use Google Forms: 1) Make it easier for supervisors to collect data without having to meet face-to-face with resource people, especially for resource people who are far from the location of supervision activities; 2) data collection through the Google Form application is used for activities or administrative reports that don't require the presence of supervisors in the field. 3) The availability of GoogleForm capabilities, including graphs, tables, spreadsheets, and others, substantially support the information requirements of madrasa supervisors (Rahmiyati, 2020).

This study aims to describe the use of the google form in implementing academic supervision conceptually. The purpose of supervision is to improve and encourage the learning process through a series of actions that assist teachers in strengthening their capacity to control the learning process. The purpose of supervision is to provide technical assistance and guidance to teachers (and other school staff) so that this person can improve the quality of their performance, especially in carrying out their duties, namely carrying out the learning process. With the google form application, the principal/supervisor appointed by the principal can quickly, more effectively, and efficiently supervise. Implementing supervision still carried out during the Covid-19 pandemic increases teachers' creativity in learning at home. The existence of a more creative learning model increases the motivation/spirit of students to take distance learning. With more active students participating in learning activities, the value/achievement of students will increase. The advantages of the google form application used for supervision are; (1) the instruments used are attractive; (2) it can be used for various tests/questionnaires/quiz; (3) it can be responded to anytime and anywhere; (4) internet-assisted, accessible from android; (5) can be analyzed quickly and automatically because there is a response facility in the application; (6) can be done together/collaboratively. In addition to being used by supervisors, this google form has also been used by teachers to evaluate their learning for final meetings, daily, and end-of-semester tests. Therefore, it is recommended that all teachers, employees, and supervisors use the google form application in learning activities, data collection, and academic supervision (Purpuniyanti, 2021).

This paper aims to conceptually describe the use of google forms in implementing academic supervision. The nature of supervision as a series of activities to help teachers develop their ability to manage the learning process is aimed at improving and fostering aspects of learning. Academic supervision serves to help teachers develop their competencies with learning objectives. With the google form, supervisors (supervisors) carry out academic supervision effectively and efficiently. Some of the advantages of google forms are; (1) the instrument used attracts attention, (2) it can use various types

of tests or questionnaires, (3) it can be responded to anywhere and anytime, (4) it does not use paper and pen, but can use android, (5) can be analyzed with fast and automatic, (6) can be done collaboratively. Therefore, supervisors are advised to use the google form in academic supervision activities (Kasmawati, 2020).

This paper aims to conceptually describe the use of google forms in implementing academic supervision. The nature of supervision as a series of activities to help teachers develop their ability to manage the learning process is aimed at improving and fostering aspects of learning. Academic supervision serves to help teachers develop their competencies with learning objectives. With the google form, supervisors carry out academic supervision effectively and efficiently. Some of the advantages of google forms are; (1) the instrument used attracts attention, (2) it can use various types of tests or questionnaires, (3) it can be responded to anywhere and anytime, (4) it does not use paper and pen, but can use android, (5) can be analyzed quickly and automatic, (6) can be done collaboratively because supervisors are advised to use google forms in academic supervision activities (Hosnan, 2020).

2. Zoom Meeting App

This school action research was carried out on teachers in the field of study for the 2020-2021 school year whose performance in carrying out online learning tasks was relatively declining due to the COVID-19 pandemic. This school action research aims to improve teacher performance in online learning by implementing academic supervision using the Zoom Meeting application and Google Forms. The data collection method is carried out by observing the completeness of documents and implementing online learning in the classroom. The data analysis method is descriptive for both qualitative and quantitative data. The results of this study indicate that the implementation of academic supervision using the zoom meeting application and google Forms can improve teacher performance in implementing online learning. This is evident from the increase in teacher performance in planning, implementing learning, evaluating, and following up on the evaluation results from pre-cycle to cycle I and to cycle II. Thus, it can be concluded that implementing academic supervision using the zoom meeting application and google Forms effectively improves teacher performance in implementing online learning. (Naranata, 2021).

3. Google Sheets App

This study aims to improve teacher competence in managing learning activities from home at SDN Gendongan 01 for the 2020/2021 academic year by applying Google Spreadsheet-based Academic Supervision. This research is a School Action Research. The research was carried out in two cycles, where each cycle consisted of planning, implementation, observation, and reflection. The subject of the study was the class teacher at SDN Gendongan 01, totaling 18 teachers. Sources of data come from teachers and students. Data collection techniques are observation, interviews, academic supervision, and document analysis. The validity of the data using data triangulation techniques and method triangulation. Data analysis used comparative descriptive analysis techniques and critical analysis. The results showed that through Google Spreadsheet-based academic supervision, the competence of teachers in managing

learning activities from home was increasing. This can be seen from the assessment of each aspect that has increased. The average professional teacher analysis was used as the primary indicator for research from the research pre-cycle; the final average score of the teachers taken as a sample of 60.56 increased to 73.83 in cycle one and increased to 84.78 in cycle 2. The final score in cycle 2 was 84.78, exceeding the indicator set at 70. This study concludes that applying Google Spreadsheet-based academic supervision can improve teacher competence in managing learning activities from home (Rahayu, 2021).

4. Web Based Technology

Academic supervision is a set of activities designed to help teachers hone their skills in controlling the learning process to meet learning goals. Academic supervision at Madinaturream Islamic Elementary School concentrates on learning assessment planning, implementation, and evaluation. The management and processing of data for the evaluation of academic supervision is one of the assessment process's many flaws. This application makes academic supervision assessment more organized in terms of data input, PHP-programmed calculation processes, and MySQL-stored databases (Alpisyah et al., 2021).

As for the processing of applications and discussions presented in an Application for Academic Supervision Assessment at Madinaturream Islamic Elementary School, Banjarmasin City, the following conclusions can be drawn: a) With the processing of this application, it can provide convenience in the creation and management of academic supervision assessment data. b) A computerized scoring system can provide convenience and speed up the value calculation process. c) Information on the value of the data presented in a report becomes more accurate because it uses calculations, and the assessment results cannot be manipulated. d) By using this system, the assessment becomes well organized to perform data searches and facilitate repairs or corrections if an error occurs in inputting data.

5. E-Quality Supervision Application

This study aims to describe the flow of an implementation of academic supervision based on the E-Quality Supervision application at the Education Service Office of the Ponorogo District during the Covid-19 Pandemic, to describe the carrying capacity that supports the implementation of academic supervision based on the E-Quality Supervision application at the Education Service Office of Ponorogo District. During the Covid-19 Pandemic, describes the implementation of academic supervision based on the E-Quality Supervision application at the Education Service Office of the Ponorogo District. During the Covid-19 Pandemic, describes the obstacles and solutions during the implementation of academic supervision based on the E-Quality Supervision application at the Education Service Office Ponorogo District During the Covid-19 Pandemic Period. This study uses a qualitative research method with a descriptive approach. Data collection techniques used are interviews and documentation studies. The results showed that: 1) in the implementation of supervision, the school operator filled out a questionnaire following the direction of the principal, the supervisor had someone who was trusted to monitor the target school directly in the field, the school operator was given access to the E-Quality Supervision application by the supervisor. 2) there are

school operators who help the target schools, regular training from the LPMP team, supervision questionnaires distributed via WhatsApp, and complete infrastructure to support the success of supervision. 3) the E-Superquality application is influential in the implementation of supervision during the Covid-19 Pandemic; the features of the E-Superquality application according to the supervisor's needs, the process of using the E-Supermutu application is listed in the E-Supermutu guidebook. 4) supervision constraints are the complexity of the supervisor's task and the supervisor's lack of understanding of E-Supermutu; the solution is that the questionnaire is distributed via WhatsApp to shorten the time supervisors attend training (Novitasari & Hariyati, 2021).

6. Internet-Based Technology Online

This study aims to determine the implementation of Online-Based Academic Supervision and Supervisory Information Technology Mastery in the Context of Improving the Professional Competence of Islamic Education Teachers. This study uses a descriptive qualitative approach—data collection techniques through observation and interviews. The results of this study concluded that; First, the implementation of online-based academic supervision activities by PAI supervisors can be carried out in SMP N 1 and SMP N 8 Salatiga City with satisfactory results. Second, the implementation of online-based academic supervision activities by PAI supervisors was successful, with a reasonably high score, namely 70.67%, meaning that PAI supervisors could use online supervision program applications in academic supervision programs at schools. Third, this online-based academic supervision effectively improves the professional competence of PAI teachers by considering the level of implementation and mastery of online-based information technology, getting an average score of 70.43%, which means that the success rate is high (Asep Awaluddin, 2017).

Other research, however, has produced inconsequential findings. The use of in-service training as a monitoring method has little impact on teachers' performance (Makhdoom et al., 2011). This demonstrates that instructional supervision has not successfully raised instructors' general competency. Despite ongoing supervision, the teacher frequently performs activities, mainly teaching tasks, in a poor manner (Wiyono, Wedi, et al., 2021). The principal has not performed as a supervisor overseeing learning at the highest level. Humanistic collaborative supervision impacts teacher performance but is not linked to technological advancements (Wiyono, Rasyad, et al., 2021). To find successful instructional supervision strategies that are in accordance with current ICT advancements, it is therefore required to do more extensive study on the efficiency of various instructional supervision approaches related to the usage of ICT.

Implementing instructional supervision cannot be divorced from using these technologies in keeping with the advancement of communication and information technology. These methods of communication can take the form of sharing long-form writing or blogging on platforms like WordPress, Tumblr, or Blogger, short-form writing on platforms like Facebook, Twitter, and Google Plus, or sharing photographs on platforms like Snapchat, Pinterest, and Instagram. Examples of supervision media that can be used for synchronous conversation are Skype, Google Hangouts, and Second Life. For academics, researchers, and professionals, social networking sites like LinkedIn,

ResearchGate, Academia.edu, and Vitae have been created (Wiyono, Indreswari, et al., 2021). These communication strategies can be used when putting learning supervision into practice. It is yet unclear, nevertheless, how much ICT-based communication methods can facilitate the implementation of learning oversight. There is considerable debate over how much ICT can do to raise the bar for instruction.

Some ICT-related research findings have not produced the best learning outcomes. The use of ICT in education has not significantly impacted the outcomes of student learning. Similarly, ICT hasn't always been exploited to its full potential in school administration. The use of ICT to carry out administrative activities at schools or create relationships between schools and the community is still subpar. Additionally, it is unknown how much of an impact ICT use in school administration has on academic achievement. ICT has been used in several studies to implement instructional supervision; however, the outcomes have been inconsistent (Maor et al., 2016).

Additionally, its impact on the educator's learning process has not been appropriately investigated. The various communication methods are also different, but no studies have been done on their efficiency. According to one study, employing online tools for supervision may improve coordination between supervisors and supervisees. Although this has not been empirically demonstrated in the field, videoconferencing, email, and teleconferencing can be valuable tools for fostering employee professional competencies when following the proper protocols. Another study using tablets as a digital tool demonstrated that they could enhance concentration, boost motivation, increase feedback, increase opinion-sharing, enhance coherence, enhance the structure, and enhance planning and reflection in the execution of supervision. However, no research has been done on its impact on the teacher-teaching-learning process (Hampel & Stickler, 2005). There has been numerous research on the effectiveness of virtual supervision for student assistance, but none have looked at communication approaches. Although video conferencing is thought to be more efficient for student supervision, its impact on the learning process has not been established (Gordon et al., 2015). There were no appreciable differences in self-efficacy or instructor performance between electronic-based and conventional supervision. It is required to investigate further how the use of ICT in instructional supervision affects instructors' instructional processes in light of some of the study's findings.

Advantages of using technology in academic supervision

The use of the Google Form application in helping madrasa supervision to be effective and efficient can be described as follows; 1) Make it easier for supervisors to collect data without having to meet directly with resource persons, especially for resource persons who are far from the location of supervision activities; 2) for data required from activities or administrative reports that do not require the presence of supervisors in the field, then data collection through an instrument made by Google Form will help the implementation of madrasa supervision tasks more effectively and efficiently. 3) The availability of features available on Google Forms, such as graphs, tables, excel, and others, strongly support the data needs of madrasa supervisors

(Rahmiyati, 2020). The advantages of the google form application used for supervision are; (1) the instruments used are attractive; (2) it can be used for various tests/questionnaires/quiz; (3) it can be responded to anytime and anywhere; (4) internet-assisted, accessible from android; (5) can be analyzed quickly and automatically because there is a response facility in the application; (6) can be done collaboratively (Purpuniyanti, 2021). The advantages of google forms are; (1) the instrument used attracts attention, (2) it can use various types of tests or questionnaires, (3) it can be responded to anywhere and anytime, (4) it does not use paper and pen, but can use android, (5) can be analyzed with fast and automatic, (6) can be done collaboratively (Kasmawati, 2020).

Academic supervision using the Zoom meeting application and Google Forms effectively improves teacher performance in implementing online learning (Naranata, 2021). Google Spreadsheet can improve teacher competence in managing learning activities from home at SDN Gendongan 01 (Rahayu, 2021). The application processing can provide convenience in creating and managing academic supervision assessment data. A computerized scoring system can provide convenience and speed up the value calculation process. Information on the value of the data presented in a report becomes more accurate because it uses calculations, and the assessment results cannot be manipulated. Using this system, the assessment becomes well organized to perform data searches and facilitate repairs or corrections if an error occurs in inputting data.

D. CONCLUSION AND IMPLICATION

The technology used in implementing academic supervision is Google Form Application, Zoom Meeting Application, Google Spreadsheet Application, Web-Based Technology, Quality Supervision E-Application, and Online Internet-Based Technology. The whole technology uses the internet in its utilization. The technology used is already available and explicitly developed to support educational supervision activities. The use of technology in academic supervision has various advantages, namely: academic supervision can run effectively and efficiently, supervision can be carried out remotely, is cost-effective, the technology used can attract the attention of principals and teachers, accelerate the data recapitulation process, and collected can be stored online and can be accessed at any time. The results of this study indicate that the current use of technology must be used in academic supervision so that academic supervision can be carried out effectively and efficiently. This technology should not only be limited to the technology that has been discussed but also needs to be developed and tested on other potential technologies. In order to determine which technology is the most efficient, more investigation is required in the form of a comparison of each technology's efficiency level.

REFERENCES

- Alpisyah, S., Setiawan, A., & Sari, M. (2021). *Aplikasi Penilaian Supervisi Akademik Pada Sd Islam Madinaturrاملah Kota Banjarmasin Berbasis Web*. eprints.uniska-bjm.ac.id. <http://eprints.uniska-bjm.ac.id/4391/>
- Asep Awaluddin. (2017). *Supervisi Akademik Berbasis Internet Online Dan Penguasaan*

- Teknologi Informasi Supervisor dalam rangka Peningkatan Kompetensi Profesional Guru PAI (Studi Kasus di SMP Negeri 1 dan SMP 8 Kota Salatiga)*. IAIN SALATIGA. <http://e-repository.perpus.iainsalatiga.ac.id/id/eprint/1967>
- Baumeister, R. F., & Leary, M. R. (1997). Writing narrative literature reviews. *Review of General Psychology*, 1(3), 311–320. <https://doi.org/10.1037/1089-2680.1.3.311>
- dos Santos, H. L., & Cechinel, C. (2019). The final year project supervision in online distance learning: assessing students and faculty perceptions about communication tools. *Behaviour and Information Technology*, 38(1), 65–84. <https://doi.org/10.1080/0144929X.2018.1514423>
- Effendy, N. (2019). Meningkatkan Kemampuan Guru Dalam Melaksanakan Pembelajaran Melalui Supervisi Akademik Berbasis Teknologi Informasi dan Komunikasi (TIK) di SMPN 1 Jaro. *Jurnal Penelitian Tindakan Dan Pendidikan*, 5(1), 49–56. <https://rumahjurnal.net/ptp/article/view/558>
- Fauzi, F. (2020). Peningkatan Profesionalisme Guru Melalui Supervisi Klinis. *EDUSIANA: Jurnal Manajemen Dan Pendidikan Islam*, 7(2), 109–128. <http://digilib.unimed.ac.id/id/eprint/1104>
- Fitria, H., Ahmad, S., & Novita, D. (2021). The Effectiveness of Internet-Based Supervision on The Covid 19 Pandemic Situation. *Tadbir: Jurnal Studi Manajemen Pendidikan*, 5(1), 19–32. <https://doi.org/10.29240/jsmp.v5i1.2174>
- Fitriyadi, H. (2013). Integrasi teknologi informasi komunikasi dalam pendidikan: potensi manfaat, masyarakat berbasis pengetahuan, pendidikan nilai, strategi implementasi dan pengembangan profesional. *Jurnal Pendidikan Teknologi Dan Kejuruan*, 21(3), 269–284.
- Gordon, R. M., Wang, X., & Tune, J. (2015). Comparing psychodynamic teaching, supervision, and psychotherapy over videoconferencing technology with Chinese students. *Psychodynamic Psychiatry*, 43(4), 585–599. <https://doi.org/10.1521/pdps.2015.43.4.585>
- Hampel, R., & Stickler, U. (2005). New skills for new classrooms: Training tutors to teach languages online. *Computer Assisted Language Learning*, 18(4), 311–326. <https://doi.org/10.1080/09588220500335455>
- Hosnan, H. (2020). Supervisi Akademik Melalui Penggunaan Aplikasi Google Form Pada Madrasah Binaan. *Media Nusantara*, 2(1), 56–66. <https://ejournal.pcpergunukraksaan.org/index.php/pcpergunu/article/download/11/8>
- Ibrahim, S. (2017). Supervisi Akademik Oleh Kepala Sekolah Dalam Meningkatkan Kompetensi Profesional Guru SD Negeri 2 Calang Kabupaten Aceh Jaya. *Pascasarjana Universitas Syiah Kuala*, 7(3), 192–198. <http://e-repository.unsyiah.ac.id/JAP/article/view/9354>
- Kasmawati. (2020). Pemanfaatan Aplikasi Google Form dalam Pelaksanaan Supervisi Akademik di Masa Pandemi Covid-19 pada Sekolah Binaan di Kabupaten Takalar. *Jurnal Sipatokkong BPSDM Sulawesi Selatan*, 1(2), 137–142. <http://ojs.bpsdmsulsel.id/index.php/sipatokkong/article/view/28/15%0Ahttps://ojs.bpsdmsulsel.id/>
- Mahdum, M., Hadriana, H., & Safriyanti, M. (2019). Exploring teacher perceptions and motivations to ICT use in learning activities in Indonesia. *Journal of Information Technology Education: Research*, 18, 293–317. <https://doi.org/10.28945/4366>
- Mahlopi, M. (2022). Supervisi Pendidikan Era Teknologi 5.0. *ADIBA: Journal of Education*, 2(1), 133–141.
- Makhdoom, S., Shah, A., Mehmood, K., Ziarab, K., & Ishtiaq, M. (2011). In-Service Training of Secondary Level Teachers: a Follow up of Teachers ' Performance in Comparative Perspective. *Journal of Education and Practice ISSN 2222-1735 (Paper) ISSN 2222-288X (Online) Vol 2, No 11&12, 2011, 2(11)*, 40–50.
- Maor, D., Ensor, J. D., & Fraser, B. J. (2016). Doctoral supervision in virtual spaces: A review of research of web-based tools to develop collaborative supervision. *Higher Education Research and Development*, 35(1), 172–188. <https://doi.org/10.1080/07294360.2015.1121206>
- Munastiwi, E., & Puryono, S. (2021). Unprepared management decreases education performance in kindergartens during Covid-19 pandemic. *Heliyon*, 7(5), e07138.

- <https://doi.org/10.1016/j.heliyon.2021.e07138>
- Naranata, I. G. N. (2021). Supervisi Akademik Dengan Aplikasi Zoom Meeting Dan Google Form Untuk Meningkatkan Kinerja Guru Dalam Pembelajaran Daring Di Sma Negeri 1 Kuta Utara. *Suluh Pendidikan*, 19(2), 132–145. <https://doi.org/10.46444/suluh-pendidikan.v19i2.353>
- Novitasari, T. I., & Hariyati, N. (2021). Implementasi Supervisi Akademik Berbasis Aplikasi E-Supervisi Mutu Di Kantor Pelayanan Pendidikan Kecamatan Ponrogo Pada Masa Pandemi Covid-19. *Jurnal Inspirasi Manajemen Pendidikan Volume*, 09(4), 833–845. <https://ejournal.unesa.ac.id/index.php/inspirasi-manajemen-pendidikan/article/view/40792>
- Purpuniyanti, M. & Y. D. (2021). Supervisi Akademik Dengan Aplikasi Google Form Untuk Peningkatan Kreativitas Guru Dalam Pelaksanaan Pjj. *Prosiding Webinar Nasional IAHN-TP Palangka Raya*, 1, 40–50. <https://prosiding.iahntp.ac.id/index.php/seminar-nasional/article/view/161>
- Rahayu, A. T. (2021). Peningkatan Kompetensi Guru Dalam Pengelolaan Kegiatan Belajar Dari Rumah Melalui Supervisi Akademik Berbasis Aplikasi Google Spreadsheet. *Jurnal Ilmiah Pendidikan TRISALA*, 2(20). <https://garuda.kemdikbud.go.id/documents/detail/2335962>
- Rahmiyati, S. (2020). Pemanfaatan Aplikasi Google Form dalam Meningkatkan Pelaksanaan Supervisi Pendidikan Pengawas Madrasah. *Jurnal Pendidikan Madrasah*, 4(2), 201–209. <https://doi.org/10.14421/jpm.2019.42-08>
- Ramadhan, A. (2017). Pengaruh Pelaksanaan Supervisi Akademik Pengawas Sekolah Dan Supervisi Kepala Sekolah Terhadap Kinerja Guru SMK Negeri Di Kabupaten Majene. *Journal of Educational Science and Technology (EST)*, 3(2), 136–144. <https://doi.org/10.26858/est.v3i2.3579>
- Saiful Bahri. (2014). Supervisi Akademik Dalam Peningkatan Profesionalisme Guru. *Visipena Journal*, 5(1), 100–112. <https://doi.org/10.46244/visipena.v5i1.236>
- Sandholtz, J. H. (2002). Inservice training or professional development: Contrasting opportunities in a school/university partnership. *Teaching and Teacher Education*, 18(7), 815–830. [https://doi.org/10.1016/S0742-051X\(02\)00045-8](https://doi.org/10.1016/S0742-051X(02)00045-8)
- Snyder, H. (2019). Literature review as a research methodology: An overview and guidelines. *Journal of Business Research*, 104(August), 333–339. <https://doi.org/10.1016/j.jbusres.2019.07.039>
- Tranfield, D., Denyer, D., & Smart, P. (2003). Towards a Methodology for Developing Evidence-Informed Management Knowledge by Means of Systematic Review. *British Journal of Management*, 14(3), 207–222. <https://doi.org/10.1111/1467-8551.00375>
- Webster, J., & Watson, R. T. (2002). Analyzing the Past to Prepare for the Future: Writing a Literature Review. *MIS Quarterly*, 26(2), xiii–xxiii. <https://doi.org/10.1.1.104.6570>
- Wiyono, B. B., Indreswari, H., & Prestiadi, D. (2021). The use of technology-based communication media in the teaching-learning interaction of educational study programs in the pandemic of Covid 19. *2021 IEEE 11th International Conference on Electronics Information and Emergency Communication (ICEIEC) 2021 IEEE 11th International Conference on Electronics Information and Emergency Communication (ICEIEC)*, 1–5.
- Wiyono, B. B., Rasyad, A., & Maisyaroh. (2021). The Effect of Collaborative Supervision Approaches and Collegial Supervision Techniques on Teacher Intensity Using Performance-Based Learning. *SAGE Open*, 11(2), 215824402110137. <https://doi.org/10.1177/21582440211013779>
- Wiyono, B. B., Wedi, A., Ulfa, S., & Putra, A. P. (2021). The use of information and communication technology (Ict) in the implementation of instructional supervision and its effect on teachers' instructional process quality. *Information (Switzerland)*, 12(11). <https://doi.org/10.3390/info12110475>