

A NON-LINEAR PARADIGM OF HIGHER EDUCATION FOR A SOCIETY OF THE 21ST CENTURY

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Introduction

The idea that higher education needs some form of reinvention, and that the formation of a new paradigm of higher education is on agenda, arose first as a response to the many challenges of the present-day world, such as globalization, ecological crises and the need for achieving some form of sustainability in the humankind development, as well as the escalation of conflicts and violence all around the world. However, the most recent and urgent challenge is probably the emergence of 'Industry 4.0' or the Fourth Industrial Revolution, which is related, first of all, to the widespread use of AI-based technologies and robotics. Particularly, as described by the World Economic Forum, major goals and tendencies in education defined by the introduction of AI-based technologies into the educational process include global citizenship, innovations and creativity, the stress on forming skills related to using new digital technologies and at the same time to communication and emotional intelligence, as well as personalized and autonomous, inclusive and accessible lifelong learning and education managed by students themselves (World Economic Forum 2024). At the same time, such a possible paradigm of education, especially higher education, is not only shaped by present-day industry and social challenges but is also expected to define the near future of humankind. It is thus important to consider that paradigm in its relation to a possible vision of the society of the 21st century.

Methodology

The paper employs methods of analysis, comparison, philosophical comprehension, and dialectics in order to consider the possible features of higher education aimed at preparing humankind for life in the upcoming decades of the 21st century.

Results

The idea of Industry 4.0, proposed by a group of German industrialists in 2011 and later popularized by the founder of the World Economic Forum

Klaus Schwab, does define the present-day situation quite well, leading to the already noted urge to update and redefine the system of higher education, taking into account both the new paradigm of knowledge, skills and abilities that will be required of graduates, and the new role of a teacher. But the paradox of such an update is that higher education must always try to be "ahead of the curve", and therefore its mission is to prepare specialists who can work and live in the conditions that correlate not only and not so much to the present-day social and economic situation, but rather to the one that will or may appear in the more or less near future with one or another level of probability. What future holds for us, and what Weltanschauung foundations do we need in order to survive? Of course, philosophy is not exactly futurology, and philosophers usually tend to consider the past (or rather the eternal issues), in the critical situation where the very place of human beings in the world of artificial intelligence and machines that are supposedly able to "think" is being questioned (Mielkov 2024), it is necessary to make some presumptions for humans having all the skills and knowledge that would ensure their existence.

It is not surprising then that after just a few years since the idea of the Fourth Industrial Revolution was introduced into the social and academic discourse, some scholars started talking about an even more provocative idea of the Fifth Industrial Revolution and 'Industry 5.0'. That last concept, in difference from its closest predecessor, stresses the synergy of the collaboration between machines, particularly AI-based technologies and LLMs, and humans, as opposed to the possible competition between them and the grim perspectives of the AI replacing human specialists in doing their jobs. As for the goal of development, it is now envisioned not in making the industry more effective and powerful due to the introduction of innovative technologies, but in achieving the welfare of all social stakeholders at once (Noble et al. 2022:201).

In the sphere of education, as defined by Ukrainian researchers, the imperative under the Fifth Industrial Revolution is to acknowledge human qualities, to define competencies and roles that are best suited to humans. Particularly, those are qualities related to innovativeness, creativity, critical thinking, analytical skills, design, empathy, and everything that is by definition inaccessible to the machines (Saukh & Saukh, 2023). At the same time, it is quite natural that such a new paradigm of education refers not only to the development of the industry but also to that of the whole society in general. In particular, Japanese scholars and managers talk about the prospects for the formation of "Society 5.0", which—in contrast to the current "Society 4.0" or "information society"—acts as a primarily human-centric society balancing economic development with the resolution of social problems using a system with advanced merging of cyberspace and physical (real) space (Suzuki 2018:7).

Accordingly, the new social reality affects the development strategies of education, making them what we would call essentially non-linear. The thing is that the envisioned (possible future) society of the middle of the 21st

century replaces the paradigm of "role models" and three defined stages of life ("study – work – retirement") by a "multi-stage" paradigm without any pre-defined models. That is, getting higher education is no longer something one would be doing just in his or her youth, in order to obtain necessary skills and knowledge to find a job, and to do that job until the very retirement 50 or so years later. First, the job market is now found to be as volatile and unpredictable as the world with its economic and political situation as a whole: we can no longer define any skills and knowledge that would last for long and will be relevant even in a narrow field of activity. Second, a person may find it desirable to change occupations and to obtain new qualifications and especially micro-qualifications at any moment in his or her life, thus getting back to school and training several times in a row.

In other words, higher education becomes non-linear open education. From a philosophical point of view, such ideas (if any) are not entirely new: they correspond well to the classical ideal of higher education peculiar to the classical European tradition, particularly, to the ideal of the all-round development of human personality. We can also remind ourselves of the ideas by José Ortega y Gasset about the mission of the university that lies in educating not so much narrow professionals ('new barbarians' as he used to describe them, and in the present-day world of unpredictability and ambiguity) as cultural personalities. But the difference of the present-day situation from that of the Europe of the 1920s, which the great Spanish existentialist thinker was dealing with, lies in the rather elitist tendency he was adhering to—and in the existing and promising democratization of higher education. Higher education now faces transformation into a common public good, accessible and necessary for everyone, according to, for example, the program for the transformation of the Japanese higher education system for the period until 2030, which is aimed at providing universal higher education for virtually everyone.

That issue also leads philosophers to envisioning a new model of the university: a "transformational" (Guzmán-Valenzuela 2016) or "ecological" (Barnett 2018) university as a new level of development of a higher education institution in addition to the research and entrepreneurial university, not in the sense of its alternativeness, but as a supplement to the usual models now augmented with new stages and aspects. In any case, "transformational" or "ecological" is just a conditional title here: it does not limit the university to the environmentalist dimension, but appeals to a much broader philosophical sense. The contemporary university can and should position itself not merely as a center of economic, social, or even ecological development, but as a locus of human development, above and first. In this perspective, we can argue that all the global challenges of today's society—from the ecological crisis (if not catastrophe) to the escalation of armed conflicts, whose tragic manifestations we have long observed here in Ukraine—are rooted in a deficit of humanity and human qualities (Mielkov 2025).

We can thus summarize that non-linearity in education corresponds to its human-dimensionality: the latter notion appears as an alternative concept to a more usual human-centric approach. While still grounded on the same universal values of humanism, it no longer hosts an opposition of humans and nature, humans and the world: human-centric is too close to the old idea of anthropocentrism, which could be shown to be at least partly responsible for all the ecological crises we face today. An ecological university could be both human-dimensional or human-commensurable (with its infrastructure focused on de-urbanization up to the "university in garden" concept and practices)—and not destructive in relation to the natural world (by not only adopting the corresponding environmentalist traditions, but also moving parts of its activities online). Of course, such a new paradigm still requires many didactical, methodical, administrative, and so on innovations, which should be the subject of future research on the topic, but at least it presents a positive and probable image of what humans, their society, and their system of higher education could and should be in the middle of the 21st century.

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