

Transformation or revolution? The role of Artificial Intelligence in the new era of learning

Barbora Řebíková¹

Abstract: The article explores the significance of artificial intelligence (AI) in education in the 21st century. With the continuous advancement of technology and data resources, AI plays an increasingly crucial role in reshaping how we learn and teach. The article deals with the profound transformations and crises affecting the contemporary world and education. It highlights that new artificial intelligence tools will undoubtedly bring unprecedented changes to education. These changes, although still very new, have the potential to redefine traditional education. The world itself is going through many crises. Higher education is not immune to these challenges; the various crises affect its ideological, intellectual, managerial, and ethical dimensions. This paper introduces the concept of "turn to artificial intelligence" in education, highlighting the role of artificial intelligence (AI) in reshaping educational paradigms.

Keywords: education, Artificial Intelligence, technologies, ethical and social aspects

JEL Classification: I21, I24

1 Introduction

Education plays a key role in finding ways to respond to the changes in today's world marked by multiple crises. However, education itself is undergoing unprecedented transformation. The world of education is being transformed by new tools that are completely transforming existing ways of doing academic work and, above all, working with texts.

The main aim of this article is to show that, both the contemporary world and education are in an unprecedented crisis and that education will certainly undergo a transformation thanks to new AI tools. What this change will look like cannot be said today, but it is undeniable that it will happen and that it will be unprecedented. Research in this area is still in its infancy, which is why all predictions are a bit like crystal ball divination.

In my article I do not offer a detailed review of this current research, but rather a new perspective through which the current state of affairs can be viewed and understood. I focus on broader contexts and parallels that might open the way, or at least suggest a direction in which research in the area of AI and education might go.

2 The World of Crisis

It can be said with certainty that the word "crisis" defines the beginning of the 21st century. The world has gone through the COVID-19 pandemic, a crisis of economic systems, a social crisis, and is facing a humanitarian crisis, with millions of people facing extreme poverty, hunger, racism, and injustice. (Lagadec, P., 2005) There are also migration and political crises with new authoritarian regimes and wars that have emerged in recent years, and unfortunately in recent days. (CNN, 2023) There are many more crises such as the energy crisis and imbalances with global implications. Among other crises, we can certainly mention the global crisis of liberal democracy, the crisis of inequality, the crisis of public health, and even the crisis of confidence in public health. (Leslie, J., 2023). Many scientists believe that all these crises are dominated by the ecological crisis and the problems associated with our historical era, which they call the "Anthropocene". "The changes that humans have made in recent decades have been on a scale that has altered our world beyond anything it has experienced in its 4.5 billion year history. Our influence is so profound that it is moving the planet into a new age that geologists call the Anthropocene: the age of humans." (*Future Earth. Our Future on Earth 2020.*)

The world of the 21st century is unlike anything in our history. The situation on our planet is completely unprecedented. Inequality between people is widening, with the rich amassing incomprehensible wealth and standing apart from the rest of the world, while millions of people live in extreme poverty in both poor and developed countries. We are witnessing billionaires going on their joy rides into space while millions of people are starving. (Popenici, 2023). The climate crisis has become a direct existential threat to humanity, and the reality of total global catastrophe is being

¹ University of Jan Evangelista Purkyně, Faculty of Arts, Department of Philosophy and Humanities, Pasteurova 13, 400 01 Ústí nad Labem, Czech Republic, barbora.rebikova@ujep.cz

openly discussed among world leaders. In short, it can be said that we are facing the biggest cascade of crises in our history.

3 The Crisis of Higher Education

It is obvious that if the world is being so fundamentally transformed, the education that prepares us for this world, and not only for survival but also for ordinary life in it, cannot remain the same. If it stays the same, it must also necessarily be in crisis, and that unfortunately seems to be the case. Regular publications devoted to higher education, such as *The Chronicle of Higher Education*, *Times Higher Education*, *Inside Higher Education*, and others, devote a great deal of space to the crisis in higher education. „In fact, we have several crises of higher education in the English-speaking Western world: ideological, intellectual, managerial, and ethical crises." (Popenici, 2023, p. 3).

Popenici focuses on the situation of higher education and points out that universities now stand as marketized, narrowly graduate-employability-oriented institutions, with the dysfunctional ethos and intellectual endeavors reduced to economic returns and sloganeering. He defines universities in terms of mediocrity and short-termism. Although „in the history of education and the history of universities, there are times when changes are revolutionary, involving different ways to think about teaching, learning, culture, and humanity“ there is a kind of refrain of universities that do not change, and they remain too rigid. (Popenici, 2023, p. 75.) According to many other scholars, universities are in deep crisis. The sources of this crisis are still debatable. Some theorists believe that there is insufficient commercialization of universities, while others point to decades of defunding of universities (Biesta, 2011). They all agree that higher education is currently in a phase of a complex crisis.

Let's try to find one possible root of this crisis and quote from the book *Anti-Intellectualism in American Life* by Richard Hofstadter, a professor of American history at Columbia University, for which he also won the Pulitzer Prize in 1964, the same year the concept of artificial intelligence was born. Hofstadter makes a distinction between intelligence and intellect, which I believe could be useful in what follows.

Although the difference between the characteristics of intelligence and intellect is more often assumed than defined, the context of popular usage makes it possible to extract the nub of the distinction, which seems to be almost universally understood: intelligence is an excellence of the mind that is employed within a fairly narrow, immediate and predictable range; it is a manipulative, adjustive, unfailingly practical quality – one of the most eminent and endearing of the animal virtues. Intelligence works within the framework of limited but clearly stated goals, and may be quick to shear away questions of thought that do not seem to help in reaching them. (...) The intellect, on the other hand, is the critical, creative, and contemplative side of the mind. Whereas intelligence seeks to grasp, manipulate, re-order, adjust, intellect examines, ponders, wonders, theorizes, criticizes, imagines. Intelligence will seize the immediate meaning in a situation and evaluate it. Intellect evaluates evaluations and looks for the meaning of situations as a whole. (Hofstadter, 1963, p. 24-25.)

The difference between intelligence and intellect as understood by Hofstadter was also mentioned already in 1922 by Roback. (See Roback, 1922). Hofstadter noted that we are witnessing the definitive success of anti-intellectualism, in which we can also see the roots of the crisis of higher education and the steady decline of higher education in Europe. He warned that virtues such as education, wisdom, erudition, and deep knowledge are not adored in the way they should be and are not associated with respected people, either in popular culture or in real life. The emphasis on intelligence instead of intellect has led to the commodification of learning and teaching and to nowadays crisis. Hofstadter reaches conclusions similar to those of Popenici. Education has become a commodity, professors have become service providers, and students have become customers. Leaders in education have become managers who are responsible for efficiency, adapting to market demands, and partnering with industry and other corporate structures. The rankings of what some universities call "product" are actually a caricature of what is left of the goals of education, lacking coherence in teaching and belief in the power of good teaching. (Popenici, 2023, p. 82)

It seems logical that if we blame the emphasis on intelligence on the current state of education, then an emphasis on intellect might be the way out of this crisis. Let us try to see whether it is possible to strengthen skills that we connect with the intellect, as Hofstadter describes it, even in an age that celebrates and adores intelligence and, moreover, artificial intelligence. Whether and why artificial intelligence could lead to a revolution in education and to the strengthening of such skills. To do this, let us focus on turns in education and on the last turn which we could name AI turn.

4 "AI Turn". The New Era of Education?

The utilization and transformation of Artificial Intelligence (AI) have been in existence for many years. It can be traced back to the 40s and 50s. (Hamdan, A., (2021). p.223) AI usage can be seen as a simple computer or machine that is able to read handwritten documents to Google, Google translation, face recognition, voice recognition, GPS system, or a robot that can do a sophisticated surgery operation on its own.

AI is a technology that is changing our lives in an enormous way. Many areas of human life and various industries have already embraced AI and have begun to benefit from its technological advancement. Artificial intelligence meets the main requirements of today's business world and it benefits companies and businesses in many different ways, such as improving product features, functions, and performance, optimizing internal business operations, improving decision-making processes and workplace conditions, and enhancing employee creativity through automation and task shifting. (Hamdan, A., 2021, p. 222) As a result, AI applications are being applied in many industries and companies. One such industry is higher education, which can potentially also gain many benefits from the AI revolution. However, the roles, benefits, and promises of AI in higher education institutions are currently very new and still a changing topic that has not yet been adequately explored and requires further research.

I will not focus on the development of AI, but only on its current form and the tools that play a role in education. Of all the possible current AI tools, it is ChatGPT that, in my opinion, has transformed and will transform the shape of education in a significant way. But let's start with another important consideration.

For many decades, the world of academic education has also been a world of text. In the social sciences and natural sciences, but also in the whole area of our culture, there have been several major so-called "turns". The idea of these turns comes from the philosophy of Richard Rorty, according to whom the whole history of philosophy is a series of such turns. Rorty describes ancient and medieval philosophy as focused on the thing, eighteenth- and nineteenth-century philosophy as focused on the idea, and contemporary philosophy as preoccupied with words. The latest turn in Rorty's conception of history, the "linguistic turn," has become evident in the other social sciences as well. "Textuality", according to Rorty, became a central concept for the study of art, media and culture, and found its background in semiotics and linguistics. Society, he argues, has become a text, and nature and the natural sciences "discourses" (Koopman, 2011).

According to Mitchell, however, the "linguistic turn" was not the last turn in contemporary history. There has been another turn in the social and natural sciences, as well as in the whole area of our culture, that can characterize the present. The author sees hints of this turn already in the semiotics of Charles Peirce and later in Nelson Goodman's *The Languages of Art*. Goodman's theories and the non-linguistic symbolic systems he describes no longer stand on the assumption of language as a necessary, paradigmatic basis for grasping meaning. Mitchell also identifies this turn with phenomenological investigations of imagination and visual experience or with Jacques Derrida's "grammatology." With the turn of attention from a "phonocentric" conception of language to its visual side, with the Frankfurt School's explorations of modernity, mass culture and visual media, and with the results of Michel Foucault's philosophy. Here, according to Mitchell, one can see the foundations for the latest turn in Western culture, which he calls the "turn to the image".

According to Mitchell, this last turn for the time being occurred during the period for which the term "postmodernism" was adopted. The following paradox is characteristic of the postmodern period, he argues and underlines the change in the general attitude towards images. On the one hand, it is an era of video, cybernetic technologies, electronic reproduction, and the development of new, fantastic forms of visual simulation; on the other, it is a time fraught with fear and anxiety about the power of new images, technologies and electronics in general. Fear that images and advanced technology will eventually destroy their creators and users (Mitchell, W., T., J., 1994).

I believe that the last turn, "turn to the image", has not fundamentally changed the shape of academic education and that it has remained closely linked to the text. The text is still the essential and central basis of higher education and a major tool for enhancing knowledge and gaining intelligence. Students work with texts and their education is based on reading and writing. They have to write essays and term papers to get credit and exams and theses to get diplomas. Reading and working with texts is the most intrinsic core of education. Education that is in crisis.

I believe that this form of education is irreversibly disrupted by the advent of the latest AI technologies and that there is currently a turn that has not yet had its name. A turn that we could call the AI turn. Working with text will never be the same with the advent of ChatGPT and the requirements for writing text must fundamentally change. All of education will be transformed by new AI tools because these tools are changing the very foundation on which higher education is built. The new generative AI tools make it possible to produce texts that are innovative and original and therefore cannot be

considered plagiarised. It is no longer possible to ask students to do what they were asked to do before. The whole world of education must and will be transformed by AI tools.

I believe that this change will not just be about teaching students to acquire the new literacies (data literacy, technology literacy, and human literacy) they will need to survive in the digital age, along with changing their mindsets and ways of thinking about the world. ChatGPT will cause changes that we can only guess at today, but I think that by its nature it will not lead to the development of intelligence, but rather the kind of skills that we associate with intellect. If there is an artificial intelligence that human intelligence cannot overcome, then there is no need to even try. It is possible to focus with the help of the AI on other skills.

5 Conclusion

In conclusion, as under-researched as this consideration may seem if higher education is connected to textuality, and if textuality is now being overcome by AI tools, then these tools will transform and perhaps revolutionize education. What this transformation and possible revolution will look like, no one can say for sure today. But all would certainly agree that this transformation is happening and that it is unprecedented.

All of these considerations and conclusions are very recent and in some ways new and supported by only recent research. There are already a number of publications that focus on the goal of uncovering how universities can benefit from AI and what conditions need to be met to prepare for this powerful technology, but it is still a new topic. AI has a high potential to transform universities in many ways, and universities should therefore be prepared to reap its many benefits while being prepared for the risks.

References

- Biesta, G., (2011). How Useful Should the University Be?: On the Rise of the Global University and the Crisis in Higher Education. *Qui Parle: Critical Humanities and Social Sciences*, 20(1).
- CNN, Magramo, K., Yeung, J., Renton, A., Upright, E., Berlinger, J., Sangal, A., Andone, D., Almasy, S., Powell, T., B., and Hammond, E., (2023). *October 10, 2023 - Israel-Hamas war*. in: <https://edition.cnn.com/middleeast/live-news/israel-hamas-war-gaza-10-10-23/index.html>.
- Future Earth. Our Future on Earth 2020. www.futureearth.org/publications/our-future-on-earth
- Hamdan, A., and spol. (2021). Applications of Artificial Intelligence in Business, Education and Healthcare, *Studies in Computational Intelligence*, 954.
- Heing, B. (2019). *Environmental Catastrophe*, Greenhaven Publishing LLC. E-pub.
- Hofstadter, R. (1963). *Anti-Intellectualism in the American Life*, in: https://www.google.cz/books/edition/Anti_Intellectualism_in_American_Life/GaPHPYQ_x1QC?hl=en&gbpv=1&prints ec=frontcover.
- Koopman, C., (2011). Rorty's Linguistic Turn: Why (More Than) Language Matters to Philosophy, *Contemporary Pragmatism*, 8(1), (June 2011), 61–84.
- Lagadec, P. (2005). Crisis management in the 21st century „unthinkable“ events in „inconceivable“ contexts. 2005. hal-00242962. in: <https://hal.science/hal-00242962/document>.
- Leslie, J. (2023). *The Crisis of Trust in Public Health. Sociopolitical trends influence people's confidence in public health institutions*. In: <https://www.thinkglobalhealth.org/article/crisis-trust-public-health>.
- Mitchell, W., T., J., (1994) „The Pictorial Turn“ in *Picture theory*, The University of Chicago Press, Chicago 1994, 11-34.
- Popenici, S. (2023). *Artificial Intelligence and Learning Futures. Critical Narratives of Technology and Imagination in Higher Education*, New York: Routledge.
- Roback, A. A., Intelligence and Intellect, *The Journal of Philosophy*, 19(12)(Jun. 8, 1922), 325-330.