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Analysis of education policies for elementary school children in the industrial revolution 4.0 era

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Abstract: The era of the industrial revolution 4.0 in the aspect of education that plays an important role is educators or teachers, one of the goals is for students to understand digital literacy. But in this era the role of educators will not be replaced by technology. Because in the practice of learning, educators teach character, morals and role models for students. The purpose of this article is to describe the role of elementary school educators in the era of the industrial revolution 4.0 in accordance with existing policies and the role of parents of elementary school students in the era of the industrial revolution 4.0. This study uses the literature study method, namely by searching for literature from various sources, especially Google Scholar, then analyzing reference sources that are in accordance with the issues raised. An important finding obtained from this research is the increasing professionalism of educators or teachers which will have an impact on increasing the quality of elementary school education in entering the era of the industrial revolution 4.0.

Keywords: industrial revolution 4.0, 21st century, elementary school

PRELIMINARY

The world has entered the era of the industrial revolution 4.0, which means technology is the basis for all aspects. Everything becomes unlimited space and time, as a result of technological developments. The changes that occurred were very significant and affected all aspects so that there was chaos which meant changing the old order into a new order (Putri & Damayanti, 2019). In the discussion of this article is focused on the field of education. In the era of the industrial revolution 4.0, technology must be involved in educational activities, especially in the education of elementary school students.

In the 1945 Constitution, precisely in the 4th paragraph, which in essence is that education is the first and foremost thing to realize the progress of the Indonesian nation. And education also plays an important role in improving the quality of human resources. Qualified human resources and ready to live in society. To improve human resources,

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quality education is needed (Ihsan Maulana, 2019). Elementary school students education is education for future generations, because elementary school students are the hope for the formation of future generations, namely generations of people who are of good quality and have good character. Quality is one of the criteria that is open minded towards the progress of science and technology.

In the era of the industrial revolution 4.0, elementary school students in carrying out learning activities must involve technology in it. So that educators should have the provision of knowledge in planning technology-based learning activities. So that it can produce a generation that can keep up with technological developments, especially in the current era of globalization which demands to compete freely. Educators of elementary school must be able to improve their competence so that they can become facilitators for alpha generation students. Do not let students have more abilities than educators, especially in the field of science and technology. So the purpose of this article is to describe the role of elementary school educators in the era of the industrial revolution 4.0 in accordance with existing policies and the role of parents of elementary school students in the era of the industrial revolution 4.0.

METHOD

This study uses the literature study method, namely by searching for literature from various sources, then analyzing reference sources that are in accordance with the issues raised regarding children's education policies in elementary schools during the industrial revolution 4.0 era. Literature study is a way that can be done to obtain data from reference sources that are appropriate to the topics raised in this research. Actually reference sources can be obtained from various sources such as journal articles, books, the internet and libraries, but in this study researchers used journal article reference sources from Google Scholar.

RESULTS AND DISCUSSION

A. Challenges of the Industrial Revolution Era 4.0

a. Rapid and uncontrollable change

Changes are fast and uncontrollable, meaning that in the era of the industrial revolution 4.0 there were rapid and uncontrollable changes in the order of life in all

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fields, from the economy, industry to even education. One example in the field of education is the use of technology in learning activities. The technology used is experiencing rapid and uncontrollable changes in accordance with technological developments, namely the use of smartphones for learning activities, the use of Android-based media, and even the latest use of learning media based on augmented reality and virtual reality.

Augmented reality is an alternative for obtaining real and comprehensive knowledge, so as to minimize conceptual errors that may occur in students understanding actual concepts (Putri et al., 2020). While Virtual reality is a technology that allows people to simulate a real object using a computer program that is capable of generating a three-dimensional (3D) atmosphere so that it makes the user feel as if he is physically involved. The basic concept of virtual reality is to use immersive devices to isolate (Peng et al., 2020).

b. Uncertainty

Due to rapid and uncontrollable changes, uncertainty arises, for example in the development of the educational curriculum, the educational curriculum should ideally be adjusted to advances in science and technology or science and technology in accordance with the era of the industrial revolution 4.0 so in practice using the curriculum tends to change so that it seems there is certainty . In fact, if it is assessed from the point of view of an academician, this curriculum change is because the curriculum applied in education should experience improvements in accordance with the development of science and technology.

c. A complex problem

Uncertainty causes complex problems, one example is the application of the curriculum in schools with various perceptions of understanding the implementation of the curriculum. This is because the implementation of the educational curriculum is not long. For example, the 2013 curriculum, several years after being implemented, is still undergoing evaluation and revision until it finally becomes the 21st century learning curriculum, which in implementing the curriculum must involve technology, not long ago the curriculum was implemented, there was an independent learning curriculum adapted to the development of

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renewable science and technology. This is one of the complex problems in the learning system in schools.

d. Obscurity

With the emergence of complex problems, it causes uncertainty. Continuing the previous discussion, related to complex issues regarding the implementation of the curriculum in schools, this causes uncertainty in all respects, especially related to the achievements and objectives of learning in schools. Educators tend to focus on understanding the educational curriculum, concerns and demands in the educational curriculum so that the achievement of learning objectives becomes neglected.

B. Application of Education in the Industrial Revolution Era 4.0

The education system ideally also develops and undergoes renewal to suit the demands of the 4.0 industrial revolution era. One form of renewal in the curriculum pursued by the government is a new literacy movement to strengthen or improve existing literacy. Literacy that has been applied consists of the ability to read, the ability to write and the ability to count or can be known as calistung, namely reading, writing and arithmetic. However, the main scope of new literacy is data literacy technology and human literacy. (Aoun, 2018).

These three skills are the skills needed in the era of the industrial revolution 4.0. In this case digital literacy is focused on skills in reading, then analyzing and finally concluding that is in accordance with the data and information obtained. Whereas technological literacy aims at understanding how machines or applications related to technology work, and finally human literacy is defined as the ability to increase communication and mastery of skills in design (Aoun, 2018). New literacy is expected to create competitive graduates by perfecting existing literacy movements or old literacy that focuses on improving reading, writing and math skills. New literacy improvements can be applied by adjusting the curriculum or learning system as a form of response to the 4.0 industrial revolution era (Yahya, 2018).

The 21st century is characterized by the era of the industrial revolution 4.0, which is an era of openness in general or known as the era of globalization,

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experiencing drastic changes and the existence of all-new patterns of living. In the 21st century, good quality is demanded in the results of the work performed and there is a demand for good quality human resources or natural resources, who have been trained to become superior natural resources professionals who can produce ideas, think, conceptualize, and act superiorly. New challenges demand breakthroughs in thinking if what is expected is quality output that can compete with work in an open world (Tilaar, 1998).

Education in schools is the task of the teacher in making it successful. The learning process should be able to equip children in carrying out life in society (Nurhafizah, 2018). In the era of the industrial revolution, the world is in the age of knowledge by creating an unusual increase in knowledge. Teaching and learning activities should be adapted to current demands. Learning tools that are developed should be authentic according to the demands in which participants collaborate with each other in finding solutions to problems in learning activities at school. Solving the problem in question leads to questions and seeks answers that are carried out by students which can then be searched for solutions in the learning context and using available sources of information and an accountable basis.

The demands of the 21st century are to experience significant improvements, which are known to be inherited from the old education system by memorizing concepts of truth or facts without interpreting them. Making changes in the education system in Indonesia is not easy, this is because Indonesia is a vast country, diverse ethnicities and cultures as well as an island nation that has access to roads and different communications. However, this change must be made if you do not want to be left behind by the globalization era. In order to achieve 21st century skills, learning in schools should be adapted to the demands of learning in the 21st century, one of which is involving technology in learning activities.

C. Elementary School Education in the Industrial Revolution Era 4.0

In the independent curriculum, the continuity of learning in elementary school is the main key, because the period of elementary school children is actually at the age of 0-8 years (Shonkoff, J. P., Radner, J. M., & Foote, 2017). The learning achievements at the elementary school level in the learning groups are at the end of the curriculum achievements at the starting point in grade 1 elementary school, and will continue to

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be built until the final phase A, namely grade 2 elementary school. Readiness in school is the emergence of interactions from all three dimensions at once, namely students who are ready (ready children), families who are ready (ready family), and schools that are ready (ready school) (Unicef, 2012). Children's readiness for school is a condition that continues to be created according to the curriculum, especially for low grade elementary school students.

Entering the era of the industrial revolution 4.0, educators are required to always follow the development of abilities to face the era of education 4.0, namely with 3 main characteristics that educators should have (Ihsan Maulana, 2019)

1. Having the main expertise according to the main profession of an educator to continue learning and developing himself in accordance with this all-new era and should have a critical, creative, innovative, communicative and collaborative attitude.
2. Establish good relations, mutually support fellow teachers to develop themselves in entering the current era.
3. Maintaining its social life because it cannot be denied that educators carry out their duties as an educator's profession is a calling to educate this nation's generation through learning in schools.

Educators are someone who has authority and honor from many aspects to be a role model both in the classroom, outside the classroom and even in the surrounding community in their intellectual abilities and affective aspects (Hadiyanto, 2004). (Nurhafizah, 2011) educators in educating are "modeling" or examples for students not only conveying knowledge, but teaching values, attitudes, and skills.

D. The Role of Elementary School Educators in the Industrial Revolution Era 4.0

1. Educators must be able to carry out a comprehensive assessment

   Assessment is not only related to the assessment of knowledge or cognitive aspects, but in the era of the industrial revolution 4.0, assessment should be able to cover the advantages possessed by each student, so that students can recognize the potential that exists in students from elementary school students. Educators at the present time are required to be able to develop assessment instruments that cover all aspects of students, both cognitive and psychomotor aspects. All of these aspects must be explored, can be honed and can be evaluated clearly in learning activities.

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In addition to preparing assessments, educators should make assessment reports that can describe the advantages or talents of students. Assessment reports will be very necessary for students and even parents as a response to whether or not a learning objective is achieved.

2. Educators Have 21st Century Capabilities or competencies

   To realize learning in the 21st century, educators should have 21st century competencies, namely there are 3 important aspects including character, knowledge, and skills. The first is about character, character that is attitude, for example honest and polite and should have performance character, for example hard work and responsibility. Then the second is the knowledge or cognitive aspect, in which a teacher must always follow the development of science, because science is always developing. Furthermore, the third is the aspect of skills that educators need to have, namely critical, creative, collaborative and communicative so that the learning process that takes place can make students become a generation that is ready to face the challenges of changing times.

3. Educators must develop the profession in a sustainable manner in the era of the industrial revolution 4.0

   In Article 1 paragraph 5 (INDONESIA, 2017) it is explained, Continuous professional development is the development of the competencies or skills of educators who are owned according to the needs in the era of the industrial revolution 4.0. Educators should always develop the profession in accordance with developments in the 21st century. Continuous professional development of PKB is carried out by educators which includes 3 ways, namely self-development in this case is educators, scientific research publications and related to innovative works in accordance with developments in the era of the industrial revolution 4.0. Self-development can be done by participating in training, workshops, MGMP seminars both online and offline. Scientific publications, for example by making class action research which is then published either in journals or proceedings. And regarding innovative work, it is carried out by developing learning tools such as developing media, handouts, or other teaching tools which can then be HKI right.

4. Educators Must Have 4 Basic Competencies in this

   a. Pedagogic Competence

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(Ryegard, Asa. Karin Apelgren, 2010) states that pedagogic competence is related to attitudes, knowledge, abilities, being able to adjust to situations, persistence, sustainable development, and being integrated in all that exists. In addition, pedagogic abilities also include sub-competencies, the first is understanding the characteristics of each student, the second is understanding from the perspective of the students' family and community background, the third is being able to understand the learning styles as well as the learning difficulties experienced by students, the fourth educator facilitates the development of the potential inherent in students, fifth mastering the theories and principles of learning along with educational learning, sixth developing a student center-based curriculum, seventh designing learning activities that can educate, eighth carrying out educational learning activities, and the last is evaluating the process and learning outcomes that has been done (Sukanti, 2008). From the explanation above, pedagogic competence is very important because if educators do not have pedagogic competence, the learning that is carried out will not be able to keep up with developments in the era of the industrial revolution 4.0.

b. Personality Competence

It is the teacher's ability to be an example in life in the school environment, even in society. The teacher becomes a mirror of life for students. Wise and wise in dealing with problems in the school and community environment (Yudha Adrian, 2019). This competence is very much needed, especially in the era of the industrial revolution 4.0 as it is today so that educators become the vigor of an educator who follows technological developments so that they can motivate students and even the community who also follow current trends in technological developments, of course, while being selective in taking positive impacts.

c. Social Competence

It is the ability of educators to communicate and socialize effectively with their students, existing fellow educators, existing teaching staff, parents or guardians of educators and the community around the environment (Notanubun, 2019). In the era of the industrial revolution 4.0, to involve technology in learning educators ideally communicate with anyone involved in learning,

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especially students to parents or guardians of students so that they have a uniform understanding, that involving technology in learning is a demand for 21st century learning.

d. Professional Competence

Is a competency that has to do with mastery of material concepts that have a broad and deep scope. Here are two things to note: a. Mastering scientific substance related to the field of study. b. Mastering steps or methods of research and critical studies so as to add insight and understanding of concepts or material (Widyaningrum et al., 2019).

E. The Role of Parents for Elementary School Student in the Industrial Revolution Era 4.0

1. Parents should keep abreast of technological developments

In the era of the industrial revolution 4.0, it not only requires educators of elementary school students to have 21st century competencies, but parents of elementary school students are also required to have 21st century competencies, at least parents of elementary school students follow current trends in technological developments, for example being able to operate smartphones, laptops or computers so that parents can monitor their children's use of technological devices and can find out the needs of elementary school students regarding technology to support learning in the current era.

2. Parents communicate with educators

Communicating with educators is very important for parents of elementary school students to work together in educating elementary school students. This is because children in carrying out learning activities are not only at school but at home also indirectly carry out learning activities. So that by communicating with educators, parents can find out the development of children's education in schools, especially those related to technology. As well as in this communication, educators can also convey to parents about the demands of learning in the industrial revolution 4.0 era which must involve technology in learning activities so that parents can understand the needs and use of technology in learning.

3. Parents facilitate and support technology-based learning

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To realize learning in the 21st century which requires learning to involve technology, the facilities and support of parents are very important. For example, currently there are many Android-based learning developed, so parents need to facilitate smartphones for their children. Facilitating is not buying smartphones for children, but tends to facilitate smartphones for children if children feel it is necessary to make it easier for children to do learning, of course with time limits and supervision in use because children are still elementary school students. Technology, especially smartphones and the internet, is now growing. One of the benefits that can be drawn from this technology is to use it as an educational learning medium (Putri et al., 2022).

4. Parents accompany technology-based learning at home

   Because children are still of primary school age, in using technology to support learning activities at school and at home, children must be accompanied. If at school the educator is automatically a companion. However, if learning is done at home, parents should ideally accompany educators in conducting technology-based learning. And ensure that technology makes it easier for children to do learning with limited time and supervision provided. So that children can understand and wisely use technology for learning. And so that children do not experience smartphone addiction for games or games that do not support learning activities. This depends on the closeness and parenting style of the child, therefore the right parenting style will have an impact on students' high learning motivation, so that the use of technology-based learning facilities can be applied maximally (Kurnianto & Rahmawati, 2020).

CONCLUSION

In the current era of the industrial revolution 4.0, especially in the world of education, the role of educators is very important to know and understand the development of science and technology. Elementary school education in the era of the industrial revolution 4.0 should involve technology in learning practices but still pay attention to the main goal of technology-based education, namely to make it easier for students to do learning, not the other way around. Elementary school educators in the era of the industrial revolution 4.0 should be open to novelty, especially related to science

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and technology developments and be guided by that educators as a whole to educate, teachers will never be replaced with very sophisticated technology, this is because the role of educators is not only presenting learning activities but also provide character education, convey moral education and provide exemplary. And the role of parents or guardians of elementary school students in the era of the industrial revolution 4.0 is to provide support for students, motivate students, facilitate if they can and most importantly monitor and limit the use of technology wisely. For the efforts that need to be made to be able to increase the professionalism of an educator in the current era, educators should have the ability to carry out assessments or evaluations in accordance with 21st century abilities (knowledge, character, and literacy skills/competencies) to be able to design learning according to the passion of students, as well as being able to carry out innovative authentic learning.

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