**THE FACULTY OF PHILOSOPHY
WIDYA MANDALA SURABAYA
CATHOLIC UNIVERSITY,
SURABAYA, INDONESIA**

PROCEEDINGS OF THE INTERNATIONAL SYMPOSIUM ON TRANSFORMATIVE IDEAS IN A CHANGING WORLD

THE GLOBAL SOLIDARITY CRISIS

EDITOR: AGUSTINUS RYADI

Solidarity

Global

Crisis

FOR ANY INQUIRIES:

🌐 https://bit.ly/32510N2

✉ globalsolidarity@ukwms.ac.id

REGISTRATION: https://bit.ly3F3AIJO

PAPER PROPOSAL: https://bit.ly3F3AIJO

PROCEEDINGS
OF THE INTERNATIONAL SYMPOSIUM
ON TRANSFORMATIVE IDEAS IN A CHANGING WORLD
THE GLOBAL SOLIDARITY CRISIS

CONTENT

Proceedings of the International Symposium

On Transformative Ideas In A Changing World: The Global Solidarity Crisis

Parallel Session Papers:

Bani and Ai in Education: A Human Approach to Cooperative in Overcoming Pollumics

Dr. Cicilia Damayanti
Indraprasta PGRI University, Jakarta, Indonesia
ciciliadamayanti1@gmail.com

Abstraction

Our world is undergoing a massive change, especially due to the Covid-19 pandemic. Technology has caused changes in almost all fields, especially in education. Because of Covid-19 our education system has changed drastically. Currently school lessons are taught online, and this means that parents in the whole country must learn to use the new technology just so they can help with their children's learning. The biggest problem that we are currently facing is the existence of artificial intelligence in our everyday life, including in the field of education. This situation leads us to enter the world of BANI which causes the world to be in a state of uncertainty. BANI is the abbreviation of *Brittle, Anxious, Non-linear, Incomprehensible.* What can education do to help children facing this BANI situation? This article will explain about the effects of technology, especially artificial intelligence, in education. The method that is used is the analysis of books from various authors who write about artificial intelligence and education. Hopefully this study contributes to helping children to develop their character as they prepare for a life full of uncertainty. Teachers have important roles in helping their students who will become agents of change.

Teachers are expected to have deep interest in realizing the idea of "developing patterns of thought" so that the self-confidence of children can be improved and they can become resilient persons. Teachers are expected to be able to process children's personality to be winners, so they have more self-confidence, can value themselves positively and have more self-control. Such personality can help children achieve goals.

Keywords : artificial intelligence, BANI, children , education, teacher

Introduction

We had been experiencing the world of VUCA (*Volatility, Uncertainty, Complexity, Ambiguity*) during these recent decades. A situation where we experience a state full of turbulence, uncertainty, complexity and confusion. The Covid-19 pandemic that has been going on for two years worsen this situation. The era of VUCA itself already brought complicated problems especially in the world of politics, economics, society, climate change, as well as education.

At this moment we are entering the era of information-communication, where technology and the internet increasingly helps the rapid spread of technology. Furthermore, the emergence of AI (*artificial intelligence*) makes the situation more worrying than before. AI creates distinct challenges for human. If in the past technology has already created smart machines, now more advanced technology creates machines capable of self-learning. This situation brings up many

questions to our minds. Can we survive living together with AI? Can we work together with AI? How to create successive generations who are resilient and independent, especially through education? This article discusses about AI and the effect of the BANI world we are now facing. The method used in this paper is the analysis of books on AI in education, written by writers working in the fields of technology and education. Next, explanation will be given on what BANI is and its impact on our lives today.

The World of BANI (*Brittle, Anxious, Non-linear, Incomprehensible*)

The Covid-19 pandemic which was expected to end by the end of 2021 still continues today. The unending mutation of the Covid-19 virus seemingly leads to dead end. The situation caused by the unexpected attacks of Covid-19 renders the concept of VUCA obsolete.

Jamais Cascio (1966 -) an American anthropologist, created the BANI concept (*Brittle, Anxious, Non-linear, Incomprehensible*) in 2020 to describe the conditions we are experiencing (Cascio, nd) . What is BANI?

After previously experiencing political upheaval and disruption caused by technology, now the Covid-19 pandemic has made our situation even much more chaotic. What we previously consider as volatile changes has now become unpredictable and brittle. Now the society no longer feels the world as full of uncertainty but as a world full of anxiety. Our world is no longer a complex world, but a world that has accepted a system of disconnectedness (non-linear). This ambiguity creates incomprehensibility.

Rabindranath Tagore has said that man is unique, free to create, has a heart full of compassion, creative, has a recognized existence, has emotions and a sense of wonder and curiosity. He mentions all these as the surplus in man. This uniqueness is in man because, according to him, man has the ability to think of things other than himself and to realize his thoughts (Nussbaum, 2011, pp. 7–34). Aside from that, there are 6 factors of man's surplus: logic, memory, imagination, intuition, will and perception. These abilities will help us face the BANI world. Brittle condition forces us to adapt quickly. To face anxiety, we are forced to have empathy and care for others. Disconnectedness/non-linearity forces us to develop the ability of interdisciplinary analysis. Lastly, this incomprehensible situation forces us to open ourselves, to appreciate different opinions, and to be tolerant (Saefuddin, nd).

Currently the education system, especially in the family and at school, is expected to work itself up to adapt to the fast change. Education which centers only on the ability to think is no longer reliable. The ability to think needs to be balanced with the ability to process emotions. The concept of *multiple intelligence* is increasingly needed, where there is the necessity to combine intelligence with empathy and tolerance. Education must apply interdisciplinary abilities to see problems from various perspectives to get the right solutions.

The Age of Information-Communication

Communication is a human activity that makes him connect with the others. If in the past, gossip was the means for man to spread information by word of mouth, now the internet has become the most efficient tool to spread that information (gossip). Now the internet has become a warehouse containing people's thoughts, and is not centered on the knowledge of the man himself. This situation leads us to big questions. Has man truly understood about technology which he has created? How can man create technology which is useful and beneficial in a life of togetherness with the others?

The book *AI And Developing Human Intelligence: Future Learning and Educational Innovation* tries to explain what we are experiencing at this moment and how to overcome it – particularly in the field of education. The invention of gadgets and the internet helps man to process data, to create and spread information. This smart machine (machine learning) technology developed into deep learning which then created AI (artificial intelligence). Now AI continues to be developed by increasing its capacity to remember and **LEARN** (Gyarmathy , 2021, pp. 6–8) . This machine then creates a new problem: if AI can learn, does man still have to learn? Can't we not just ask AI our questions? Does AI have consciousness? Can we discuss with AI about the complexity of our life problems? Can we pour our heart out to AI?

AI is truly present in our everyday life and it starts from the smartphones that we hold. In real life, AI is an ordinary agent and is not as bombastic as pictured by the science fiction films. Not all AI can perform the same functions. At this moment, AI is still unable to match human capabilities, although AI which has human emotions is now being designed (Gyarmathy, 2021, pp. 80–81).

The Increasingly Faster Industrial Revolution

Education has a big role in changing the human life. The emergence of internet has brought many changes to education. Below is a brief explanation on the history of the development of the internet:

Web 0.0: 1969 – ARPANET and the emergence of internal information network.

Web 1.0: 1991 – the emergence of the World Wide Web makes the information network easily accessible to the public.

Web 2.0: 2003 – the social media makes human interaction easier, the communication network spreads faster, the use of digital data more massive and deeper.

Web 3.0: 2006 – shapes intelligence network, data comes from users to other users who need it, information spreads faster and easier, contents are more accessible to the public.

Web 4.0: 2012 – AI becomes a part of information network, man starts to cooperate with machines, a more holistic information network is formed (Gyarmathy, 2021, pp. 10–11).

This development of the internet caused an industrial revolution in all fields:

The Past Situation

Industry 0.0: 13th century – technological innovation, natural resources used to power the first machines, such as water wheels and wind wheels.

Media 0.0: 11-15th centuries – the Bible and secular works were copied so more people could get access to knowledge.

Education 0.0: 11-15th centuries – the education system in seminaries became the foundation of the education system that we currently use, this system gives underprivileged children a chance to study.

Easier Situation

Industry 1.0: the end 18th century – the discovery of steam engine ended man's dependency on animal labor; machines could now work on fuels.

Medium 1.0: mid-15th century – the discovery of printing machine enabled man to copy books, hence information spreads more easily.

Education 1.0: mid-18th century – school was formed and education became more equal for all.

The Situation Where Information Spreads Easily

Industry 2.0: the early 20th century – mass production in the industrial world.

Media 2.0: the early 20th century – massive information spread, the invention of radio, industrial printing machine, telephone and television enabled easy access of information by the public.

Education 2.0: the early 20th century – the emergence of public education, where every person is obliged to study.

A More Personal Situation

Industry 3.0: the early decade of the 21st century – digital technology, the production of more personal items, the invention of nanotechnology and 3D printing.

Medium 3.0: the early decade of the 21st century – personal information becomes public information, where personal data is willingly spread through social media.

Education 3.0: the early decade of the 21st century – digital technology eases the teaching and learning process, everyone can learn in a more personal way, smartphone and the internet enable man to get education easier through online learning.

A More Comprehensive Situation

Industry 4.0: 2014 – more thorough production, the connectedness of knowledge in the fields of biology, physics and the digital world, the invention of AI which were beginning to be used for communicating with others.

Media 4.0: 2020 – a more comprehensive media, newspapers and television are inseparable, data processing by AI.

Education 4.0: mid-21st century – learning becomes more comprehensive in all fields, schools are centered around electronic gadgets hence learning can be done anywhere and anytime, education is also connected to AI (Gyarmathy, 2021, pp. 11–12).

These changes mean that much work must be done so the education system can be adaptive. There is a shortage of educators who understands technological development. The generation Z and Alpha have already encountered electronic gadgets since they were infant. This makes it easier for them to accept and absorb information.

Human Intelligence vs. Artificial Intelligence

Man is intelligent, able to think objectively and has good personality. This statement helps us understand the difference between the human cognitive and the emotion. Human emotion is connected with the mind (cognitive) to produce intelligence. The emotion function is to acquire knowledge and understanding which is often called cognitive. Intelligence is the ability to acquire and apply cognitive ability in absorbing knowledge. An intelligent man has the ability to think objectively. Intelligence is related to the cognitive characteristic of man, whereas an intelligent man is centered around his personal ability (Gyarmathy, 2021, p. 75).

Artificial intelligence (AI) is understood as the ability of a system to understand data correctly, then study the data, and use it to reach specific goals and tasks, as well as the ability to adapt more flexibly (Kaplan & Haenlein, 2019, p. 17). Characteristically, artificial intelligence (referred to as AI in this paper) has a system to think like human, to act like human, to think rationally and act rationally (Russell & Norvig, 2016, p. 35). AI is divided into 3 types of system, namely analytical, human-inspired, and resembling human. AI with analytic system only has cognitive ability. Human-inspired AI has a system which consists of components of cognitive and emotional intelligence; this AI understands human emotions and has cognitive ability for decision making. AI that resembles man has the competence abilities (cognitive, emotional and social intelligence), has self-awareness, and is able to control itself when interacting with others (Kaplan, 2021, p. 23).

As AI's intelligence improves continuously, human intelligence seemingly becomes more inferior than AI's. This is proved by the victory of AI, named AlphaGo, in defeating Lee Se-dol, a master in the game of "Go" or *baduk* in Korean (Gyarmathy , 2021 , p. 57) . This incident was thought of as a sign of the reality that man is weak and lazy, hence with his plastic brain man searches for solutions to make his life easier. In the past, man hunted to fulfill his needs. Then he searched for ways to make it easier. How? Man then moved the plants that he needed from the forest to his home garden. Next, man learned and worked so that the plants could still grow and thrive in its new environment. He tried to cultivate the land and build irrigation so the plants did not lack water. After that man learned to read and write so that all knowledge he had acquired would not be stored only in his thoughts. This complexity of life is then passed down to his children, so that they also have to study in schools to better prepare themselves to face life's challenges. Ironically, after all his life needs are fulfilled and his life becomes more relaxed due to the tools he has created, what he does next is to return to nature to spend his free time. They return to hunting in the forest and go fishing. Is it as if they return to man's life in the past, like what was done by their ancestors.

What can we learn from this? There are at least two things. Firstly, man gives control of his life to the tools he created. Secondly, man depends on the tools to face the ever uncertain and very quick changes (Gyarmathy, 2021, pp. 59–61). Then came next questions, who is controlling and who is being controlled? We know that technology (as tool created by man) is never **LAZY**, whereas man is the opposite. Hence this advice is rightly addressed to man: automated technology that is used to serve man's needs will increase his success at work. But if technology is used ineffectively, it will add to his loss (Gyarmathy, 2021, p. 60). Currently man is demanded to be more effective and efficient in using technology, so as not to increase problems when he has to live together with AI.

AI Applications in Education

In the communication information era, what is most needed by man is accurate and trusted data information, such that the advancement of a nation is now measured by how high its technological development is. Technological revolution has changed man's life. Quoting from Matthew 13:12 and 25:29, "The rich get richer, the poor get poorer", it can be seen that technological advancement which was expected to help man's life is in fact increasing the social gap. Those who have access to technology are more able to rule the world, hence the Matthew effect becomes more real, where success is obtained not by a man's intelligence but by his rich family background which enables him to fulfill this technological need. This is because only rich families can have access to good quality education by acquiring advanced technology (Gyarmathy, 2021, p. 61).

Currently some countries have already been using AI in their education system such as the USA, Germany and China. The use of AI in education starts with web intelligence which

consists of 4 levels: network level, interface level, knowledge level and social level. The web intelligence in education works as follows: the web becomes a medium for the teaching lesson to happen by presenting pedagogy agents which provides infrastructures so that knowledge and information is shared among its users (teachers and students) through education server. Here the web functions as facilitator in the teaching and learning activities (Devedžić, 2004, pp. 31–33).

Web capabilities in the field of education is continually upgraded until it produced AI which becomes a personal coach which is adaptive in interacting with children. AI algorithm is said to be more accurate in giving scores in class. This algorithm is allegedly more reliable in analyzing the dynamism and engagement of students in class (Chen et al., 2022, p. 28). AI continues to evolve and transform into an agent of learning. At this moment, many students are using AI to study, though they still do not understand enough about what AI is and its dangers (Chai et al., 2021, p. 89). AI is divided into two types, namely the general type and the narrow type. The general type of AI refers to machines developed to imitate human intellect, that is cognitive intellect. Whereas narrow type of AI refers to machines which has specific functions to perform limited range of tasks, such as playing strategic games, translating languages, automobile, and detecting faces (Blais & Jungdahl, 2019, p. 109). It is believed that AI's capability to act like human has improved, such as studying and learning to solve a problem. It has evolved into intellectual agents capable of receiving perceptions from its environment and taking actions through stimulus in order to adapt to the changes in its environment or to achieve a certain goal (Xie et al., 2021, p. 85).

What is the role of a teacher? The presence of AI in all areas of life begins from Google, Siri, Alexa, and so on. Despite AI being a helper in the learning system, it also creates distinctive problems. One of the problems is about the capability of teachers in understanding and using AI in the teaching process. Teachers have important role in motivating students to work with AI. Teachers are expected to have literary ability to know and learn the concept of AI and to apply it (Lin et al., 2021, pp. 225–226). AI is fast in spreading information. Hence teachers must be trained to understand AI in order to advance the world of education. They must be given trainings by AI experts on how to use AI in the teaching and learning process (Chen et al., 2022, p. 42). Human and AI become more effective when they work together. Human is better suited to work in ethics and morality (strong in the area of emotion), whereas AI is better at repetitive tasks (Kaplan, 2021, p. 26).

Today's education system must start to think on developing a curriculum based on AI, all the while focusing on the students' development. An AI based curriculum in formal education can help children to prepare themselves to face the AI environment of the future. Working with AI can help them develop behavior control and build the confidence that AI has contribution to social life. Such curriculum needs teachers who understand AI, because it is through them that the development of AI can bring benefit in building a better societal life. Thus, education

system must work itself into preparing its teachers and students in facing AI (Chai et al., 2021, pp. 96–97).

The 21ˢᵗ Century Components Needed by the Next Generation

The age of communication information presents many stimuli which drives curiosity in children. Their ability in using gadget is better than adults in their surroundings. This makes children better adapted to keep up with the changing times, because they themselves are the agents of that change.

Information which spreads faster makes it easier for children to absorb knowledge. The combination of gadget and internet helps them to search for the needed information faster and more easily. This makes them think that they can learn independently. Asking *"Mbah Google"* (grandpa Google) is easier and faster, and it does not create a boring and unnecessary debates with their teachers and parents. This very fast information spread must be guided by adults, so that children do not lose orientations and are still able to follow the norms and rules agreed by the society.

It is undeniable that children's brain development nowadays is faster than that of the older generations. This is caused by the fast-evolving technology, also by the massive and quick information spread. They are known to be a generation that is creative and good in earning money. However, this creativity is focused only on things which interest them, that is creativity which is centered on the goal and not the process. They prefer instant things for the ease and convenience. The values of education needs reformation precisely at these points, so that it can follow the development of times.

Homogenous education system focused on uniformed and outdated knowledge is no longer acceptable. Internet and technological advancement enable children to easily acquire more heterogenic information and knowledge. That situation has positive value where children can receive the varieties that exist in this world. But there are negative values lurking as well. When children are not guided, they accept information as it is. This renders them susceptible to the wrong knowledge. When information process is easily accessible, children are in a cycle of uncertainty. The abundance of information can get them into trouble when they are not accompanied by parents and teachers.

The 21ˢᵗ century is a century full of rapid changes. Hence, we must equip children of the Z and Alpha generation with these following components:

1. Accepting uncertainties

Children can be taught to accept uncertainties as a part of life that we are currently facing together. The solutions will not be found in what is certain, but in how we teach them to accept and process the uncertainties of life. By accepting uncertainties, they will be always ready to face any situation that may arise.

2. Working together

Children can be taught to cooperate with the others. By working together, they create equality. Everyone has the same rights to education, so that a more thoroughly knowledgeable society can be achieved. Competition is still needed, not to determine who is the best, but to create a better world. Adam Brandenburger and Barry Nalebuff call this as co-opetition: the combination of cooperation and competition to get the best result for the wellbeing of the society.

3. Harmonization

Children must be taught to balance their reasoning and emotion. We can train them by doing activities which combine sensory, artistic activities and games. Sensory activities develop their feelings and emotion processing. Games can develop strategic thinking by strengthening their cognitive aspect through analysis, logic and calculation. Such activities develop children's intelligence, hence multiple-intelligence can be realized. Learning is transforming information into knowledge then understanding it so we can get wisdom.

4. Independence

This ability helps children to be more responsible for their choices of life. Adults usually give rewards after children finished their tasks. But actually, giving rewards make them less creative and independent, because gifts make them expect that doing tasks well will definitely bring rewards. This makes them less able to express their creativity and their own desires. They are constrained by the wishes of their parents in doing tasks. In comparison, children who do tasks on their own, are freer in making decisions and are more able to be responsible of their own actions. Independent children are more ready to face uncertainties and are not as easily affected by new situations.

5. Critical thinking

Children must be taught to understand that acquired information is full of assumptions which can be wrong. When we understand information, usually assumptions will emerge following our knowledge, and those assumptions can influence our considerations when accepting an information. Self-control happens when we have considerations when processing an information. Children need to be taught to use their critical thinking in avoiding hoax. We can teach them to process information by verifying the truth of the news, for example, by checking the information given by credible and reliable informants. This action is called reevaluating each information acquired.

6. An attitude to enjoy live (*carpe diem*)

Everyone has the need to enjoy life. Enjoying life in Latin is *carpe diem*, and in English is understood as "*seize the day*". Children must be taught to enjoy the life they were living, including uncertain situation. This can be taught to children by giving them challenging education in order to prepare them for their future (Gyarmathy, 2021, pp. 16–21).

These components are very much needed by children to survive, especially because we are entering a new era of education and culture 3.0.

Cultural Literacy

Culture 3.0 is marked with the emergence of varieties of easily accessed information. In this era, the older generations are expected to learn and learn continuously. They are expected to keep up with the changing times, that is in adapting to the use of technology, thus, the "lifelong learning" slogan. An effect that may arise is the possibility of the younger generation being teachers to the older generations.

A good learning system takes place in dialogues. Human knowledge is acquired through information. The information today is getting more varied, and there are increasingly many ways to obtain them. A timeless method is reading which provides a way to develop our mind. We all know that the younger generation prefers audio-visual mode as a way to obtain information and knowledge. This system is easier to understand because it is easier for man to understand something through images seen and heard. However, reading is very important to train the brain in understanding the sequences of events. This is why it is suspected that audio-visual mode can lower a person's analytical ability, because knowledge through audio-visual shortens the process of acquiring knowledge (Gyarmathy, 2021, pp. 31–32).

Reading can help children develop their imagination through the understanding of sequencing and linking words into a complete image. It will be easier for them to understand an idea and picture it during the process of reading. Language helps the thinking patterns of children to develop together with the development of their imagination. The analysis and understanding about the relationship of cause-and-effect is the foundation of logical thinking. Imagination is very necessary in reading, for that linguistic element must be taught so that they can form a clear picture of what they are reading. Clearly expressed words help the brain to develop the imagination. The ability of imagination that is formed through these words can be acquired by children through reading practices so that a complete understanding is formed. Children who cannot read yet can be helped by parents through story telling. In stories, children undergo the process of arranging the words that they hear so their imagination is developed. Literacy has an important role in developing analytical and critical reasoning.

The Role of Education in the 3.0 Era

At this moment we are faced with generation Z and Alpha who are already very familiar in using technology since a very young age. These are their characteristics:

- Interested in audio-visual knowledge and less interested in deep thinking
- Prefer instant things and focused on the result and not the process
- Prefer things that are clear and existing in their surrounding
- Live in a circle of digital technology
- Less active in face-to-face socialization (Gyarmathy, 2021, p. 34) .

They are generations who live in a world with varieties of developments, plural horizon and knowledge, have unique weakness (known as autistic children because of the lack of socialization), have freedom especially in accessing today's abundant information and knowledge. Has the education system supported these capabilities?

Education system at this moment needs synthesis knowledge, where dialogues must be built to broaden knowledge. A simplified Bloom's taxonomy can be used to develop education, such as:

1. Freedom to explore: when regulation is loosed up a little bit, children have more freedom in learning. Their knowledge is obtained through easily accessed information hence the mentoring of parents and teachers is needed so they can understand the right information.
2. Methodical learning: children can choose the methods which they think are more suitable with their learning capabilities, that method can then be used to make learning process more enjoyable.
3. Independent study: children can learn to connect the information received, then process it together with parents and teachers so that they can think whether or not the information is reliable and can be used in daily living (Gyarmathy, 2021, pp. 35–36).

Logical processing of information and analytical thinking is important key to acquire knowledge. For this, children can be taught to search for the truth, and then make categories. Culture 3.0 has its own literacy problems, especially in education. Abundant information makes knowledge easily obtained from anywhere and anytime. Children must practice selecting and processing information that they receive. They must be taught to develop their capacities to consider and select the right information access to gain knowledge. This can be done through dialogue process so that their critical reasoning also develops well. Education system must be reformed. This can begin by eliminating the ranking system which categorizes achievements, and eliminating the division of school subjects; this gives children freedom to explore themselves. Open dialogue is needed by children to understand complex knowledge. They can be invited to develop scientific projects and search for solutions. The post-literacy world they are facing needs a system which is free from rigid grouping of subject knowledge. Education system must be flexible in keeping up with the changing times in this information-communication era in order to survive (Gyarmathy, 2021, pp. 37–39).

What can be done by teachers and parents for their children's development? Remembering that we now live in a very diverse society means that the values we are adopting are getting more diverse. We can teach children to become resilient and brave individuals. They must be taught the ability to accept failures as part of the process to become a better person. Next, they must be taught to rise again to correct their errors. We need to teach children to rise and fight again when they experience failures by instilling self confidence in them that they are strong, resilient and brave individuals (Matthews, nd).

Conclusion

Although the development of AI is made more advanced by giving them the ability to copy human movements and emotions, AI has a weakness. They may be able to take decisions based on logical reasoning and mechanism. But this reasoning is already programmed, which means it has the tendency to be cold and rigid. Whereas human is more flexible and has emotional considerations in making decisions. These artificial agents will be even more advanced in the future. So, they will be able to do reasoning which surpass today's context. However, there are intrinsic aspects of man which will take a long time to be copied by AI, that is the complex human emotions (Damayanti , nd) .

Wisdom is the highest level of knowledge. At this level, the mind creates understandings based on knowledge, judgement, and considerations in order to understand knowledge. Here creativity has an important role in transforming knowledge into wisdom. At this point, human emotions also have important roles. Can AI reach wisdom? If AI is increasingly capable of learning and having consciousness, is this consciousness humane? This is where the tension occurs. Are not these artificial agents created to make decisions which disregard human values, so that they can function according to the procedures and reduce emotions which are subjective aspects in actions? Can they fulfill human's deeper needs for affection?

The human brain can adapt to the changes that are happening to themselves and to their environment. Children are also growing in their nerve system; thus, they will be able to accept changes in their lives. Man's thoughts are formed by the kinetic perceptions of the cerebral system. The human brain can record patterns, and not only consists of a collection of mental activities and learning results. Human imagination can produce innovations necessary to be used in life to help us solve problems. Although AI is developed to increasingly resemble human brain, AI has no ability to adapt to the changing situations and conditions in its environment. AI is a machine created to follow patterns and instructions. When AI loses the goal-directed algorithm, AI becomes unable to solve even simple problems in unexpected situations. Therefore, children must be taught to use technology wisely, so they do not become entirely dependent on technology (Gyarmathy, 2021, pp. 82–83).

A life that is full of integrity and stability can be achieved by balancing a life of togetherness with nature, with ourselves, family, community, society, the ecosystem and the surrounding environment (ecosphere). We are living in a world that is full of agitations and is always changing, so we need to balance our lives and share with the others. The components of this 21st century are the provisions needed by children in striving to find a balance when accepting unexpected happenings. Children who are prepared to be responsible for their own life choices are given the chance to be free to be themselves. We as adults need to build an environment which supports them to become independent and hardworking individuals so they may survive. Thus, they will become a strong generation ready to face uncertainties as challenges of life. Uncertainties can be faced by working together in building a balance in the

surrounding environment and creating a mentality to strive in children. Teachers and parents must develop in children the character and the spirit to strive. Character which makes them strong and brave in facing life's uncertainties. Children who have more balanced character and emotion will be able to accept pluralities; they will become strong individuals, ready to face the uncertainties of life.

Bibliography

Agilitat. (n.d.). *BANI versus VUCA: a new acronym to describe the world*. 28 Juli 2020. https://stephangrabmeier.de/bani-versus-vuca/

Blais, J. R., & Jungdahl, A. M. (2019). Artificial Intelligence in a Human Intelligence World. *American Intelligence Journal*, *36*(1), 108–113. https://www.jstor.org/stable/27066342

Cascio, J. (n.d.). *Open the Future: Anticipatory Mythologies*. 2021. http://www.openthefuture.com/jamais_bio.html

Chai, C. S., Lin, P.-Y., Jong, M. S.-Y., Dai, Y., Chiu, T. K. F., & Qin, J. (2021). Perceptions of and Behavioral Intentions towards Learning Artificial Intelligence in Primary School Students. *Educational Technology & Society*, *24*(3), 89–101. https://www.jstor.org/stable/27032858

Chen, X., Zou, D., Xie, H., Cheng, G., & Liu, C. (2022). Two Decades of Artificial Intelligence in Education. *Educational Technology & Society*, *25*(1), 28–47. https://www.jstor.org/stable/48647028

Damayanti, C. (n.d.). *Manusia dalam Lilitan Teknologi Digital*. 14 Oktober 2021. https://www.berandanegeri.com/2021/10/4842/manusia-dalam-lilitan-teknologi-digital.php

Devedžić, V. (2004). Web Intelligence and Artificial Intelligence in Education. *Journal of Educational Technology & Society*, *7*(4), 29–39. http://www.jstor.org/stable/jeductechsoci.7.4.29

Gyarmathy, É. (2021). *AI and Developing Human Intelligence: Future Learning and Educational Innovation*. Taylor & Francis. https://books.google.co.id/books?id=tBs5EAAAQBAJ

Kaplan, A. (2021). Artificial Intelligence (AI): In P. Verdegem (Ed.), *AI for Everyone?* (pp. 21–32). University of Westminster Press. http://www.jstor.org/stable/j.ctv26qjjhj.4

Kaplan, A., & Haenlein, M. (2019). Siri, Siri, in my hand: Who's the fairest in the land? On the interpretations, illustrations, and implications of artificial intelligence. *Business Horizons*, *62*(1), 15–25. https://doi.org/https://doi.org/10.1016/j.bushor.2018.08.004

Lin, C.-H., Yu, C.-C., Shih, P.-K., & Wu, L. Y. (2021). STEM based Artificial Intelligence Learning in General Education for Non-Engineering Undergraduate Students. *Educational Technology & Society*, *24*(3), 224–237. https://www.jstor.org/stable/27032867

Matthews, D. (n.d.). *The dangers of 'character education' in universities*. 28 April 2018. https://www.timeshighereducation.com/blog/dangers-character-education-universities

Nussbaum, M. (2011). Reinventing the Civil Religion: Comte, Mill, Tagore. *Victorian Studies*, *54*(1), 7–34. https://doi.org/10.2979/victorianstudies.54.1.7

Russell, S., & Norvig, P. (2016). *Artificial Intelligence: A Modern Approach*. CreateSpace Independent Publishing Platform. https://books.google.co.id/books?id=PQI7vgAACAAJ

Saefuddin, A. (n.d.). *Keadaan VUCA Menjadi Semakin BANI*. 1 Desember 2021. https://academiamu.com/2021/12/01/keadaan-vuca-menjadi-semakin-bani/

Xie, H., Hwang, G.-J., & Wong, T.-L. (2021). Editorial Note. *Educational Technology & Society*, *24*(3), 85–88. https://www.jstor.org/stable/27032857