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Education for Sustainable Development and Beyond It

Viktor Zinchenko[1],* Mykhailo Boichenko[2], Oleksandr Polishchuk[3]

[1] *Institute of Higher Education of the National Academy of Educational Sciences of Ukraine, Ukraine*
[2] *Taras Shevchenko National University of Kyiv, Ukraine*
[3] *Khmelnytskyi Humanitarian-Pedagogical Academy, Ukraine*
Email: zinchenko.72@gmail.com

ABSTRACT
This paper aims to consider the human dimension of education for the sustainable development of society. A systematic approach in value analysis of social institutions should be used as a research methodology. The education for sustainable development should be based on the latest technical achievements, but these achievements themselves are not an end in itself. This education aims to develop humans as a person and humanity as a species in the face of increasing technological and other threats to humankind's very existence. Simultaneously, technologies turn out to be ambivalent – they can serve both the destruction of humankind and a significant deterioration in the conditions of its existence, or the development of humankind and the improvement of these conditions. Artificial intelligence (AI) is a prime example. AI could be used as a resource for education, but only until AI itself began to use people receiving education as its resource. Researchers should theoretically ground the decision on the degree of participation or limitation of AI in modern education, technically prepared by programmers and other AI practitioners. Still, such a decision should also be discussed and agreed upon with the common public's participation. Professionals should calculate the risks of such a decision, but the final decision can only be made on a democratic basis and consider liberal and social values.

Keywords: *Education for Sustainable Development, Artificial Intelligence, Digitalization, Risks, Values.*

1. INTRODUCTION

Education should prepare the next generations for the new environmental demands, and one of the main demands of the near future will be the capacity to deal with Artificial Intelligence (AI). Humans' predominant environment is even now not nature, but the artificially designed and intellectual provided space. If, for today, Sustainable Development is the containment of human appetite for consumption, then for tomorrow, humankind will be scarcely able to prevent or restrain AI development. Even now, the sustainable development of human beings is ensured by the transition of fulfilling human needs from the material space to virtual reality. More and more needs of postindustrial men and women are concentrated in sharing products provided with the help of AI – virtual games, movies, distance work, virtual journeys, social nets, 3D graphics, 3D printers, smartphones, smart TV, smart home, smart city, smart planet, maybe in the recent future smart world? Humans limit, restrict, and even terminate some of their natural needs but enlarge, widen and deepen their artificial and especially virtual needs. Today, rare people could solve their problems without the Internet, cell phones, and electricity. The culture of virtual bodies and immediate pleasures substitutes the culture of natural body and health care. Cyber reality for humans becomes closer than reality of nature. Beyond the sustainable development of humankind, it is flourished the unlimited development of AI. Education for sustainable development in the near future should be aimed at the containment of AI, not on humanity's restrictions. The consideration of this thesis is the aim of this paper.

2. METHODOLOGICAL BACKGROUND, GOALS AND PROSPECTS

The solution to the question of the benefits or harms of digitalization for education lies in the plane of predictive research. In recent years, the number of popular scientific works in this area has increased dramatically. Suffice it to recall the works of Joy Ito and Jeff Howe [1], Kevin Kelly [2], Tim O'Reilly [3], Alec Ross [4] and many others. All these works are ultimately dedicated to one thing: to convince readers that humanity's digital future is irreversible. Only the approaches differ – in terms of

programming, political position, consumer interest, business position, and so on.

However, all these authors pay little attention to the extent to which it depends on the citizens' will themselves, in what volumes, how quickly and how effectively these digital changes in society will take place. And practically no one discusses the question of the fuses for humanity from the encroachments of AI. These institutionalism based investigations had a gap between systemic and value approach.

Therefore, a systematic approach to value analysis of social institutions should be used as a research methodology. In particular, its foundations were presented in the works of Niklas Luhmann [5]. Besides, it is also necessary to address the topic of systemic risk, the understanding of which is revealed in the classic work of Ulrich Beck [6]. These studies help to understand that there are no inevitable solutions for social systems. Still, there is a choice of possible scenarios for the development of events, each of which has its own advantages and risks. AI research should rely on this methodology because the creators of social systems are people, not programs. Still, programs themselves, communication networks, and, ultimately, artificial intelligence result from human creativity.

3. MODERN TRENDS AND KEY PROBLEMS

The European Commission recently adopted the Digital Education Action Plan (2021-2027), which sets out the European Commission's vision for high quality, inclusive and accessible digital education in Europe [7]. For today European educational strategy is aimed at the digital-friendly content and format. There is no big part of this strategy devoted to digital security and AI usage risks and emergencies.

AI and digital technology are assessed as important helpful means but not a threat to humans. This Plan calls for active cooperation at the European level to learn from the COVID-19 crisis, during which technology is being used on an unprecedented scale in education and training; make education and training systems fit for the digital age [8].

Open public consultation on the new Action Plan was held from June to September 2020. The new Action Plan has two strategic priorities. The first is to foster the development of a highly efficient digital education ecosystem [9]. But this Plan takes into account just threats *from humans* who could be wrong in using AI, but not AI that itself could be a threat *for humans*.

However, this plan is not central to the European Union in the field of education. It largely identifies the means to achieve, and the goals and values are defined by the program "Transforming our world: the 2030 Agenda for Sustainable Development". It offers the following practical mechanism for achieving and ensuring inclusive, equitable, and quality education and training at the global level of education and science, promoting all educational and lifelong learning opportunities [10].

UNESCO and the OECD have developed several conceptual and instrumental programs for the better implementation of this Strategy.

I. Leading Education 2030. According to this program, the education system should be developed only as an integral and important condition for promoting democracy and human rights, the strengthening of global citizenship, and sustainable development [11].

II. The Future of Education and Skills Education 2030 is a comprehensive monitoring of sustainability targets at the national educational and scientific levels to shape the global experience level. It is also planned to prepare reports on policy coherence, analysis of progress, etc. [12].

III. The OECD Learning Framework 2030 offers certain "orientations" rather than a ready-made recipe – the forms, visions, and principles that underpin the global education and science system's future. Accordingly, forms of project interactions and cooperation of government representatives and stimulating the growth of the partner community – in particular, ideological leaders, experts, educational and research networks, heads of educational institutions, teachers, scientists, researchers, students and youth groups, parents, universities (and others forms of higher education institutions), organizations and other social partners [13].

In particular, one of the frames for education development is the European strategy for sustainable development. This strategy is coherent with the Resolution of the United Nations General Assembly "Transforming our world: the 2030 Agenda for Sustainable Development" which formulates Sustainable Development Goals (SDGs) that target key areas for implementing this global comprehensive multi-level strategy for social, governmental and institutional sustainable development [10].

Accordingly, the education system and educational institutions should be developed, transformed, and improved as institutions that should create and strengthen a safe, non-violent, inclusive, and effective learning environment for all society members. In the end, this will help achieve success in cooperation at all levels – both in education and science and in society as a whole.

All these official documents need to be filled by the idea of readiness to fend off threats from AI. Such ideas of the "existential threat" from AI for the humans were publicly expressed by Stephen Hawking, Bill Gates, Steve Wozniak, Jack Ma, Elon Musk, and other scientists and "captains" of international business [14]. One of the most radical speakers on this topic is the head of Tesla and SpaceX, American businessman and billionaire Elon Musk, who declared the threat to humanity from AI.

Musk noted: "We should be concerned about where AI is going. The people I see being the wrongest about AI are the ones who are very smart because they can't imagine that a computer could be way smarter than them. That's the flaw in their logic. They're just way dumber than they think they are" [15]. The speed with which all AI algorithms are improving is gaining momentum, and technology faster than people think, says Elon Musk.

Musk believes that artificial intelligence is a dangerous technology for humanity, capable of destabilizing the world's situation.

This is not the first time Musk has spoken about the dangers of AI for humanity. Since 2016, he has warned that a person can become a pet for intelligent machines with seized power. And has since regularly called for regulation of AI technology. He once co-founded OpenAI, a nonprofit organization that tries "is to be the first to create AGI – a machine with the learning and reasoning powers of a human mind" [16]. Later, Musk stepped back from this company's leadership, with a Twitter comment, "I have no control & only minimal insight into OpenAI. Confidence in Dario for safety is not high" [17]. This Musk's demarche was his specific reaction on a program review of OpenAI crew (and Dario Amodei as its research director) ambitions [16]. There is no doubt that "By extrapolation, AGI could be catastrophic without the careful guidance of a benevolent shepherd." Still, it seems certain that many other similar companies do not agree that "OpenAI wants to be that shepherd" [16].

However, among all AI developers, Musk is most concerned about Deep Mind – a Google division. "Just the nature of the A.I. that they're building is one that crushes all humans at all games," said the head of Tesla in an interview for the New York Times. "I mean, it's basically the plotline in 'War Games'" [18]. In this Cold War film, a teenage hacker connects to a government supercomputer run by AI and trained in war simulators. During the game, AI convinces the authorities that a nuclear attack is inevitable. Comparing the algorithms of Deep Mind with the War Games, Musk claims that AI will surpass a person in intelligence in the next five years, and we probably will not even notice it. "We're headed toward a situation where A.I. is vastly smarter than humans, and I think that time frame is less than five years from now. But that doesn't mean that everything goes to hell in five years. It just means that things get unstable or weird" [18], and he also said: "Nobody would suggest we allow the world to build nuclear warheads if they want, that would be insane. And mark my words: AI is far more dangerous than nukes" [15]. It seems Musk wants to be the first again – but only as a winner, not as a looser: he doesn't want to be responsible in case of the harmful effect of new AI activity for humans.

At one time, Isaac Asimov predicted the need to regulate the relationship between humans and creatures created by them (androids, robots, cyborgs, clones, sigmoids, etc.), formulated the "Three Laws of Robotics": "1) A robot may not injure a human being or, through inaction, allow a human being to come to harm. 2) A robot must obey the orders given by human beings except where such orders would conflict with the First Law. 3) A robot must protect its own existence as long as such protection does not conflict with the First or Second Laws" [19].

But in the very near future, it is quite possible that because of bad ecology, humankind's poor genetic ability of humankind, but its high technical abilities and sophisticated medicine, it will be almost no "pure" humans, but predominantly cyber creatures and AI bearers. There comes a time when above mentioned three laws must be at least supplemented with the following forth law (B. Stern. "Human is a… (Necessary addition to the three laws of Asimov)"): "An intelligent being cannot harm another intelligent being or, by his inaction, allow another intelligent being to be harmed" [20].

From this point of view era of post-humanism almost comes. It is probably possible to find an answer to the question of limits for Homo Sapiens inside itself Homo Sapiens investigations. "Modern humankind is potentially partly related to the subspecies of Homo Sapientissimus. For this reason, the highest values of the 'Man of Truly Reasonable' gradually become the results of mental functions (thinking, consciousness, reason), more precisely, formulated and implemented ideas based on the content of the stage worldview, as well as on the principles of morality and types of activity corresponding to it (including economic activity)". The subspecies of "Proper Homo Sapiens" begin to differ not in morphological features, but in the mega-structure of connections between the neurons of the brain, as well as in the content of essential and status needs, goods and values that corresponds to this mega-construction [21, p. 228-230]. It could be done with additional technology like Musk's Neuralink and evolutionary changes of human beings and his mind. Such changes should be prepared with help of correct educational strategy.

Education should orient on the constructivism as a worldview. It is wrong to wait for new, unexpected problems – humans should make solutions for problems by creating their own problems [22] due to the forming by their own activities based on their own reasoning and deliberation their own predictable future [23].

4. PRELIMINARY RESULTS

In the education system, more and more arguments are being formed in favor of human activity forms, which strengthen the theory and practice of liberal ideas about democratic civic education.

Liberal perceptions of democratic civic education are expanding regarding university pedagogy, particularly higher teaching and learning. The arguments are based on protecting the development of humanity through (higher) educational meetings based on virtues associated with love. Unlike romantic and erotic love, the Nuraan Davids and Yusef Waghid book "Teaching, Friendship and Humanity" deals with love concerning educational meetings through which people or citizens can engage in autonomous, conscious and responsible, yet loving, engagement. Authoritative researchers argue that "the rationale behind focusing on philia in educational meetings is that it expands our current understanding of such meetings beyond just talking about reasonable commitments – autonomous action, deliberative iteration" [24, p.61].

However, practically none of the researchers question that education should not so much digitalize future generations as it should teach them to survive without digital technologies in a digital society. But no one can guarantee the impossibility of a situation of systemic failure of these technologies, if only due to an elementary power outage or serious problems with the Internet. All this constitutes a significant threat to the sustainable development of society. Besides, digital technologies themselves are beginning to invade citizens' privacy too actively, making it part of Big Data. The consequences – such as Brexit – have already become a reality, and they make one think about the possibility of manipulating the behavior of not only individual people, but entire countries, and possibly the whole of humanity.

5. CONCLUSIONS

The preparation of the next generation to participate in the sustainable development of society as the goal of modern education does not have an unambiguous correlation with the digitalization of education in general and the introduction of artificial intelligence in education in particular. AI should partly enter as a component of education, partly should remain outside of it.

The digitalization of the education system is taking place all over the world almost uncontrollably by civil society and without taking into account all the strategic risks. The problem of risks is raised not by government officials and scientists but mainly by public figures and private companies' representatives. It could appear false impression that only representatives of the technical elites or special services of states can solve such issues. Although, at least in the field of education, the decision on digitalization and its degree should be made with the obligatory participation of all citizens of the state, especially the parents of students parents. This is a concrete answer to the demand for the preservation of democratic and liberal values based on education in modern society.

THE AUTHORS' CONTRIBUTION

Authors' contribution consists of a systematic analysis of the risks of one-sided orientation towards the uncontrolled and ill-considered AI introduction into education systems. The authors focus on the need to preserve humanistic, socially focused, and liberal values as ultimate goals and as criteria for selecting specific programs for the digitalization of education or, in some cases, refusal to digitalize certain educational programs. The prospect of sustainable development of humankind should be determined by human development possibilities, not AI development. Although certain aspects of human development require investment in the development of AI – including through the education system.

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