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The urgency of entrepreneurship learning in the industrial age of 4.0

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Abstract. This study was aimed to provide information on the urgency of learning entrepreneurship in the era of industrial revolution 4.0. The 4.0. Industrial revolution not only provides opportunities but also challenges for the millennial generation. The developments of science and technology as a trigger for the industrial revolution cause some implications such as unemployment, human vs. machine competition, and increasingly high demands on competency. It is estimated that in the next five to ten years it will eliminate 35 - 75 per cent of the work. As a result, the production process becomes faster and easier to distribute. Then what about human energy? New business opportunities will stimulate the emergence of young entrepreneurs. This is what encourages the emergence of the spirit of entrepreneurship along with changes and developments in the times. The purpose of this study is to explain the importance of learning entrepreneurship in the industrial era 4.0 from elementary to university. The method used in this study was literature and scientific journals studies through a theoretical descriptive approach. The finding of this paper is: In order to be able to compete in the industrial revolution era 4.0, the early creative and innovative entrepreneurship learning is and innovative.

1. Introduction

Living in the industrial era 4.0 is a challenge especially for the younger generation, known as the millennial generation. However, the optimism that surrounds everyone in the present is that entrepreneurship talent can be developed by anyone. A person's talent then develops and is honed by his environment. Dreams that are imagined by someone moving dynamically follow the learning process. In addition to talent, the success of an entrepreneur is also influenced by the conducive environmental conditions and the opportunities to practice in the next stages.

Industry 4.0 is the name of the latest automation and data exchange trends in factory technology. This term includes physical-cyber systems, the internet for everything, cloud computing and cognitive computing. Industry 4.0 produces 'smart factories'. In smart modular structures, cyber-physical systems oversee physical processes, create copies of the physical world virtually, and create an uncentralized decision.

Brightening the explanation about Industry 4.0, here is footage, 'Industry 4.0: The 4th generation industrial revolution is characterized by the emergence of supercomputers, smart robots, vehicles



without drivers, genetic editing, and the development of neuro-technology that enables humans to further optimize brain function. This was conveyed by Klaus Schwab, founder and executive chairman of the world economic forum in his book the fourth industrial revolution. Meanwhile, President Joko Widodo, when he was inaugurating the roadmap called 'Making Indonesia 4.0' some time ago, expressed hopes that the Industry 4.0 sector could contribute to more job creation and new technology-based investments.

The Industrial Revolution 4.0 opens wide opportunities for anyone to be an advance. Information technology that is increasingly accessible to all corners causes everyone to be able to connect within a social network. Flooding of information as predicted by the scientist and the experts a long time ago becomes a reality found in the era of industrial revolution today. This abundant information provides great benefits for the development of science and the economy. The 4.0 industrial revolution not only provides opportunities but also challenges for the millennial generation. The progress of science and technology as a trigger for the industrial revolution was also followed by other implications such as unemployment, human vs. machine competition, and increasingly high demands on competency. The 4.0 industrial revolution in the next five years will eliminate 35 per cent of the work, and even the next ten years the type of work that will be lost will increase to 75 per cent [1].

This is because the work that usually done by human step by step is replaced by the program of digitalization technology. As a result, the production process becomes faster and easier to distribute massively with minimal human involvement [2]. In the United States, for example, the development of online banking systems has facilitated the process of banking service transactions [3]. As a result, 48,000 bank tellers have to face termination of employment due to efficiency reasons.

Now that we are in the industrial era 4.0, a lot of works is now being done all digital and using computer technology. Then what about human energy? While printed media, audio-visual media and social media are still busy discussing unemployment. The atmosphere of change in relations between human changes quite rapidly with the presence of technological developments that are able to change the pattern of relations between humans in all aspects of social life both from the social, economic, legal, political and cultural aspects as well as security. The phase of change which came to be known as the Industrial Revolution 4.0, a general phase of data automation and exchange in factory technology, robotics and artificial intelligence [4;5;6]. For companies, this change is certainly very beneficial, but from the aspect of human resources, it will have a quite dangerous impact if it is not managed properly. There will be many human activities that are lost because they have been replaced by machines through artificial intelligence.

Through the elaboration done in the introduction of this study, so the problem of this study is formulated in the form of the question as follows "what the urgency of learning entrepreneurship in the era of industrial revolution 4.0" This study is done in order to provide information about the urgency of learning entrepreneurship in the era of industrial revolution 4.0. It is expected that after conducting this study, the urgency of learning entrepreneurship in the era of industrial revolution 4.0 is known.

2. Methods

The method of this study was library research, it is a series of activities relating to the methods of library data collection. In order to get the information data of this study, library such book and another source of information related to the topics of this study were used by the researcher. The information taken through the library research was collected and organized to provide the answers to the problems of this study. The designed of this study was content analysis.

3. Discussion

Higher education institutions can no longer just issue a diploma regardless of the degree of competence behind the diploma certificate, as well as the inherent abilities and skills and the ability of graduates to obtain certification according to their expertise. The qualifications for the education of the Indonesian workforce are still lagging behind compared to some countries such as Malaysia, Singapore, Thailand and even the Philippines, and in some cases under Brunei. The biggest problem is precisely for graduates who must be able to compete fiercely with the graduates from other ASEAN member universities to fill the open labour market.

Some of the superior skills needed in the current era up to 2020 include the following: a) complex problem solving; b) critical thinking; c) creativity; d) people management; e) coordinating with others; f) emotional intelligence; f) judgement & decision making; g) service orientation; h) negotiation; and i) cognitive flexibility [7]. While the need for skills in the future industry, among others are: a) complex problem solving; namely the ability to solve unfamiliar problems and the solution is unknown in the real world [8]; b) social skills; namely the ability to coordinate, negotiate, persuasion, mentoring, sensitivity in providing assistance to emotional intelligence; c) process skill; namely the ability consists of active learning, logical thinking, and monitoring self and the other skills. The ability to be able to make judgments and decisions with cost-benefit considerations, as well as the ability to know how a system is created and implemented [9]; and d) cognitive abilities, namely skills consisting of, among others: cognitive flexibility, creativity, logical reasoning, problem sensitivity, mathematical reasoning, and visualization.

To answer all the challenges above, the following shows the figure of Alibaba is the current e-commerce company in China. Last year its founder, Jack Ma was declared the richest person in China. Even though Jack Ma started everything from scratch. Jack Ma is not the smartest person in his school. He even had trouble getting his first job. When KFC first opened a branch in China, he applied as a waiter at KFC Hangzhou. Of the 24 people who applied for the job, only Jack Ma was the only candidate who was rejected. But Jack Ma managed to reach his current position because he was so resilient and never gave up.

Some quotes from him become the principles of life that he always holds might probably inspire your day: a) about never giving up; b) about teamwork; c) about having a bigger mission; d) about perseverance; e) about working hard; f) about competition; g) about starting a business; h) about growth; i) about the motivation of others; j) about changing the world; k) about changing; l) about maintaining enthusiasm; m) about motivation; n) about lifestyle; o) about getting out of your comfort zone; and p) about focus. Jack Ma's figure was phenomenal until he is being talked in Time magazine that addressing him as "Crazy Jack". Hopefully, a little wisdom from Jack Ma will inspire your day. Stay passionate about pursuing any of your dreams.

The McKinsey Global Institute research institute predicts that Indonesia will receive a 'bonus demographic' in 2030, which means that the population of productive age will be twice bigger than the population of elder and infants. If it is not anticipated, this can lead to a demographic boomerang. Because, when the working age is booming, the industry has shifted to artificial technology [10]. Various realities in the field have conveyed the revolutionary phenomenon. Thus, in the future, there will be a lot of unemployment that John Keynes (British economist) would call 'technology unemployment', which is a type of unemployment due to changes in human muscle labour into computer machines [11]. Data from the UN Labor Organization (ILO) also noted this trend.

The emergence of new business opportunities will stimulate the emergence of young entrepreneurs. This is what encourages the emergence of the spirit of entrepreneurship along with changes and economic development. There are several factors that stimulate the spirit of entrepreneurship, namely: a) product evolution; Product changes will lead to changes in needs that give rise to new opportunities; b) evolution of science; Changes in science will inspire new products and so on; c) changes in lifestyle, tastes, and hobbies; Lifestyle changes will lead to the desire for different products; d) changes

in technology; The development of technology and the increasingly sophisticated technology will create a different product, atmosphere and lifestyle; e) cultural change; The development of lifestyles, income, tastes, technology, and so on will change one's culture, so this affects the need for different products in each place; f) changes in government and political structures; Political change will affect changes in government structure, which will lead to changes in the rules, policies, and direction of the economy, so that a gap in the need for the past and after the change arises; g) Intrapreneurship; The ability of intrapreneurship (entrepreneurship in an internal company) that is getting better and stronger will lead to entrepreneurial passion [13]. This is due to creativity, innovation, intense competition, desire for more recent challenges, organizational change, and so on. So the organization indirectly develops someone's entrepreneurial spirit.

In a world filled with competition between life or exclusion like today, what is important is what Charles Darwin said: "It is not the strongest, the biggest, the smallest, the highest, the weakest, the brightest, and the most ignorant, who will survive! But ... who are creatures who are able to adapt to changes in the environment, and proactive thinking that will come out of the pressure of competition" [14]. The fact that we find, many bachelor graduates who aspire to create a company and develop his own business, compared to being an employee in a corporation or commercial organization [15]. However, there are many 'young entrepreneurs' who are considered successful and some who fail.

Observing the situation, Indrajit wrote key success factors as follows: a) understand the principles of new economy; b) have a good vision; c) excellence in working stamina; d) able to cope with change; e) can manage people; f) collaborate to compete; g) combine professional with entrepreneurs [16]. After studying the various opinions above, the writer comes in to conclusion that to realize the dream of becoming an entrepreneur, we must: a) can find the uniqueness of the business that we pursue; b) scaling up; c) choose the right people, such as: (1) character good people; (2) having passion in the field; (3) have competence; d) business must have a system; standardize the process. tomorrow must be better than today. companies must seek value and build a supportive climate. look for the uses or benefits of your company for others, and e) belief and mission [17].

For this reason, there are 5 keys to successful entrepreneurs: a) continue to innovate; b) good at seeing opportunities; c) dare to try and not be afraid of failure; d) have a clear concept and target, and e) relationships and partners [18]. human life, like the business world, requires a strategy to deal with intense competition. evolution theory applies in entrepreneurship landscape. the business world or every type of work adheres to the law of evolution, anyone who is unable to adapt to changes in the environment will surely be crushed by the change itself.

4. Conclusion

The exact strategy in this era of disruption, at least three things can be done: a) keep honing soft skills - when machines and computers replace human tasks physically, the distinguishing factors that humans have are soft skills, such as integrity, team working, motivation and leadership; b) multiple skills - how many professions have become extinct due to disruption. In the future, maybe the work aspired by Z Generation actually no longer exists. Therefore the young generation must master many skills and never be tired of innovating in a climate of change that moves faster than before; c) open and adept way of thinking quickly - when new changes emerge, behind that will actually also create new opportunities, to capture them we need to have an open (inclusive) perspective, so that we do not merely see change as something harmful. In addition, it is important to be adaptive, because those who reject change will be eroded by history.

The three things above are then refined with ethical, moral, and religious moral values. We all hope that Generation Z is now able to become a formidable generation facing the disruption era. That optimism must always have to be fertilized and sought. Generation Z must try to be a winner, not just as a change imitator, but as the initiator of the change itself. Change after the change has changed the

order of the pattern of competition, vision, mission, strategy and tactics of an entrepreneur so that it directly affects the emergence of many business opportunities, brilliant ideas, and smart ways to start a business in this all-digital era. Information technology is the trigger and at the same time is a new weapon to compete, as if it were 'spirit' for an entrepreneur in managing his business. The evolution of the application of information technology is so fast and shows its increasingly vital and crucial role that it becomes a locomotive in growing its business. Information technology is like 'oxygen' for entrepreneurs because that is the factor that makes a business survive in a market where competition is very tight. For this reason, information technology is a differentiator in all business matters. The emergence of the use of the internet to communicate, conduct relationships, market themselves and form groups has created a new generation of culture-based internet technology that is often referred to as 'Netizens'. This is the generation of Netizens to become a new community targeted by entrepreneurs engaged in digital technology.

The characteristics of the Netizen Generation include: (1) internet addiction, (2) wanting to live freely, (3) not wanting to be controlled for freedom, (4) not controlling others, (5) having high integrity, (6) have the nature of wanting to be cared for, known and recognized as being (narcissistic), (7) liking instant culture, 'ready to use' and idolizing high-speed speed. Each individual generally keeps the determination to become digital-entrepreneurship, with characteristics: (1) hobbies and internet addiction, (2) armed with knowledge and educational background in their fields, (3) handling work that is always related/using the internet, (4) media that is popular with regard to the internet, (5) usually they are programmers. Therefore, let us put entrepreneurship learning as a compulsory and urgent matter taught in formal and non-formal educational institutions from an early age, starting from Elementary School to Higher Education. The author believes that every human being is creative because he was created by the Creator of the Almighty, and from his creativity that humans are able to become reliable innovators who are ready to compete but remain in the same era in the era of industrial revolution 4.0 today.

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