Empowerment for adults through digital skills enters the era of industrial revolution 4.0

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Abstract. The development of the digital world in the era of industrial revolution 4.0 is very significant both in the world of education and the world of industry where it requires adaptation to be able to utilize it so that they remain productive to increase income. The purpose of this article is: (1) To know the empowerment of adults through digital skills entering the era of industrial revolution 4.0 by utilizing technology as an opportunity for their lives (2) The process of stages that adults do about understanding digital skills. The time of this study was conducted January-February 2019. This research was conducted in Sleman, Yogyakarta Special Region. This research model uses the Self-Directing Learning approach. The method used in this study is a qualitative method with data collection techniques through observation, interviews, questionnaires, and documentation. The subjects in this study were 23 online drivers. The results of this study indicate that (1) There is a significant favourable influence on empowerment for adults that has been carried out through digital skills (2) The process of stages carried out for adults to be able to improve and adopt the concept of digital skills through planning, socialization, training, implementation, evaluation, and assistance. With this empowerment, online motorcycle taxi company partners pay more attention to drivers by empowering them if there is a new menu. So that all drivers immediately find out the latest list published by online motorcycle taxi companies.

1. Introduction

The development of the world from time to time is growing. The era where globalization was tinged with the increasingly sophisticated technology in the era of industrial revolution 4.0. Everything aspects of the affairs of human life are not free from technology. Starting from eating, drinking, shopping, transportation, transactions, and the world of education has been packaged in such a way with technology. Technology has become a primary human need in the digital era. If it does not adapt to follow it, then humans are considered technology stutter. This cannot be avoided or denied, considering that it has become a basic human need. Therefore, the demand for digital skills competency is now a demand for a promising era and is most needed in the period of industrial revolution 4.0 at present.

Today's technological advancements actually make it easier for individuals to obtain information faster than before, such as newspapers and postal mail. To establish communication relations with different places will definitely be easy and fast, considering everything is digital. Therefore, the globalization of information today is not only interpreted as the flow of mass communication in the
sense of merely disseminating television broadcasts and entertainment but also includes the expansion of information horizons and insights into human knowledge. In a broader sense, this globalization is a transformation of socio-culture with global scope [1].

The presence of Information and Communication Technology (ICT) is expected to be useful for community development, especially digital skills, as demand for competencies that are competing in the global market. Because in the era of industrial revolution 4.0, not only adults are required to work, but all people can work with the help of technology. One example is being a content creator, YouTube, vlogger, logo designer and many that can be accessed by all people so that digital skills are needed and very important in the era of industrial revolution 4.0.

The Minister of Communication and Information of the Republic of Indonesia stated that the use of information technology could promote development programs and community development by utilizing ICT. The concept of evolution by using ICT is known as ICT4D (Information and Communication Technology for Development) or Information and Communication Technology for development [1]. One form of the program based on the ICT4D concept is a program providing access to Information and Communication Technology, especially the internet to all various regions. The government program that was launched has been exactly that to give access to Information and Communication Technology to all areas is a part of a sustainable development program in the development and empowerment of communities, especially for adults.

Education for adults is not like teaching small children to recognize letters. Education for adults cannot be equated with elementary school children's education. This means that what must be understood is what drives adults to learn, what obstacles they experience, what they expect, how they can learn well [2]. In the beginning, many practices of the learning process in training aimed at adults, which should be andragogical, were carried out pedagogically. Even though we need to know adult learning with elementary school, children's education is very much the opposite. This is in line with the opinion of Knowless revealing the right learning theory for adults is a challenge for counselors in providing material to adults [3]. Since then the term "Andragogy" has been increasingly discussed by various groups, especially education experts.

Adult education, or in other terms, Andragogy comes from Greek, which is derived from the word aner means adult, and agogos mean to lead. Then literally, andragogy means art in teaching adults, as opposed to pedagogy, which means skill and children's teaching knowledge [4]. For more details, we can see the difference in teaching adult learning styles by teaching an elementary school child, according to Tamat [5]. The following:

- Learning is more directed at a process of maturation, a person will change from a dependent nature to having self-abilities, and requires self-direction even though in certain circumstances, they are still addicted.
- Because the main principle is to gain self-understanding and maturity to be able to survive, learning is more critical using experimentation, discussion, problem-solving, training, simulation, and field practice.
- Adults will be ready to learn if the training material is following what they feel is very important in solving life problems. Therefore, creating learning conditions, tools, and infrastructure, and procedures will make adults ready to learn. In other words, learning programs must be arranged according to their actual life needs, and the order of presentation must be adjusted to the readiness of students.
- Development of capabilities is oriented toward learning centered on activities. In other words, how to arrange lessons based on what ability or appearance that is expected by students.

The ability of adults to learn can be estimated as follows: (a) 1% through the sense of taste, (b) 1% through the sense of touch, (c) 3% through the sense of smell, (d) 11% through the sense of hearing, and (e) 83% through the sense of sight (Payton, S & Hague, C. 2010). In line with that, Adult learning is
more effective at listening, speaking, seeing, and more effective if you can do it. The composition of the ability of adults can be described in the learning pyramid (pyramid of learning) as in figure 1 below.

![Adult learning pyramid](image)

**Figure 1.** Adult learning pyramid [2].

To achieve maximum results in the learning process. Someone is not only required to be able to use digital devices well but must understand everything related to digital technology. This is called digital literacy [5]. Meanwhile, research conducted by Zogby International in the United States showed that 24 percent of 1,950 respondents consisting of adults stated that the internet had a significant impact on their lives. According to the research company, most people say they cannot live without the internet and need high-speed connectivity [6]. Adult education is part of the concentration of non-formal education. Non-formal education, according to Coombs is an activity organized outside the established schooling system, carried out intentionally to serve students to achieve learning goals [7]. The function of non-formal education is not only as a formal education partner but can be a substitute, complementary, supplement and complementary formal education that is useful as a bridge to get into the world of work.

Non-formal education functions as empowerment. Empowerment for the community to create productive communities. Including creating adults to remain productive so that they can use leisure time to be more valuable and produce sustenance when it is well empowered. Empowerment, according to Kindervatter, says, "People's understanding of and control over social, economic, and political forces to improve their standing in society." This means that everyone must understand that each has the potential to transmit knowledge by creating innovations both economically, socially, politically or otherwise so that there is value in the benefits of what is designed for many people [8].

Empowerment carried out for adults in the industrial era 4.0 is a part of the needs of the times that provide convenience in overcoming various life problems. Where empowerment explored in this study is to combine technology with their work based on experience to digital skills. This digital skill empowerment effort does not require that all adults can be in a day or able to change drastically to be able to adapt to master the digital age. But this research was conducted step by step so that it can lead to digital skill competence. Because with this empowerment, the benefits obtained are that this knowledge has an impact on subsequent lives to create a sustainable human development culture of the Sustainable Development Goals (SDGs) which is the state's aspiration to educate the nation's growth following the 1945 Constitution.

We can see empowerment for adults, such as PT. Indonesia, which has been able to empower the Indonesian people to reach approximately 1 million driver partners from 50 cities that they have operated according to online news since March 27, 2018 (tempo business, 2019). This figure is very fantastic for one company that has been moving since 2010 and is now an Indonesian unicorn. Speaking of income, of course working at this company cannot be underestimated as being a conventional motorcycle taxi before an online motorcycle taxi. This company is part of an example of proper empowerment by seeing
the ability of the achievement index to increase every year. They can bring not only adults but teenagers who already have a SIM and invite older adults who are still able to operate their vehicles.

Digital skills are a concept of competence that must be possessed by everyone, including adults. Many out their adults spend time in coffee shops while playing chess, playing gambling, unemployment, or enjoying retirement in the old days. Therefore, digital skills are present not only as an information center to find out information changes quickly. But it can give an impact on their daily lives. This concept will change their way of life and their perspective on life that has always looked ordinary. With the presence of digital skills, it can make them feel the benefits after participating in the competencies needed in the industrial era 4.0.

Therefore, the purpose of this study is to empower adults through digital skills entering the industrial era 4.0, namely: (1) To know empowerment for adults through digital skills entering the age of 4.0 industrial revolution by utilizing technology as an opportunity for their lives. (2) The process of stages that adults do about understanding digital skills. The existence of this empowerment is expected to be able to change the mindset and perspective of adults in utilizing technology to be able to increase income. But it needs adaptation so as not to stutter technology. Therefore, it is necessary to empower adults to welcome and prepare themselves for the industrial revolution 4.0.

2. Method

This study uses descriptive qualitative research methods. Where qualitative research is a type of research that is used to see and analyze events and common symptoms that occur more deeply [9]. The research method according to Sugiyono, an artistic approach because the research process is creative (not patterned), also called the interpretative way because the research data is related to the interpretation of the data found in the field [10]. This method is often referred to as an effective method because it can be found scattered data, and the results are constructed in a theme that is more meaningful and easy to understand.

This research model uses the Self-Directing Learning approach. This term has been found in the psychology literature of adult education [11]. According to Gibbons, that Self Directing Learning is a skill where a person can decide for himself and choose the goals he wants to achieve, plan strategies to be carried out, strive to solve problems, manage himself, and evaluate the thinking and performance performed. These skills will enhance personal knowledge, expertise, and achievements [12].

This method aims to produce qualitative observations for the needs of decision makers to determine the need for additional research in planning and carrying out activities. The techniques for collecting data through observation, interviews, questionnaires, and documentation. Data analysis techniques by collecting data, reducing data, presenting data, drawing conclusions. The data sources in this study are online drivers and online business people. All of them were made respondents for all information regarding related studies. This research was conducted in Sleman, Special Region of Yogyakarta. The time of this research was held January - February 2019.

3. Results and discussion

3.1. Results

The results in this study include matters related to the program, technical in the field as well as barriers obtained during research in exploring further about the study of empowerment for adults through digital skills entering the era of industrial revolution 4.0. The results in this study summarize observations, interviews, questionnaires, and documentation presented with narrative in the form of qualitative descriptive. The stages carried out in this study can be seen in table 1 below:
Table 1. Results of the stages conducted by research on empowerment for adults.

| Stages Carried Out | Data from Interviews                                                                                     |
|--------------------|----------------------------------------------------------------------------------------------------------|
| Planning           | a. Informant background.                                                                                 |
|                    | b. *Constraints during participating in digital skills empowerment.*                                     |
|                    | c. *Interest in participating in digital skills empowerment.*                                           |
|                    | d. Results and influence on daily life after participating in digital skills empowerment.                |
| Socialization      | a. At first, they were never attracted by the job of being an online motorcycle taxi driver, because they still underestimated and the degree was the same as a base motorcycle taxi. |
|                    | b. Online business people are initially confused about what to sell to supplement their income.         |
|                    | c. Interest arose when he saw that there was a success that was not in line with their expectations that jobs that were underestimated had promised their income. |
|                    | d. The digital skills empowerment program has instigated themselves at that time, that now is the era of all smartphone so that they finally take part in the training set. |
|                    | e. An online business without a company indeed learns with the method of direct self-learning to learn how to solve the problem itself. Sometimes you need a tutor friend who is more familiar with the same field. |
| Training           | a. Indonesian PT. Gojek or Grab companies certainly provide training that indeed makes it easier for their partners to operate their smartphones. |
|                    | b. This training is adapted to the characteristics of learning styles with the Self-Direct Learning method for adults. |
|                    | c. With the Self-Direct Learning method, online businesses have prepared many e-books from Google, of course, more information can be obtained how to attract buyers’ attention to our merchandise so that it is efficient and effective. |
| Implementation     | a. *Get a lot of friends from all walks of life, backgrounds, education, and so on without any choice because they work through digital skills empowerment.* |
|                    | b. *Online merchandise people in business sell faster than previously still conventional.*                 |
|                    | c. *Income is much better and promising than before they knew digital skills.*                           |
|                    | d. *Get special treatment for drivers online through special food promotions, vehicle maintenance, Umrah rewards, and so on.* |
|                    | e. Merchandise that is traded is bought simple, secure transactions, and according to what the buyer wants. |
| Evaluation         | a. Operate smartphones still need adaptation.                                                            |
|                    | b. Lots of buyers or buyers who hoax for the services or merchandise they offer according to customer needs so far. |
|                    | c. Losses continue to haunt when the transaction occurs.                                                 |
|                    | d. Orders delivered or goods sold are not in accordance with the buyer's request.                       |
| Accompaniment      | In the Training period, there is a guidance service or complaint where when they have problems during implementation; of course, all have the right to be helped and protected for the issues that befall them. |

(Source: Primary Data, 2019)

3.2. Discussion
Empowerment for adults is essential in utilizing their free time while not understanding the demands of digital skills. The introduction of the concept of digital skills is one characteristic of changing their life mindset so far, that it is essential to recognize technology in a definite use to support their work or their activities. Therefore, we know that empowering adults must understand the characteristics of education for adults.
Empowerment for adults is essential in utilizing them free time while not understanding the demands of digital skills. The concept of digital skills is a characteristic of changing their life mind-set so far that it is essential for them to support their work or their activities. Therefore, we know that empowering adults must recognize the characteristics of education for adults.

Experience for adults is precious learning for adults. Each participant has varied experiences, different levels of education, maturity, and the environment. For this reason, empowering adults should pay attention to the following: 1) participants as a source of learning, therefore the applied learning techniques are oriented towards efforts to absorb their experience through; group discussion, brainstorming, role-playing, simulation, demonstration, focus group discussion. 2) emphasis on practical applications, new knowledge, concepts, and new experiences can be explained through possible experience experienced by students. The results of learning can be utilized directly in his life. 3) learning material is designed based on the skills and conditions of students.

Therefore, in empowering adults during the stage of providing experience, we need to pay attention to the implications of proper empowerment to achieve the desired goals, including the following: First, create a conducive learning climate. Second, diagnosis of learning needs. Third, the Planning Process involves students in preparing training plans. Fourth, formulate objectives, namely about the behavior that will be generated to meet the needs of students. Fifth, Developing a general model, more adult education through discussion, both small groups, and large groups. Then sixth, Determine the material and learning techniques, the material is more emphasized on real experience, adapted to needs and oriented to practical applications, methods, and techniques chosen must avoid transferring knowledge from facilitators to students, more participatory [2].

4. Conclusion
This study examines how empowerment for adults through digital skills enters the industrial era 4.0. Descriptive qualitative research methods will provide an explanation of how the results of this study show that (1) there is a significant positive influence on empowerment for adults that has been carried out through digital skills so that they greatly benefit from those who have participated in digital skills based empowerment. (2) The process of stages carried out for adults to be able to improve and adopt the concept of digital skills through planning, socialization, training, implementation, evaluation and mentoring by related institutions according to their work. The self-direct learning model does not change their perspective and income directly, but they can be tech savvy and not technologically when entering the industrial era 4.0 with the demands of digital skills competency. This research helps to examine more deeply how the impact they feel after participating in this digital skills empowerment.

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