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## A Revolution Of Human Resources In Era Of Industry 4.0

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### Abstract

This research will explain about a rovlution of human resources in the industrial era 4.0. Human resources needed by the industry today who have competence in digital technology. People must have expertise and experience especially technology development to follow era industril revolution 4.0. For this reason, an increase in skills (up-skilling) or expertise (reskilling) for human resources is based on the needs of the industrial world. This study uses a qualitative participatory research method, which emphasizes research results in the researcher is directly involved as a research instrument. Data obtained through literature studies and interviews. The results of this study will explain human resources in the industrial revolution era 4.0. competent human resources.

**Keywords:** Human Resouces, Comptencies, Skill, Revolution 4.0

### 1. INTRODUCTION

The era of globalization, automation, and the industrial revolution 4.0, its require us to develop something. One of the concerns is Competence. One of the challenge is Human Resources especially in the employment sector. Skill of labor must be anticipated by all sector. Including types of work, and community needs. Workers as human resources that produce services, of course, must be able to face various changes in human resource needs which is a challenge in the era of the free market and the industrial revolution 4.0.

One of the characteristics of the industrial revolution 4.0 is artificial intelligence – AI. Artiifiacial intelligence is computerization and robots that aim to replace human labor. One of the reason, it can make more cheaper, faster, effectively, and efficiently. McKinsey & Company said there will be 23 million employee in

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Indonesia that will be replaced by robots in 2030 in 'Automation and the future of work in Indonesia' released September 2019. Even though, there will 27-46 million created new jobs, and 10 million of them are not there before. The elimination jobs in this era will be lost cause the characterized by predictable repetitive physical activity. For example, work related to data collection or data processing where the number of jobs replaced by robots is above 70 percent. There will be a new jobs which more related to managing people, providing expertise, and interacting with other people or agencies. So that worker not replaced by robots, human resources are needed to be able to compete in the current industrial era.

From this phenomenon, education department will prepare human resources to challenge the technology. Human resources (HR) who are ready to compete, because competition must be faced not only between individuals, but also with technology products such as machines, robots to artificial intelligence. Technological development also shifts the various types of work that have been done by humans. Therefore, humans must be able to do more than that. If technology is able to input data more efficiently and accurately, then humans can no longer just work on inputting data.

## **2. LITERATURE REVIEW**

### **Industrial Revolution 4.0**

The Industry Revolution 4.0 is currently a top priority for many organizations, companies, academics, universities, and manufacturing companies. In the face of changes in the industrial revolution many difficulties have come to understand this phenomenon, and to identify the steps needed for the transition to Industry 4.0. The meaning of the Industrial Revolution 4.0 is the development of technology has shifted various types of jobs that have been done by humans. Therefore, humans must be able to do more than that. If technology is able to input data more efficiently and accurately, then humans can no longer just work on inputting data. The existence of this phenomenon provides a major challenge that must be faced at this time, namely the need for provisioning for human resources (HR), especially students to be ready to face a new chapter in industry 4.0. Anticipating all challenges that arise in this industrial revolution era. One of its tasks is to create a workforce as a superior competitor and has a strong bargaining position in the era of the global market and industrial revolution 4.0, so as not to be replaced by foreign workers who incidentally have good competence.

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## **Human Resources**

Human resources is a very important factor so it must be managed well to increase the effectiveness and efficiency of the organization or company. Micro definition of HR is an individual who operates and is part of an industry or institution and is commonly known as employees, employees, labor, workers, laborers and the like. Whereas the understanding of human resources in a macro level is a society of a country that has entered the age of the workforce, both those who have not worked or who have worked. Human resources must be managed properly so that their talents and abilities can be used as a whole, maximally, and well targeted through effective and efficient methods and systems. Human resources consist of two things, namely physical power and thought power which will determine human ability. In an activity, humans are the main element, no matter though many sophisticated equipment can work instantly, but the equipment will not be able to function if it is not managed by humans.

HR Management is an activity program to obtain human resources, develop, maintain and utilize them. With the aim to support the organization achieve its objectives. Human resources currently have a large influence on a company which is now in a changing business environment that is difficult to predict and is no longer stable. Companies must be flexible no longer be rigid (organizational rigidity). Business activities are no longer run based on rules alone, but are also controlled by vision and values. Therefore, it requires HR capabilities that can be relied on, have insight, creativity, knowledge, and are at the same level as the company. There are several characteristics of potential human resources needed by the organization, among others (Hartanto, 2009): a) As a production agent who is able to regulate the use of machines, materials, money, and methods. b) As a member of the company that has potential that can be mobilized to create value in the corporate environment. c) As an actor capable of regulating and controlling production machinery and equipment. d) As a person who can provide commitment to produce the best performance. e) As a person who is able to participate in production activities with the spirit of "the men that can make the place develop and grow". f) As someone who is suitable to be employed because of his character, capability, and ability to develop himself. g) Appropriate people are given the opportunity to set their own work. h) As a person who can trusted to work responsibly and accountably. i) As appropriate people are given the opportunity to take initiative and participate widely and proactively. j) As a person who can be counted on to work together in work and in forming an integrated team. k) As a person who is able as a source of inspiration for sharing knowledge in realizing

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superior performance.

In the era of the industrial revolution 4.0, every organization both government and private owned organizations have demands on HR with the characteristics of moving more quickly and effectively on the basis of its vision and mission, always trying to meet customers quickly, its activities are proactive, pursuing competitiveness, members are more diligent work, its members must try harder, their leaders want to mobilize all their employees with empowerment, their leaders always encourage their employees to always improve their knowledge and skills so that they are up-to-date and relevant to tasks, integrated planning, implementation and decentralized control, (Hardjosoendarmo, in Bendriyanti, 2015).

Colleges ideally produce graduates who have the competence to face the industrial revolution 4.0 are as follows: 1. The ability to think critically and make decisions 2. The ability to solve problems or problems that are complex, and cross-field quickly and accurately. 3. Entrepreneurship and innovative thinking ability 4. The ability to communicate and collaborate or collaborate. 5. The ability to use knowledge, information, and opportunities in an innovative way 6. The ability to hold responsibilities in financial matters and make policies. (adopted from the Partnership for Century Skills, in Saputra, 2016) 7. Emotional abilities or intelligence 8. Social abilities and adaptability across cultures 9. Ability to lead, be responsible and negotiate. 10. Creative and flexible knowledge skills 11. Operational management capabilities 12. Information literacy, media literacy, and ICT literacy capabilities, including understanding big data and artificial intelligence.

## **Competency**

Competence comes from the word "competency" is a noun that according to Powell (1997: 142) is interpreted as 1) skills, abilities, competencies; and 2) authority. Proficiency is a term derived from English, namely Competence, which if interpreted directly into Indonesian is skill, ability and authority. The ability (ability) or the capacity of someone to do various tasks in a job, where this ability is determined by 2 (two) factors, namely intellectual abilities and physical abilities. Competence can be described as the ability to carry out a task, role or task, the ability to integrate knowledge, skills, attitudes and personal values, and the ability to build knowledge and skills based on experience and learning which is conducted. If applied to management, especially HR management, skills can be interpreted as a combination of knowledge, skills and personality that can improve employee performance so that they can contribute to the success of the organization.

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Wibowo in Dahlia (2016) said that the factors that could affect competency skills were: 1) Beliefs and values. People's beliefs about themselves and others will greatly influence behavior. If people believe that they are not creative and innovative, they will not try to think about new or different ways of doing things. For that one must think positively both about himself and towards others and show the characteristics of people who think ahead. 2) Skills. By improving public speaking and writing skills, individuals will increase their skills in competence regarding attention to communication. Skills development that specifically relates to competencies and impacts both organizational culture and individual competencies. 3) Experience. The expertise of many competencies requires experience in organizing people, communicating in front of groups, solving problems and so on. 4) Personality characteristics. Personality can affect the personality of managers and workers in a number of competencies, including in conflict resolution, showing interpersonal care, the ability to work in teams, influence and relationships. 5) Motivation. By giving encouragement, appreciation for the work of subordinates, giving recognition and individual attention from superiors can have a positive influence on the motivation of a subordinate. 6) Emotional issues. Must be able to overcome the unpleasant will improve mastery in many competencies. But it is unreasonable to expect workers to overcome emotional barriers. without assistance many of them are considered taboo in the work environment. 7) Intellectual abilities. Competence depends on cognitive mastery such as conceptual and analytic thinking. It is impossible to improve through every intervention that an organization embodies. Certainly factors such as experience can improve skills in this competency. 8) Organizational culture. Organizational culture influences human resource competencies in the following activities: a. Employee recruitment and selection practices, consider who among the workers are included in the organization and who have the highest level of expertise b. The reward system communicates to the organization how the organization values competence. c. Decision-making practices affect competence in empowering others, initiatives, and motivating others. d. The organizational philosophy of mission and vision and values related to all competencies. e. Habits and procedures inform workers about how much competency is expected f. Commitment to training and development communicates to workers the importance of competencies regarding sustainable development. g. The organizational process that develops leadership directly influences the competency of leaders.

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### 3. RESEARCH METHOD

Method Used In this study uses qualitative research methods where this research will emphasize the depth of research results where researchers are directly involved as research instruments. This research is also conceptual in nature, where the results of thought in this study are based on a literature review of scientific articles and journals.

### 4. FINDINGS AND DISCUSSION

The competency of Human Resources is the main characteristic of skill belongs a worker to perform effectively and excellent in their work. A combination of knowledge, skills, attitudes, and personal characteristics needed to achieve success. Competitiveness with a capable ability can show better, faster, or more meaningful results in their jobs. Thus highly competitive in human resources can show the capacity and capability to produce something excellence in their fields / aspects. High competitive, it shows better, faster, newer, and cheaper compared to before or with others (Saragih, 2012). Highly competitive Human Resources is a work that must be carried out by the company. Human Resources created in an integrated, planned and systemized manner by considering the character, dignity, dignity, interests, talents, and different backgrounds of the HR.

The strategy to build highly competitive human resources in the era of the industrial revolution 4.0 can be done by:

- a) Enhancing Human R competencies Increased HR competency is through increased education and HR skills. Schuller & Youngblood in Saragih (Hendrawan, 2012) said that HR development in an organization would involve education and training factors. The results of the study prove that the level of education and skills of a person has a positive effect on thinking patterns, decision making, level of maturity, insight, and perspective on things.
- b) Training Education and training are planned efforts of the organization to improve employee knowledge, skills and abilities. Training and development are at the heart of ongoing efforts to improve employee

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competence and organizational performance (Mondy, 2008). There are several reasons why education and training must be carried out including:

- Newly recruited employees often do not understand correctly how to do work.
- Efforts to adjust HR with changes in the work environment.
- Increase company competitiveness and improve work productivity.

According to Sedarmayanti (2013), Mondy (2008), and Kasmir (2016). General objectives of employee training and development are:

- a) Developing knowledge, so that work can be completed rationally.
- b) Develop skills / expertise, so that work can be completed more quickly and effectively.
- c) Develop / change attitudes, resulting in willingness to cooperate with fellow employees and leaders.
- d) Increase employees' knowledge about competitors and foreign culture which is very important for success in foreign markets.
- e) Help ensure that employees have the basic skills to work with new technology, such as robots and the processes of utilizing computer aids.
- f) Helping employees understand how to work effectively in teams so they can contribute to the product and service quality.
- g) Ensure that corporate culture emphasizes a culture of innovation, creativity, and learning.
- h) Ensuring job security by providing new ways for employees to contribute to the company when jobs and interests change, or other skills become obsolete.
- i) Prepare employees to accept and work more effectively with each other.
- j) Increase sense of responsibility
- k) Increase obedience.
- l) Increase self-confidence.
- m) Deepening sense of belonging to the company.
- n) Provide work motivation
- o) Add loyalty.
- p) Understanding the work environment.

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From each of the factors that affect employee performance, there are issues that are important enough to be addressed, among others: lack of ability and skills of employees who still need improvement and training, providing motivation / support that is less / low from the leader, lack of attention of the leader in paying attention to the family atmosphere, harmony and welfare of employees, lack of willingness of employees to change for the better, and leaders lacking appreciation for their employees, employees often spend work time doing things that are not related to their work, such as: playing online games, Facebook, listening to music, and so on. As a form of work responsibility in advancing the craft, loyalty and creativity should be improved by always thinking positively and eliminating all bad habits such as: procrastinating, lazy to enter the office but should have a will to continue to develop. If we often procrastinate, are lazy to enter the office and do not have the will to develop it will greatly affect our performance. Therefore, by thinking positively for the sake of improving performance, craft, loyalty, and creativity can improve performance

## 5. CONCLUSION

First, competence concerns a person's characteristics related to how to perform effectively and have an advantage in a particular job. Competence puts the characteristics of a person's ability so that it can be a differentiator whether someone is capable or not, including in terms of behavior. Competence can therefore predict behavior and performance. Competence plays an important role in realizing highly competitive human resources in the era of the industrial revolution 4.0. An HR must always try to improve knowledge, skills and attitudes, so that the HR can have the advantage in contributing to realize the vision and mission of the organization. An organization in realizing highly competitive human resources in the era of the industrial revolution 4.0 needs to make efforts to increase HR competencies according to what is needed, education and training as well as changing competitive work culture. The role of competence in realizing highly competitive human resources can be done by increasing competence, education and training.

Second, the need for competence is not limited to technical issues. But also related to non-technical skills. Non-technical skills that must be possessed by a civil servant include the ability to solve complex problems, think critically, creatively, human management, the ability to coordinate, as well as having emotional intelligence, skills in terms of assessing and making decisions, service oriented,

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having negotiation skills, and flexibility cognitive.

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