

Impact of the Industrial Revolution 4.0 for Citizens Learning at Non-formal Education Units

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Abstract—The era of the industrial revolution gave a very rapid influence in the field of learning, especially in Non-formal learning. All components of learning must be able to adjust these changes. The purpose of this study is to describe the impact of the industrial revolution 4.0 in the process of learning equality in non-formal education units. The method used in this research is explorative descriptive qualitative. Respondents in this study are the managers of non-formal education institutions and non-formal education program participants. The study was conducted in Sleman Regency, Yogyakarta City and Bantul Regency. Data collection is done through interviews, observation and documentation. Data analysis was performed using qualitative analysis. The results of the study indicate that the impact of the 4.0 industrial revolution in the learning process in non-formal education units is: a) graduates can work better and are useful for promotion, b) work skills for graduates increase so that they are able to get better jobs; c) learning citizens can apply for jobs using their certificates or diplomas, d) create new jobs, and absorb labor; e) graduates of course and training institutions that utilize digital marketing are able to develop a business marked by increasing sales turnover.

Keywords—*industrial revolution; education; non-formal*

I. INTRODUCTION

The industrial revolution provided many influences on people's lives in various fields. The development is so fast that people must be fast in responding to it. In this case it is not only limited to the formal world, but informal life must also be able to be fast. The industrial revolution 4.0 is a unique phenomenon compared to other industrial revolutions. The term industry 4.0 itself was officially born in Germany precisely when the Hannover Fair was held in 2011 [1]. Several other countries also participated in realizing the concept 4.0 but using different terms such as Smart Factories, Industrial Internet of Things, Smart Industry. Some of these conditions are caused by the rapid use of technology in various fields. The impact of the industrial revolution had a negative and positive effect. Of the benefits obtained, namely regarding the improvement of work flexibility acceleration, increased service to customers and increased revenue. Besides bringing benefits, the industrial revolution raises challenges that must be faced by society. Industry 4.0 challenges are the emergence of resistance to changes in demographics and social aspects,

instability in political conditions, limited resources, risk of natural disasters and demands for the application of environmentally friendly technologies [2].

The industrial revolution made possible the emergence of a society without schools, which meant that everyone could study anywhere and anytime without having to be in the classroom. Internet technology is developing faster and faster, able to facilitate one's learning needs without having to study in class with the guidance of the teacher. A person is able to learn something through video shows, digital books and other skills that are increasingly offered through the internet network.

The possibility that can arise encourages non-formal education to continue to innovate, especially in terms of learning. Non-formal education itself is any organized and systematic activity, outside the established schooling system, carried out independently or is an important part of broader activities, which are intentionally carried out to serve certain students in achieving their goals study it [3]. The presence of the industrial revolution in non-formal education has been widely felt by non-formal education providers such as the Learning Activity Studio, PKBM (Community Learning Centers), LPK (Job Training Institutions), and TBM (Community Reading Gardens). Various challenges in non-formal education namely a) non-formal education needs to be more proactive in reforming its vision, mission and strategy to change educational programs that were originally oriented to produce graduates as job seekers into efforts to produce graduates who have expertise and abilities to be independent and create employment, b) elements of the non-normal education system need to be carried out in a complete and complete manner that includes components, processes and goals, c) improve the vision and mission and strategies for developing non-formal education, d) non-formal education increases the orientation of the alignments to the people, e) non-formal education needs to develop three aspects of internal institutional development with research, management and production efforts, f) in enhancing the mission of such broad-based non-formal education, the institutions implementing and implementing education programs cannot work independently. self without any connection with other parties [3]. With the 4.0 industrial revolution, the challenges of non-formal educational

institutions are increasingly apparent in facing various problems

II. METHODS

This study uses a descriptive-explorative qualitative approach, in which this research will systematically analyze the description of the facts and characteristics of the subject and object under study. This research was conducted in February - June 2018. The research was carried out in PNF institutions/units that carry out life skills education programs in Sleman Regency and Yogyakarta City.

The subjects in this study were managers of non-formal education units and participants of non-formal education programs. The techniques used in data collection are through interviews, observation and documentation. The tools used in data collection included: interview guidelines, observation guidelines and documentation guidelines. Qualitative data analysis was performed through data reduction procedures, data display and conclusion drawing. As for the validity of the data using the triangulation technique of sources and methods.

III. RESULT AND DISCUSSION

The industrial revolution made work done faster and easier so that it took a long time to complete the job. This is because there has been a massive change in the way humans produce goods through technology. Thus it can be explained that the industrial revolution greatly affected human life, so that humans are required to be able to master technology.

The Industrial Revolution 4.0 has more or less influenced theory and practice in the field of education, including non-formal education. The practice of non-formal education that is more flexible provides its own advantages because it is able to adapt to the needs of the times. Technological developments have influenced all human life from various fields, namely education, politics, culture, economy, social, law and so on. One area of human life that is deeply felt by society is the field of education. Educators and students are required to be able to balance the educational process with information technology. One of the education sectors that experienced the impact of the industrial revolution is non-formal education. Non-formal education, which was originally carried out with a conventional system, is now required to be able to compete technologically. This is intended to make innovations in non-formal education learning.

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The industrial era 4.0 needs to be seen as a challenge, to provide enthusiasm, that humans are not easily monopolized by technology. As expressed by Tilaar: "A new challenge demands a breakthrough process of thought if what is desired is a quality output that can compete with the work of an open world" [4].

From several programs that have been implemented, information has been obtained about the results that have been achieved, including: a) learning citizens acquire additional skills in addition to the chasing package program they have participated in; b) tutors and learning citizens find it easy in the learning process; c) Citizens can study independently, d) Many graduates are accepted and continue in universities, both public and private; e) most of the WB immediately obtained a job after graduation.

In the industrial era 4.0, education has experienced tremendous disruption. In the non-formal education learning process, various changes in learning methods have been made. Learning that begins with the traditional changes to the online system. Tutors are increasingly facilitated in the learning process, as well as learning citizens, the easier it is to access various materials and information. Thus the existence of tutors was gradually displaced by the existence of technology. This is in line with the opinion of Sukartono who so far as the only provider of knowledge has shifted somewhat away from him [5]. In the future, the role in interactions with students will be more varied and requires high creativity so that its role is not replaced by technology which is seen as making it easier for students. The biggest challenge of education is how a capable education program not only emphasizes the content of knowledge, but also attitudes and skills. In the future, non-face-to-face learning interactions (cyber school) will increasingly occur, eroding educational interactions between teachers and students, so that educational values are threatened with loss. Not to mention the program challenges and knowledge content offered to students. In the future, humans must be able to compete with the domination of industrial machines which increasingly reduce the role of humans. Human resources are encouraged to be smarter and more productive than machines created by humans themselves.

The 21st century is the information age, in this century, information around the world can be accessed without the obstacles of space and time. Dr. Spencer Kagan stated that information explosion and change rate. The information explosion impacts one's ability to memorize a new fact of less value than the ability to understand, analyze, organize, apply, evaluate and create new information.

The most easily seen impact of non-formal education is its absorption in the world of work. Some of the impacts felt by education unit managers on graduates include: a) being able to work better and be useful for promotion, b) increasing work skills so that they are able to get a better job; c) learning citizens can apply for jobs using their certificates or diplomas, d) create new jobs, and absorb labor; e) graduates of course and

training institutions that utilize digital marketing are able to develop a business marked by increasing sales turnover.

The direct impact felt by the learning community after they joined the program can be described as described above. However, there are also some indirect impacts that are felt, namely the routine work carried out by the learning community is not disturbed by learning activities. Besides that, the educational program that is being held also has an economic impact on learning citizens such as increasing monthly income and a perceived economic increase

IV. CONCLUSION

The results felt by the learning community after participating in the program organized by the PNF unit include: acquisition of additional skills, ease in the learning process, formation of learning independence, graduates continue their education to the next level, most graduates immediately get a job. In addition to the results, the learning community also

feels the impact, including: being able to support career advancement, getting better jobs, creating jobs, increasing sales turnover with the help of digital marketing that has been learned.

REFERENCES

- [1] Kagermann, H., Lukas, W.D., & Wahlster, W. (2013). Final report: recommendations for implementing the strategic initiative INDUSTRIE 4.0 Working Group.
- [2] Drath, R., & Horch, A. (2014). Industrie 4.0: Hit or hype? (industry forum). IEEE industrial electronics magazine, 8(2), pp. 56-58.
- [3] Sudjana. 2004. Metode dan teknik Pembelajaran Partisipatif dalam Pendidikan Nonformal. Bandung : Falah Production.
- [4] H.A.R. Tilaar. 1998. Manajemen Pendidikan Nasional; Kajian Pendidikan Masa Depan. Bandung: Remaja Rosdakarya.
- [5] Sukartono. 2018. Revolusi Industri 4.0 dan Dampaknya terhadap Pendidikan di Indonesia. <http://pgsd.ums.ac.id/wp-content/uploads/sites/73/2018/12/Materi-Sukartono.pdf>.