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Qualification and Competence of Headmaster as A Supervisor According to Regulation of The Minister of National Education Number 13 of 2007 to Face Industry 4.0

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Abstract: A school principal is the key person in achieving the school's vision, mission, and goals. Minister of National Education Regulation Number 13 of 2007 concerning standards for headmasters consists of general and specific qualifications. Besides the qualifications, a principal must fulfill personal, managerial, entrepreneurial, supervision and social competencies. Supervision competence is the competence of principals who need to get serious attention including, 1) planning an academic supervision program, 2) conducting academic supervision of teachers using appropriate supervision approaches and techniques, 3) following up on academic supervision results. The principal as a supervisor who is responsive to industry 4.0 can be seen by his positive attitude and concrete steps in the use and development of information and communication technology both in the administrative and academic aspect as evidence of follow-up on the results of supervision done.

Keywords: *qualification, competence, headmaster, regulation of minister of national education no. 13 of 2007, industry 4.0*

A. Introduction

A school principal is a functional staff teacher who is given the task of leading a school where a teaching and learning process is held or a place where interaction between teachers gives lessons and students who receive lessons (Wahjosumidjo, 2009: 81). In the context of education, the principal is a person who must be able to move, influence, motivate and direct people within certain educational institutions to achieve the goals that have been formulated.

Indirectly, a good school gives a picture of having a good headmaster. This can be seen from the professional ability of the principal and his willingness to work hard in empowering all potential school resources to guarantee the success of a school in achieving its goals.

Especially in the era of the 4.0 industrial revolution where work has been done digitally. Only by using one device, can be used to manage multiple jobs (multi-tasking). The era where the world of education was faced with a number of challenges. This requires visionary and innovative principals who have sensitivity and speed in responding to or answering these challenges.

The principal as the main actor has a very influential role in coordinating, mobilizing, and harmonizing all available educational resources in the school. Principal leadership is one of the factors that can encourage schools to be able to realize the vision, mission, goals, and objectives of their schools through programs that are implemented in a planned and gradual

manner. The principal is required to have adequate management and leadership skills to be able to take initiatives and initiatives to improve school quality. Danim and Suparno (2009: 19) suggest that: "The principal is responsible for maintaining and motivating teachers, students, and school administration staff so that they are willing and able to implement the applicable rules and regulations in the school. This is where the essence is that the headmaster must be able to carry out the role of schooling and his ability in the field of school management".

The principal is the main actor in playing an important role in the school. The principal is the key person in achieving the success of school autonomy which is given responsibility in managing and utilizing human resources and financial resources for the sake of success in achieving the vision, mission, and goals of the school.

Legislation has outlined that principals in educational units occupy two important positions to ensure the continuity of the education process. First, the principal is the manager of education in the school as a whole. Second, the principal is the formal leader of education in his school (Moch Idochi, 2004: 86).

The principal as education managers responsible for the successful implementation of educational activities by carrying out the administration of the schools with all its substance. In addition, as a manager, the principal has the task of developing the performance of the personal, especially the teacher, towards the expected professionalism. While the principal as a formal leader is responsible for achieving educational goals through efforts to move the subordinates towards achieving predetermined educational goals. In this case, the principal is in charge of carrying out the functions of leadership, both functions related to the achievement of educational goals and the creation of a conducive school climate for the implementation of the teaching and learning

process effectively and efficiently (Akhmadi Afroni, 2009: 82-83).

Based on the Regulation of the Minister of National Education Number 13 of 2007 dated April 17, 2007, concerning the standards of principals that the qualifications of principals consist of general qualifications and special qualifications. In addition to having to meet the qualifications, a school principal must fulfill personal, managerial, entrepreneurial, supervision and social competencies.

Based on the Republic of Indonesia Minister of Education and Culture Regulation Number 6 of 2018 concerning the Assignment of Teachers as Principals The Principal workload in chapter IV article 15 states that:

1. The full workload of the Principal to carry out managerial main tasks, develop entrepreneurship, and supervise Teachers and education staff.
2. The Principal's workload as referred to in paragraph (1) aims to develop schools and improve school quality based on 8 (eight) national education standards.

Looking at the article, a school principal must have sufficient competence to be able to fulfill the workload given to him. One of the principals' competencies that must be developed is supervision competence. This competency needs to get serious attention considering that with the supervision carried out by the principal, the teacher can feel the presence of the principal as a supervisor which is to be a partner who helps increase his professional abilities.

According to Sahertian (2004:19), that supervision is a process specifically designed to help teachers learn the daily tasks at school so they can use their knowledge and abilities to provide better services to parents of students and schools and try to make school as a more effective learning community.

The purpose of general supervision is to provide technical assistance and guidance to teachers (and other staff) so that the personnel

is able to improve the quality of their work, especially in carrying out their duties, namely implementing the learning process (Arikunto, 2004: 40). This purpose implies the improvement and development of the teaching and learning process in total including improving the quality of teaching teachers, the growth of the teaching profession and the provision of leadership service facilities and the development of good human relations to all parties involved (Ministry of Religion, 2004: 28).

Based on the importance of supervision objectives and the principal's role as a supervisor, the main thing that must be done by the principal that know the extent to which teachers are able to carry out the study with a visit in the classroom to observe the learning process directly, especially in the choice of methods, the media used and the involvement of students in the learning process s so that there are known weaknesses and advantages in carrying out learning, the level of mastery of the competency of the teacher concerned then provides solutions, guidance, and follow-up in improving weaknesses and maintaining its superiority (Hermino, 2014: 144).

In essence, the principal as a supervisor must be able to play a role in carrying out various controls to improve the performance of educators and education staff. This supervision and control is a control so that educational activities in schools are directed at the intended goals. This requires that to become a school principal who is capable of carrying out his duties and responsibilities as a good supervisor, he must fulfill the qualifications and competencies that have been set by applicable regulations and be able to respond to challenges in industry 4.0.

This article is important because it discusses and examines the qualifications and competencies of principals as supervisors in accordance with applicable regulations, namely Regulation of the Minister of National Education Number 13 of 2007 in order to be

better prepared to respond to the challenges of the industry 4.0.

B. Definition of Headmaster Qualifications and Competencies as a Supervisor and Industry 4.0

1. Qualifications and Competencies

In the Indonesian Dictionary (2008: 822-823), the definition of qualification is special education to obtain a skill. In other definitions, qualifications are defined as the skills needed to perform or occupy positions.

Etymology competency means skill or ability (Team Prima Pena, 2006: 256). While in terminology means knowledge, skills and basic values reflected in the habit of thinking and acting. The habit of thinking and acting that consistently and continuously enables a person to be competent in the sense of having knowledge, skills and basic values to do something (Majid, 2005: 9).

Competence is knowledge, skills, attitudes, and values that are manifested in the habit of thinking and acting. The habit of thinking and acting will consistently and continuously allow someone to be competent. This means that someone's competence can be in the form of knowledge, skills and basic values to do something (Mas'ud, 2017: 125).

In the context of this discussion, the qualifications of the principal explain the academic and non-academic requirements to be appointed as principals. While competency contains a set of capabilities that must be owned and controlled by the principal to be able to carry out the main tasks, functions, and responsibilities.

Based on the explanation, in essence, the qualifications and competencies of the principal are requirements, criteria in the form of expertise, levels of education, knowledge, skills, attitudes, and values that are manifested in the habit of thinking and acting and that must be fulfilled by a

school principal in leading everything resources available at a school to cooperate in achieving goals.

2. Headmaster

The headmaster comes from two words namely head and school. The word head can be interpreted by the leader or chairman of an organization or institution. While the school is an institution where it becomes a place to receive and give lessons (Ministry of Education and Culture, 1988: 420 and 796).

The principal is a functional teacher who is given the task of leading a school where a teaching and learning process is held or a place where there is an interaction between the teacher who provides lessons and students who receive lessons (Wahjosumidjo, 2009: 83). In the context of education, the principal is someone who must be able to move, influence, motivate and direct people in certain educational organizations/institutions to achieve the goals that have been formulated.

Seen the important role of principals in an effort to influence and move people in educational institutions towards a positive direction in order to achieve goals. Based on this, what is meant by the writer with the principal is a person who is given the mandate to lead a school so that the educational goals can be achieved as stipulated.

3. Headmaster as Supervisor

Etymologically supervision comes from English, which means supervision (Wojowasito, 1972: 198). According to Good Carter in Sahertian (1981: 18), provides an understanding of supervision as follows: "Supervision is the effort of school officials to lead teachers and other officers in improving teaching, including stimulating, selecting the growth of positions and the development of teachers and revising educational goals, teaching materials, and teaching and evaluation teaching methods."

According to the Directorate of Education Personnel (2008: 4), supervision is supervision professionals in the academic field are run based on scientific rules about their fields of work, understanding more about learning than just ordinary supervisors.

Supervision is an activity in determining conditions or essential conditions that will guarantee the achievement of educational goals. Looking at this matter, the principal as a supervisor should have sufficient qualifications and competencies to research, search, determine the conditions needed for the progress of the school so that the educational objectives of the school can be achieved.

From the definition above, the writer can give the understanding of the principal as a supervisor is a process of supervision carried out by the principal with expertise, knowledge, skills, attitudes and values that are manifested in the habit of thinking and acting the teachers and staff in it so that the performance they do is in accordance with the objectives planned in advance so that they can achieve the stated goals.

4. The era of Industry 4.0

The concept of industrial revolution 4.0 is a concept that was first introduced by Professor Klaus Schwab. A well-known German economist and initiator of the World Economic Forum (WEF), through his book, The Fourth Industrial Revolution, stated that the industrial revolution 4.0 could fundamentally change the way we live, work and connect with one another (Halim, Stevani, Revolusi Industri 4.0 di Indonesia, https://medium.com/@stevanihalim/rev olusi-industri-4-0-di-indonesia-c32ea95033da, (Accessed 1 April 2019).

Industry 4.0 is the name of the trend of industrial automation systems, where there is the latest exchange of data in factory technology. This term includes physical cyber systems, internet for all activities, cognitive computing and other network-based activities. The industrial revolution 4.0 is often also called the fourth generation industrial revolution which is characterized by the emergence of supercomputers, smart robots, unmanned vehicles, genetic editing and neurotechnology developments that enable humans to optimize brain functions (Saepudin, Budhi Slamet, Revolusi Industri 4.0 apa itu, dan Pengaruhnya terhadap Dunia Pendidikan, http://disdikkbb.org/?news=revolusi-industri-4-0-apakah-itu-dan-pengaruhnya-terhadap-dunia-pendidikan, (Accessed 1 April 2019)..

Based on the explanation above, the era of industrial revolution 4.0 is a period or era characterized by the use of digital technology in the process of carrying out activities that take place continuously without limits of space and time limits.

C. Qualifications and Competencies of Principal According to Minister of National Education Regulation Number 13 of 2007

Based on the Regulation of the Minister of National Education Number 13 of 2007 dated April 17, 2007, concerning the Standards of Principals that the qualifications of principals consist of general qualifications and special qualifications.

1. General Qualifications of Principals are as follows:
   a. Have an undergraduate academic qualification (S1) or a four (D-IV) education or non-diploma education at accredited colleges;
   b. At the time appointed the head of aged high school - 56-year high;

c. Teaching experience of at least five (5) years according to each school level, except in kindergarten /Raudhatul RA (TK/RA) has a teaching experience of at least 3 (three) years in kindergarten/RA;
   d. Has a rank as low as III/c for civil servants (PNS) and for non-PNS equals to the rank issued by a foundation or authorized institution.
2. Special Qualifications of Principals including:
   a. Head of Kindergarten/Raudhatul Athfal (TK/RA) are as follows:
      1) Status as a kindergarten/RA teacher;
      2) Having an educator certificate as a TK/RA teacher;
      3) Has a TK/RA head certificate issued by an institution determined by the Government
   b. The Principals of Primary/Madrasa Ibtidaiyah (SD/MI) are as follows:
      1) Status as an SD/MI teacher;
      2) Having an educator certificate as an SD/MI teacher;
      3) Has a certificate of the head of SD/MI issued by an institution determined by the Government.
   c. Head of Junior High School/Madrasa Tsanawiyah (MTs) are as follows:
      1) Status as an SMP/MTs teacher;
      2) Have a teaching certificate as a teacher at SMP/MTs;
      3) Have a junior/MTs head certificate issued by an institution determined by the Government.

d. Head of Senior High School/Madrasa Aliyah (SMA/MA) are as follows:
1) Status as a high school/MA teacher;
2) Having an educator certificate as a high school/MA teacher;
3) Has a high school/MA head certificate issued by an institution determined by the Government

e. Vocational High School/Madrasa Aliyah Vocational School Principals (SMK/MAK) are as follows:
1) Status as a teacher of SMK/MAK;
2) Having an educator certificate as a teacher of SMK/MAK;
3) Have a head certificate of SMK/MAK issued by an institution established by the Government.

f. Extraordinary High School Principals (SDLB/SMPLB/SMALB) are as follows:
1) Status as a teacher at the SDLB/SMPLB/SMALB education unit;
2) Having an educator certificate as an SDLB/SMPLB/SMALB teacher;
3) Has an SLB/SDLB head certificate issued by an institution determined by the Government

g. The Principals of Indonesian Foreign Affairs are as follows:
1) Have at least 3 years' experience as headmaster;
2) Have an educator certificate as a teacher in one education unit;

3) Having a principal certificate issued by an institution determined by the Government.

While the competency of the principal includes personality competence, managerial competence, entrepreneurial competence, supervisory competence, and social competence. The dimensions of each competency can be described as follows:

1. Personality competencies include:
a. Have noble character, develop a culture and tradition of noble character, and set an example of noble character for the community in the school.
b. Have personality integrity as a leader.
c. Have a strong desire for self-development as headmaster.
d. Be open in carrying out basic tasks and functions.
e. Control yourself in facing problems in work as headmasters.
f. Have the talent and interest in positions as educational leaders.

2. Managerial competencies include:
a. Arranging school planning for various levels of planning.
b. Developing a school organization as needed.
c. Leading schools in order to make optimal use of school resources.
d. Manage changes and development of schools towards effective learning organizations.
e. Creating a school culture and climate that is conducive and innovative for learning students.
f. Manage teachers and staff in order to optimally utilize human resources.
g. Manage school facilities and infrastructure in the context of optimal utilization.

h. Manage the relationship between school and the community in the search for idea support, learning resources, and funding for schools.

i. Manage students in the framework of acceptance of new students, and the placement and capacity building of students.

j. Manage curriculum development and learning activities in accordance with the direction and goals of national education.

k. Manage school finances in accordance with management principles that are accountable, transparent and efficient.

l. Manage school administration in supporting the achievement of school/madrasa goals.

m. Manage special school service units in supporting learning activities and activities of students in schools.

n. Manage school information systems in supporting program preparation and decision making.

o. Make use of advances in information technology for improving learning and management of schools.

p. Monitoring, evaluating, and reporting on the implementation of school activities programs with appropriate procedures, and planning follow-up.

3. Entrepreneurship competencies including:

a. Creating innovations that are useful for the development of schools.

b. Work hard to achieve school success as an effective learning organization.

c. Have a strong motivation to succeed in carrying out their main tasks and functions as school leaders.

d. P is giving up and is always looking for the best solutions to the obstacles faced by schools.

e. Having entrepreneurial instincts in managing school production/service activities as learning resources for students.

4. Supervision competencies including:

a. Planning an academic supervision program in order to increase teacher professionalism.

b. Carrying out academic supervision of teachers using appropriate supervision approaches and techniques.

c. Following up on academic supervision of teachers in order to increase teacher professionalism.

5. Social competencies including:

a. Cooperate with other parties for the interests of the school.

b. Participate in community social activities.

c. Have social sensitivity towards other people or groups.

D. Qualifications and Competencies of Principal as Supervisors According to Minister of National Education Regulation Number 13 of 2007

1. Principal Qualifications and Competencies

Based on the Regulation of the Minister of National Education Number 13 of 2007 dated April 17, 2007, concerning the standards of principals, that the strategic position of a school principal must go through a process and procedure based on applicable regulations. The appointment procedure provides guidance on the source and background of education, experience, age, rank, and integrity. While the rules emphasize the

requirements or criteria that need to be met by prospective school principals (Isjoni, 2007: 66). This means that the teacher appointed as a candidate for the principal must fulfill the qualifications and competencies in accordance with the provisions stated in the regulation.

According to Arsyad in his article entitled Mencermati Standar Kepala Sekolah", at http://re-searchengines.com/0508arsyad.html, accessed March 4, 2019, articles in Regulation of Minister of National Education Number 13 of 2007 can lead to multiple interpretations, meaning that the qualifications and competencies can be interpreted as a condition of entering the school principal's professional area. After the person is appointed as the principal, his status as an educator/teacher becomes free. But it can also be interpreted as strengthening the old status of only a teacher who was given an additional assignment as the principal. If that is the case, then the profession is dual, namely the teaching profession and the principal's profession. According to him, a school principal even though it is required to come from a teacher but after being appointed as the principal then the concerned should no longer be a teacher/educator but as a professional school principal with clear tasks and functions that require special attention like other education professions such as school supervisors, laboratory, and librarian.

According to the author, Muhammad Arsyad's analysis of the importance of the principal's profession was made as a special profession like other professions, there was a positive side. The principal is essentially functional staff who are given the task of leading a school. Therefore, the competencies emphasized on the principal's tasks are not the competencies of the teaching and learning process, but

the competencies expressed by Lipham in Wahjosumidjo's writings (2009: 366-367), namely the ability to analyze problems, organizational skills, managerial abilities, ability to make decisions and abilities communicate.

Quoting Daryanto's opinion (2011: 71-72), the principal has a number of roles that must be played together, namely as educators, managers, administrators, supervisors, motivators, entrepreneurs and leaders. Often the role of the principal as a leader in learning often lacks the appropriate portion. The school principal is preoccupied with routine administrative work, meetings and other non-academic activities, so that time to study curriculum renewal/innovation, teaching and learning processes and assessment of learning outcomes is less attention. In fact, these three things are very closely related to improving the quality of the teaching and learning process which will affect the improvement of the quality of students and the overall quality of the school.

The essence of the articles in Regulation Number 13 of 2007 concluded that a school principal must have the ability to lead the school as a whole. The competencies and dimensions of development must be demonstrated in their daily activities as the principal.

Regarding the supervisory competence listed in the Minister of National Education Regulation Number 13 of 2007 in accordance with the focus of the author's discussion, competence in supervision is also as important as the other competencies required by the regulation. The role of the principal as a supervisor is the role that is automatically attached to it. The supervisor in question is a person who functions to provide assistance to teachers in stimulating teachers towards better learning.

2. Competence of Principal as Supervisors According to Minister of National Education Regulation Number 13 of 2007

To be able to carry out the mandate of the role of the principal in accordance with the rules stipulated in Regulation Number 13 of 2007, the principal is required to understand the role and be able to develop dimensions of competence in accordance with these regulations. One of the competencies that are the focus of this discussion is the competence of supervision described in the competencies as follows:

a. Planning an academic supervision program in order to increase teacher professionalism;

Academic supervision is a guiding activity aimed at improving conditions both personal and material that enable the creation of a better learning situation for the creation of educational goals (Ashari, 2004: 1). In order for the academic supervision program to run well, the principal must try to prepare the preparation of the supervision program so that the implementation of academic supervision can run well, appropriately and appropriately up to follow up on the results of academic supervision.

The first and foremost stage in academic supervision is arranging academic supervision planning. Academic supervision planning is an activity that must be well prepared by the principal. This stage must be carried out both by the teachers and the principal themselves as supervisors. In this stage, planning also includes discussion of supervision instruments that will be used in the implementation of academic supervision later.

The principal must prepare everything well starting from the implementation schedule, the academic supervision instrument and prepare the teachers to face academic supervision so that later the implementation of academic supervision can run well too. This is in line with the opinion of Asmani (2001: 50), that the implementation guidelines or supervision plans made by the school principal remind all teachers to prepare everything in preparing a good plan in the learning process so that the teaching and learning process can be qualified in its implementation.

In planning academic supervision, the principal as supervisor must also determine the instruments to be used in implementing the academic supervision. The compiled instruments are based on the Minister of Education and Culture Regulations relating to academic supervision activities and also based on the results of the training that had been attended by the principal. The instrument will be used in the implementation of academic supervision to assess the performance of the teachers. This is in line with the opinion of Mulyasa (2011: 250) that the initial meeting stage is the stage of learning planning which is discussed openly by the teacher and the principal which will be the focus of supervision, and also the discussion of observation instruments to be used in supervision activities.

b. Carrying out the academic supervision of teachers using appropriate supervision approaches and techniques.

The implementation of supervision is based on everything

that has been planned. The headmaster evaluates the performance of the teachers with class visits according to the plans that have been set. This is in accordance with with Wibisono's opinion (2006:193) that performance evaluation is a performance assessment compared to what has been planned.

The performance evaluation is carried out by the school principal by checking various administrative features that have been prepared by the teachers and conducting class visits to observe the course of the learning process. Class visits are the most effective technique in implementing academic supervision because with a class visit the principal will know more about the way the teacher delivers the learning. As revealed by Sutisna cited by Sagala (2008: 238) that technique the most effective technique to observe teachers' work, tools, methods, and techniques of particular teaching was wearing, and to study the learning situation as a whole by taking into account all factors affecting student growth.

In the process of class visits, the principal observes all the activities carried out by the teachers in learning. The school principal also records various findings in the instrument that was planned beforehand, the instrument contains various components that must be done by the teacher and the principal in charge of filling them with the appropriate values. As revealed by Arikunto quoted by Aedi (2014: 265), it is explained that an instrument is a tool that functions to facilitate the implementation of something, further explained that the instrument for

collecting data is a tool used by data collectors to carry out their duties in collecting data.

c. Following up on academic supervision of teachers in order to increase teacher professionalism.

Follow-up of academic supervision can be done if there is a result of the implementation of academic supervision that has been carried out by the principal to the teacher. As stated by Mulyasa (2011: 242) that in supervision, research is an implementation activity to obtain a clear and objective picture of the actual educational situation. Through the research, data and information will be needed as a result of the assessment in the situation of education and teaching. The results of the assessment itself are a follow-up to improve the results of the research that has been obtained.

Follow-up is also the stage of meeting between the teacher and the principal to fix any problems encountered so that in the next learning there will be an improvement in a better direction. This is similar to that expressed by Mulyasa (2011: 242) that the follow-up stage is an open discussion stage conducted by the principal and teacher based on the results of the observation so that later it can produce conclusions on how the next learning activities take place.

Forms of follow-up from the results of the implementation of academic supervision can be in the form of giving motivation, direction, and input to the teachers in order to improve the deficiencies found in the implementation of academic supervision. The provision of follow-up is based on the results of the

assessment contained in the academic supervision instrument filled in by the principal on the evaluation of teacher performance, namely in supervising class visits contained in the implementation of academic supervision.

From the explanation above, it can be taken at the core that the follow-up stage of academic supervision of the teacher in the context of increasing teacher professionalism is a follow-up activity so that feedback occurs after supervision is carried out. From this monitoring, follow-up will be produced so that the supervision program that has been planned and implemented can be measured. How far the supervision has been done by comparing the results achieved with the objectives and the feedback should be taken to follow up.

E. Efforts of Principal as Supervisors in Facing Industry 4.0

Some important things related to the competency of school principals must be prepared in order to respond to the challenges in the era of industrial revolution 4.0, given the strategic position of a principal as the key person, among others: First, the appointment of school principals must go through a process and procedure based on applicable regulations . The appointment procedure provides guidance on the source and background of education, experience, age, rank, and integrity. While the rules emphasize the requirements or criteria that need to be met by prospective school principals (Isjoni, 2007: 66). In this case, the qualifications and competencies of the principal must meet the applicable regulations, namely Regulation of the Minister of National Education Number 13 of 2007.

Second, so that principals in carrying out their main duties and functions effectively are required to fulfill the requirements as stated in

the Republic of Indonesia Minister of Education and Culture Regulation Number 6 of 2018 concerning Assignment of Teachers as Principals.

In connection with the efforts of principals who are responsive to the industrial revolution era 4.0, we can see positive attitudes and concrete steps towards information technology and communication in both the administrative and academic fields. This is a form of visionary and innovative thinking of a school principal as a supervisor, as evidence of follow-up on the results of supervision he has done. In its development, principals are required to always have the ability to master the progress of information and communication technology (ICT), even always making information and communication technology as a tool used in their daily activities while carrying out their duties as principals.

The concrete follow-up steps of academic supervision are responsive to the challenges of industrial revolution 4.0, among others by designing information and communication technology competency development activities in order to improve teacher professionalism by developing e-learning learning application systems that facilitate and simplify the process of academic activities in school. This has become very crucial in the industrial revolution era 4.0, considering that information and communication technology is used as a learning tool, it is also a source of learning, and even used a lot as it increasingly needs to use information and communication technology devices (Indris Apandi, *Kepala Sekolah Inovatif dan Visioner di Era Indutri 4.0,* https://www.kompasiana.com/idrisapandi/5 c0b431bbde57540ec66d978/kepala-sekolah-inovatif-dan-visioner-di-era-revolusi-industri-4-0?page=all, (Accessed 1 April 2019).

Follow-up supervision of school principals in the field of administration, among others, by developing a school administration system based on information technology or an academic administrative information system. The administration is the process of carrying

out work carried out jointly to achieve the stated goals if supported by information technology it will have a positive impact that allows teachers to provide services that are fast, effective, and can be accessed indefinitely.

In essence, in the face of the industrial revolution era 4.0 school principals must be able to maintain a positive attitude towards information technology and the use of information technology for learning management, so as to improve the quality of school performance, and improve the quality of human resources by continuing to keep up with information technology in education . The principal is required not only to be smart and master the theory, but they must also have high learning abilities to keep up with rapid changes. For principals who are less receptive to information technology innovations, they are expected to have an open attitude towards the development of information technology and further enhance the mastery and adoption of information technology for school activities.

F. Conclusion

To become a school principal and supervisor is not easy because it must meet the standards of qualifications and competencies to become a school principal. Based on the Regulation of the Minister of National Education Number 13 of 2007 on April 17, 2007, concerning the standards of principal that the qualifications of principals consist of general qualifications and special qualifications. In addition, reaching the qualifications, a school principal must fulfill personal, managerial, entrepreneurial, supervision and social competencies.

The principal will carry out several basic tasks and functions where one of them is to act as a supervisor. In carrying out his role as supervisor in educational institutions, namely schools, a school principal is very closely related to the supervision program. The principal is required to carry out the planning of the supervision program that will be carried out, the implementation of the supervision

program, and the follow-up of the results of supervision that has been carried out.

The principal must prepare an academic supervision plan starting from the academic supervision schedule, techniques to be used in academic supervision and also various instruments that will be used in the implementation of academic supervision. The implementation of supervision can be in the form of performance evaluation by checking various administrative features that have been prepared by the teachers and conducting class visits to observe the course of the learning process. Follow-up from the results of the implementation of academic supervision carried out by the principal is done through the delivery of various results obtained by the good teachers that have both advantages and disadvantages.

Regarding the manifestations of principals who are responsive to the industrial revolution era 4.0, there can be seen positive attitudes and concrete steps towards information technology and communication in both the administrative and academic fields. This is a form of visioner and innovative thinking of a school principal as a supervisor, as proof of follow-up on the results of supervision done.

Bibliography

Aedi, Nur. (2014). *Pengawasan Pendidikan.* Jakarta: Rajawali Pers,

Afroni, Akhmad. (2009). Kompetensi Kepala Sekolah Sebagai Supervisor Pembelajaran Dalam Upaya Peningkatan Kompetensi Guru. *Jurnal Forum Tarbiyah* Vol. 7, No. 1, 81-97.

Arikunto, Suharsimi. (2004). *Dasar-dasar Supervisi.* Jakarta: Rineka Cipta.

Arsyad, Muhammad. (2019, March 4) "Mencermati Standar Kepala Sekolah", *http://re-searchengines.com/0508arsyad.html.*

Ashari, Ahmad. (2004). *Supervisi Rencana Program Pembelajaran.* Jakarta; Rian

Putra.

Asman, Jamal Ma'mur. (2001). *Tips Efektif Supervisi Pendidikan Sekolah.* Yogyakarta: DIVA Pres.

Danim, S. dan Suparno. (2009). *Manajemen dan Kepemimpinan Transformasional Kepala Sekolah.* Jakarta: Rineka Cipta.

Daryanto. (2011). *Kepala Sekolah sebagai Pemimpin Pembelajaran.* Yogyakarta: Gava Media,

Depag RI Direktorat Kelembagaan Islam. (2004). *Pedoman Pengambangan Administrasi dan Supervisi Pendidikan.*Jakarta: Depag RI.

Departemen Pendidikan dan Kebudayaan Republik Indonesia. (1988). *Kamus Besar Bahasa Indonesia.* Jakarta: Perum Balai Pustaka.

Direktorat Jenderal Peningkatan Mutu Pendidik dan Tenaga Kependidikan. (2008). *Metode dan Teknik Supervisi.* Jakarta: Depdiknas.

Halim, Stevani. (2019, April 1) *Revolusi Industri 4.0 di Indonesia,* https://medium.com/@stevanihalim/revolusi-industri-4-0-di-indonesia-c32ea95033da,

Hermino, Agustinus. (2014). *Kepemimpinan Pendidikan di Era Globalisasi.* Yogyakarta: Pustaka Pelajar.

Idochi, Moch. (2004). *Administrasi Pendidikan dan Manajemen Biaya Pendidikan.* Bandung: CV Alfabeta,

Indris Apandi. (2019, April 1) *Kepala Sekolah Inovatif dan Visioner di Era Indutri 4.0,* https://www.kompasiana.com/idrisapandi/5c0b431bbde57540ec66d978/kepala-sekolah-inovatif-dan-visioner-di-era-revolusi-industri-4-0?page=all,

Isjoni. (2007). *Saatnya Pendidikan Kita Bangkit.* Yogyakarta: Pustaka Pelajar.

Majid, Abdul., & Dian Andayani. (2005). *Pendidikan Agama Islam Berbasis Kompetensi (Konsep dan Implementasi Kurikulum 2004).* Bandung: Remaja Rosdakarya.

Mas'ud. (2017). Pengaruh Kompetensi Kepala Sekolah, Motivasi dan Kompetensi Guru terhadap Terhadap Kinerja Guru serta Implikasinya pada Kompetensi Lulusan. *Jurnal Kontingensi* Volume 5, No 2, 122-131.

Mulyasa, E. (2011). *Manajemen dan Kepemimpinan Kepala Sekolah.* Jakarta: Bumi Aksara.

Peraturan Menteri Pendidikan Nasional Nomor 13 Tahun 2007.

Sagala, Syaiful. (2008). *Administrasi Pendidikan Kontemporer.* Bandung: Alfabeta.

Sahertian, Piet A., & Frans Mataheru. (1981). *Prinsip dan Tehnik Supervisi Pendidikan.* Surabaya: Usaha Nasional

Saepudin, Budhi Slamet, (2019, April 1) *Revolusi Industri 4.0 apa itu, dan Pengaruhnya terhadap Dunia Pendidikan,* http://disdikkbb.org/?news=revolusi-industri-4-0-apakah-itu-dan-pengaruhnya-terhadap-dunia-pendidikan,

Sahertian, Piet A. (2004). *Konsep Dasar dan Teknik Supervisi Pendidikan.* Jakarta: Rineka Cipta.

Tim Penyusun. (2008). *Kamus Bahasa Indonesia.* Jakarta: Pusat Bahasa Depertemen Pendidikan Nasional.

Tim Prima Pena. (2006). *Kamus Ilmiah Populer.* Surabaya: Gita Media Press.

Wahjosumidjo. (2009). *Kepala Sekolah: Tinjauan Teoritik dan Permasalahannya.* Jakarta: Raja Grafindo Persada.

Wibisono, Dermawan. (2006). *Manajemen Kinerja.* Jakarta: Erlangga, 2006.

Wojowasito, S., & J. S. Poerwadarminta. (1972). Kamus Lengkap Inggris-Indonesia, Indonesia-Inggris. Jakarta: Hasta.