

Moral Education and its Challenges in the Industrial Revolution 4.0

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Abstract—Moral has been a foundation of each person's behavior. They used it to distinguish between good or bad attitude especially in this industrial revolution 4.0 which grew rapidly. Keeping the moral value in each person's hand could be a suitable reference to do some goodness. This matter has become a challenge to the moral value which sensitively gained social problem and the behavior to face the industrial revolution 4.0. The social problem emerged in the community was mostly caused by the lack of understanding in everyone. Moral value could be obtained from the character building in some subjects obtained in school implicitly or explicitly. The subject containing moral value is in social science family like social science education (*IPS*). The purpose of this article is to find out the method of moral education in facing the challenges of the industrial revolution 4.0.

Keywords: *moral education, industrial revolution 4.0*

I. INTRODUCTION

The presence of the fourth industrial revolution is widely felt around the world. 4.0 industry is a term created in Germany in 2011 with the beginning of digital revolution [12]. The term "4.0 Industry" originally found in 2011 at Hannover Fair in Germany as a strategy to decrease the competition comes from the foreign countries and to distinguish the Germany and European Union (EU) from other international market. The German Government was trying to use smart monitoring in production process which will help decision-making and engine maintenance to reduce cost as well as to increase German Industry competitiveness [6]. This industry is a digitally synchronized process which covers wide range of technology, from 3D to robotic aspect that deemed capable of increasing the productivity. 4.0 industry gave a wide and great effect to various aspects. A lot of features are now controlled by machines and robots which will cut down the humans' employment, resulting in careful attitude towards industrial revolution.

The ease of use of technology in all life aspects undoubtedly resulted in different effects, both positive and negative. The ease of accessing online news for the preferred information without needlessly spending money to buy newspapers or magazines is one of the examples. It is not a hard work to find and read a lot of online news anytime and anywhere. Unfortunately, news readers were unaware that they were driven by the biased editorial of the writer thus a moral value is very important to deal with this situation. On the other hand, the freedom in here is not a limitless freedom. The liberty should be inside a mutual understanding that honor the rights as the citizen, avoiding tyrannical or unbalanced rights between majority and

minority. Furthermore, the minority should feel protected by the majority, stopping any loss between individual rights [8]. The freedom, which can be seen in mass media information that become hyper reality, has gone over the limit and tend to purposely create a fake perception (as if telling the truth).

This moral value phenomenon can be seen in Indonesia President election recently. During the campaign, both parties were mocking each other. It's not a surprise to find out a lot of meme (image with words), video, and hoax which is full of mocking both candidates. This issue caused a lot of people to be in a difficult situation to distinguish which information is true or untrue. Both sides claiming they are on the rightful side and never said anything wrong. Like adding fuel to fire, they were attacking each other with political identity strategy [21]. The situation was heating up afterwards between both sides including the people which is not directly involved.

This phenomenon proved that the 4.0 industrial revolution era is happening in Indonesia which can be seen in how the television, social media, and digital media gave significant effect in driving people's opinion while they do not know yet how to distinguish the fact or a fake news made. Hate speech, mockery, swearing, and curse are easily found by teenagers in any kind of social media [7]. The reality in the democratic festival proved that the older generation cannot give good example of a good citizenship to the younger generation. In order to do that, changing peoples' mentality will be very significant to this country's progress in the middle of the globally competitive world. Changing a strong mindset and mentality is neither an easy task, nor an impossible matter. As a habit which turned a culture, a quick and complete alter become the base of mental revolution [17].

The example above shows the lack of moral education in everyone. Moral teaching which should shape a good character is expected to be strengthened through social discipline family in education which can be realized in Social Science Education (*IPS*) in school. Moral value alone is connected to the students' affective. Affective is an aspect concerning the student's internal side, thus is hidden [5]. Affective showed what is inside the students and can be found out through their behavior. Moral teaching through character building taught in schools' subjects is expected to prepare the students in facing reality. The learning in social science education works as a moral teaching so that the future generations will employ the values of the nations' founder better. Based on the background stated above, writer interested to observe about the importance of moral teaching in school to face

4.0 industry. The purpose of this article is to find out the method of moral teaching in facing 4.0 industrial revolution.

II. MORAL EDUCATION IN INDONESIA

According to *Kamus Besar Bahasa Indonesia (KBBI)*, moral is the teaching definition of good or bad perceived by the behavior, attitude, and responsibility. Furthermore, moral is a unity giving benefits beginning from within that will affect life and future. In truth, moral is the community collective deal aimed at its own people value, placed highly to be the rule of the game. This shows a red thread that moral institutionally owned by the people [5].

Moral teaching has been strongly connected to psychological constructiveness framework in the West. Popularized by Jean Piaget and further by Lawrence Kohlberg, moral teaching is an effort to promote cognitive structure development between kids and teenagers (moral reasoning step) in school [1]. In other words, moral teaching mostly known in school environment although it also able to be obtained from family teachings. A statement strongly supports that moral teaching can be achieved through children behavioral construction, both in house or in school [7].

Family education is a primary and significant education. Children first education begins in house, as it is the most essential education for any children. In the family, honesty, discipline, ethic, aesthetic, religion and many others were taught. In addition, this is the golden age for the children. Based on the conditioning theory as the foundation, a character is greatly affected by the environmental factor. A strong characteristic individual can be created in a strong character environment. This formation demands a great effort done by every sides: family, school, and all components of the citizen [20].

The education value was structured in co-curricular, curricular, and extracurricular activities inside all teaching process of the subjects in schools. Thus, anything taught in school are expected to guide the students in living and becoming a good citizen [7]. Moral application in school also found through some subjects, especially in social science family. Social science education (*IPS*) is one of the examples which gave huge contribution to a deeper understanding of good or bad, right or wrong, and proper or improper.

Based on the observation result, [20] education value obtained from schools did not gave significant result to students' character building. On the other hand, education value gained from friends and mass media gave a significant result. This issue showed that moral value can be gained not only from house or school, but also from friends. A strengthening in students' moral value is not entirely conveyed through a positive written message and a distinct fairy tale, but a combination of both. In implication, if positive messages about life packed in a fresh, interesting story, a positive character building will be easily formed.

A strong and good character can be formed if there is a well-created value teaching stimulant or media. Furthermore, if there is a coherence between teachings in school with the desired life values and messages which

will be useful for their future guidance, a wise and strong character will create the students. This is also supported by the statement that through the education in school guided by the teacher following their talent and goal will develop their own potential [19] so that their aim is clear and precise.

Moral teaching is different from character building. Moral education focused on justice reasoning development and combining new works on relational morality, reasoning about interpersonal care. While character building is more general, often unclear border between moral and immoral concept but related [1]. Essentially, character building has a higher concept that moral education since it is not merely about right or wrong, but also about raising a good behavior in life in order to let students have awareness, understanding, caring, and commitment to do well in life [10].

In practice, moral and character education should go together as to form a good moral through school teaching which is enhanced by character building included in each subject. Character in here is a representation of human values and behavior related to their God, human relationship, environment, interpersonal, and citizenship established inside customs, culture, karma, law, thoughts, attitudes, feelings, words and doings based on religious norms [14]. Character building based on moral intelligence has become an urgent matter since it is built on some main virtues that will help students to face life challenges which is full of contradictive [13].

In the law number (No). 20 of 2003 of National Education System Chapter II article 3, stated: "national education function is to develop capabilities and shape the character as well as to become a dignified nation in the context of enrich the life of the nation, aimed to develop their potential to be faithful and righteous human, noble, healthy, knowledgeable, capable, creative, independent and be a democratic and responsible citizen.

Based on the law number (No). 20 of 2003, national education essentially functioned as a support for the students so that they can develop and shape their character, creating and enrich a civilized nation as well aimed to develop their potential to be faithful and righteous human, noble, healthy, knowledgeable, capable, creative, independent and be a democratic and responsible citizen. Every aspect in the education function and purpose are basically values expected to be accomplished in educational process in which the values are considered righteous from Indonesian perspective [7]. All teaching process in every education must use these values as the foundation.

Education is a conscious effort to alter students' attitude from less-good to favorable and as an effort to let students have wisdom, ability, and attitude to solve troubles encountered in social life. According to the discovery in neuro-education observation, learning is an unsuccessful teaching process without the students' active involvement. A successful learning is also a source of happiness. The major consideration about studying is construction, where structures and applications take part. Learning is also a social activity where emotion and motivation become a great factor in successful learning.

Similar issues applied for the time, location, and space of the learning process [19].

Social science education (IPS) is one of the examples which gave huge contribution to moral education. IPS is a comprehensive subject to respond and solve the socio-nations problems in Indonesia relevant with their capabilities [11]. Based on that, IPS should have tendency to be educative rather than academic. Some of IPS purpose are to:

1. develop the basic discipline of sociology, geography, economy, history, and nationality,
2. develop ability to think critically in solving social problems and abilities,
3. build commitment and awareness of humanity values,
4. own capabilities of competition, communication and cooperation in society.

Those IPS learning goals formula are related to cognitive, affective, as well as psychomotor aspects. One of the purposes to learn IPS is also to face frequent social problems in society so that students will think critically while solving the social issue. Combining the purposes with role of teachers and reference books is expected to construct moral value within the students to deal with the existing freedom. Hence, students will be able to adapt accordingly with their environment especially in the advanced technology of the industrial revolution 4.0.

A revitalization is necessary for this IPS education as a means of values education. Without a value education perspective and no highlight on students' character building, education will lose its essence as the genuine education process [11]. A strong consideration and effort are crucial to place the essence of education precisely.

III. THE INDUSTRIAL REVOLUTION 4.0 AND THE CHALLENGE TO MORAL EDUCATION

Based on a few *Kamus Besar Bahasa Indonesia (KBBI)*, industrial revolution consisted of two (2) words, revolution and industry. Revolution means a quick change, while industry is an application of production process. In conclusion, the meaning of industrial revolution is a quick change in the application of production process in which the process was formerly done by human is replaced by machine as well as commercial valued added to the manufactured goods [17]. In industrial revolution context, the adjustment can be explained as a rapid change of social and culture which include basic needs and wants of the society. The adjustment progress in revolution can be planned or unplanned and can be done with or without violence.

The industrial revolution has gone the fourth phase. The rapid advancement of technology and science has a huge impact on humans' life. A great ease of facility and innovation are obtained without hardships with the digital and technological support. Service is now faster and more efficient as well as broader range with online system. Life has become cheaper and easier.

The 4.0 industry has given a lot of advancement in educational world as well. Learning process can be an

integrated part of internet physical manufacturing system in the future of 4.0 industry [18], as below:

1. virtual classroom, open for unsynchronized social learning. 4.0 Industry support virtual learning without the need to face directly,
2. learning paradigm bridging formal and informal learning,
3. the use of systematic analysis and real data visualization from internet physical manufacturing system within formal and informal learning,
4. the use of "time pocket" which is unnecessary to be synchronized to learn actively,
5. adaptive learning, method, evaluation and step that constructed individually
6. an active and continuous career planning and management from and for individual,
7. the use of learning company for a synchronized social learning,

4.0 industry as a phase of technological revolution change the way humans do their activity in a distinct scale, range, complexity and transformation from the previous life experience. Humans will live in an uncertain life globally, forcing them to predict future and adapt rapidly. Every country should respond the change comprehensively and simultaneously. The response should involve the whole global political leaders, from public, private, academics, as well as civilians so that the 4.0 industry may be turned as a chance [2].

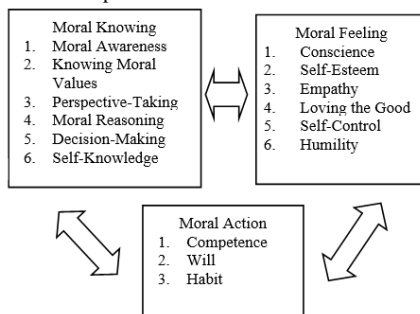
Accessing internet effortlessly has given positive and negative impact as well as a challenge. Considerable challenge is the great risk of virtual crime as a result of better connection and a lot of unemployment caused by automation in most industrial operation as a part of 4.0 industry [6]. This shows the good and the bad impact brought by industrial revolution 4.0. Nevertheless, millennial era with its distinct characteristics also giving negative impact to the society, especially educated teenagers.

The millennial generation is vulnerable from social media harassment to a cybercrime issue which affect their maturity of thinking. It has been found recently that social media is not only used as an online interaction but also become political communication. Online communities or social media, of any kind, tend to facilitate their politics and social activities, where current young millennial generation actively use. Statement about millennial generation, born between 1980s-2000s, support this issue saying that this generation shows mental degradation [9].

If millennial generation cannot manage, control their use of technology very well, another challenge will rise as they will be the one controlled by information and technology. The symptom has troubling the community since they will only be playing with their gadget all day ignoring whatever around them. Although being together with their families or friends, everyone just stood or sat silently forgetting friendly talks with their parents as they are having fun with their own gadget and becoming less sensitive to their surroundings.

Some problems emerged in industrial revolution 4.0 may turn to be a challenge for character building, moral strengthening in individual character building precisely. A good-morale individual can only be achieved through a good character building. Character building can be effectively done if the three elements were applied simultaneously and synchronously. Using this design, character building is expected to develop moral intelligence comprehensively and continuously [13]. This is also extended by value or moral education resulting a character with three good components, namely: moral knowing, moral feeling, and moral action [4] which can be seen in picture 1.

Picture 1: Components of Good Character Education [4].



Those three characters in picture 1 must simultaneously built within character building application. Moral knowing includes: moral awareness, moral-value science, future sight, moral reasoning, decision-making, and self-knowledge, is an essential issue that must be taught to the students. However, moral knowing character building is not enough. It is necessary to continue to moral feeling which includes: inner words, confidence, empathy, love kindness, self-control, and modesty. Furthermore, continuing to the most important step, moral action. includes in competition, willingness, habit aspect showed due to his own motives to act good. Three moral components correlated simultaneously became the requirement to actualize character building in developing students' moral.

The three components simultaneously gave a strong basis to construct a coherent and comprehensive character building. The definition above pushed us to make sure our students are given tasks that make them think critically towards moral and ethics issues; while inspiring them to be loyal to moral and ethical action; and giving chance to them to apply the ethical and moral action [15]. Character building which is a part of values education through school is an honorable effort which application is urgently required [14]. Frankly, if speaking about the future, school has responsibility not only creating a bright pupil in information and technology, but also in identity, character, and personality.

Character building nowadays also in line with perform a serious effort, systematic, and continuously build and develop awareness and beliefs to everyone in Indonesia that a better future will not be realized without the enhancement of Indonesian character [14]. Likewise, there will be no better future, without hardships, strong will to study, honesty, self-discipline, enthusiasm of unity in diversity, develop responsibility, contribution for united growth, and optimism. Giving only academic intelligence

without any moral education is a serious threat to the community. School plays great role to build children character.

Effort to construct a nation with a strong character begins from the young generation, so that a solid generation will come easily in the future. The character building is purposed to develop key potential so that children will have a good heart, attitude, and mind. character building able to be done not only from school, but also from different media as in family, environment, even the technology [16].

A character building is a very strategic and important step to bring back national identity and establish new form of Indonesia. Thus, first necessary step is to reconnect the educational networks which is almost cut off between these three elements [14]. Character building will not be constructed successfully if three of the educational elements are not coherent and in harmony.

IV. CONCLUSIONS

4.0 industrial era also possess negative value besides its positive value to this country. The example of the positive value is the availability of information that can be accessed extremely fast. On the other side, society is easily accepting the culture that is not suitable with our tradition and heritage. In that case, they are affected by the bad habit conveyed through electronic media, and modernism lifestyle. The development of culture and technology made some people in this country misuse them for their own benefit. It is suggested that we can choose how culture, technology, and other issues are giving benefits for us as well as other people.

Character building is a planned effort to change the attitude, habit, behavior, and action that is done by the students so that they can interact with the society using the moral value that is suitable with the local community. Moral education should have bigger portion in national education system, whereas moral strengthening in every subject mainly social science family. There are some issues behind the morality decrease of Indonesian people which needs to be discovered and examined the best solution to settle the issues.

Moral education must be an important agenda for the government by improving character building in any educational level, from primary school to a higher education. Character building will be a strong support that we may encounter in 4.0 industrial era. Likewise, family has a huge responsibility in giving education to its member, because they are the best place to have discussion and interaction. Noble values of Indonesian moral and culture may be delivered accordingly and becoming idealistic faith for everyone with the application of character building. By conveying good values in every educational process, it will help the process of character construction upon the moral and dignified learners.

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