

Optimizing The Implementation of Teacher Performance Assessment in Indonesia's Industrial Revolution 4.0 and Society Era 5.0

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Abstract

An efforts needs to be taken by a nation to improve education in pursuing advancement and developments in science and technology. We are currently entering the period of the Industrial Revolution 4.0 and the Era of Society 5.0, in which it is necessary for people to use creativity and technology to solve social problems. The goal of this discussion is to identify the most relevant HR supervision theories for the Industrial Revolution 4.0 and the Society 5.0 eras in order to raise the standard of instructors by requiring them to understand technology. This research was carried out using the library research method which consisted of determining the theme of the discussion, finding reference sources according to the theme of the discussion, compiling the contents of the material, and concluding the results of several reference articles. The theory applied was the relationship between the HR supervision function and teacher quality in the era of the industrial revolution 4.0 and the era of society 5.0. The results of the discussion indicate the need for renewal. Education and training need to be packaged into an activity that is able to improve mindsets, new innovations, as well as teachers' mastery of technology in schools, so as to create modern learning according to the needs of the times.

Keywords: *Human Resources Supervision, Teacher Performance Assessment, Industrial Revolution Era 4.0. Era of society 5.0*

INTRODUCTION

Along with the increasing demands and competition for the quality of education, teacher performance has decreased. This is in accordance with Kusumawati's explanation¹ showing that the performance of teachers in Indonesia

¹Erna Kusumawati, 'Analysis of the Relationship between the School Principal's Visionary Leadership and Kindergarten Teachers' Performance', *Journal of Innovation in Educational and Cultural Research* 4, no. 1 (2023): 89–97, <https://doi.org/10.46843/jiecr.v4i1.526>.

is still low due to several factors such as lack of enthusiasm for teaching, lack of discipline in teaching, teaching skills that are not optimal and minimal in digitization-based learning. Seeing this, it is difficult for the world of education to improve academic quality. Moreover, teacher performance is related to teacher competence. It is known that teacher competence based on data from the Teacher Competency Test results in 2022 is low. The UKG average is still below the standard score of 53.38 (Regional Education Balance Sheet 2022). This data is very low from the minimum UKG achievement value of 70.00. The low performance of teachers is caused by less than optimal teacher management, which has been reviewed through the following studies: Rivai et al.² Steinberg and Sartain,³ Ulfathmi et al.,⁴ Zubaidah et al.,⁵ This requires supervision as a form of assessment and guidance on teacher performance linked to the challenges of the 4.0 and 5.0 era.

In attempts to promote and expand cooperative actions within an organization, supervision plays a crucial role. To accomplish a goal, many people must collaborate at educational institutions. Of course, efforts to assess, direct, shape, and manage educational institutions are inextricably linked to the issue of methods and instruments as well as the issue of the people who must be able to carry out work efficiently. Teachers are both a valuable resource in schools and the cornerstone of efforts to raise educational standards. The success of education in enhancing and growing the caliber of human resources is driven by teachers.

There are many advantages and disadvantages to the ideas and creativity that emerge and materialize from the minds of great people in the modern period.⁶ We are currently entering the era of the industrial revolution 4.0, the era of society 5.0, an era where technology is part of humans themselves and the internet is not only used to share information but also to live life.⁷ This also occurs in education, which is defined by new rules, practices, and learning environments that must be modified to meet contemporary needs. Because of this, there is a need for educators who are knowledgeable, flexible, and skilled in development. However, many teachers lack the necessary creativity and innovation to effectively educate the country's youth since they do not completely comprehend the industrial revolution 4.0 and society

²Rivai Rivai, Mursalim Umar Gani, and Moh Zulkifli Murfat, 'Organizational Culture and Organizational Climate as a Determinant of Motivation and Teacher Performance', *Advances in Social Sciences Research Journal* 6, no. 2 (2019), <https://doi.org/10.14738/assrj>.

³Matthew P Steinberg and Lauren Sartain, 'What Explains the Race Gap in Teacher Performance Ratings? Evidence from Chicago Public Schools', *Educational Evaluation and Policy Analysis* 43, no. 1 (2021): 60–82, <https://doi.org/10.3102/0162373720970204>.

⁴Ulfathmi Ulfathmi, Yasir Arafat, and Andi Arif Setiawan, 'The Influence of Principal Leadership and Work Motivation on Teacher Performance', *Journal of Social Work and Science Education* 2, no. 2 (2021): 160–68, <https://doi.org/10.52690/jswse.v2i2.238>.

⁵R A Zubaidah, Siswoyo Haryono, and Udin Udin, 'The Effects of Principal Leadership and Teacher Competence on Teacher Performance: The Role of Work Motivation', *Calitatea* 22, no. 180 (2021): 91–96.

⁶ Muhammad Kristiawan et al., *Inovasi Pendidikan, Jawa Timur: Wade Group National Publishing*, 2018.

⁷Ni Luh Putu Sariyani, 'Strategi Komunikasi Dalam Meningkatkan Kinerja Karyawan Di Bhr Law Office', *Jurnal Ilmiah Manajemen Dan Bisnis* 2, no. 2 (2020): 115, <https://doi.org/10.38043/jimb.v2i2.2313>.

5.0 eras.⁸ There is no doubt that developing competent and qualified instructors is a difficult process. In order to meet the demands of the modern day and generate outstanding young people, a particular education and training program is required.⁹

The National Education System is governed by Law of the Republic of Indonesia Number 20 of 2003, which declares that teaching is a profession. As a result, instructors must constantly update their knowledge and skills to reflect current events, advances in science and technology, and societal demands. Oviyanti claims that investing in education as a long-term human resource (HR) investment offers strategic benefits for the survival of human civilisation worldwide. The instructor is a key element in education.¹⁰

Lack of opportunity for teachers to participate in training, both locally and nationally, inefficient, and a focus on administrative issues in educational supervision, which is intended to improve the learning process, are the main causes of teachers' poor performance and insight.¹¹ Since performance is an effort made to accomplish the results achieved (achievement) for the amount of effort that has been put into it, it can also be compared to effectiveness, usability, or productivity. According to Sedarmayanti, performance is the outcome of how well a particular task or activity functions throughout the course of a specific amount of time.¹² According to Rivai in Astuti, a teacher's performance at work is determined by how they actually behave in accordance with predetermined criteria and their responsibilities as educators.¹³

The job of the teacher in as elaborated has to do with their function during the educational process. The position that the teacher performs in the learning process—which is at the center of the entire educational process—makes the teacher a very important determining element in education. Teachers design, carry out, and

⁸Ilham Ilham, 'Pendidikan Islam Di Madrasah: Suatu Kajian Permasalahan Dan Solusi Pendidikan Madrasah Dalam Perspektif Filsafat Pendidikan Islam', *Tajdid: Jurnal Pemikiran Keislaman Dan Kemanusiaan* 4, no. 2 (2020): 103–24, <https://doi.org/10.52266/tajdid.v4i2.516>.

⁹ Zulkifli Zulkifli, 'Analisis Kompetensi Guru Menghadapi Era Revolusi Industri 4.0', *JISIP (Jurnal Ilmu Sosial Dan Pendidikan)* 4, no. 3 (2020), <https://doi.org/DOI: http://dx.doi.org/10.58258/jisip.v4i3.1286>.

¹⁰ Fitri Oviyanti, 'Tantangan Pengembangan Pendidikan Keguruan Di Era Global', *Nadwa: Jurnal Pendidikan Islam* 7, no. 2 (2016): 267–82, <https://doi.org/DOI: https://doi.org/10.21580/nw.2013.7.2.562>.

¹¹ Mariyamah Mariyamah, 'Penerapan Supervisi Edukatif Kolaboratif Secara Periodik Untuk Meningkatkan Peningkatan Kinerja Guru Dalam Pembelajaran Di Kelas Di SD Negeri 170/Ix Marga Pada Semester Ganjil Tahun Ajaran 2019/2020', *Jurnal Literasiologi* 3, no. 3 (2020), <https://doi.org/10.47783/literasiologi.v3i3.110>.

¹² Muhammad Noor, 'Peningkatan Kinerja Guru Melalui Supervisi Edukatif Kolaboratif Secara Periodik', *Al-Adzka: Jurnal Ilmiah Pendidikan Guru Madrasah Ibtidaiyah* 8, no. 1 (2018): 45–60, <https://doi.org/10.18592/aladzkapgmi.v8i1.2177>.

¹³P Astuti, 'Peningkatan Kinerja Guru Melalui Supervisi Edukatif Kolaboratif Secara Periodik Di SD Negeri 3 Depok Kecamatan Bendungan Kabupaten Trenggalek', *Jurnal Kajian Pembelajaran Dan Keilmuan*, 2021, <https://doi.org/10.28926/jpip.v1i2.183>.

assess student learning in the classroom.¹⁴ As a result, teacher performance can be defined as the actions taken by a teacher in carrying out his responsibilities as an educator and teacher while presenting material to a class in accordance with specific criteria, such as planning teaching programs, carrying out learning activities, and assessing learning outcomes. The ability to manage oneself and all of one's capacity in order to achieve life welfare in a balanced and sustainable order is a quality that teachers should possess.¹⁵

It is not easy for teachers to keep up with the demands of the modern world while still improving their skills. The problem is even greater for older teachers since they must acquire modern technology, including programs, systems, and other teaching tools that they may not be familiar with.¹⁶ Institutions of higher education and training must be able to organize coaching and training sessions in a fresh, creative approach.¹⁷ Therefore, this article aims to provide knowledge about HR supervision in improving teacher performance and how to develop appropriate education and training programs for teachers to improve their quality and performance, in order to meet the demands of an increasingly modern era in facing the era of the industrial revolution 4.0 and the era society 5.0. This makes it important to have HR supervision in order to improve teacher performance as HR in schools.

Based on the problems that have been described, there is a gap for researchers that there is currently no research that examines teacher performance appraisals that combine the industrial era and the era of society 5.0. Moreover, the industrial era and the era of society 5.0 are a new trend for the development of research both nationally and internationally. So that researchers are interested in researching improving teacher performance in the industrial era 4.0 era society 5.0 through optimizing teacher performance appraisals. This research has practical implications for the role of teachers to provide reinforcement for teachers to be able to adapt to rapid and complex changes. This is done by improving teacher performance in the industrial era 0.4 and society 5.0 era. Thus, this research can provide direction for stakeholders including stakeholders to create an educational environment that is in line with the demands of the industrial era 4.0 and the era of society 5.0. Thus, it is important to discuss "Optimizing the Implementation of Teacher Performance

¹⁴Syukri Syukri, 'Peningkatan Kinerja Guru Dalam Pembelajaran Di Kelas Melalui Supervisi Edukatif Kolaboratif Secara Periodik Di SMPN 8 Satu Atap Langgudu Semester Ganjil Tahun Pelajaran 2020/2021', *JUPE: Jurnal Pendidikan Mandala* 5, no. 6 (2020), <http://dx.doi.org/10.58258/jupe.v5i6.1642>.

¹⁵Hira Maulida et al., 'Memacu Kualitas SDM Di Tengah Pandemi Covid-19 Di Rumah Tahfidz Al Hikam, Kel. Pondok Kacang Timur, Kec. Pondok Aren. Tangerang Selatan', *DEDIKASI PKM* 2, no. 2 (2021): 233–38.

¹⁶Dian Marta Wijayanti, *Guru Zaman Now (Guruku, Sahabatku)* (Semarang: Formaci, 2017).

¹⁷Juwita Juwita, 'Mengembangkan Kompetensi Profesional Widyaiswara Dalam Menghadapi Tantangan Pembelajaran Jarak Jauh (E-Learning) Dimasa Pandemi Covid 19', *Syntax Literate; Jurnal Ilmiah Indonesia* 6, no. 4 (2021): 1754–72, <https://doi.org/10.36418/syntax-literate.v6i4.2544>.

Appraisal (PKG) in Indonesia in the Era of Industrial Revolution 4.0 and Era Society 0.5

METHOD

This is library research which is a type of qualitative research method in which the location and place of research is carried out with libraries, documents, archives, and the like. According to Sugiono, in qualitative research the researcher acts as a key instrument and seeks to collect data, describe and analyze data in the field. The results of qualitative research emphasize meaning rather than generalization.¹⁸ The use of this approach is adapted to the main objective of the research,¹⁹ which is to describe and analyze HR supervision in optimizing the implementation of teacher performance assessment in Indonesia in the 4.0 industrial revolution era and the 5.0 society era. Sources of data are literature or materials sourced from books, journals and other sources. In analyzing the data, this study uses the documentation method, namely data obtained from written materials related to research problems, both from document sources, namely primary and secondary data, photographs, books, encyclopedias, papers, articles, letters, news, internet, and so on. This is followed by data analysis using induction and deduction interpretation steps, internal coherence methods, and descriptive methods as well as historical-philosophical approaches, in order to obtain an overview of human resource supervision in optimizing the implementation of teacher performance assessment in Indonesia in the era of industrial revolution 4.0 and the era society 5.0.

FINDING AND DISCUSSION

Finding

The Era of Industrial Revolution 4.0 and Society 5.0

According to the Japanese Cabinet Office, Society 5.0. is defined as a human-centered society that balances economic progress with the resolution of social problems through a system that highly integrates cyberspace and physical space. They want to answer and jump over the issues that are developing from Europe to the whole world about the industrial revolution 4.0. which is considered to eliminate the role of humans as a result of being replaced by technology.²⁰

The emergence of the idea of Society 5.0 departs from the Japanese Government's concern about the condition of its aging society. About 26.3 percent of Japan's population is over 65 years old, while population growth is relatively low. Through the Society 5.0 project, Japanese senior citizens are expected to use artificial

¹⁸ Sugiyono, 'Memahami Penelitian Kualitatif', Bandung: Alfabeta, 2015.

¹⁹Michael Quinn Patton, *Qualitative Research & Evaluation Methods: Integrating Theory and Practice* (Sage publications, 2014); Matthew B Miles, A Michael Huberman, and Johnny Saldaña, *Qualitative Data Analysis: A Methods Sourcebook* (Sage publications, 2018).

²⁰I Arifin, 'Penguatan Literasi Humanistik Bidang Manajemen Pendidikan Menghadapi Tantangan Dan Peluang Era Revolusi Industri 4.0. Dan Society 5.0. Makalah Internasional Seminar Program 3 in 1', n.d.

intelligence (AI) technology, Internet of Things (IoT), machine learning, big data and so on to help their lives. According to Thufail, the Society 5.0 movement faces two fundamental problems, namely interface and culture. The second problem is related to the hierarchical structure of Japanese companies. Decision making must be consulted with superiors, colleagues and other parties. This concept allows society to use modern science-based (AI, robots, IoT, etc.) to serve human needs. Society 5.0 itself was only inaugurated on January 21 2019 and was made as a solution to the Industrial Revolution 4.0 which was feared would degrade humanity.

For this reason, Indonesian human resources now and for the future are required to have: (1) character (performance characteristics: hard work, discipline, tenacity, not giving up easily, thorough as well as moral character traits such as faith and piety, honesty, humility, courtesy /morals); (2) competence (creative thinking, creativity, communication and collaboration as well as problem solving); and (3) literacy (reading and writing, numeracy, scientific literacy, ICT Fluency/technology skills), language skills, cultural awareness, logical thinking) and communication skills in a global world. Facing this challenge, the Indonesian nation is required to produce quality human resources through a quality education process from the level of Early Childhood Education (PAUD) to tertiary institutions.

Supervision of Education with Technology in the 4.0 and 5.0 eras

Nowadays, a variety of technologies can be used for monitoring tasks, including virtual supervision (internet). The limitations of the absence of direct communication between teachers and supervisors, as well as the supervision's current time and location, will be readily solved. The virtual-based supervision model is particularly successful and efficient because it allows a supervisor to keep an eye on a target teacher's actions outside of the classroom with no time, place, or distance restrictions.

Many teachers in various schools can be managed by a single supervisor in one location. It is anticipated that collaboration between supervisors and teachers from various schools would result in a number of studies that will improve the standard of learning. Because this virtual or internet-based supervision may be done whenever and wherever it is desired without any time restrictions, it will give supervisors and teachers the freedom to share information.

In general, educational technology is interpreted as a medium that was born from the revolution in communication technology that can be used for teaching purposes besides teachers, books and blackboards. According to Danim, the pattern of human life and technological progress has a close relationship; education is the most prominent container. Some of the educational technology media include: a) Whiteboards, b) Bulletin Boards and Displays, c) Photographic Images and Illustrations, d) Slides and Flimstrips, e) Flim, f) Educational Records, g)

Educational Radio, h) Television Education, i) Maps and Globes, j) Textbooks, k) Over Head Projectors, l) Tape Recorders and Lcd Projectors, l) Other Educational Technology Tools.²¹

Teacher Competency Standards

Each teacher needs to be competent so that he/she can be guided in carrying out responsibilities as an educator. Competency means "ability or prowess." Competence denotes "the state of being legally competent or qualified, especially the state of being authorized or completing the requirements according to legal regulations," in addition to the definition of "capacity".²² According to Law No. 14 of 2015 Concerning Teachers and Lecturers, pedagogical, personality, professional, and social skills are all part of teacher competency. There are four main competencies of a teacher that have been evolved into teacher competency standards, including pedagogic, personality, social, and professional competences, according to Law No. 16 of 2007 Governing Teacher Qualification and Competency Standards.

Teacher performance assessment

Teacher performance assessment is carried out on teacher competence based on the obligation to carry out learning, mentoring, or additional work in accordance with the interests of the school. Assessment is a systematic step and includes activities to analyze, interpret and collect information that can be used as an object to determine how far the teacher achieves learning objectives.²³ Meanwhile, the Ministry of Education and Culture stated that teacher performance evaluation is a structured activity in collecting, processing, compiling and interpreting data, information and facts in the hope of being able to conclude the size or rank of a person in competence of one type/profession in the field of educational expertise. Furthermore, teacher performance evaluation is an assessment carried out on each item of the teacher's main task activity with the aim of career development, position and rank.²⁴ A productive teacher performance appraisal is an organized process that includes the action of analyzing, interpreting, and gathering helpful explanations in order to draw conclusions about a person's character.

Teacher Performance Assessment Indicators

²¹Sudarwan Danim, *Media Komunikasi Pendidikan: Pelayanan Profesional Pembelajaran Dan Mutu Hasil Belajar* (Bumi Aksara, 1995).

²²Jamil Suprihatiningrum, *Guru Profesional: Pedoman Kinerja, Kualifikasi & Kompetensi Guru* (Ar-Ruzz Media, 2013).

²³Kusaeri Suprananto, 'Pengukuran Dan Penilaian Pendidikan', Yogyakarta: Graha Ilmu, 2012.

²⁴Suciana Rahayu and Anita Sindar, 'Sistem Pendukung Keputusan Penilaian Kinerja Guru Menggunakan Metode Simple Additive Weighting', *Jurnal Ilmu Komputer Dan Informatika* 2, no. 2 (2022): 103-12, <https://doi.org/10.54082/jiki.28>.

According to the Ministry of National Education, Directorate General of Quality Improvement of Educators and Education Personnel, there are several indicators of evaluating teacher performance that can be seen: (a) Pedagogic competence including (1) The character of students is mastered by the teacher; (2) The principles of learning and learning theory that educate must mastered by the teacher; (3) Developed curriculum; (4) Educational learning activities; (5) Developed student potential; (6) Teacher - students communication (7) evaluation and assessment (b) Personality competence, including (1) Ethics work, high responsibility, pride in being a teacher (2) Religious, legal, social and national cultural norms (3) Show a mature and exemplary personality (c) Having social skills means being able to: (1) communicate with parents, students, other teachers, and the community; and (2) act impartially, inclusively, and without bias. (1) Developing professionalism through reflective action is part of professional competence (d). (2) Mastery of the information, organization, ideas, and scientific perspectives that underpin the disciplines being taught.

Discussion

Efforts to Develop Teacher Performance through HR Supervision in the Industrial Age 4.0

As a result of the complete digitization of all services, our quick access to information, and the high level of competitiveness in today's world, it is clear that Indonesia must work to strengthen its human resources. According to the Minister of Research, Technology, and Higher Education (Menristekdikti), Mohamad Nasir, Indonesia was considered to be a country with high potential and its location in Southeast Asia was taken into consideration based on an initial assessment of the nation's readiness to face the industrial revolution 4.0. Nevertheless, it continues to fall under neighboring nations like Malaysia, Singapore, and Thailand. There are a number of reasons why Indonesia continues to lose, and these need to be addressed to ensure that Indonesia is competitive. These include the low quality of higher education, inadequate preparation for careers in science and technology, and a lack of understanding in business and innovation (innovation and business sophistication).

Resource changes are crucial since only dependable and superior resources can compete in this global market and endure. Particularly human resources from the educational sector, who play a crucial part in these transformations.²⁵

Teachers play a crucial role in educational resources as staff members because they are the main driver of educational success. As a result, attempts to build and enhance education quality must begin with factors connected to teacher resources that are related to their professionalism in performing their duties as motivators,

²⁵Piet A Sahertian, *Konsep Dasar & Teknik Supervisi Pendidikan: Dalam Rangka Pengembangan Sumber Daya Manusia* (Penerbit Rineka Cipta, 2000).

facilitators, evaluators, and similar tasks. Therefore, in order for teachers to be able to perform professionally, it is necessary for them to possess the following qualities, according to Mastuhu:²⁶

First, teachers should care deeply about their responsibilities and duties, and they should be aware that the tasks they complete are interconnected and form a larger network rather than standing alone.

Second, the teacher needs to be capable of handling the assignment. They need to be aware of what to do, why to do it, and how to go about doing it.

Third, instructors must receive fair rights in accordance with their different duties and responsibilities in order to carry out their duties and responsibilities as stated in the first and second points.

The development and improvement of teacher professionalism can be carried out with the help of supervisors (principals, inspectors/supervisors) as well as certain agencies that carry out supervision activities for teachers. One of the reasons for the importance of supervising teachers is the promotion of the position of the teaching profession, where academic supervision is tasked with maintaining, caring for and stimulating the increase in the position of the teacher. So that later the teacher can become a professional figure in carrying out the mandate and responsibility and has a bargaining value in society in general and the government in particular in terms of forming graduates (output) who have knowledge and technology and the formation of a complete human character.

There are several ways that can be used and implemented by the principal as a supervisor in carrying out academic supervision activities in order to improve the professionalism of teacher performance, namely: coaching teachers, education and training, increasing work motivation.

Efforts to Develop Teacher Performance through HR Supervision in the Era of Society 5.0

A long-term human resource investment with strategic importance for the future of human civilisation in the world, education is one of the efforts made to attain national education goals.²⁷ These objectives, however, do not reflect the caliber of Indonesian education. We must acknowledge that our nation's educational system continues to be of poor quality.

The poor quality of teachers in Indonesia is one of the reasons behind the country's poor educational system.²⁸ The majority of teachers lack the

²⁶ Mastuhu, *Menata Ulang Pemikiran Sistem Pendidikan Nasional Dalam Abad 21 (Cet. Ke4)* (Yogyakarta: Safiria Insania Press, 2004).

²⁷ Badrut Tamam, 'Reorientasi Pendanaan Pendidikan Dalam Membangun Mutu Sekolah', *Misykat Al-Anwar Jurnal Kajian Islam Dan Masyarakat* 1, no. 2 (2018): 44–57, <https://doi.org/10.24853/ma.1.2.44-57>.

²⁸ Leonard Leonard, 'Kompetensi Tenaga Pendidik Di Indonesia: Analisis Dampak Rendahnya Kualitas SDM Guru Dan Solusi Perbaikannya', *Formatif: Jurnal Ilmiah Pendidikan MIPA* 5, no. 3 (2016), <http://dx.doi.org/10.30998/formatif.v5i3.643>.

professionalism necessary to carry out their responsibilities under Article 39 of Law Number 20 of 2003, which include creating lesson plans, evaluating student learning outcomes, providing guidance, conducting training, conducting research, and performing community service.²⁹

The skills that must be possessed in the 21st century include leadership, digital literacy, communication, emotional intelligence, entrepreneurship, global citizenship, problem solving, team-working. The former Minister of Research Technology and Higher Education (Menristek Dikti), Muhammad Nasir, explained that there are four things that universities must pay attention to in order to produce qualified and competent graduates. First, competency-based education, an information technology approach is needed to help determine the right study program according to their abilities. Second, the use of (IoT) Internet of things can help communication between educators and students in the teaching and learning process. third, the use of virtual/augmented reality can help students understand theory that requires certain simulations according to actual conditions. Fourth, the use of Artificial Intelligence (AI) to find out and identify the learning needs needed by students.³⁰

Therefore, the preparation of a training program for teachers must be designed through a needs analysis according to the needs of the times. In this case what needs to be included in the training materials is the mastery of information and communication technology, the development of creativity, the development of learning methods, and the development of innovation.

Education and Training Program Materials in Improving Teacher Performance in the Era of the Industrial Revolution 4.0 and the Era of Society 5.0:

First, mastery of information and communication technology (ICT) is expected to become a unit in learning so as to create students who are more active and independent. Teachers also need to have professional competence, namely always improving and developing academic qualifications and competencies in a sustainable manner in line with developments in science, technology and art. Teachers need to improve their competence through collaborative activities with colleagues, collaborating with parents, empowering community resources, conducting simple research.³¹ Effective use of technology in education, however, is not instantaneous and it must be taken into account that it must be used with wise planning, design, reflection and testing.³²

²⁹ Septin Angraini, 'Peran Supervisi BK Untuk Meningkatkan Profesionalisme Guru BK', in *Prosiding Seminar Bimbingan Dan Konseling*, vol. 1, 2017, 332–41, <http://pasca.um.ac.id/conferences/index.php/snbk>.

³⁰Faulinda Ely Nastiti and Aghni Rizqi Ni'mal 'Abdu, 'Kesiapan Pendidikan Indonesia Menghadapi Era Society 5.0', *Jurnal Kajian Teknologi Pendidikan* 5, no. 1 (2020): 61–66, <https://doi.org/10.17977/um039v5i12020p061>.

³¹Abdul Halim, 'Pengembangan Kompetensi Guru Di Era Teknologi Informasi Dan Komunikasi Abad-21' (Thesis Commons, 2022), <http://dx.doi.org/10.31237/osf.io/9nrxrw>.

³²Sutiah Sutiah et al., 'Implementation of Distance Learning during the Covid-19 Pandemic in Faculty of Education and Teacher Training', *Cypriot Journal of Educational Science* 15, no. 1 (2020): 1204–14, <https://doi.org/10.18844/cjes.v15i5.5151>.

Second, the development of teacher creativity can be seen in the learning process. Fun, active, and creative learning is the obligation of every teacher as an educator. As stated in the National Education Law, educators and educational staff are obliged to create an educational atmosphere that is meaningful, fun, creative, dynamic and dialogical.

Combine existing methods so that learning can be interesting and fun. Khaeruddin explained that creative learning requires teachers to be able to motivate students and bring out student creativity during the learning process by using various methods and strategies such as group work, problem solving, and so on.³³

Fourth, the development of innovation is very important to achieve learning objectives by using an active, effective and efficient learning model. Ideas, ideas, actions that are considered new in certain fields, to solve problems that arise. Innovation usually arises because of the concerns of certain parties (eg teachers) about organizing activities (eg learning) in overcoming problems that occur. That way, in the training program that will be followed by a teacher must bring in speakers and trainers who are reliable in their respective fields. So that activities can get maximum results and can be implemented properly by the teachers.

The capacity to adjust to scientific discoveries that get more advanced every day is one sign of a skilled and qualified instructor. Furthermore, effective educators must be able to adapt their teaching strategies to meet the needs of their students as well as the demands of time. The use of this pattern will foster a positive learning environment, make teaching enjoyable, and eventually result in an effective teaching and learning process with top-performing students.

Analysis of the Implementation of HR Supervision in Improving Teacher Performance in the Era of the Industrial Revolution 4.0 and the Era of Society 5.0

The writers used the literature study approach to review all the literature they had gathered and chosen in order to arrive at the findings of this article review. The articles that the writers obtain from the literature review will result in new perspectives on the title of this work as well as research findings with the following justification:

Using ICT (Information and Communication Technology) media tools, research by Guntoro & RC revealed that the factual supervision model has been modified to become an academic supervision model.³⁴ The supervision development model has been validated by experts and practitioners as well as limited trials and has a very good level of validity and is considered effective for

³³ Ahmad Syaikhudin, 'Pengembangan Kreativitas Guru Dalam Proses Pembelajaran', *LISAN AL-HAL: Jurnal Pengembangan Pemikiran Dan Kebudayaan* 7, no. 2 (2013): 301-18, <https://journal.ibrahimy.ac.id/index.php/lisanalhal/article/view/66>.

³⁴David Guntoro and Achmad Rifai RC, 'Pengembangan Model Supervisi Akademik Berbantuan E-Supervision Berbasis Web', *Educational Management* 5, no. 2 (2016): 122-28, <https://journal.unnes.ac.id/sju/eduman/article/view/12967>.

improving teachers' abilities in the IT field. This supervision model in its implementation must be carried out with adequate infrastructure so that it can run effectively and efficiently.

A study suggested that there were problems in the academic supervision of the class visit model, finally the researchers developed the academic supervision of the class visit model to become the 212 model academic supervision by utilizing digital technology which was carried out with three basic stages, namely:³⁵ (1) Two initial stages consisting of from teacher and principal or supervisor assessments, as well as initial supervision using video recordings, (2) One stage of reflection, namely assessing and examining existing problems, and (3) Two final stages, namely providing solutions to problems and re-observation. The purpose of the 212 academic supervision model is for teachers to feel comfortable when carrying out supervision because there is no principal or supervisor who supervises it so that teachers can teach in class in a relaxed, relaxed and free expression.

A research conducted by Purpuniyanti & Dwikurnaningsih explains that academic supervision using the Google Form application is effective and efficient and easier to carry out supervision. During the Covid-19 pandemic, the use of digital supervision is needed so that the implementation does not stop. The advantages that Google Form has for implementing academic supervision are that it can be responded to anytime and anywhere, it can be done simultaneously, the instruments used are attractive and cost-effective because they don't use paper but use Android. Therefore, educators, employees and supervisors can apply the Google Forms software in teaching and learning activities, data collection and academic supervision.³⁶

Research conducted by Meika stated that academic supervision activities during the Covid-19 pandemic were carried out online by the principal of a public junior high school in Cicendo District, Bandung City, which was categorized as very good. Implementation of supervision using the Zoom Meeting/Google Meet application, WhatsApp, Google Forms. The implementation of online supervision makes the teaching competence of educators at Public Middle Schools in Cicendo District, Bandung City categorized as very good because the teachers have planned, implemented, and assessed learning very well.³⁷ Furthermore, research conducted by Muklis stated that the existence of the Covid-19 pandemic made academic

³⁵Eko Faisal, 'Pengembangan Supervisi Akademik Model 212 Berbasis Digital', *Pelita Eduka* 1, no. 1 (2021), <https://doi.org/ISSN: 2797-8958, e-ISSN: 2798-4206>; Adang Danial, Mumu Mumu, and Dedi Nurjamil, 'Model Supervisi Akademik Berbasis Digital Oleh Kepala Sekolah Dalam Meningkatkan Profesionalisme Guru PAUD', *Jurnal Educatio FKIP UNMA* 8, no. 4 (2022): 1514–21, <https://doi.org/10.31949/educatio.v8i4.3922>.

³⁶Menik Purpuniyanti and Yari Dwikurnaningsih, 'Supervisi Akademik Dengan Aplikasi Google Form Untuk Peningkatan Kreativitas Guru Dalam Pelaksanaan PJJ', in *Prosiding Seminar Nasional IAHN-TP Palangka Raya*, 2021, 18–29, <https://doi.org/10.33363/sn.v0i6.161>.

³⁷Nafa Nur Meika, 'Pengaruh Supervisi Akademik Kepala Sekolah Secara Daring Terhadap Kinerja Mengajar Guru Smp Negeri Di Kecamatan Cicendo Kota Bandung Pada Masa Pandemi Covid-19 COVID-19' (Thesis: Universitas Pendidikan Indonesia, 2021).

supervision activities at the Rejang Regency Middle School, Lebong Bengkulu unable to be carried out factually. Therefore, academic supervision is carried out using the E-Supervisor application. Supervision activities are carried out online through Zoom Meetings, Google Forms, WhatsApp Groups. Monitoring data processing is carried out through the E-Supervisor application version 5.0 to produce a digital portfolio for evaluation and reporting activities.³⁸

Research conducted by Zarkasi explained that in the era of technological advancement supervisors must be more creative in utilizing technology for the benefit of academic supervision. The use of ICT media or technological aids can solve problems regarding supervision experienced by school principals in improving the quality of their schools. In addition, IT-based supervision is considered very effective and efficient because it can provide convenience for supervisors.³⁹ Next, research conducted by Julak suggested that ICT-based academic supervision activities at SDN Kuin Cemcuk 5 Banjarmasin were proven to be able to develop educator competencies in carrying out teaching and learning properly.⁴⁰ This is because a series of supervisory activities are carried out according to the character of the educator and through a process of coaching and training with fellow colleagues. Furthermore, research conducted by Sulastri explained that implementing ICT-based academic supervision could improve the ability of teachers at SDN 13 Bukit Bestari. The teacher's ability has increased significantly after carrying out ICT-based academic supervision and can have a positive influence on a series of learning activities.⁴¹

Purnamawati explained that observation and data analysis of academic supervision are important components for creating quality information. This study produced an android-based observation instrument application model, namely AOS (Application of Observation) with an accountability index of 4.57, which means that the model is accountable for use in the academic supervision process. The output of this model can be used as a reference in determining appropriate guidance for teachers so that the quality of the learning process and student learning outcomes can be improved to achieve national education goals.⁴² Furthermore, research conducted by Haris explained that the use of Information

³⁸Muklis Muklis, 'Supervisi Pendidikan Agama Islam Berbasis Aplikasi E-Pengawas Di Sekolah Menengah Pertama Kabupaten Rejang Lebong Bengkulu' (Thesis: UIN Sunan Gunung Djati Bandung, 2021).

³⁹Taqiudin Zarkasi, 'Supervisi Pendidikan Bebas ICT (Supervisi Berbasis Internet)', *At-Tadbir: Jurnal Manajemen Pendidikan Islam* 2, no. 1 (2018): 17–25, <https://doi.org/10.3454/at-tadbir.v1i2.3008>.

⁴⁰Alwiyati Alwiyati, 'Penggunaan Supervisi Akademik Berbasis Teknologi Informasi Komunikasi (Tik) Dalam Meningkatkan Kemampuan Guru Melaksanakan Pembelajaran Di Sdn Kuin Cerucuk 5 Banjarmasin', *Jurnal Pembelajaran Dan Pendidik* 1, no. 2 (n.d.): 409645, <https://www.julak.online/index.php/Jurnal/article/view/40>.

⁴¹Sulastri Sulastri, 'Supervisi Akademik Berbasis TIK Di SDN 013 Bukit Bestari Tanjungpinang', *Indonesian Journal of Educational Development* 2, no. 1 (2021): 88–97, <https://doi.org/10.5281/zenodo.4781861>.

⁴²Risa Fahriyani Purnamawati, Rais Hidayat, and Henny Suharyati, 'Development of Supervision Instrument Application Model through the Utilization of Android-Based Technology for School Heads', *International Journal of Global Operations Research* 1, no. 4 (2020): 143–50, <https://doi.org/10.47194/ijgor.v1i4.60>.

and Communication Technology (ICT) to improve the quality of academic supervision practices in schools in remote/disadvantaged areas (3T) from a national and international perspective is seen as important. Therefore, some supervisors in Indonesia have an initiative to set up an E-Supervision platform to enable more frequent communication and guidance for the schools under their supervision. This research applied several approaches that can be used by 3T regions to facilitate digital supervision.⁴³

According to the findings of a literature review, the process of monitoring education through digital technology is deemed effective enough to be used in the industrial revolution 4.0 and the current era of society 5.0 because the monitoring process is made simpler and the outcomes are produced more quickly and automatically. E-implementation Supervision's in the 4.0 and 5.0 eras has the potential to improve the quality of teacher learning and teacher competence in the field of technology, which can improve the quality of these educational institutions. It can also make it easier for supervisors to carry out supervision and is not based on geographical location.⁴⁴

Therefore, it is believed that the introduction of digital monitoring will be beneficial and will raise the degree of HR supervision adoption. Digital HR monitoring does not always help managers and educators, though. According to Haris' research, communicating in Special Regions (3T/Outermost, Disadvantaged, and Remote) typically necessitates the use of SSB radio or physical communication actions like walking or riding a motorcycle to find a telephone signal, aside from the option of visiting Service at the District or District Center. Dial-up and satellite internet access are both quite pricey and constrained. In the meanwhile, the usage of E-Supervision necessitates the use of electricity from multiple sources, telephones that utilize different 3G and 4G satellite technologies, and other modifications.⁴⁵

According to Rupiah, implementing academic supervision through the use of ICT also has its challenges, including:⁴⁶ poor signal, a lack of technological expertise, frequent power outages in rural regions, a shortage of internet capacity, and rising credit charges. Digital academic supervision is hampered by the lack of IT knowledge among instructors and administrators as well as by inadequate infrastructure caused by a lack of funding from schools, particularly private

⁴³Ikhfan Haris, Fory A Naway, and Wiwy T Pulukadang, 'Technology Approaches to School Supervision: The Way to Improve School Supervision Practice in Remote/Disadvantaged Areas', *International Journal of Innovation, Creativity and Change* 5, no. 5 (2019): 97–107, <https://www.ijicc.net/index.php/volume-5-2019/148-vol-5-iss-5>.

⁴⁴Rachmat Rachmat Satria, Rachmat Satria, and Mustiningsih Mustiningsih, 'Supervisor in Era Industrial Revolution 4.0 and Society 5.0', in *5th International Conference on Education and Technology (ICET 2019)* (Atlantis Press, 2019), 596–601, <https://doi.org/10.2991/icet-19.2019.147>.

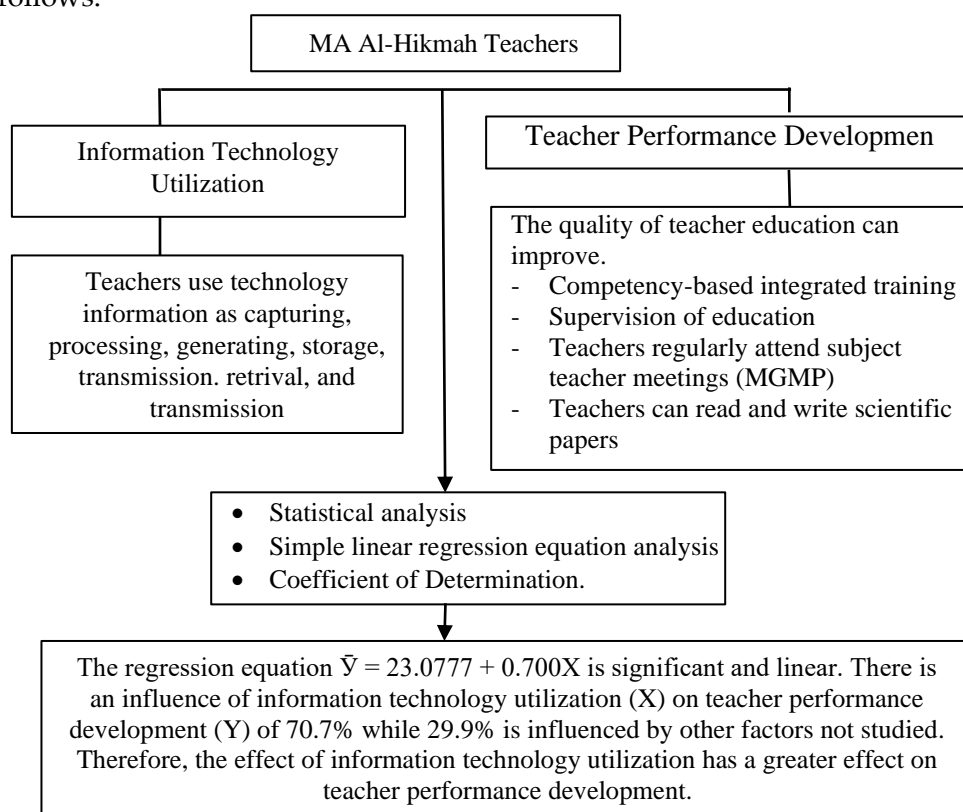
⁴⁵Haris, Naway, and Pulukadang, 'Technology Approaches to School Supervision: The Way to Improve School Supervision Practice in Remote/Disadvantaged Areas'.

⁴⁶Rupiah Rupiah, 'Utilization Of Information And Communication Technology (Ict) In Academic Supervision During The Covid-19 Pandemic', *Jurnal As-Salam* 5, no. 2 (2021): 120–28, <https://doi.org/10.37249/assalam.v5i2.304>.

institutions. Consequently, the adoption of digital academic supervision may not always result in benefits for current supervisors and teachers, but there are also drawbacks that are perceived, particularly in the 3T (Outermost, Disadvantaged, and Remote) locations.

As well as the results of research by Fitri Setio Rini and Achmad Farouq Abdullah that the results of student test scores in the implementation of class actions on the use of multimedia have increased significantly with an average in the first cycle of 5.75 and in the second cycle increased to 7, 05. This can be interpreted that the utilization of Arabic Learning Multimedia based on Visual Learning can improve the Arabic language learning skills of UNIDA Gontor students.⁴⁷

While the results of Febby Oktavianti's research (2022) on "The influence of digital advances in education on teacher performance at Madrasah Aliyah Al-Hikmah Bandar Referring to this explanation, the framework of this research is as follows.



Description:

Based on the framework chart, this study also explains the indicators of the information technology utilization variable and the teacher performance

⁴⁷ Fitri Setyo Rini and Achmad farouq Abdullah, 'Utilization of Visual Learning-Based Arabic Learning Multimedia to Improve Arabic Language Skills of Female Students at University of Darussalam Gontor', *At-Ta'dib* 15, no. 2 (2020): 125–44, <https://doi.org/10.21111/at-tadib.v15i2.5121>.

development variable with statistical data analysis, simple linear regression equation and the coefficient of determination. Thus, there are

CONCLUSION

The implementation of digital academic supervision, which is thought to be very effective and efficient to be implemented by supervisors in coaching educators so that they can produce educators who are professional and IT literate, can meet the challenges of the Industrial Revolution 4.0 and the Era of Society 5.0. Digital academic supervision has not always been deemed a success due to its implementation's flaws, which include: 1) The principal or supervisor did not understand how to use the technology that will be used to conduct E-Supervision. 2) The 3T Special area needed facilities and infrastructure including electricity, an internet network, and adequate computers.

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