

ACJOURE : Academic Journal Research

Vol. 02 No. 01 (2024) :89 -106

Journal homepage

<https://journal.antispublisher.com/index.php/acjoure>

TRANSFORMATION OF EDUCATIONAL SUPERVISION WITH DIGITAL TECHNOLOGY: IMPLEMENTATION, OPPORTUNITIES AND CHALLENGES

Ruli Astuti¹, Sutiah², Hidayatulloh³, Nur Maslikhatun Nisak⁴^{1,3,4} Universitas Muhammadiyah Sidoarjo, Indonesia² Universitas Islam Negeri Maulana Malik Ibrahim, IndonesiaEmail: ruli.astuti@umsida.ac.id¹, sutiah@pai.uin-malang.ac.id², hidayatulloh@umsida.ac.id³,
maslikhatun.nisak@umsida.ac.id⁴DOI: <https://doi.org/10.61796/acjoure.v2i1.122>

Received: 02-06-2024

Accepted: 20-06-2024

Published: 28-06-2024

Abstract:

Technological developments in the field of education pose challenges for teachers and school leaders. Rapid adaptation to change and increased professionalism and commitment are the keys to the success of education. Digital academic supervision emerged as a solution to overcome the weaknesses of conventional supervisors, that are often time-controlled and effective. This article aims to study the implementation of the use of digital technology in education supervision as well as identify opportunities and challenges. The study uses the Systematic Literature Review (SLR) to examine the implementation of digital technology in the supervision of education by analyzing 12 articles published between 2020-2023. The results show that digital supervisors can facilitate supervisory implementation and effectively improve teacher competence. The challenges faced by digital supervision include limited internet access, minimal technology mastery by senior teachers, and the need for adequate support. Implementation of digital academic supervision is an important step towards improving the professionalism of teachers and the quality of education as a whole, on the condition of adequate training, improved access to technology, and support from all stakeholders.

Keywords: *Academic Supervision, Digital Technology, Opportunities, Challenges***Abstrak:**

Perkembangan teknologi di dunia pendidikan menghadirkan tantangan bagi guru dan kepala sekolah. Adaptasi terhadap perubahan dan peningkatan profesionalisme serta komitmen menjadi kunci keberhasilan pendidikan. Supervisi akademik digital muncul sebagai solusi untuk mengatasi kelemahan supervisi konvensional yang sering terkendala waktu dan efektifitas. Artikel ini bertujuan untuk mengkaji implementasi pemanfaatan teknologi digital dalam supervisi pendidikan, serta mengidentifikasi peluang dan tantangannya. Studi ini menggunakan Systematic Literature Review (SLR) untuk mengkaji implementasi teknologi digital dalam supervisi pendidikan, dengan menganalisis 12 artikel yang diterbitkan antara tahun 2020-2023. Hasil studi

menunjukkan bahwa supervisi digital dapat mempermudah dalam pelaksanaan supervisi dan efektif dalam meningkatkan kompetensi guru. Tantangan yang dihadapi dalam supervisi digital diantaranya keterbatasan akses internet, minimnya penguasaan teknologi para guru senior, dan kebutuhan sarana penunjang yang memadai. Implementasi supervisi akademik digital merupakan langkah penting untuk meningkatkan profesionalisme guru dan mutu pendidikan secara keseluruhan dengan syarat adanya pelatihan yang memadai, peningkatan akses teknologi, dan dukungan dari semua pihak terkait.

Kata Kunci: Supervisi Pendidikan, Teknologi Digital, Peluang, Tantangan

INTRODUCTION

The continuous development of education presents a series of challenges for teachers and school principals (Halifat Wahid et al., 2022). To be able to compete and improve the quality of schools, teachers and principals are required to adapt and keep up with change quickly. Moreover, the success of education is greatly influenced by the level of professionalism and commitment of its educators. (Fadhilah et al., 2022). To achieve educational results, educators must possess high professionalism and strong dedication. In this case, supervision is carried out as an important step in developing the professionalism of teachers (Mbawala & Hermanto, 2023). Education supervision can be performed by principal, the supervisor of education, or senior teachers who have special qualifications in carrying out educational supervision (Bestari et al., 2023).

There are three factors to assess the effectiveness of education supervision, namely the teaching process, learning process, training activities, professional development, and efforts in developing human skills and capacities (Mohammad et al., 2022). Supervision is needed as a monitoring activity to provide guidance and administration to improve teachers' quality in educating, as a form of nurturing the potential and capacity of teachers. Supervision is designed to help teachers understand and carry out their daily tasks at schools, so they can utilize their knowledge and abilities to improve service to students, parents, and schools, and strive to make schools a more effective learning community (Istiningsih et al., 2020).

Implementation effective academic supervision is not the same as supervision that focuses solely on inspection, where supervisors look for teacher mistakes, without giving guidance for improvement (Rusmaniar et al., 2023). Good academic supervision involves guidance, constructive feedback, as well as assistance in addressing the problems and challenges faced by teachers in their teaching process.

The model of academic supervision applied in some schools is still conventional, such as visiting and observing classes, which can affect the readiness of teachers and increase their mental burden while teaching in front of the classroom. In fact, teachers teaching performance during the supervision process may not reflect the actual ability, but rather the result of a previous planned scenario (Ma'ayis & Haq, 2022). The implementation of conventional supervision has many obstacles related to the limited time of the principal and the school supervisor (Purba et al., 2023), this could hinder the effectiveness of supervision. Supervision that is supposed to improve the quality of teaching and

teacher performance as well as the entire educational process become less optimal because it is not carried out thoroughly in a timely manner. The discussion forums between supervisors and teachers are also limited, so teachers do not get information about the supervision report result (Saputra & Yusrianti, 2023). Conventional supervision model is also less adaptive to individual needs and changes in learning, especially in the era of digital education and the Industry 4.0 revolution. Therefore, the presence of technology can be a new innovation for supervisors in utilizing digital academic supervision (e supervision) (Ma'ayis & Haq, 2022). Technology that can be used by supervisors in carrying out digital-based academic supervision, such as online platforms or software to observe, provide feedback, support teacher development in teaching. With e-supervision, this process can be more efficient and effective as well as supporting efforts to improve the quality of learning in schools.

The study of transformation educational supervision with digital technology is crucial in the context of modern education. The educational process is expected to produce excellent and dignified human resources, therefore maximum efforts for renewal in the implementation of learning are required (Asmarani et al., 2022). Implementing digital technology in education supervision can bring many benefits, but the challenges also need to be addressed with appropriate strategies so the transformation can have a positive and significant impact on the field of education. This article aims to examine the implementation of digital technology in education supervision, as well as identify its opportunities and challenges.

RESEARCH METHODS

This article employed a systematic literature review (SLR) methodology. A Systematic Literature Review (SLR) is a type of literature review that gathers and critically evaluate information (Cruz-Benito, 2016). Its aim is to offer comprehensive summary of the existing literature pertinent to a specific research question. There were three main steps involved in this study. The first step was formulating a research question. The second step focused on the search procedure, which aim to locate the necessary data for the inquiry. Data were gathered from the Google Scholar Website to facilitate easier access to the required journal. The final step was the review phase. The researcher used twelve articles discussing digital academic supervision published between 2020-2023. The research study selection process included reviewing titles, abstracts, and full text of journal articles, and key study findings were obtained and further analysed.

RESULTS AND DISCUSSION

Several research findings show that digital academic supervision has a positive impact in addressing various problems in conventional supervision, facilitating supervision implementation, and increasing teacher competence towards technology. The research study selection process included examining titles, abstracts, and full-text of articles, and the main findings of the studies were obtained and utilized for further analysis as shown in the following table:

Table 1 Table Selected Articles

No	Authors/ year	Research Title/ Journal Link	Research Focus	Major Finding/ discussion
1	Priianti, R., 2020	Model Supervisi Akademik Bantuan Elektronik Bagi Pengawas Madrasah di Provinsi Jawa Tengah. https://proceeding.unnes.ac.id/snpasca/article/view/610/529	Describing a digital-based supervision model for madrasah supervisors in Central Java Province	Electronic-assisted supervision models can be developed to address problems such as the large number of institutions and supervised teachers, remote geographical conditions, and the difficult location of madrasahs. Madrasah supervisors can use apps like skype, Zoom, cisco WebEx, google meet, WhatsApp, Google Form, Google Doc, LMS Edmodo to perform supervisory tasks.
2	Asmarani, et al., 2021	Pemanfaatan teknologi dalam pelaksanaan supervisi pembelajaran di SMP. https://edutainment.unmuhbabel.ac.id/index.php/Edutainment/article/view/509/150	Analizing the use of technology in the implementation of learning supervision (e supervision) at SMPN 21 Batang Hari.	Technology-based learning supervision has been implemented, but is not optimal. E- supervision is conducted using applications such Zoom, Google Meet, and WhatsApp groups. The supervision begins with pre supervision, the supervision scheduled according to the teacher's teaching hours, and it ends with reflection activities. Obstacles in the implementation of e- supervision include teachers' difficulties in

				using technology, unstable internet access, and the need for teachers to provide their own internet packages.
3	Mustabsyiroh, et al., 2021	Implementation of Virtual Academic Supervision as an Effort to Increase Competence in the Covid 19 Pandemic. https://www.atlantispress.com/proceedings/iccoet-21/125962240	Descriptive analysis of the implementation of academic supervision as an effort to enhance the competence of teachers during the Covid 19 pandemic, as well as providing an overview of the problems encountered in improving teacher competence.	Virtual academic supervision is suitable for effective implementation by school principal using technology platforms such as virtual online, google forms, and google documents.
4	Danial, et al. 2022	Model Supervisi Akademik Berbasis Digital oleh Kepala Sekolah dalam Meningkatkan Profesionalisme Guru PAUD https://ejournal.unma.ac.id/index.php/educatio/article/view/3922	Explaining the digital-based academic supervision model carried out by the school principal to enhance the professionalism of teachers in the non-formal institutions of PAUD.	In industry 4.0 era, academic supervision by school principal in PAUD institution has adopted digital applications to develop methods and techniques of academic supervision. A digital-based academic supervision is used to identify the weaknesses of teachers, improve professional abilities, and improve the teaching learning process. The models developed involve

				applications such as Google Drive, Google Classroom, e-learning and other platforms.
5	Suprianto, E., et al., 2023.	Supervisi Akademik <i>Online: Analisis Kekuatan dan Kelemahan dalam Pembinaan Lanjut Guru untuk Meningkatkan Pembelajaran.</i> https://journal.binadarma.ac.id/index.php/jurnalbinaedukasi/article/view/2858	The aim is to analyze online academic supervision conducted by school principal	Online academic supervision has a positive impact in addressing problems, facilitating the implementation of supervision, and helping to improve teacher competence towards technology. This training model is flexible concerning teacher's competence. The weaknesses of academic supervision include the disruption of the direct interaction between supervisor and teacher, the lack of optimal internet access, as well as the problems encountered by supervisors and teachers during the supervision.
6	Muta'ali, 2023	Model Supervisi Akademik Berbasis Digital Bagi Pengawas Madrasah di Kab. Cirebon. https://pijar.saeublisher.com/index.php/jpp/article/view/7	Describing a digital-based supervision model for madrasah supervisors in Kab. Cirebon	The effective methods that can be used by madrasah supervisors, including providing guidance through online methods. Various digital applications that can be used include Zoom Cloud Meeting, Seesaw, Microsoft Teams, Google Meet, Cisco Webex, and UmeetMe.

7	Nurdin, S., et al., 2023	Web-based Application Assisted Academic Supervision Model in Developing PAI Teacher Competence. https://jurnal.radenfatah.ac.id/index.php/Tadrib/article/view/21563	Explaining the need for academic supervision with the help of a web-based application and designing a web-based application to enhance teacher competence by PAI supervisor	A web-based application is perfectly suitable for academic supervision activities.
8	Nugroho, A., et al., 2023	Implementasi program Digitalisasi Supervisi Akademik Kepala Sekolah dalam Mutu Kinerja Guru di SMP Muhammadiyah Al Mujahidin Gunungkidul. https://jurnal.ucy.ac.id/index.php/fkip/article/view/1879/1875	Analyzing the implementation of the digitalization program of academic supervision by the school principal on the quality of teacher performance	The digitalization program of academic supervision by school principal using Academic Supervision Application, school principal can conduct supervision effectively and efficiently, provide feedback to teachers, thereby the quality of teacher performance can be continuously improved.
9	Mulyanti, 2023	Educational Supervision to Improve Teacher's Learning Quality and Performance in the New Normal Era. https://jurnal.staihubbulwathan.id/index.php/alishla	Studying the role of education supervision in improving the quality and learning performance of teachers in the new normal era.	Digital-based individual academic supervision is carried out by the school principal involves planning and implementation. Supervision is carried out through online class visits, observations, and discussions with teachers. This method enhances efficiency by

		h/article/view/3780/1839		principal to monitor the teachers' activities in different classes without limitation of time and place. However, digital supervision has a weakness that is a lack of direct interaction between supervisor and teacher.
10	Puspitasari, et al., 2023	Challenge and Transformation: The Innovative Roles of Supervisor in 21 st Century Educational Supervision. https://repository.uinsi.ac.id/bitstream/handle/123456789/3791/4523-Article%20Text-11957-1-10-20231111%20%281%29.pdf?sequence=1&isAllowed=y	Understanding the extent to which supervision of education has transformed in the 21st century and identify the challenges supervisors face in conducting supervision in the modern age of education	In order to face the challenges of the 21st century, supervisors must adopt innovative strategies that include integrating technology into supervision, developing an adaptive curriculum, continuous training for teachers, collaborative approaches, and finding synergies between the use of technology and a humanistic approach. Supervisors need to have skills in understanding the latest educational developments, designing adaptable curricula, continuously enhancing self-competence, and adopting innovative approaches in the supervision process.
11	Purba, et al., 2023	Digital Supervision and Teamwork of	The study aims to identify the influence of digital academic	Digital-based academic supervision can enhance the efficiency of the supervision

		Science Education at Vocational School. https://pdfs.semanticscholar.org/1894/7568b6a816d9f83e54f64966ce85c3cdc094.pdf	supervision on teamwork, the impact of academic supervision on the performance of teachers, and the influence of teamwork on teacher performance.	system. Digital academic supervision is an effective strategy for improving teamwork and teacher satisfaction. The better academic supervision applied, the better the team work of teachers.
12	Saputra, E. & Yusrianti, 2023	Implementasi Model Supervisi Akademik Digital (e Supervisi) Menggunakan Platform Madrasah Smart Digital. https://jptam.org/index.php/jptam/article/view/7008	Explaining the implementation of academic supervision using the Madrasah Smart Digital platform	Implementation of the academic supervision model using the Smart Digital Madrasah platform is not optimal due to the differences in the curriculum applied in the madrasah with in the Digital Smart Madrasah application. The use of the Madrasah Smart digital platform is effective in improving of teachers' ICT competence. The use of this application requires adequate internet connection and device support, especially for madrasahs with limited support facilities.

The previously chosen articles are being categorized and analysed into two discussions parts as follows:

Implementation of Digital Academic Supervision in Educational Institutions

The advancement of technology in education requires the principal, supervisors, and teachers to possess competencies in technology (Purba et al., 2023). The era of the Industrial Revolution 4.0 presents challenges and opportunities that principals need to consider in designing a digital-based

academic supervision (Khasanah et al., 2023). Supervisors must be able to adapt to these challenges and adopt innovative strategies to ensure that education is quality, relevant, inclusive, and adaptive to the demands of the times (Puspitasari et al., 2023). As an innovative academic supervisor, the school principal must possess skills in digital technology to adapt to the changes occurs. Having skills in digital technology allows the school principals to be more effective in his role as a supervisor, able to adapt to change, and lead the school towards a better future.

Supervision is a continuous developmental activity to improve teaching conditions and improve the quality of education (Saleh, 2020). In this context, monitoring, evaluation, and training are carried out to ensure that teachers can provide effective teaching, so the students can achieve optimal learning outcomes. Education supervision requires time, dedication, and most importantly, adequate training to qualify for the role (Ismail, 2018). In the implementation of supervision, it takes time to carry out comprehensive observations and evaluations so that supervision can have a significant positive impact on the quality of education. Communication and collaboration with the school principals also needs to be done in developing new strategies (Rukanda & Nurhayati, 2023), includes by identifying individuals involved in school development, building good communication with stakeholders, explaining new plans and strategies clearly.

The principal has a responsibility to carry out academic supervision, includes planning, implementation, and evaluation of teaching. Moreover, the school principal must be able to lead teachers, develop school programs that encourage creativity and innovation, and help teachers adapt to the digital age (Basilio, 2021). In academic supervision activities, web-based applications are perfectly suitable for use (Nurdin et al., 2023), as they can improve the effectiveness and efficiency of supervising. Several digital academic supervision models that can be developed or implemented according to some literature are using the applications Madrasah Smart Digital, e Sisaga, Academic Surveillance Applications (ASA), zoom, Microsoft Teams, Webex, Google Classroom, Google Drive, e learning, cisco, skype, Edmodo, Microsoft teams, UmeetMe and so on.

The academic supervision model using the Smart Digital Madrasah Platform employs application to facilitate virtual interaction among supervisor, principal, and teacher (Saputra & Yusrianti, 2023). Academic supervision using Madrasah Smart Digital platform includes scheduling, planning the implementation, preparing evaluation instruments, and providing online discussion forum. During e supervision process, supervisors monitor the activities of teachers, provide evaluation, doing reflections and discussions. The supervisor gives a positive feedback to the teacher by discussing the problems and difficulties faced and providing solutions. As a result of research carried out by Saputra, the platform Madrasah Smart Digital platform effective in improving the teacher's ICT competence, it recommended tool for madrasah supervisors and online teacher training.

Meanwhile, e-Sisaga application is a web-based designed for

comprehensive and professional academic supervision (Nurdin et al., 2023). It facilitates online and blended academic supervision and supports development of religious education teachers. E Sisaga application feature demonstrative, evaluation, and communication function tailored for both supervisor and PAI teacher. It supports online teacher competence assessment, thereby enhancing educational quality.

In conducting digital academic supervision, the principal can also utilize the Academic Supervision Application (ASA). ASA is a web-based application designed to facilitate principals easier in conducting supervision (Nugroho & Hidayati, 2023). ASA can be accessed through smartphones, laptops and PC, offering automated scoring, and digital monitoring data that can be reviewed or printed, as well as provide direct feedback to the teacher. The digital technology such as a voice recorder is also often used to perform observations (Mulyanti, 2023). Online video conferencing allows for continuous monitoring of the learning process through virtual class visit, and scheduled based on agreement between principal and teacher. The results of the evaluation and recommendations for improvement are conveyed to supervised teacher. Digital supervision activities for each educational unit can also be done through online interviews (Mustabsyiroh et al., 2021). The principal prepares materials, evaluation instruments, and special programs to provide guidance to teachers. This design is created as a guide to the implementation of supervision, to ensure that no important aspects are missed.

The phase of a digital-based supervisory model that can be implemented by madrasah supervisor includes some important steps (Muta'ali, 2023). First, madrasah supervisor assists the teacher and madrasah principal, and selects the suitable online tools. The supervisor scheduled academic and managerial supervision. During supervision process, the supervisor identifies obstacles faced by the teacher and madrasah principal, provides alternative solutions and follow up to address the problems effectively.

Individual academic supervision by the principal involves planning by creating program and instrument using the google drive and google form applications, conducting online class visits, observations, and discussions with teachers (Mulyanti, 2023). Academic supervision of teachers includes support services to enhance teacher ability to develop learning tools, lesson plan, teaching processes, and assessing learning outcomes. The assistance primarily uses Google Drive, Google Classroom, e-learning and other applications (Danial et al., 2022). The principal supervises learning tools to assess and evaluate teacher's instructional material, offering feedback, to enhance teacher's competence. After identifying problems, the principal provides supports through individual or group training session using video calls or messaging app. They also guide lesson plan development openly during school meetings, fostering a conducive environment for teaching improvement.

Opportunities and Challenges in the Implementation of Digital Supervision

Supervision is an essential component in achieving optimal quality and educational goals by overseeing teaching quality and supporting teacher professionalism (Saputra & Yusrianti, 2023). The combination of support, guidance, and consultation provided by supervisors helps create a better learning environment and supports the progress of the entire educational community. As a supervisor, the principal is responsible for overseeing, correcting and seeking initiatives to ensure the operation of all educational activities (Ray et al., 2023).

Effective academic supervision is crucial in enhancing teacher competence, serves as a model for the principal and teachers in implementing academic supervision in the era of information technology (Sukmara et al., 2023). Various challenges in conventional supervision have prompted the shift towards online academic supervision (Suprianto & Imron, 2023). It aims to enhance the teacher's pedagogic competence to the maximum in school learning. Principals, supervisors, and teachers need to possess high competencies, especially in the digital field, to cope with rapid technological advances (Inom et al., 2023). Monitoring in supervision is expected to help teachers broaden their knowledge of learning developments and innovations in the era of society 5.0. Teachers should be able to use of technology in the process of learning, the technology used should be capable of supporting the achievement of learning goals (Bestari et al., 2023).

Implementation of digital supervision is designed to monitor teacher activity continuously in a flexible manner without distances and time constraints. This setup facilitates easier access to provide feedback on the learning process, and discuss the solutions to solve problems faced by teachers (Purba et al., 2023). Utilizing online academic supervision can simplify overcoming the barriers facing teachers, adapting to changes in teaching methods due to the pandemics, improving competence in technology, and providing flexibility in supervising process.

The digitalization of academic supervision program makes the supervision process in schools more effective and efficient for the principal in monitoring and overseeing the teaching activities (Nugroho & Hidayati, 2023). In addition, teachers have benefits from the ease in administrative tasks, giving more time to improve teaching competence and quality of education. Electronic-assisted supervision models can be developed to address the problems such as numerous of institutions and supervised teachers, and remote geographical conditions (Prilianti, 2020). The academic supervision model also help to improve the ICT competence of teachers, and have a positive impact on the quality of learning, as well as provide effective tools for madrasah supervisors (Saputra & Yusrianti, 2023).

Despite the significant benefits of digital academic supervision, there are several challenges and weaknesses that need to be addressed, including the lack of direct interaction between supervisor and teacher (Mulyanti, 2023), which can reduce the effectiveness of communication and personal relationships that are

typically easily intertwined in direct interactions. Additionally, inadequate internet access, as well as the problems faced by supervisors and teachers during the implementation of online supervision, are also challenges for implementing digital supervision (Suprianto & Imron, 2023). Lack of technological proficiency of senior teachers also becomes an obstacle in implementation of supervision, the minimum of adequate support facilities (Saputra & Yusrianti, 2023), unstable internet access, and the need for teachers to provide their own internet packages are challenges that can affect the effectiveness of digital academic supervision (Asmarani et al., 2022). By identifying these challenges, the implementation of digital academic supervision can be more effective and have a positive impact on improving the quality of education.

CONCLUSIONS

Implementation of digital supervision is an important step aligned with technological advances and the demands of 4.0 Industrial Revolution era. While digital academic supervision has many advantages such as improving teacher ICT competence, time efficiency, and flexibility, there are also challenges or weaknesses that need to be addressed. These include the lack of interaction between supervisor and teacher, limited internet access, insufficient technological proficiency among senior teachers, and the need for adequate supporting facilities.

The implementation of digital academic supervision in educational institutions has great potential to improve the quality of teaching. To achieve optimal results, it requires adequate training, improved access to technology, and support from all stakeholders. Therefore, digital academic supervision can be an effective tool in improving teacher professionalism, and improving the overall quality of education. For further researcher are able investigate the specific strategies that enhance the interaction between supervisor and teacher in digital academic supervision, such feedback mechanism, and collaborative platform that mitigate the lack of face to face interaction.

REFERENCES

- Asmarani, A., Susi Purwanti, & Suryawahyuni Latief. (2022). Pemanfaatan Teknologi Dalam Pelaksanaan Supervisi Pembelajaran Di Smp. *Edutainment : Jurnal Ilmu Pendidikan Dan Kependidikan*, 9(2), 83–91. <https://doi.org/10.35438/e.v9i2.509>
- Basilio, M. B. (2021). Instructional supervision and assessment in the 21 st - century and beyond. *Institutional Multidisciplinary Research and Development Journal*, 4, 1–8.
- Bestari, P., Awam, R., Sucipto, E., Marsidin, S., & Rifma, R. (2023). Peran Supervisi Pendidikan dalam Meningkatkan Kualitas Pembelajaran di Era Digital. *Jurnal Papeda: Jurnal Publikasi Pendidikan Dasar*, 5(2), 133–140. <https://doi.org/10.36232/jurnalpendidikandasar.v5i2.4016>
- Cruz-Benito, J. (2016). Step 3 : Systematic Literature Review Step-By-Step. *Note*, 62. <https://doi.org/10.5281/zenodo.165773>
- Danial, A., Mumu, M., & Nurjamil, D. (2022). Model Supervisi Akademik Berbasis Digital Oleh Kepala Sekolah Dalam Meningkatkan Profesionalisme Guru PAUD. *Jurnal Educatio FKIP UNMA*, 8(4), 1514–1521. <https://doi.org/10.31949/educatio.v8i4.3922>
- Fadhilah, F., Murniati, M., & Usman, N. (2022). The Effectiveness of Academic Supervision in Improving Online Learning during the Covid-19 Pandemic. *AL-ISHLAH: Jurnal Pendidikan*, 14(3), 4317–4324. <https://doi.org/10.35445/alishlah.v14i3.1307>
- Halifat Wahid, H. N. T., Rawis, J. A. ., Lenny, M., & Mangantes. (2022). Supervisi Dan Evaluasi Pendidikan Dalam Perspektif Merdeka Belajar. *Jurnal Pendidikan*, 4, 1707–1715.
- Inom, N., Aji, P., Amaludin, T., Dina, O., Khoirun, N., Nindya, A., & Nurdahyanti. (2023). Supervisi Pendidikan Era Society 5.0. *Inspirasi Dunia: Jurnal Riset Pendidikan Dan Bahasa*, 2(2), 118–128.
- Ismail, I. binti. (2018). An Important Role of Educational Supervision in the Digital Age. *COUNS-EDU: The International Journal of Counseling and Education*, 3(4), 115–120. <https://doi.org/10.23916/0020180314230>
- Istiningsih, E., Suyatno, & Widodo. (2020). Academic supervision to improve teachers' readiness in utilizing information and communication technology in vocational high schools. *Universal Journal of Educational Research*, 8(10), 4365–4373. <https://doi.org/10.13189/ujer.2020.081002>
- Khasanah, N. U., Fatoni, A., Haryanto, S., Assidiqi, M., & Pendidikan, M. A. (2023). *ACADEMIC SUPERVISION TO ENHANCE TEACHERS ' TPACK*. 37(2), 119–129.
- Ma'ayis, S., & Haq, M. S. (2022). Implementasi Model Supervisi Akademik Digital (E-Supervisi) Di Era Pandemi Covid-19. *Jurnal Inspirasi Manajemen Pendidikan*, 10(01).
- Mbawala, J. J., & Hermanto, H. (2023). *Education Supervision and The Challenges Faced by Supervisors in Implementing Their Responsibilities in Tanzania*. 8, 1–14. <https://doi.org/10.17977/um025v8i12023p1>

- Mohammad, N., Alazzam, A., Mohammad, I., Mohammad, N., & Alazzam, A. (2022). Challenges facing the educational supervision methods of the Ministry of Education in light of Saudi Vision 2030. *Journal for Educators, Teachers and Trainers*, 13(4), 390–401. <https://doi.org/10.47750/jett.2022.13.04.050>
- Mulyanti, D. (2023). Educational Supervision to Improve Teachers' Learning Quality and Performance in the New Normal Era. *AL-ISHLAH: Jurnal Pendidikan*, 15(3), 3749–3755. <https://doi.org/10.35445/alishlah.v15i3.3780>
- Mustabsyiroh, N., Prestiadi, D., & Imron, A. (2021). Implementation of Virtual Academic Supervision as an Effort to Increase Teacher Competence in The Covid-19 Pandemic. *Advances in Social Science, Education and Humanities Research*, 589(Iccoat), 112–115.
- Muta'ali, A. (2023). Model Supervisi Akademik Berbasis Digital Bagi Pengawas Madrasah di Kab. Cirebon. *Jurnal Pendidikan Dan Pengajaran*, 1(2), 1–11.
- Nugroho, E. P. A., & Hidayati, D. (2023). Implementasi Program Digitalisasi Supervisi Akademik Kepala Sekolah Dalam Mutu Kinerja Guru Di Smp Muhammadiyah Al Mujahidin Gunugkidul. *Academy of Education Journal*, 14(2), 1535–1546. <https://doi.org/10.47200/aoej.v14i2.1879>
- Nuridin, S., Kustati, M., & Isnaini, M. (2023). Web-based Application-Assisted Academic Supervision Model in Developing PAI Teacher Competence. 9(2), 135–146.
- Prilianti, R. (2020). Model Supervisi Akademik Berbantuan Elektronik bagi Pengawas Madrasah di Provinsi Jawa Tengah. *Prosiding Seminar Nasional Pascasarjana 2020*, 1(1), 1–12.
- 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>
- Puspitasari, A., Utari, D., Rohim, M., & Sudadi. (2023). Challenge and Transformation: The Innovative Role of Supervisors in 21st Century Educational Supervision. *Journal on Education*, 06(01), 9477–9488.
- Ray, A. ul mardiyah, Fauziah, A., Salamah, I. ayu, Wibowo, A., & Diastami, S. M. (2023). Tantangan & Upaya Kepala Sekolah Dalam Meningkatkan Supervisi. 3(2).
- Rukanda, N., & Nurhayati, S. (2023). Educational Supervisors' Strategies in Improving ECCE Principals' Managerial Competence in the Digital Era: A Case Study. *Jurnal Obsesi : Jurnal Pendidikan Anak Usia Dini*, 7(5), 6281–6294. <https://doi.org/10.31004/obsesi.v7i5.5497>
- Rusmaniar, R., Widiyatsih, T., & Setiyo, H. (2023). Individual Technical Academic Supervision Using Digital Technology. *PPSDP International Journal of Education*, 2(1), 46–54. <https://doi.org/10.59175/pijed.v2i1.60>
- Saleh, K. (2020). Penerapan Teknik Pengawasan Akademik Di Sekolah Dasar Menghadapi Era Digital. *Pendekar: Jurnal Pendidikan Berkarakter*, 3(1), 18–21.
- Saputra, E., & Yusrianti, S. (2023). Implementasi Model Supervisi Akademik Digital (E-Supervisi) Menggunakan Platform Madrasah Smart Digital.

Jurnal Pendidikan Tambusai, 7(2), 5167–5171.

Sukmara, G., Yuliana, L., Retnowati, E., & Jannah, N. M. (2023). The Important Role of Principal in Academic Supervision to Improve Teacher Competency in Society 5.0 Era. *Cendekia: Jurnal Kependidikan Dan Kemasyarakatan*, 21(2), 268–284.

<https://doi.org/10.21154/cendekia.v21i2.6926>

Suprianto, M. E., & Imron, A. (2023). Supervisi Akademik Online: Analisis Kekuatan Dan Kelemahan Dalam Pembinaan Lanjut Guru Untuk Meningkatkan Pembelajaran. *Jurnal Ilmiah Bina Edukasi*, 16(2), 100–114.

<https://doi.org/10.33557/jedukasi.v16i2.2858>