

The Role of Leader Assessment in Developing Teacher Teams in The Industrial 4.0 Revolution

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This study aims to determine the role of assessment in building teacher work teams in the era of the industrial revolution 4.0 and the role of education stakeholders in supporting the achievement of elementary school teacher achievement programs. Using a multisite approach and survey with research respondents consisting of teachers, principals, supervisors, Teacher Working Groups, and education. The sample consisted of five schools that participated in this study. Data collection was carried out through interviews, questionnaires, documented observations, and group discussion forums. Data analysis techniques using data reduction, data presentation, and verification. The results of the study stated that the indicators of primary school teacher achievement evaluation consisted of portfolios (20%), teaching videos (10%), written tests (20%), scientific papers (20%), presentation of scientific papers (20%), and role models (10%). While educational stakeholders play a role in their respective duties and functions.

Keyword: *Industrial Revolution 4.0, Leadership, Teamwork*

Introduction

The National Association of Elementary School Principals (2001) defines learning leadership as leaders of the learning community, where within the learning community teachers meet regularly to discuss their work, collaborate to solve problems, reflect on their work, and are responsible for what students learn. In the learning community, learning leaders make adult learning (teachers, staff, and other workers) a priority, set high expectations for performance, create a culture of sustainable learning for adults, and get community support for school



success. Learning leadership is the view that learning must be given the highest priority while everything else goes around learning. Learning leaders need to know what is happening in the classroom. Without having this knowledge, they will not be able to appreciate some of the various problems faced by teachers and students. That is why, on any day, teachers and students will always see the principal walking around the school, praising the results of student work, giving recognition of what the teacher is doing. Learning leaders need to work closely with students, develop learning techniques and methods as a means to understand the teacher's perspective, and to build a useful foundation for making decisions related to the curriculum.

Success in an educational institution will not be achieved well, even by an intelligent and professional teacher. Teamwork can build and have a very good influence on educational success. The principal is demanded to be a leader in maintaining school harmony and can establish good relationships with policymakers as an educational institution the principal acts as the head of learning. Leadership in learning requires a principal not to participate in government affairs and the principal is expected to focus on improving learning. The role of the principal as a learning leader is a relatively new concept that emerged in the early 1980s, which was strongly influenced by the results of research that revealed that effective schools usually had principals who emphasized the importance of learning leadership (Brookover & Lezotte, 1982). In the first half of the 1990s, attention to leadership learning faded away, replaced by discussions around school-based management and facilitative leadership (Lashway, 2002). Hasibuan (2016) said that a leader is someone who exercising his leadership authority to direct others and take responsibility for the person's work to achieve a goal and therefore needed a leader who can give directives to achieve company goals already set.

Most expert opinions state that learning about leadership is necessary to make an effective educational institution, but most principals consider that it is not a priority. For example, among the many tasks that principals do, only one-tenth of their time is devoted to school leadership (Stronge, 1988). Among the reasons cited by experts for the lack of emphasis on learning, leadership is a lack of in-depth training, lack of time, increased administrative work, and community perceptions about the role of the principal as a manager (Flath, 1989; Fullan, 1991). At present, the data (Kemendikbud, 2019) states that most school leaders seek balance in their roles as managers.

Learning leadership is different from the leadership of an administrator or school manager in several ways. Principals who pride themselves as administrators are usually too preoccupied with managerial tasks, while principals who become school leaders involve themselves in setting clear goals, allocating learning resources, managing the curriculum, monitoring planning, and evaluating teachers. In short, learning leadership reflects the actions taken by a school principal to encourage the growth and development of student learning (Flath, 1989). Learning leaders make learning quality the highest priority of the school and strive to make



this vision a reality. With the shift in focus from teaching to learning, some experts propose the term "learning leader" to replace the "instructional leader" (DuFour, 2002). Instructional leadership is very important to be applied in the world of education. In Indonesia because based on the results of the study if a school principal uses leadership instructional then the principal's leadership has a significant effect on student learning achievement (Pramudia, 2012). The role of instructional leadership in increasing teacher professionalism for a long time is recognized as an important factor in the organization of a school, especially related to their responsibilities in improving the quality of learning (Gorton, 1991; Hallinger & Leithwood, 1994 in Kusmintardjo, 2015).

Blase and Blase (2000) mention learning leadership behaviors, such as giving advice, giving feedback, being an effective learning model, asking for opinions, encouraging collaboration, providing professional development opportunities, and giving praise for effective learning. According to House in (Gary Yukl, 2009) said that: Leadership is the ability of individuals to influence, motivate, and make others can contribute to the effectiveness and success organization. So, in the House's opinion, it can be said that leadership is a way to influence and motivate others so that the person wants to contribute to the success of the organization.

Leadership in organizations is directed at influencing people who are he led so that he would do as expected or directed by someone else is leading it. (Sutikno, 2014). Whitaker (1997) identifies four essential leadership learning skills:

1. An effective learning leader needs to be a resource provider. It is not enough for a school principal to simply know the strengths and weaknesses of teachers; they must also recognize the teacher's desire to be recognized and valued for work done. Based on experience, teachers only seek a glimmer of praise and certainty that the principal is there to support them as a provider of resources.
2. Learning leaders need to be instructional resources (instructional resources). Teachers see the principal as a source of information about developing trends and effective learning practices. Learning leaders follow the development of issues related to curriculum, pedagogical strategies, and effective assessment. For example, teachers want to come to the principal's office every day to ask for advice on how to best handle students who do not understand the concept.
3. Effective learning leaders need to be good communicators (good communicators). They need to communicate essential beliefs about learning, such as the belief that all students can learn.
4. Effective learning leaders need to show their existence. This includes focusing on learning objectives, modelling itself as learning behavior, and designing learning programs and activities. As an administrator, more than half of the principal's days are spent focusing on these goals, Effective learning leaders need to show their existence. This includes focusing on learning objectives, modeling itself as learning behavior, and designing learning



programs and activities. As administrators, more than half of the principal's days are spent focusing on these goals. According to the findings of a survey conducted by researchers that as a school leader or administrator, they spend a lot of time to achieve goals. For example, a school principal who encourages learning in small groups for reading and mathematics lessons, he must provide support resources, explain how they work, and act as a model for teachers who are struggling to apply the concept. Learning leaders also need to have up-to-date knowledge about three domains of education: curriculum, learning, and assessment (DuFour, 2002). as a principal need to know the changes in curriculum concepts, educational philosophy, and belief in education to improve curriculum for the better.

Learning Principals need to know various learning models, theoretical reasons for adopting a particular learning model, and theories that underlie technology-based learning environments. Principals need to know the principles of student assessment, assessment procedures with an emphasis on alternative assessment methods, and assessments aimed at improving student learning. Principals must have certain skills to carry out the tasks of a learning leader, namely: interpersonal skills, planning skills, and learning observation skills (Lashway, 2002). Interpersonal skills can maintain trust, spread motivation, empower, and foster collegiality. Relationships are built on trust, and tasks are carried out through motivation and empowerment in which the teacher is involved in planning, designing, and evaluating learning programs. Empowerment can foster attitudes and commitment when teachers identify problems and design their strategies. Collegiality encourages sharing, collaboration, and collaboration, in which the two principals and teachers talk about teaching and learning (Brewer, 2001).

If principals as leaders take the role of learning leaders seriously, they must free themselves from the confines of bureaucratic tasks and focus on efforts to teaching and learning. Improving learning within schools is a major goal that needs to be achieved together when implemented, thus enabling students and teachers to create a safe and calm learning environment that has meaning. Achieving this goal requires more than a strong head of school with concrete ideas and technical expertise. It is necessary to redefine the role of the principal, a role that removes barriers to leadership by removing bureaucratic structures and re-arranging relationships.

Educational theorists often call the Education Industrial Revolution Era 4.0 to illustrate various ways to integrate cyber technology both physically and non-physically in learning. Education in the Industrial Revolution Era 4.0 is a phenomenon that responds to the needs of the industrial revolution by adjusting the new curriculum to the current situation. The curriculum can open the window of the world through its grasp for example utilizing the internet of things (IoT). On the other hand, teachers also get more references and teaching methods. Industry 4.0 is characterized by the presence of new technologies that merge the physical, digital and biological worlds, which are manifested in the form of robots, mobile computers, artificial



intelligence, vehicles without drivers, genetic editing, digitization of public services, etc. In industry 4.0 equipment, machinery, sensors, and humans are designed to be able to communicate with each other using internet technology known as the "Internet of Things (IoT)" (Maria, Shahbodin, Pee, 2016). The role of teachers is increasingly important and strategic now, this is because currently there is a shift in development priorities by the government. After focusing on infrastructure development, starting in 2019 the government is working to improve the quality of human resources (HR).

However, this did not escape the challenges for teachers to implement it. There are at least four competencies that are expected to be possessed by teachers. Kompasiana (2019) explains the following four competencies which teachers need to possess to be effective in their roles:

- Firstly, critical thinking and problem-solving skills. It is the ability to understand a problem, get as much information as possible so that it can be elaborated and bring up various perspectives to solve the problem. Teachers are expected to be able to mix learning and export these competencies to students.
- Secondly, communication and collaboration skills. These skills are not immune to information technology-based abilities so that teachers can implement collaboration in the teaching process.
- Thirdly, the ability to think creatively and innovatively. It is hoped that new ideas can be applied by teachers in the learning process so that it spurs students to think creatively and innovatively. For example, in doing tasks by utilizing technology and information.
- Fourthly, technology, and information literacy. Teachers are expected to be able to obtain many references in the use of technology and information to support the teaching and learning process. For the world of education, the Industrial Revolution 4.0 is expected to be able to realize smart education through enhancing and equalizing the quality of education, expanding access, and relevance in realizing world-class. To realize this learning interaction is done through blended learning (through collaboration), project-based learning (through publication), flipped classroom (through public interaction and digital interaction). Covid-19, better known as the Coronavirus, is a new type of coronavirus that is transmitted to humans. This virus attacks the respiratory system. This disease caused by a viral infection is called Covid-19. Coronavirus can cause disorders of the respiratory system, acute pneumonia, until death. Indonesia is currently facing days against Covid-19, even the Minister of Administrative Reform and Bureaucratic Reform (Minister of PAN-RB) has issued a new circular which essentially states the extension of the period of work from home (Work from Home) and adjustments to the work system. This also applies to education. With the abolition of the National Examination, studying at home through certain applications, online lectures, online tutoring, and seminars are examples of educational services that accelerate the implementation of Revolutionary 4.0 Education. in the



digital era at this time teachers and students are required to be able to understand the development of technology at least in schools.

On the other hand, students are also forced to explore technology and information and channel their creativity through innovations in given tasks. Amid the co-19 pandemic at this time there needs to be an adjustment in implementing learning that is by using the 4.0 revolution era in the field of educational technology. But the Covid-19 outbreak will inevitably be one of the drivers of the implementation of this system. On the other hand, apart from being demanded to understand technology and information and how to implement it, of course, some problems arise that are related to adequate infrastructure. Beyond this, students are required to be able to adjust and utilize Revolutionary 4.0 Education by implementing the internet of things (IoT). So that it can develop creativity and innovation through joint tasks (collaborations), individual tasks, and certain projects that are useful during this plague situation.

Lastly, in the outbreak of Covid-19, Education in the Industrial Revolution era 4.0 can be applied with certain adjustments without putting aside things that need more technical attention, such as their impacts and weaknesses. On the other hand, the demands of the role of students are expected to be able to bring positive change in the middle of the situation through the understanding given by the instructor. It is time for us to collaborate in realizing the "opportunity" to serve amid this pandemic.

Methods

This study aims to investigate the assessment criteria of teachers in schools and to determine the role of teachers to work in teams during the Industrial Revolution 4.0 era. The population of the study consisted of all the principals and teachers of all the primary schools in the provinces of Jakarta, Banten and West Java. The sample consisted of five primary schools who participated in the study. Data was also obtained from the Directorate of Teachers and Education Staff from the Ministry of Education and Culture.

This research uses a qualitative method with a multi-site approach. Data was collected through interviews, analyses of documentation, observations, and group forum discussions. Data will then be displayed and verified. Data was analyzed through data reduction, display, and verification (Miles, Huberman, & Saldaña, 2014). While data validity is done through credibility, transferability, dependability, and accuracy (Miles et al., 2014).

Discussion and Analysis

In the world of education, primary school teachers who excel are teachers who have pedagogical, personal, social, and professional competencies that meet the national education standards. The performance of these teachers is excellent, and they become role models for



fellow teachers, students, and the community. The teacher program targeted all the teachers from the thirty-four provinces provided that the participants in the achievement of primary school teachers in the sub-district are elementary school teachers at the education unit level, high school, or district teachers in the district or municipality. First place for primary school teachers at the sub-district level. Participants in the selection of elementary school students at the provincial level are ranked one primary school student at the district or city level, participants in the selection of elementary school students at the national level are the best elementary school teachers of the three finalist participants (ranked 1, 2 and 3) in each province was based on evaluation results by two assessors from the Ministry of Education and Culture of the Republic of Indonesia and one assessor from the representative of the local provincial education office.

The Government of the Republic of Indonesia provides an outstanding teacher selection program for elementary school teachers intending to increase the degree of teachers as respectable and dignified professions, increasing teacher motivation and professionalism in their duties, and increasing teacher competency through competition who is healthy with appreciation in education.

The benefits of choosing teachers are motivating teachers to improve performance, for example, dedication and loyalty to achieve high-quality educational goals, increasing teacher dignity, image, and professionalism, fostering teacher creativity and innovation in improving quality learning by the changing demands of the industrial revolution era 4.0, building interaction between teachers to exchange experiences in educating students and fostering a sense of national unity and unity through education.

The principles of implementing such a teacher program are:

- the selection of teachers is based on fair selection at all levels and is not based on appointment or equity and is competitive.
- the process of assessing and determining primary school teacher titles at school, sub-district, district or city, provincial and national levels is conducted fairly, non-discriminatory, and meets the assessment standards.
- transfusion, which refers to a process that provides opportunities for all stakeholders to obtain access to information on the assessment and determination of the title of primary school teachers at all levels, as a system that includes inputs, processes, and results of assessments, (4) accountable, which refers to the process of assessing and determining the high-level honors of school teachers at all levels can be accountable to all educational stakeholders, both academically and administratively.

The criteria for evaluating teachers in the Ministry of Education and Culture in 2018 consist of six aspects, namely portfolio assessment, learning videos, written tests, scientific papers,

presentation of scientific papers, and examples (Islami et al, 2019 Nurtanto, et al, 2020 & Rabiman et al, 2020):

- the portfolio assessment is a document in the form of information about various activities that have been taken by prospective teachers during their time as teachers in the education unit.
- the assessment of learning videos is one part of the assessment of planning and implementation of learning that is always done by prospective teachers.
- written test assessment is part of the assessment criteria for teachers. Written test material consists of teacher competency components, which include professional competencies, pedagogical competencies, personality competencies, social competencies, and educational insights.
- the assessment of scientific papers compiled by the teacher is the result of Classroom Action Research or Best Practices that have been conducted by the teacher during the learning process in class.
- evaluation of the presentation of the article is scientific writing that includes aspects of exposure consisting of clarity or mastery of the material, the attractiveness of exposure or appeal, time management of presentation, the appropriateness of the media used, the relevance of the answer to the question.
- exemplary and noble moral assessments are carried out using two types of questionnaires, namely the exemplary questionnaire and the noble moral questionnaire.

**** Please have a look at the layout of Figure 1

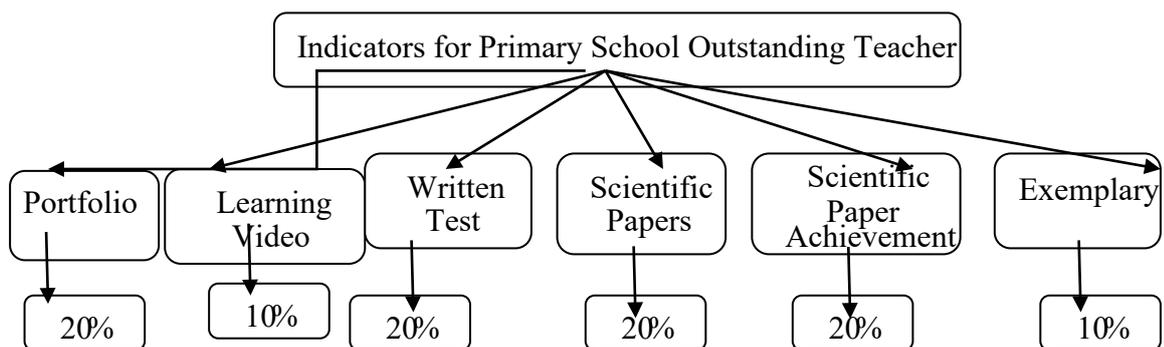


Figure 1. Indicator primary school outstanding teacher

The six assessment indicators are then divided into several presentations points Educational stakeholders in achieving elementary school teacher programs at the district or city level are (1) the education office, (2) supervisors, (3) principals, (4) tertiary institutions, and (5) teacher working groups. Each stakeholder has a role based on the capacity of the institution. Table 1

will explain the role of education stakeholders in supporting outstanding elementary teacher programs in more detail.

Table 1: The role of education stakeholders in supporting outstanding elementary school teacher programs

Stakeholders	Education Department Supervisor	Principal	Principal	Higher Education	Teachers Working Group
Indicator of assessment					
Portfolio	Help provide the required documents	Help provide required document	Help document needed	X	X
Video Learning	Helps facilitate reward in the for a budget-making instructional video	X	Play a role as giving feedback content, provide motivation and budget-making instructional videos	Acting as an expert and coach in providing input video learning content	Acting as a peer group teaching
Written test	X	Helps master competency teachers	Acting as a mentor in applying the competency of teachers	Help content and knowledge material competence	Acting as a peer group discussion
Scientific Writing	X	X	Providing feedback content	Providing guidance for writing scientific papers	X



Presentations, Scientific Writing	X	X	Provides feedback on technical presentations	Assessing and guiding presentations	As an audience conducting presentation
Modeling	Good examples in behavior inside and outside the school environment	Giving examples of good behavior in dealing with all stakeholders	Giving examples of good behavior so that it becomes teachable	Giving arrangements and skills in behavior (the winning attitude)	Become a partner and feedback on daily activities

The main purpose of teacher assessment and evaluation is to strengthen knowledge, skills, dispositions, and practice in the classroom as professional educators. "The current policy discourse on teacher evaluation falls within the framework of rewards and punishments that too often aims to: 1) measure the effectiveness of each teacher, 2) categorize and rank teachers, 3) give rewards to those at the top, and 4) fire those under. Such a simple approach not only ignores the complexity of teaching but also ignores the true purpose of teacher assessment and evaluation (Fantini, 2018).

Teacher assessment is a comprehensive development and growth. The National Education Association in Teacher Assessment and Evaluation states that "The core purpose of teacher assessment and evaluation is to strengthen the knowledge, skills, dispositions, and classroom practices of professional educators (Arifin et al, 2020). This goal serves to promote student growth and learning while also inspiring great teachers to remain in the classroom (Cowan & Goldhaber, 2016). Achievements lead students and provide quality learning experiences that have long been dreamed of by educational institutions. Teacher skills and competencies have the most important variables that influence graduate competencies. So regular teacher performance assessments are needed to determine teacher quality levels. Assessment must determine the gap between the expected quality required by students and society and reality. Teacher assessment can be an important lever to increase focus on teaching quality, "and understanding of various aspects of successful performance appraisal is very important" (Elliott, 2015). While Performance appraisal can be defined as an ongoing process used to identify, measure, and develop individual performance following an organization's strategic objectives (Elliott, 2015).

Competent teachers are those who give teachings that inspire, love, and enrich. Qualified teachers are those who place students as part of the community. Competent teachers are those who want to see roommates teaching and training Inspire, excite and enrich students from all



sections of society, provide skills for a modern economy and contribute to the cohesion and regeneration of local communities "(Dixon & Pilkington, 2017).

The criteria for evaluating elementary school teachers in Indonesia are the concept of teachers in the world with portfolio assessment categories, learning videos, written tests, scientific writing, presentations, scientific papers, and examples. A portfolio will provide complete information about what teachers will convey to the public through archived documents. Portfolios are one alternative that can be used to write assessments (Eridafithri, 2015). This study introduces the function of e-Portfolios as storage, workspace, and showcase to support Competency Certification in Indonesia (Sensuse & Purwandari, 2018). E-portfolio is a promising approach to develop teachers into reflective practitioners who show that they can adapt to new technologies, new criteria, and new environments (Alshumaimeri, 2017). Often administrators look for alternative methods to evaluate staff while staff often look for methods to represent the breadth and quality of their efforts. One method of proving to be effective for collecting and organizing the product of teacher activities is a portfolio. Teacher portfolio development requires planning, time management, and cooperation from students, colleagues, parents, and supervisors. The portfolio format can vary from individual to individual and based on personal choice. Portfolios provide useful insights both in the content and teaching methods used by teachers and, in doing so, add significant qualitative dimensions to many existing teacher evaluation systems (Gelfer, Hara, Krasch, & Nguyen, 2015).

The use of instructional videos can motivate teachers to use technology effectively in the learning process of the learners in the class and this could contribute to the evaluation and development of the teachers. Luckin et al., (2016) explain that the main focus is to enable teachers to use technology effectively to question the progress of their students' learning.

Scientific papers can provide information about the prospective teacher's track record. On the other hand, adult scientific literacy has been measured primarily from the perspective of mastery of scientific knowledge and skills (Naganuma, Nurtanto, et al, 2019). The cross-case analysis revealed that regardless of the program and context of teacher preparation that was very different, the assignments were very similar and focused on developing candidates as authors or writing teachers. Scientific writings can explain the ability of teachers to present learning material and the development of the skill to argue their points of view are recognized as an important factor for teacher success in the school and beyond. This is supported by Frey, Ellis, Bulgren, Hare, & Ault (2015) who explain that the ability to integrate knowledge and ideas, describe and evaluate claims and arguments, and assess the reasons used in arguments is at the core of the State Core Standards. Based on the results of our assessment, we propose that the seminar described can effectively complement existing approaches to teaching critical scientific thinking (Ferenc, Cerven, Birc, & Sevc, 2017). The scientific thinking skills



investigated are questioned-posing, explanations, graphs, investigations, and metacognition (Dori, Zohar, Carmi, Zohar, & Carmi, 2018).

Conclusion

The role of the principal as a leader becomes important for the successful implementation of the achievement program for elementary school teachers. The results of the study state that: Given the results that have been achieved, the researchers recommend the following: Activate the role of principals by giving them greater authority to take steps that enhance the concept of intellectual security. In the education unit, the principal will select potential and qualified teachers to take part in the selection of teachers by considering academic, administrative, and special requirements held by the teacher and the principal will then propose potential teacher candidates at the sub-district level.

The Industrial Revolution Era 4.0 will demand teachers to become more qualified, ready to deliver, both at national, regional, and international levels. The position and role of teachers are increasingly strategic in preparing human resources to face the era of the industrial revolution 4.0. The selection of elementary school teachers can increase motivation, dedication, loyalty, and professionalism which might have a positive effect on improving performance and achievement that can be seen from the quality of graduates of education units. The criteria for evaluating teachers are the benchmarks in providing transparent teacher competition results. The role of education stakeholders will make teachers have motivation and enthusiasm to continue to develop.



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