



Education in the Disruption Era

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Abstract: *The disruption era is the occurrence of fundamental changes in all aspects of life. The new system comes to replace the old and obsolete system that is not in accordance with the requirements of the times. In terms of education, disruption will change conventional teaching patterns to digital. The emergence of innovative applications in the world of education can make it easier for everyone to seek knowledge wherever and whenever. The use of social media or online tutoring applications now is greatly benefits for the reach of a wider and more equal audience. This study will discuss the need for our understanding of education in the era of disruption, and how educators deal with this phenomenon with more emphasis on the need for education that can better adapt to current conditions.*

Keywords: *disruption; education digitalization; education*

I. Introduction

The theory of disruption was first introduced by Christensen. Disruption replaces the "old market" industry and technology to produce more efficient and comprehensive reforms. The era of disruption has fundamentally changed all aspects of life. The world is currently facing a phenomenon in which all things are free and unlimited. New records come to replace the old order that is not in accordance with the demands of the times. Disruption creates new learning models with more innovative and massive interactions. The presence of this era makes people must be open to technological advancements so that they are not left behind in all fields, especially in education.

The presence of disruption makes people must be able to encourage themselves in learning digitalization on life. The presence of various digital applications makes a variety of developers want to make a variety of applications to facilitate human life, one of which is in the field of education. A variety of applications in the field of education such as, Teacher's Room, Quiper, Duolingo, and others will greatly assist students in learning the things they need to know in their learning at school. Of course the use of these applications is more beneficial to the community not only cheaper applications like that are also more efficient and reach a wider audience. Now people can even use MOOC, an abbreviation of the Massive Open Online Course and AI (Artificial Intelligence) for educational purposes. MOOC is an online learning innovation that is designed openly, can share and connect with each other. AI (Artificial Intelligence) is a technology that can be used by humans as an assistant capable of helping human life like a robot but only in the form of a virtual display in a computer system. Haugeland (1996) argues that AI is a mind design which means creating a system similar to the workings of the human brain. In education, AI will help education that is more personal. Because of AI is able to search the desired learning information as a whole quickly, accurately, and interactively. Luckin et al., (2016: 14) argue that AI as a computer system designed to interact with the world through certain abilities and intelligence behavior that we are aware of as humans in general.

Education is a capital for humans in maintaining civilization. Education that has helped humans achieves success. The educational process has occurred in a long time, various ways have been created so that the acquisition of knowledge is easier and more efficient. In addition, education is carried out and involves various elements of the community component. As

contained in the 1945 Constitution Article 31 Paragraph 3 that the government strives and organizes a national education system, which enhances faith and devotion as well as noble character in the context of intellectual life of the nation, which is regulated by law.

The presence of the disruption era will excite the world of education in Indonesia. There will be many conveniences that are present in increasing the scientific index of the Indonesian nation. Every child in Indonesia will get proper education through a digital learning process. Each student will find lessons that fit their needs with the ability of AI to be able to categorize the needs of students. This article will discuss the need of our understanding about how to adjust to the world of education in the era of disruption.

II. Review of Literature

2.1 Educational Challenges of Disruption Era

The present disruption era has increasingly influenced various fields of life, one of which is in the field of education. All parties involved in the field of education, including principals, teachers, students, and parents of students must be able to keep up with current technological advances.

The ability to think at a higher level, analyzing circumstances, creative thinking are some of the competencies that must be possessed by an educator to face challenges in the era of disruption. According to the Head of Research and Development of the Ministry of Education and Culture (Kemendikbud) Totok Suprayitno, there are three challenges that must be faced by educators.

a. Curriculum

UU no. 20 of 2003 states that the curriculum is a set of plans and an arrangement relating to the objectives, content, teaching materials & methods used as a guide in organizing learning activities to achieve a national education goal. The curriculum in Indonesia is a handle as a provision for student learning activities at school. So far, Indonesia has a tradition of changing the curriculum every 10 years, it is not in line with the changing world that happens all the time.

"We have to think about how to form a curriculum that can adapt, this disrupts the existing habits so far. Maybe it's better step by step so that the pattern follows the times." Totok Suprayitno said in an international symposium on education at the Ministry of Education and Culture Building, Jakarta, Tuesday (03/09/2019).

Through the curriculum, every education personnel is challenged to prepare themselves who have anticipatory, critical, analytical, creative thinking in solving problems, innovating, and having characters who can adapt to new things that are spontaneous. These characters can equip students to live in an age of complexity and uncertainty, but at the same time full of opportunities and opportunities.

b. Learning

The second challenge, namely regarding the teaching. The subject matter that can be taught by teachers easily will usually be easily replaced with technology. If the teacher only conveys the material written in the book, then it is no different from the internet. Even information on the internet is far more and more rich, where children now can find it themselves without the help of teachers. Changing teaching habits is not an easy matter. So far, all kinds of things regarding teaching have been regulated by the central government.

Teaching is like manual work, when in fact it is full of creativity, innovation. Therefore, there must be a change in aspects and improvements in all lines.

Totok Suprayitno said "the challenge of the disruption era is a change in teaching paradigm. Things that are easy to teach will usually be easy to automate too. Usually teachers teach what is easy, that is easily replaced by machines.

Totok explained that the government made curriculum in 2013 as an effort to overcome the challenge. Students are expected to learn more independently themselves than are continuously taught by the teacher. In this case, the book plays an important role to support and train children to have analytical thinking, anticipate about problems that have never been faced, and have higher order thinking skills (HOTS). In addition, through books also children are encouraged to learn on their own, have a high curiosity, think creatively and critically, are able to solve problems, and continue to innovate.

c. Assessment

The third challenge is regarding tests or assessments. Eko Putro Widoyoko (2012: 3) states that assessment is the activity of interpreting measurement data based on certain criteria and rules. At present the government continues to improve this. Because assessment is needed to find out the success of a learning system. A good assessment is one that can truly show the progress and development of a student honestly, without making up "The assessment must see ourselves as we are to know the progress of children's learning outcomes and be able to improve ourselves so that learning is better, he concluded.

The era of globalization threatens purity in education. Many schools were established with the main objective as business media. John Micklethwait describes a story about business competition that began to penetrate the world of education in his book "The Perfect Future" that the arrival of educational companies marked an approach back to the future. One of its main characteristics is the spirit of testing Victorian students who can please Mr. Gradgrind in the work of Dickens. These companies must prove that they provide results, not only for students, but also shareholders (John Micklethwait, 2007: 166).

III. Discussion

3.1 The Development of Education in Indonesia

Every year, the Indonesian government always improves the quality of education. Repairing and renewing the education system that is not in accordance with the needs of the times. Until the present millennial era, Indonesia entered the era of disruption. Everything including education in Indonesia underwent a fundamental change. Changes in the system of presenting knowledge in this era make students must be active in using the internet.

The use of the internet is very compatible with the educational needs of the era of disruption. Students will get a lot of the knowledge and skills they need from there. From the use of the application or through a search on sites that present scientific discussions. The positive impact is felt for the world of education in Indonesia. There have been many application developers to develop a special application for learning and as a learning medium.

Various types of new learning that are spread on the internet in the form of applications and learning sites not only encourage students to be able to use all the facilities, but educators are also able to master all of them and also become a facilitator for students. Educators are currently required to be able to understand and participate in developing education in the era of

disruption. Starting from understanding various learning applications, knowing e-learning based learning media, and being able to create learning systems or learning media based on e-learning. If educators are able to master all of that, then, it can be ascertained the interest of students in learning will increase and certainly will have a good impact on learning outcomes.

3.2 The Competency Needed to Face the Era of Disruption

The presence of a disruption era might look extraordinary. In this era will appear sophisticated robots, super computers, and various sophisticated tools that have used artificial intelligence, but that does not mean there is no loss from these fundamental changes. Quoting from the results of the annual International Forum with the theme "Mastering the Fourth Industrial Revolution" in 2016, the Industrial Revolution 4.0 will cause disruption not only in the business sector, but also in the labor market. This means that there will be a lot of work lost and replaced by robot functions. Maybe someday the school has been abolished because everyone can study at their own homes. The teacher will be replaced by a robot that already has an artificial intelligence that is able to accommodate all information about knowledge.

All demands in the era of disruption may be heavy enough to deal with. This makes every human being must be able to develop their competence in accordance with the demands of the times. The following are some of the competencies needed to face the era of disruption:

1. Complex problem solving is the ability to solve complex problems by starting to identify, determine the main elements of the problem, see various possibilities as a solution, take action to solve the problem, and look for lessons to learn in order to solve the problem. This ability is very useful when students will solve the problems obtained. With this ability students will become more independent and able to be responsible for everything they have.
2. Critical thinking is the ability to think reasonably, be cognitive and form strategies that will increase the likelihood of expected results. Critical thinking can also be called thinking with clear goals, reasoned, and goal-oriented. Critical thinking will make students able to express / judge the truth that students see from something.
3. Creativity is the ability and desire to innovate, find something that is unique and beneficial to society and the environment. Creativity can also be interpreted as developing something that already exists so that it can become better.
4. People management is the ability to manage, lead and utilize human resources in an effective and targeted manner. Usman (2013) states that management is a series of activities directed directly to the use of organizational resources effectively and efficiently in order to achieve organizational goals.
5. The ability to teamwork or work with others who come from outside the team. It aims to improve work efficiency and produce broader thinking.
6. Emotion intelligence is the ability of a person to regulate, assess, accept, and control their emotions and those around them. This is useful for teachers in solving problems with thoughts and feelings, having strong self-management skills, having empathy, and potentially being a good leader.
7. Judgment and decision making is the ability to draw conclusions about the situation at hand and the ability to make decisions under any conditions, including when under pressure.
8. Service orientation is the desire to help and serve others as best as possible to meet their needs. By having a service orientation, we will always try to give the best to customers without expecting mere appreciation.
9. The ability to speak, negotiates, and convinces people in aspects of work. Not everyone naturally has the ability to make agreements that produce the expected results, but this can be mastered with a lot of practice and self-habitation.

10. Cognitive flexibility is the ability to spontaneously organize knowledge, in many ways, in responding to adjust ourselves to radically change situational demands. This ability will help students deal with spontaneous situations without experiencing problems.

All competencies are needed by everyone in order to be better faced on the era of disruption. Education in the era of digital disruption is easy to understand if each competency is owned by every educator and student.

3.3 The Negative Effects of Globalization on Education

a. Commercialization of Education

The era of globalization threatens purity in education. Many schools were established with the main objective as business media. John Micklethwait describes a story about business competition that began to penetrate the world of education in his book "The Perfect Future" that the arrival of educational companies marked an approach back to the future. One of its main characteristics is the spirit of testing Victorian students who can please Mr. Gradgrind in the work of Dickens. These companies must prove that they provide results, not only for students, but also shareholders (John Micklethwait, 2007: 166).

In Indonesia, the gate of commercialization of education - specifically tertiary education - has rolled since joining Indonesia as a member of the World Trade Organization (WTO). Since then the interests of the government have been adjusted to the interests of WHO. For example in 2009 the Education Legal Entity Act (BHP Law) was born which regulates the legal entity form of formal educational institutions based on campus and non-profit autonomy. This BHP Law makes educational institutions managed like companies for maximum benefit. The BHP Law tends to minimize the state and even eliminate the state's obligation to educate the younger generation and provide quality educational facilities.

The commercialization of education has an impact on the reduced role of the state and the existence of campus autonomy. Campus autonomy makes universities like companies that are free to look for independent financial resources. Finally, various state universities (PTN) opened the widest possible entrance for prospective students. This is applied by universities as a means of absorbing the budget from the entry fees of prospective new students. This policy makes universities prioritize quantity over quality.

b. Dangers of Cyberspace

Human civilization underwent a change from the agrarian era, shifted to the industrial era, and now towards the digital era. Media experts and observers consider that the 21st century is a century of technology and information, where humanity enters the era of "cyberspace" or a world without borders. This era is characterized by information disseminated through mass media that will significantly determine the direction of the development of cyberspace societies aside from being a means to easily access information it can also have a negative impact on students. There are also, various kinds of material that have negative effects are scattered on the internet. For example: pornography, hatred, racism, crime, violence, and the like. Harassing news such as pedopholy and sexual harassment are easily accessible to anyone, including students. Items such as Viagra, alcohol, drugs are widely offered through the internet. For example, on November 6, 2018, it was reported that one of the high school students in East Java left school to meet a man he met through the "Facebook" friendship site. This is very dangerous in the teaching and learning process.

Internet networks that were initially used by certain agencies, quickly became a medium that can be used by the wider community. Even access to the internet is not only easier but also cheaper to reach. In Indonesia alone, internet users in the last two years increased by more than 50%, namely 132 million users (APJII 2014). What is even more astonishing is that most of the users are from the productive age and students.

c. Addiction

The engines of globalization such as computers and the internet can cause addiction in students or teachers. So that the teacher or student does not seem excited in the teaching and learning process without the help of these tools. With the outbreak of the internet and social media as if humans are increasingly dependent on their lives with the presence of these technologies. The opportunity to exist in a world without limits shows that anyone can create an account (community) anytime and anything. Not much different in physical (real) society, in a virtual world it is very easy to create groups or networks. Not infrequently of us who have computers and smartphones connected to the internet apparently also joined the group on Facebook, WhatsApp, Blackberry Messenger, LINE, and the like. There are no obstacles or difficulties creating a group, sharing info, and inviting others to join and even respond to discussions. This is the reality we face today in the era of advances in information and communication technology.

IV. Conclusion

The era of disruption is a fundamental and unexpected change of all aspects of life. Disruption creates new learning models with more innovative and massive interactions. The presence of this era makes people must be open to technological advancements so that they are not left behind in all fields, especially in education. The use of the internet is very compatible with the educational needs of the era of disruption. Students will get a lot of the knowledge and skills they need from there. From the use of the application or through a search on sites that present scientific discussions. To face the era of disruption everyone must have competencies such as complex problem solving, critical thinking, creativity, people management, coordinating with others, emotion intelligence, judgment and decision making, service orientation, negotiation, cognitive flexibility.

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