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Organizational Engineering in the 4.O Globalization Era in Islamic Educational Institutions

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ABSTRACT

Industrial globalization, which is now characterized by 4.0, forces people to keep up with its rapid pace, therefore organizational studies must also align equipment in the form of mobile, marketing facilities, and no less importantly it needs to be operationalized so that elements are fulfilled and utilized through potential and professionalism in each work effectiveness that has been structured. The data used is qualitative. In each study, references and literacy explorations are appropriate for the object of study. its nature is to analyze and even try to synthesize findings, in the form of data, with the methods used through reduction and cross-checking of data, which have relevance. Then present the data, and conclude and check the results of the research continues in the research process. The findings in this research library include: 1) Organization is the work of each unit that shares common goals with a leader who is responsible for embodying the process and goals of the organization as a whole. 2) Organizational engineering is constructive renewal or innovation, which adapts to market and customer (society) demands in aligning the challenges of the globalization era so that organizational programs become effective and efficient. 3) The era of globalization 4.0 demands proficiency in the use and use of technology. Completion of various tasks, and increasing the competence of employees or subordinates, to make it easier for leaders to evaluate and reduce each work result. Therefore the development of the skills and competencies of people in the organization is a necessity. It is no exception in educational organizations, all education administrators must adapt to technological advances, as well as teachers who play a very important role as agents of transformation to strengthen human resources following the demands of the era of industrial globalization era 4.0. 4) The era of globalization 4.0 is the advancement of technological media so that job demands are fast and easy, minimizing time, and reducing effort. In implementing the 4.0 industrial revolution era, both from human capital, structural capital and collaborative capital with social connections, so that input, output and outcomes can be aligned

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1. INTRODUCTION

Currently facing the industrial revolution 4.0, this is based on an analysis by the Mckinsey Global Institute quoted by Falih explaining that the industrial revolution 4.0 can have extraordinary implications globally, where robots and machines will eliminate many jobs in the world, especially in the employment sector (Falih Suaedi, 2020: 1). On a different side, according to Oesterreich and Teuteberg (Vol. 52, pp.TD Oesterreich and F. Teuteberg), this industrial era is more attached to connectivity and digitalization which can increase the efficiency of the manufacturing chain and product quality so that in the future it can eliminate 800 million fields. worldwide by 2030.

Morrar et al. (2017 Issue: Vol. 7, 11, 12-20), explained that the era of the industrial revolution 4.0 was colored by artificial intelligence, supercomputers, genetic engineering, nanotechnology, automatic cars, and innovation. This is capable of threatening the Indonesian nation as a country that has a labor force and a high enough unemployment rate.

The Indonesian government needs to respond to these changes quickly and precisely by formulating a strategy that can increase the competitiveness of the national industry while at the same time creating wider employment opportunities in the long term. This era disrupts various human activities in various fields, not only in the field of information and communication technology, but also in other fields such as economics, society, politics, health, and so on.

The development of the industrial revolution is also inseparable from constructing the human mindset and influencing the development of intellectual capital owned by every organization. Intellectual capital can become the "main weapon" of an organization in accommodating organizational development. Further explained by Falih (2020: 3), intellectual capital consists of three basic components including human capital, structural capital, and relational capital. Human capital is the sum of explicit knowledge sourced from innovation and improvisation, and competence in producing the best solutions based on the knowledge possessed by the organization.

Relationship capital shows the relationship of an organization with its stakeholders and can be seen from various parts outside the environment that can add value to an organization. For example, in educational organizations, relationships and relationships from various parties are mandatory, both from the government, educational observers, community leaders, and cultural and religious customs. all of them must synergize in establishing relationships so that the quality of education can be felt together and collectively

To elaborate on these three components, concerning organizational engineering in the industrial age which is now being hyped up, it is necessary to understand that human capital, structure and relationships are the ability to run and operate the organization at every organizational level. Therefore, in responding to the currents of this globalization era, every leader in an organization, both formal and non-formal, becomes necessity for proficiency in using renewable technology. The ability to adapt to the world of technology is an added value for the movement or back and forth of an organization. That's why the focus of the study in this paper is how to engineer organizations to face challenges in the industrial globalization era 4.0.

2. METHOD

This research uses a literature study method, with descriptive analysis and synthesis techniques. Approaches to filtering qualitative data collection. Making data search space through literature and references relevant to the context and subject being studied for discussion. Reference to research methods refers to Miles and Huberman translated by Tjetjep Rohendi Rohidi (2009:137) summary on data analysis. Through data collection techniques, reducing data, presenting data, and concluding and examining research results on an ongoing basis in the research process.

3. RESULTS AND DISCUSSION

Organizational Engineering in the Era of Globalization 4.0

In its scale, scope, and complexity, the transformation that is taking place is different from anything humanity has experienced before. There are at least two types of competencies needed to be adaptive to changes in the 4.0 industrial revolution era, namely personal competencies and interpersonal competencies as a form of constitutionalization of intellectual capital. Enrol et al (2016:OEP), describes that personal competencies can be seen as the ability to develop cognitive abilities and value systems. that may be owned by someone while interpersonal competencies are embedded in individuals as social beings in their environment where the ability to communicate, work together and build social connections and social structures with other individuals and groups is needed.

Organizational Engineering

Before studying organizations in this era of industrial globalization, to provide a theoretical standard, it is better to start with defining the meaning of the organization itself. The organization is a very interesting scientific discipline to study and apply in everyday life. Some experts have defined organization as follows:

1) James D. Mooney (1974) is any form of human cooperation to achieve common goals
2) Ralp Currier Davis (1951) is a group of people working towards a common goal under one leadership
3) Robert V. Prestuhus (1958), a system of arrangement of interpersonal relationships
4) Michael J. Jucius (1962) is a group of people who work in interdependent relationships towards a common goal or goals
5) Robbins (1984) is a consciously coordinated social unit, with a relatively identifiable boundary, which works on a relatively continuous basis to achieve common goals or group goals (Wijaya & Rifa'I, 2016: 49-50).

From some of the descriptions of the definitions of the organization above, an understanding can be drawn that an organization is a group of people with one leader who works together, and coordinates continuously to achieve common goals.

Meanwhile, the understanding and study of engineering in an organization will be explained more clearly in this study. In simple terms, organizational engineering is a technique used to redesign organizational processes. It is the process of reviewing all the different levels of the way an organization does business and considering how to improve things. By using this technique, a company can be aligned for the future. The dynamics of an institution, including educational institutions, in adapting to its internal and external environment can take various forms. However, adjustments are made to maintain or even develop the existence of the institution.

Following are the types of organizational change according to Kotter (1997) quoted by Kusdi (2013: 21):

1) Restructuring, namely changes in the organizational structure when it is felt that it is no longer adequate, ineffective, inefficient in achieving various goals and objectives of the organization.
2) Reengineering, namely changes to organizational work systems to build more effective and efficient linkages, more integrated between existing subsystems. If the subsystems are very unbalanced, it's time to re-engineer.
3) Formulation of a return strategy, is closely related to strategies to win the competition, for example changing the market share/targets for service users, changing the forms of incentives/facilities for service (product) users.
4) Acquisition, namely combining 2 institutions that have similarities, close business/task fields to produce more superior products, pursue higher economies of scale or earn more profits.

5) Downsizing, namely reducing the size of the organization to make it more efficient, either reducing less essential structures or reducing excess employees. The causes include reduced profits, and reduced budget. For the sake of savings, downsizing is done.
6) Quality programs, namely changes that are focused on achieving certain quality standards for the products or services produced.
7) Renewal of organizational culture (organizational culture's renewal), namely updating the values, and norms of the organization. Done when the organizational culture is no longer relevant to the goals and objectives of the organization so it is necessary to develop a new culture.

From the description of the points above, a synthesis is taken that organizational engineering is a change in form, character and system that must be carried out in adapting to market and customer (society) demands to increase creation and innovation in responding to the challenges of the globalization era so that organizational programs become effective and efficient.

Globalization Era 4.0

The industrial revolution 4.0 quoted from wikipedia.org states that industry 4.0 is the name of the latest trend of automation and data exchange in factory technology. This industry includes cyber-physical systems, the internet for everything, cloud computing, and cognitive computing. Zesulka in Sigit (2020: 76-78), states that industry 4.0 is used on three interrelated factors namely; 1) digitization and economic interaction with simple techniques towards economic networks with complex techniques; digitalization of products and services; and 3) new market model. Then Sung (2017), added stating that the machine will operate independently or coordinate with humans. In addition, Lee (2013: 38-41), explains, industry 4.0 is marked by an increase in manufacturing digitization driven by four factors:

1) Increases in data volume, computing power, and connectivity.
2) The emergence of analytics, capabilities, and business intelligence.
3) The occurrence of new forms of interaction between humans and machines.
4) Improvements to digital transfer instructions to the physical world, such as robotics and 3D printing.

If traced sequentially all the revolutions that occurred regarding the previous industrial revolution as the basis. The industrial revolution 2.0 will not appear as long as we still rely on muscle, wind and water for production. The industrial revolution 3.0 upgraded production lines with computers and robots. So, the industrial revolution 4.0 uses computers and robots as the basis. So, what advances have appeared in our computer world recently? Among them, the most noticeable progress is the internet. All computers are connected to a shared network, and as time goes on, computers get smaller in size, they can even be as big as our fists. That's why at this point we can feel the smartphone. This causes the process of information to be fast-paced, for example every problem can be known immediately.127-128).

In the current era, disruption does not only apply to the business world. The phenomenon of disruption has the impact of major changes in various fields but has expanded in other fields such as education, government, culture, politics, and law. In the political field, for example, political movements to gather masses through mass concentration have been replaced with social media-based movements. The government sector is now also being challenged to carry out the bureaucracy effectively and efficiently based on e-governance (Banuprasetyo & Umi Trisyanti, 2018: 24).

In general, industry 4.0 is characterized by increasingly sophisticated and modern technological developments that lead to the effectiveness of all work and streamline time and financing. Specifically, in the world of education, Professor of UIN North Sumatra Medan Giyoto, when teaching doctoral students on October 1, 2022, predicts that online learning systems (in networks) will be preferred in future learning systems, given the flexible process, so people will definitely prefer which saves time and costs and is only mediatedsmartphonesin the learning process, especially education at the postgraduate level.

The era of industrial globalization at the educational level is described in more detail by Setyo Utomo (2020: 11-12) in his article that the era of the industrial revolution 4.0 also had an impact on the world of education. The use of digital technology in the learning process, completing various assignments, and increasing teacher competency cannot be separated from the flow of information and technology development.

Furthermore, Setyo (2020) explains that the practice of education in schools which relies on the transfer of knowledge from teachers to students is no longer effective in preparing students to enter the industry 4.0 ecosystem which prioritizes the development of 21st-century competencies. Education 4.0 can only be implemented by referring to a new paradigm of education that characterizes students as connectors, creators and constructivists in the framework of the production and application of knowledge and innovation. Developing the quality of human resources means relying on teachers so that teachers are expected to be able to become agents of transformation in strengthening human resources in building the talents of students, and managing learning that is more in line with the demands of the era of industrial globalization era 4.0.

At the organizational level, to be able to compete in a global world and be adaptive to changes in the industrial era 4.0, organizations must have intellectual capital in human resources capable of creating organizational value that contains at least four characteristics according to Malik (2020), including: First, human resources valuable resources that enable organizations to implement strategies to improve efficiency and effectiveness. Second, rare resources where the organization has resources that are not owned by other organizations and if the strategy is implemented the organization will gain a competitive advantage. Third, unique resources that are not easy to imitate (imperfectly imitable resources) so that other organizations that try to imitate need to pay high costs. Fourth,

From this explanation, it can be concluded that the very rapid development of science and technology has had a significant impact on human life, including the construction of intellectual capital in the era of the industrial revolution 4.0. Both from human capital, structural capital, and relational capital can be combined into an individual competency that is integrated with the ability to communicate, work together and build social connections, both socially structured with individuals and with other groups within an organization.

Organizational Behavior in the Era of Globalization 4.0

Changes in behavior in business organizations are not only intended to improve business companies to be better, healthier, more profitable but how changes in behavior can change the country to become more prosperous.

The formula for improving the country's welfare by innovating to change behavior in organizations so that it is more efficient and profitable can refer to the successes of Ford, Eastman Kodak, and Singer sewing machines. The model for improving state welfare through innovation is also demonstrated by Japan, South Korea, Nigeria, Rwanda, India, Argentina and Mexico (Sawulski, et al., 2019). The World Economic Forum predicts that there will be disruption in developing countries (emerging countries), including Indonesia in the world of education. As many as 65% of our children who are now starting elementary school will later get jobs that are currently unknown. Millions of human jobs will be replaced by robots and artificial intelligence devices by 2022.Sentot Imam Wahjono, et al., 2020: Introduction).

Referring to the article https://www.maxmanroe.com/revolution-industri-4-0.html as quoted from the Wikipedia page, the industrial revolution 4.0 has four principles that enable each company (organizational unit, pen) to identify and implement various scenarios. Industry 4.0 includes:

1) Interoperability (compatibility); the ability of machines, devices, sensors and humans to connect and communicate with each other through the internet for everything (IoT) or the internet for audiences (IoT) media.
2) Information Transparency; information systems capabilities to create a virtual copy of the physical world by enriching digital factory models with sensor data.

3) Technical support; firstly the ability of assistance systems to help humans collect data and create visualizations in order to make wise decisions. Second, the ability of cyber-physical systems to help humans carry out various tasks that are difficult, unpleasant or unsafe for humans.
4) Independent Decision; the ability of cyber-physical systems to make decisions and perform tasks as autonomously as possible.

It was reiterated that creating a high-performance organization gained momentum with the development of the industrial revolution 4.0. The three important elements in the organization, human resources, facilities and infrastructure as well as systems and procedures are more easily integrated with cyber-physical systems, internet of things (IoT), cloud computing, and cognitive computing. The political will of top organizational management is very decisive in utilizing the 4.0 industrial revolution as a road map for creating high-performance organizations, but if the organizational leaders are clueless, that is the main obstacle to realizing high-performance organizations in the 4.0 industrial revolution era.

The digital world and the current industrial revolution, several types of business and work models in Indonesia have been affected by the current era of digitalization, one of which is traditional taxis or motorcycle taxis that have started with online-based modes, therefore, the challenge of skills and strategies to face the digital era must be a commitment to increase investment, learn by doing, increasing digital skills for the future digital era and compiling an education curriculum that includes material related to human-digital skills.

The real threats to the future have been, are being and will be faced with threats from terrorism and deradicalization, the spirit of terrorism, the threat of drugs, and the economic crisis. Tips for success for the millennial generation must always open themselves to a wider environment, maintain concentration when completing assignments/work, be sensitive to existing changes, set aside time to study, don't copy/plagiarize other people's work, seek information from trusted sources, set aside time to rest and muster all the potential/strengths you have and achieve success (Wahju S. Utomo, 2020).

Specifically, in navigating the world of organizations in the industrial globalization era 4.0, various things need to be adapted, starting from self-adjustment, being sensitive to information, proficient in technicians and making decisions that target efficiency and benefits, so that all work program units within the organization are more effective and efficient. efficient and no less important thing to note is the reliability of human resources in the organization. Even though the organization already knows theoretically the concept of industry 4.0, the people in the organizational environment do not prepare skills in technology, it is difficult for organizations to develop good work programs, as well as educational organizations. The ability to use technology in the field of education is a necessity.

4. CONCLUSION

Organizational engineering is a change in shape, character and system that must be carried out in adapting to market and customer (community) demands to increase creation and innovation in responding to the challenges of the globalization era so that organizational programs become effective and efficient.

The era of globalization 4.0 is characterized by very rapid technology which has a significant impact on human life, including the construction of intellectual capital that existed in the era of the industrial revolution 4.0. Both from human capital, structural capital, and relational capital can be combined into an individual competency that is integrated with the ability to communicate, work together and build social connections, both socially structured with individuals and with other groups within an organization.

The era of globalization 4.0, namely the proficiency in using digital technology in organizational processes and programs, completing various tasks, and increasing the competence of employees or subordinates, especially for leaders, cannot be separated from the flow of information and technology developments. The development of the skills and competencies of people within the organization is a must. It is no exception in educational organizations, all education administrators must adapt to

technological advances, as well as teachers who play a very important role as agents of human resource strengthening transformation in building the talents of students, managing learning that is more in line with the demands of the era of industrial globalization era 4.0.

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