

The Quality Of Human Resources And The Scientific Culture Issue Post-Pandemic Covid-19 (A Case Study In Indonesia)

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Abstract

This study is to analyse the condition of the quality of Indonesian people in relation to the transformation of the scientific culture of the millennial generation based on digital technology. Its method is the combination of meta-analysis and systematic literature review. The results are shown on the quality of Indonesian human resources with HCI 0.54, IQ 78.49, literacy ranking 62 out of 70 countries requires an extra strategy of adding technology skills to be able to manage technological disruption and collaborate with Artificial Intelligence (AI), big data, and the Internet of Things, solving social problems in the industrial revolution 4.0 and Society 5.0 concerning on the era of Y and Z generations. The conclusion of this study is that entering the millennial era requires a transformation of scientific culture from conventional to modern based on digital technology. Strengthening human quality is a top priority in the post-covid-19 era, in the form of; patching the degradation of human quality that has been going on since before the Covid-19 pandemic, and increasing the competitive and comparative competitiveness of human resources in order to be able to master science and technology.

Keywords: Human Capital Index, Scientific Culture, Transformation, Competitiveness, Millennials.

I. Introduction

I.1. The Problem Background

Recently, the world community is starting to rejoice at the signs of entering a sloping phase in the prevalence rate and positive rate < 1 Covid-19 in various countries. The world community has entered a new era of life by living with Covid-19. The high price that has been paid by the community because a family member has died due to Covid-19 [1]. World Health Organization (WHO) reports that until May 2022, of the 523 million cases of Covid-19, 6.27 million of them died. In Indonesia, there are 6.05 million cases of Covid-19, of which 156,000 have died. The death rate in Indonesia due to the Covid-19 disease ranks second in Asia. The case of death is dominated by the elderly population with

congenital comorbidities and other complications. The government and society in Indonesia are trying to reduce the case fatality rate by implementing mass vaccinations. The achievement of Covid-19 vaccination in the elderly until the end of last February was 53.5% for the second dose, while the 3rd dose (booster) only reached 6.2% . [2].

The Covid-19 pandemic has had a positive impact with changes in healthy lifestyles placing the "health concept" as a basic human need [3]. The community already has the knowledge of mitigation, curative, and rehabilitation when they will and have been attacked by the Covid-19 disease [4]. The recovery period for socio-economic degradation began to rise again. The reactivation of educational learning at various levels of education began to run normally with

more proportions using offline methods than online. The pandemic has shifted learning priorities: from education quality-oriented learning to distance learning with limited access to technology or no study companion

During learning from home during a pandemic, it is difficult to measure absorption and mastery of learning materials. The results of the research stated that 74.7% of students felt themselves to be no smarter than other students before the pandemic. The results of the research showed that student learning achievement decreased by 51.4% in several subjects, and 11.8% stated that their learning achievement decreased in all subjects.³ Student achievement leads to the quality of national education. The World Population Review in 2021 reported that Indonesia was still ranked 54th out of a total of 78 countries included in the world education quality ranking. Indonesia is still outperformed by being in 4th position compared to other countries in the Southeast Asian region such as Singapore at 21, Malaysia at 38, and Thailand at 46. Several Southeast Asian countries with education quality are still below Indonesia includes the Philippines at 55th, Vietnam at 66th, and Myanmar at 77 [5].

With the level of human quality in Indonesia which is still relatively low compared to ASEAN countries, exacerbated by the Covid-19 pandemic situation over the last two and a half years, it will be the work of all stakeholders in Indonesia to improve the degradation of human quality, and at the same time improve the quality of human beings as input. the main determinants of the competitiveness of current and future generations [6].

This article analyses the condition of Indonesian human quality as measured by various indicators of human quality associated with the transformation of scientific culture based on science and digital technology in the millennial generation era.

1.2 Methods and materials

As a scientific work, this article uses a combination of meta-analytical methods to obtain evidence-based from a problem of the low quality of human beings in Indonesia associated with a scientific culture based on digital technology in

future generations. The combination of systematic literature review methods from various information published in national and international journals and organizing it into information data as study material. Second stage. Conduct interpretive analysis of a number of data and facts on the quality of Indonesian people on the one hand and scientific culture on the other. Third phase. Discusses various possibilities of preparing human resources that can exist in the millennial era.

2. Indonesian Human Quality and Scientific Culture

2.1. Indonesian Human Quality

The Human Capital Index is a new method initiated by the World Bank to calculate the quality of human resources. According to the World Bank [7], human capital consists of knowledge, skills, and health accumulated throughout human life that enable the development of their potential as a productive workforce. Human resources are the main driver of sustainable physical and non-physical growth.

The World Bank report states that in 2020, Indonesia's Human Capital Index score was 0.54, an increase from 0.53 in 2018 [8]. This means that a child born in Indonesia currently only has a productive ability of 54%, while the rest has not been maximized. Human Capital Index as a composite variable is formed by variables; survival to the age of 5 years, 0.98, school expectation 12.4 years, harmonization test score 395, school years 7.8 years, probability of living to 65 years 0.85, stunting under five children 0.28 [9]. Indonesia's position is ranked 6th among ASEAN countries, behind Singapore (0.88) Vietnam (0.69), Brunei Darussalam (0.63), Malaysia (0.61) and Thailand (0.61) [10]

The main gate for the formation of human quality is quality education. With quality education to the highest level, students get a set of cognitive knowledge, work skills become social capital for applying for jobs [11]. Quality education sharpens one's innate intelligence to become more dignified in accordance with competency standards at each level of education. Intelligent people have characteristics; (1) have the ability to wisely manage various problems in their lives and

find solutions to overcome them; (2) always independent in making decisions; (3) quickly adapt to social changes and be able to initiate a new life; (4) have competitive and comparative competitiveness on a wider scale of competition; and (5) always looking for the perfect. Not satisfied with the results. Then, how is the quality of Indonesian people? One measure of intelligence is Intelligence Quotients (IQ). The results of the latest World Population Review study show that the average IQ of Indonesians is 78.49. This figure is below the average IQ of the world's population, which is 82. The report states that Indonesia ranks 130th out of 190 countries with an average IQ of 78.49 and a population of 279 million [12].

Improving the quality of human resources is a necessity to prepare a generation of toddlers and teenagers to enter a new era, namely generations Y and Z with all their characteristics that may be different from the life characteristics of past generations (generation X and baby boomers) [13].

2.2 Scientific Culture

People who have a habit of living using scientific parameters always uphold scientific truth in their daily activities [14]. Objective critical and empirical analysis underlies the activities of community members. They are open to receiving criticism, appreciate the time to fill it with productive activities, strive to achieve scientific achievements by studying and learning to explore the knowledge they are interested in [15].

The scientific community is willing to spend more time studying or gaining special qualifications for future success (i.e., delaying gratification) [16]. Given this, they are more likely to set goals to become experts in the related field [6]. The lifestyle of the scientific community is far different from the conventional society's habit of low literacy, consuming oral information and superstitions without confirmation. Most people in Indonesia are included in the category of non-scientific people who do not like reading. The average reading time of Indonesians is 59 minutes per day, far below the UNESCO standard which requires that each person read 4-6 hours per day [7]. The results of a survey conducted by

the Program for International Student Assessment (PISA) released by the Organization for Economic Co-operation and Development (OECD) in 2019, Indonesia was ranked 62 out of 70 countries related to literacy levels, or in the bottom 10 countries with low literacy levels. Indonesia gets a reading score of 371 out of 487. Mathematics score is 379 out of 487, while science is 389 out of 489. Many factors affect students' low competence; self-motivation to learn, toughness, competitive nature, learning environment at school and at home, teaching practices by teachers, completeness of learning facilities [17] [18].

The various indicators above show that the Indonesian people have not been able to adjust their habits to the challenges of turbulence and instability in millennial life where change has become commonplace. Today, we have entered a new culture in the life of the cosmopolitan generation or often called generations Y and Z. According to Robert Tanner [19], these two generations have become digital natives who have been globally oriented. Global events have influenced the way we think and react to the world. As members of a cosmopolitan habitat, they are globally connected, move across national borders, unfettered and against ancient customs, seeking scientific truth. Their view of diversity is different from that of Generation X and the past. Diversity is an experience [20] [21]. The past generations who are still there today view diversity as a social capital divided by the majority and the minority, which are capitalized for various political interests.

3. Discussion

The development of scientific culture follows the changing direction of human civilization. The baby boomer's generation (born until 1960) are new to simple technology because the country does not yet have industrial technology experts and bilateral relations with developed countries. Scientific culture at this time is only limited to studying science and knowledge that has long been controlled by European countries and the United States. The political situation also affects the mastery of technology. Generation X, which was born from baby boomers, between the mid-1960s and early 1980s is also still influenced by

western science and knowledge systems that are understanding and have not touched on the formation of creativity and innovative technology to change scientific culture. Even if there were scientists at that time, they were people who had the opportunity to study abroad and they returned to Indonesia to start the formation of a new scientific culture through a competency-oriented education system, but not yet supported by adequate technology. Generation Y, which is the generation born between 1980 and 1995, has begun to adapt to computer devices to support the learning process inside and outside the classroom. With computers, quality orientation began to be considered to catch up with neighbouring countries and western countries. This generation began to be introduced to digital communications, online networks that connect them to the outside world. Generation Z is the generation born, between 1995 and 2010 as the generation born in the smartphone era. His life is very close to the internet and its network.

Quality human resources have the competitive power of creative and innovative minds. Creative thinking is based on the ability to think exponentially and explore various resources, producing innovations, new findings for the development of science and technology. Innovation is not only the ability to carry out work according to one's competence, but also the ability to find and use new ways to complete work according to their profession and expertise.

Indonesian workers with a Human Capital Index of 0.54, IQ of 78.49, literacy level ranked 62 out of 70 countries need an extra strategy to add technology skills to be able to manage technological disruption in collaboration with Artificial Intelligence (AI), big data, and the Internet of Things (IoT) solves social problems that are integrated in virtual and real world spaces, Colleen Reilly states the 4.0 industrial revolution and the emergence of virtual reality and virtual world technology as a new horizon of human life. The technological era has a new perspective to change the way of life, work, and communication between people. There are 6 main technologies that support human behaviour in the 4.0 revolution era: (i) internet; (ii) artificial intelligence; (iii) additive manufacturing; (iv)

mixed reality (virtual, fact, continuity of fact); (v) autonomous vehicles/drones; and (vi) currency trading and exchange [22].

The development of the industrial revolution 4.0 and Society 5.0 in the era of generations Y and Z in addition to having a positive impact, namely making it easier for humans to communicate with the global world, completing technological assistance work, but also bringing disaster, namely 35% of the types of work that had been done by humans but were taken over by robots or other technologies. Even in the next 15 years the types of jobs that will be lost will increase to 75%. This is because the work played by humans is gradually being replaced by digital technology, where the system works. become faster and easier to distribute massively. Bambang Satrio Lelono said that a number of jobs will be lost by technological advances, including bank tellers and salespeople. He added that as many as 48,000 bank tellers in America lost their jobs because the country's banking system was already using the online system [23].

Information technology and its supporting equipment are the needs of Generation Y and Generation Z. It is impossible for low-income people to procure expensive telecommunication equipment. The technology appliances are all written in foreign languages. Mastery of English or other foreign languages is a necessity in this era. Foreign published YouTube content will change the user's personality. Generation Z is a cosmopolitan generation. They have never lived in a world where the Internet did not exist. Global events have actively shaped their view of the world [24]. Dependence on the internet has helped shape their personality and scientific culture that no previous generation has experienced [25].

4. Conclusion

Various indicators state that Indonesia's human quality is in a lower condition than ASEAN countries and the world. At the same time we have lived in the millennial generation with the characteristics of a civilization that is much different from the previous generation. The implication of changes occurring in the transformation of scientific culture from

conventional to scientific culture based on digital technology has an impact on taking over several types of work that have been manual in nature with robotic technology.

All human life is influenced by digital technology. Technology-based skills are very much needed in the era of the millennial generation. Scientific culture based on technological literacy is an essential need that must be mastered by people who want to exist in this century.

Strengthening human quality is a top priority in the post-covid-19 era. Human quality recovery strategy is carried out by; (1) patching the degradation of human quality that has been going on since before the Covid-19 pandemic, and (2) increasing the competitive and comparative competitiveness of Indonesian human resources entering the battle for mastery of science and technology in millennial civilization.

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