

# The Strengthening of the Principal's Competence in Order to Improve Teacher's Learning in the Era Of Industrial Revolution 4.0

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**Abstract:** Education in Indonesia has entered the era of industrial revolution 4.0. Changes that occur are becoming more comprehensive and challenges are also increasingly global. In order to answer Indonesian education entering the industrial revolution era 4.0 the learning done by teachers must also change and improve and improve its quality. The implementation of supervision in accordance with the industrial revolution era will give birth to teachers and the appropriate quality of learning. Therefore principals must increasingly improve the quality of their competence in carrying out supervision of learning and can increasingly facilitate learners achieving learning goals.

**Keyword:** industrial revolution, competency of principals, supervision

## I. INTRODUCTION

Education in Indonesia has entered the era of the industrial revolution 4.0. This era marked with the digitization and naturally all in all things (Klinik Beasiswa LPDP UM, 2019). The industrial revolution 4.0 also marked by physical cyber manufacturing and collaboration. The era of the industrial revolution combining machine, a groove work, and the system, by applying the smart grid in through in the process that is intended to controlling one with another independently (Yahya, 2018). Written speech given by Minister of Education and Culture, Muhadjir Effendi, at the annual PGRI's day to 73 at the West Java Province revealed that need to an increase in professional teachers and teaching qualifications to conform to the development of the industrial revolution.

The industrial revolution 4.0 demanding teachers to can take advantage of the advancement of information technology that is very fast so teachers will increase the quality of teaching and learning the superior to prepare. As with change will happen learning did as teachers to school tuition also have to change. By increasing innovation and creativity it is hoped that teacher learning will also can keep up students according to changes. The quality of teaching and learning done by teachers would not out of control and evaluation principal. As the leader of school, principal has a duty to prepare teachers in increasing of their learning.

Principal as a leader in school has a duty and a very important role and strategic (Sobri, 2018). One of them the task of preparing teacher in improving the quality of learning. In line with the industrial revolution is happening to the world education in Indonesia and the duty of the principal, then the ability of the school

principal must also be increased and it takes the preparation principals are adequate and in accordance with the changes happening. The provision is intended to principal capable of performing their duties and the role well (Sobri 2018). One of the things that can be done in completing an adequate headmaster can make an adequate teacher by increasing the competence of the principal in the teacher learning supervision activities. And it is expected that teacher learning supervision activities are in accordance with the industrial revolution 4.0.

## II. METHOD

This article was compiled by means of library research. The researcher examines sources that are relevant to the study on the theme above. Study activities are carried out on books, journals, or the internet (Wiyono, 2007). The literature study starts from the most up-to-date library sources in the field under study. To save time can be explored or seen from the summary section of the library sources first. With this activity information will be obtained in accordance with the research topic quickly.

Some steps taken by researchers in the following literature review are: (1) starting from the most recent literature, continuing with previous sources; (2) reading abstract or abstract, to find the relevance of the source to the topic of research conducted quickly; (3) winning the main commitment-gathering, completing with its parts; (4) taking notes directly on the note card to facilitate the making; and (5) writing library source data or complete references for each source obtained (Wiyono, 2007). With a information is obtained the arranged, seen the results, and discussed in these articles.

### III. RESULT AND DISCUSSION

#### Teacher Learning in the Era of Industrial Revolution 4.0

The industrial revolution 4.0 is also known as the digital revolution and the era of technological disruption. It was called the digital revolution because there were advances and computer interference and the automation of recording data in all fields. It is also said that the era of technological disruption is due to the automation and connectedness of all fields that will make industrial movements and labor competition not linear (Yahya, 2018; Hussin, 2018).

The industrial revolution 4.0 can shift the role of humans as one of its characteristics, namely the application of artificial intelligence (Imron, 2018). The existence of a human role that is replaced by artificial intelligence in this industrial revolution is expected not to be a problem. This industrial revolution 4.0 enables the emergence of various groups that can develop their innovations to solve problems that already existed before (Ayu, 2019).

The era of revolution 4.0 emphasizes digital economy, artificial intelligence, big data, and robotic, finally it also affected the world of education. Industrial revolution 4.0 demands the world of education to be able to reconstruct and change. Changes are made to aspects of learning. Changes start from strengthening teacher competencies considering teachers are the frontline in education (Wahyuni, 2018).

Teachers are required to be able to change learning according to the world's demands to face the 4.0 industrial revolution. For example, teachers are able to take advantage of increasingly rapid and information-rich technological advancements to improve the quality of the learning process (Wahyuni, 2018). In addition, it is also expected to be able to prepare a qualified and competent Indonesian golden generation, improve the quality of life, contribute to national development, and be able to answer global challenges (Arifin, 2018). Teachers who must be better able to prepare generations to come must always improve themselves.

One verse in the Al Quran that reads "in fact God will not change the state of a people before they change their own circumstances", explained that humans need to change to improve their lives. One form of change that occurs in the world of education is the change in learning carried out by the teacher.

The change is an effort to improve the quality of a teacher so that he is capable and competent along with the times. Changes in teacher learning certainly are inseparable from the headmaster's figure as a teacher supervisor. The principal as a supervisor must be able to direct and shape the teacher to be able to integrate various technological developments in the learning process (Ayu, 2019; Hussin, 2018). With the hope that learning will be more interesting and also more effective in accordance with the way of delivering to generations in the era of the industrial revolution known as Z generation (Hussin, 2018).

#### Effective Principal Leadership

Efforts to change that occur in the world of education, especially changes in teacher learning can also

not be separated from the figure of the headmaster even though the principal no longer has the main task to teach but the main task is as the leader and manager of the school (Permendikbud Nomor 6 Tahun 2018). With the task of being the leader and manager of the education unit, of course the principal will be obliged to realize teachers who excel and are better in their development. In addition, principals must also be able to be effective, inspiring leaders, lead the development and implementation of a shared vision for technology integration in an effort to promote school excellence and support transformation in organizations (Thannimalai and Arumugam, 2018).

In order for the principal's leadership to be effective, the principal must carry out his five main functions (Sobri, 2018). The five functions are decision-making functions and must always use data in the decision-making process (Stronge, et al., 2013), instructive or provide instructions, consultative or become good listeners and suggestions, participatory or able to influence members of school organizations, and delegate or has the authority to delegate tasks. The five functions must be carried out consistently by the principal (Sobri, 2018).

Effective school principals in addition to consistently carrying out the five functions above must also understand, develop and maintain the vision of the school. An effective and successful headmaster must carry out a clear vision. Have a clear picture of the school he leads (Stronge, et al., 2013). In achieving school goals the principal involves all school members. In addition, the principal must also be able to raise the teacher's ability to become a leader and involve the teacher in decision making (Stronge, et al., 2013).

Principals in the industrial revolution 4.0 era make the success of their students as the center of learning and employment activities (Stronge, et al., 2013). Therefore, the headmaster invites teachers to pay special attention to the teaching, curriculum, and mastery of students' competencies. In addition, the principal must also be easily found in his school (Stronge, et al., 2013). Thus, school control and evaluation can be easily carried out and sustainable.

#### Strengthening Principal Competence

The competency of the school principal has been regulated in Permendiknas Number 13 of 2007. In the regulation of the Minister of National Education it appears that the competency of the principal consists of personality, managerial, entrepreneurial, supervision and social competencies. The competency of the principal is knowledge, skills, and basic values possessed by the principal. In an effort to have and fulfill the competence of the principal, in carrying out their duties a school principal must understand the nature of leadership which is his duty (Sobri, 2018).

Strengthening the competency of school principals can be done with continuous professional development. Continuous Professional Development is a program and activity to increase the knowledge, skills and professional attitudes of principals that are carried out in stages, gradually and continuously, especially for management improvement, entrepreneurship development, and

supervision of teachers and education staff (Nirmala, 2018).

One of the competencies that must be improved by the principal in an effort to continue professional development is the competence of supervision. This competency emphasizes that a school principal can guide teachers to become professional teachers (Sobri, 2018). The principal in carrying out supervision needs to understand and use appropriate supervision approaches and techniques. Then the principal follows up on supervision activities in an effort to increase teacher professionalism (Permendiknas Number 13 of 2007).

Principals who have good supervision competence will be able to develop teachers and realize teacher professionalism in learning. The principal can work with the school supervisor to deepen his understanding of supervision and improve the professionalism of the teacher (Sobri, 2018). Thus, the program and objectives of the school will also be easily achieved and the improvement of the quality of education in the era of the industrial revolution will also be achieved.

To develop and improve the quality of education, principals can carry out professional duties and roles in the following activities (Haris et al., 2018), provide feedback on teacher performance; identify needs for staff development; identify potential for promotion; conduct quality assurance checks and ensure teacher motivation and morals and provide professional support and guidance to teachers. In addition, the principal ensures that the professional environment supports the teaching and learning process. The ultimate goal of this activity is to improve the quality of teaching and learning. This means that the principal needs to play the role of a planner; organizer; leader; maid; evaluators, assessors, motivators, communicators, and decision makers.

#### **Teacher Enhancement Learning Efforts in the Era of Industrial Revolution 4.0**

The achievement of Indonesia's HR output in the era of industrial revolution 4.0 is aimed at achieving the relevance of education and employment. This relevance needs to be adjusted to the development of science and technology, which continues to pay attention to the aspects of humanities, communication and design so that human beings continue to have good functions in the human environment (Arifin 2018). The efforts made by principals as leaders in achieving the output of good school human resources are always by improving school programs and policies. This can be seen in the activities of principals who always provide leadership to teachers in improving learning (Sahertian, 2010).

The effort of the principal in stimulating, coordinating and guiding continuously the growth of teachers in schools is known as supervision activities (Sahertian, 2010). These activities can be carried out individually or collectively. The purpose of this supervision activity is to help teachers develop their professional abilities, control teaching and learning activities in schools, and encourage teachers to apply their abilities in carrying out their tasks (Sergiovanni, 1987) to be updated and in accordance with changes.

Principals need to pay attention to trends related to education in the era of industrial revolution 4.0. There are

nine trends related to education 4.0 adapted from Hussin, (2018):

1. Learning can be done anytime anywhere. The e-Learning tool offers great opportunities for distance learning and self-sufficiency. The classroom learning approach plays a large role because it allows interactive learning to be done, while the theoretical part can be learned outside of class time.
2. Learning is tailored to each student's needs. They will be introduced to more difficult tasks only after a certain level of mastery is reached. Practice will be given if Iguru sees a need in it. Positive help is used to facilitate a positive learning experience and increase students' confidence in their own academic abilities. A good communication strategy with students can support students in achieving the objectives of the curriculum (Brett et al., 2018).
3. Students have choices in determining how they want to learn. Even though the learning outcomes of a subject are determined by the school responsible for the curriculum, students are still free to choose the learning tools or techniques they like. Among the options that can be adopted by teachers to enable students to be creative in their learning are blended learning, flipping classes and the BYOD approach (Bring Your Own Device).
4. Students will learn more based on projects. Students are asked to apply their knowledge and skills in solving a problem. By being involved in projects, they practice organizational, collaborative management skills and their time that is useful in their future academic careers.
5. Students will experience more direct learning through field experiences such as internships, guidance projects and collaborative projects. Technological advances enable specific learning to be carried out effectively, so that it is expected to make more space to acquire skills that involve human knowledge and face-to-face interactions.
6. Students will be faced with interpretations of data where they are asked to apply their theoretical knowledge to the numbers and use their reasoning skills to draw conclusions based on logic and the problems given. Mathematical calculations and forecasting will be easier because it is done by a computer.
7. Students will be judged differently and conventional assessment platforms will probably become irrelevant or inadequate. Students' factual knowledge can be assessed during the learning process, while the application of this knowledge can be tested when they are working on their projects in the field.
8. The opinions of students will be considered in designing and updating the curriculum. Their input helps curriculum designers maintain current and useful curriculum needs.
9. Students will become more independent in their own learning, forcing teachers to take on new roles as facilitators who will guide students through their learning process.

Nine educational trends in revolution 4.0 shift the primary learning responsibilities from the instructor

(teacher) to students. Teachers must play their role in supporting the transition and should not regard it as a threat to the conventional teaching profession. In this case, the principal must be able to realize the teacher figure that is in line with the expectations of education in era 4.0 through supervision activities that are oriented to the needs and outcomes of students.

The principal can build a good partnership with the teacher in his school. Partnerships between principals and teachers in supervision activities are formed in a structured manner and are very helpful for teachers in solving problems with the position of the principal as the main driver of change (Allen et al., 2017). In addition, clinical supervision can also be done. Clinical supervision allows the principal to provide what the teacher needs in improving and improving its quality (Li et al., 2018). The relationship that exists is based on a humanistic view of supervision. Where the responsibility or role of the teacher is very dominant compared to the role of the supervisor or headmaster (Glickman, 1981). Again, it needs to be emphasized that efforts to improve learning in the era of industrial revolution 4.0 are to help students achieve learning goals by improving the quality of educators.

#### IV. CONCLUSION

The conclusion is strengthening the competence of principals in an effort to improve teacher learning in the era of industrial revolution 4.0 carried out with various steps that aim to help teachers develop their professional abilities, control teaching and learning activities in schools, and encourage teachers to apply their abilities in carrying out their duties. Efforts to improve learning must also be in line with the changes that have occurred in the world of education in the industrial revolution era 4.0. The principal must be able to realize the teacher figure that is in line with the expectations of education in era 4.0 through supervision activities that are oriented to the needs and outcomes of students.

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