Conference Paper

Technocratic and Humanistic Trends in Education: New Tunes

Alexander Bodnar, Elvira Bodnar, and Vera Makerova

Ural Federal University named after the first President of Russia B. N. Yeltsin, Yekaterinburg, Russia

Abstract

Introduction. The fundamental difference between humanism and technocracy is the attitude toward a human: For a humanist, s/he is the goal, for a technocrat (of any professional affiliation), s/he is a means. For education, this became especially evident when it was labelled as a service sector. The technocratic projects of school and society in the twentieth century turned out to be unsustainable. Humanistic projects have always remained the examples of 'abstract humanism' in history. Humanistic concepts of education are based on the self-actualization of a person, technocratic ones (the second half of the twentieth century) are based on Skinner's ideas that are still popular among practical people. The reason for their survivability is the simplicity and accessibility as well as the success of information technology that contributed to a new wave of technocracy. Humanistic concepts are not so obvious but they have no alternative. **Materials and methods.** Humanistically oriented teachers, theoretical modelling, surveys, the methods of Cattell, Rosenzweig, and Fidler, the descriptive statistics and discriminant analysis. **Results.** The situation is ambivalent. Humanists never shied away from advanced technologies and rational justification of their actions, while technocrats still do not always mask the anti-human nature of their position. Nevertheless, the problems of falsification and imitation of education noted by researchers as well as the charm of modern technologies are significant, and this veil hides (for many) the anti-humanity of technocracy. Our approach allows us to remain a humanist under the circumstances. **Conclusion.** Technology has always been and remains only a tool in the hands of people. The main thing is what kind of the world image exists in their minds, what they are ready to do to achieve their goals. Scientists offer a new humanistic project with the use of the twenty-first-century technologies. This work is a fragment of such a project. The authors would like to see the real action on turning education into a true priority area on the part of the country's leadership.

Keywords: humanism, technocracy, modern education, information technology

Corresponding Author:
Alexander Bodnar
kko01127788@gmail.com

Received: 25 July 2018
Accepted: 9 August 2018
Published: 1 November 2018

Publishing services provided by Knowledge E

Selection and Peer-review under the responsibility of the Fifth International Luria Memorial Congress Conference Committee.

1. Introduction

The relevance of the research problem. The time, in which we live, can be safely called the era of the victorious technocratism. However, the technocratically organized society brings people not only the benefits of high technology but also challenges that humanity is gradually aware of and acknowledges that it does not know how to respond to them. The essence of the challenge lies in the fact that mankind has been excessively carried away by the power of technology, as a result of which, according to J. Ellul, the means turn into a goal, the behavior, interests, and inclinations of people become standardized and are transformed into an object of spiritless manipulation. The technological determinism must be overcome, and it is necessary to start from the ideas of humanism in choosing a path of overcoming [3, 16]. Humanism and technocracy have always opposed each other; and technocracy has always won in the confrontation. Today, the question is whether technocracy will finally win, and our mankind will finally lose to itself by having turned into a sort of community in which Pelevin's broiler cockerels, Zatvornik and Shestipaly lived [11]. Or it will find the strength to carry out a humanistic project. An educational sphere is at the forefront of this confrontation as it is known that the world is ruled by those in whose hands the school is.

So, the problem lies in the fact that the technocratic projects designed to shape the school and society in the twentieth century failed while humanistic projects have always remained the examples of 'abstract humanism' in history. It is necessary to look for ways out of the impasse. Without claiming a comprehensive solution to such a global problem, we propose a way. The purpose of the research is as follows: (1) to introduce the notion that there is a modern humanistically oriented teacher and (2) to design tools for the search and selection of such teachers. It seems that such work can become an essential fragment of the modern humanistic project which is being actively developed in various countries including Russia [5, 6].

Technocracy became a seriously discussed topic in the era of the second industrial revolution when a fairly large number of scientific and technical specialists were educated. The technocratic idea was shaped by the middle of the twentieth century [4]. The third industrial revolution is ideologically shaped by the concept of a post-industrial society [15]. It is important to note that one of its main ideologists, E. Toffler, in his books warned of new challenges, social conflicts and global problems that humanity will encounter at the turn of the twentieth and twenty-first centuries. Today, the challenges have become quite obvious, they fit into the fourth industrial revolution

that has begun, the symbols and content of which are informatization, digitalization, and robotization.

The benefits that this revolution brings to society are obvious and highly attractive. However, all futurists agree that the day is not far off when robots will make abundant at least 50% of the human workforce engaged in various industries today. Therefore, many professions will become extinct [1, 14].

The key points in our context are: (1) what will be done by people who do not have and are not expected to have work in a traditional sense; (2) what can be the new meanings of people's employment in the (near) future; (3) who provides answers to these questions today. Regarding the third question, it should be noted that whoever these people are by, for instance, education, profession, political views, they all are divided into two categories: either humanists or technocrats.

The fundamental difference between technocracy and humanism is the attitude toward man, for a humanist, man is the goal, for a technocrat s/he is a means. Since the days of the aforementioned books by Toffler and the more so by Galbraith, the philosophical context of the views on engineering and technologies has drastically expanded. This has led to a differentiation of opinions on their role as a social development determinant. Anti-technicist concepts appeared. They highlight the negative consequences of the fascination of people with the power of technology, as a result of which the world begins to be ruled by technological determinism. The book about the creativity of Le Corbusier substantiates the conclusion about the technocratic principles of the architect's worldview, which makes the architectural space it creates hostile to man [10]. In another work, the same author writes, 'The solution to the problem of 'limiting' the harm caused by technocracy is the development of the humanitarian component of primary, secondary, and higher education, especially the natural and technical education... Satisfactory results can be achieved only with the inclusion of humanitarian courses throughout the training period.... Only outlook can be ecological, and it is formed over a number of years and cannot be limited to passing a test or exam in the corresponding discipline. A technocrat clutching at one obvious decision (in this case, the inclusion of individual disciplines in the educational process) refuses to go further because as s/he sees the person (student) as an information repository' [9].

The essence of humanism does not change over time, however, various philosophical trends related to humanism highlight the key points differently, which generates the 'humanisms' of different metaphysical colors. The humanistic paradigm has various philosophical justification, and this contributes to both its enrichment and overcoming the shortcomings of the historically and morally outdated forms of humanism. [7, 8].

With regard to education, today there is an urgent need to reinterpret the concept of humanism in the minds of most people. By true humanism, we should understand only that what really serves the development of man. The development is associated with the effort, stress and needs to force oneself. One should not confuse the actions of the teacher, who motivates a student to force and demands from him/her some effort, with violence over him/her. If a teacher, who declares himself/herself a humanist, cares only about 'not touching', then his/her humanism is false, a disguise of avoidance of responsibility [6].

The ideology that prevailed until the end of the 1980s in the Soviet Union led to the idea that in the minds of teachers, parents, and students, the ideas of humanism were considered a manifestation of bourgeois morality. Today, the situation has changed. Today, all, and above all, education officials declare adherence to the humanistic paradigm. But most teachers and certainly officials continue to adhere to technocratic positions. This became especially evident when the education sector was declared a service sector, in which educators sell 'educational services' to students, and officials act as intermediaries between them by raising their interest from transactions. The more they earn, the more confidently they declare themselves a pedagogical elite.

In the early 1990s we carried out a study on the teacher's pedagogical potential [2]. The work was very relevant because at that time in our country there were revolutionary changes concerning the education sector. The law No 1 of the new Russian government was the law on education, where for the first time at the state level the humanistic character of education was recorded as a principle of state policy. In that work, we argued, in particular, that (1) an essential moment determining the pedagogical potential of the teacher is the humanistic orientation of his/her personality, and (2) the pedagogical elite is the bearer of the pedagogical potential.

There is a strange evolution about the concept of 'elite': it starts to be attributed not so much to the bearers of higher models of professionalism as to any 'effective managers'. In the context of authoritarianism, professional elites experience the destructive influence from the nomenclature and therefore exist mainly in a latent form. This fully applies to the professional and pedagogical elite. A quarter of a century ago, we recorded the need for the transition of the educational elite from the latent state to the actual one but there has been no change for the better so far.

The strive for personal self-actualization is at the heart of humanistic concepts. The Skinner's ideas provided the methodological basis for registration of the technocratic concepts of education in the second half of the twentieth century. Although they have

lost popularity in academic circles and are sharply criticized, the behavioral norms and the 'reinforcement' technique formulated by behaviorism are widely used among practitioners.

The reason for their survivability is their obviousness, simplicity, and accessibility. However, first of all, humanistic concepts are not so obvious; second, in order for humanistic techniques to 'act', the concepts need not only to be understood but to be made a way of life, which is not easy.

Another reason for the popularity of the technocratic worldview is the success of information technology which contributed to a new wave of technocracy in education, especially higher education. Thanks to the technologies, we are witnessing an expansion of the social base of technocracy. The public is attracted by the effects of technology, and intellectuals are attracted by its rationality and logic in decisions. On the other hand, the fact is undeniable, rationalism has been the most traditional philosophical ally of humanism [5].

Therefore, there is an area of overlapping of humanism and technocracy. However, the fundamental consequences of the blindness of technology and telematics are the thingification of human relations and the imitation of education to the production of services. The charm of modern technology is great but technology has always been a tool in the hands of people. Who are these people, what kind of image of the world exists in their minds, what goals do they set for themselves and what are they ready for in order to achieve them? The answer to these questions, and not the questions about what kind of education a person has received and how good s/he is at digital technologies, that is the answer to the question of who is before us, a humanist or a technocrat.

The term 'technocracy' is polysemantic, we use it in the widest possible sense, according to which holders of arts and humanities degrees can be deep technocrats, while the creator of the hydrogen bomb, the physicist A.D. Sakharov is a true humanist. It is all about the goals and means that are mobilized to achieve them.

Humanism and technocracy are the styles of life and thinking. Humanists must be raised and educated. Due to frequent use, the assertion that the main social institute of the state is the school has become commonplace but has not lost its truth. Of course, political leaders of the country know this truth, however, history shows that all of them have lacked the political will to make education really a priority area, not only on paper. There are quite are enough examples of this in the history of pedagogy. A contrary kind of example, at least in Russia, seems to be the only one. This is a university charter adopted in 1863 under Alexander II and used for exactly 20 years [13].

We consider it possible and necessary to cite in this study our aforementioned work for two reasons. Firstly, if a lot has been written about the pedagogical potential, then no work has been carried out to follow up on and develop our topic since then. Secondly, the relevance of the problem formulated as follows, 'There is a social and general cultural need for the pedagogical elite, at the same time in pedagogy there are no adequate means to detect and form it' has become even more acute. It is impossible to use our previous results directly since society has changed radically in a quarter of a century. But the methodology is not outdated. Today, it is advisable to replicate the research in the context of a new mentality and to calibrate a tool for diagnosing the pedagogical potential of a new 'human material'.

2. Methodology

The methodology for the comparative analysis of scientific literature is applied. The 'Pedagogical Potential' concept was built by using the theoretical modeling method. The empirical base of the study was represented by the teachers of various schools in Ekaterinburg. To create a sample of teachers belonging to the pedagogical elite, the expert survey method was used. Empirical data are obtained by using the methods of Cattell, Rosenzweig, and Fiedler. Statistical processing was carried out by using variational statistics methods and discriminant analysis from the SPSS package.

3. Results

In the introduction, we outlined the results of a comparative analysis of the literature on the problem of the coexistence of humanism and technocracy in society and education at the beginning of the twenty-first century, showed the initial contradiction and proposed an option that would facilitate its solution. Under the heading 'Results' we present the program of the planned comparative study with the exact repetition of all previously used procedures.

The initial study problem, which was the contradiction between the objective demand for the pedagogical elite and the lack of technological means of detecting it, was solved: we have a tool for measuring the pedagogical potential. Therefore, the problem of the planned research is quite technical but very complicated. The main difficulty is in forming a sample of elite teachers. We used the first study and will continue to use the following criteria: (1) the humanistic orientation of the candidate's

personality, (2) the possession of pedagogical techniques and technology. The procedure for assessing the teacher's compliance with the selected criteria requires special thoroughness, it cannot be formalized. The only acceptable assessment method is expert. With the help of experts, a group of teachers is selected, each of them as well as several of their colleagues, pupils, parents of pupils being interviewed. The aim of the interview is to confirm or deny the opinion of experts, after which the final list is set up.

Then there is the stage of identifying professionally important qualities (PIQ). One of the problems of the first research was to decide in which areas to look for PIQ. It was decided that it was necessary and sufficient to examine the three areas most important for the pedagogical activities. These are: (1) the structure of the personality; (2) the area associated with a person's ability to resist frustration; (3) the personality evaluation style. To test the areas, the Cattell's personality test, Rosenzweig's frustration test and Fiedler's method, which measures the characteristics of the evaluation activities, were used. Similar measurements are made with the comparison group (we called it 'normal'), which includes teachers who are not suitable for the elite group. It does not represent any difficulties to generate such a group. After carrying out all measurements, we obtain the initial data matrix, where each subject is described by a set of measured variables that make up the content of test procedures.

At the next stage, it is necessary to compare groups across all variables in order to select those of them by which the groups are not randomly distinguished. That is, at this step we distinguish differentiating variables, on the basis of which by means of discriminant analysis we can refer a person with an unknown pedagogical potential, either to the elite group or a normal one.

4. Discussion

We described the algorithm for creating a methodology for measuring the teacher's pedagogical potential. Obviously, this algorithm is suitable for assessing the pedagogical potential of not only a school teacher but also a university teacher and a kindergarten teacher. It is also obvious that every time before using the algorithm, it is necessary to conduct meaningful work on the construction and filling the theoretical construct. If this is, as in our case, the pedagogical potential, then that is the 'hierarchical two-level biosocial formation that has some capabilities and abilities, experience and personal qualities, pedagogical motivations and their quintessence – the professional orientation of an individual as elements' [2, p. 18]. It is of fundamental

importance that this orientation should have a humanistic character. Otherwise, the teacher's professional potential can only be relatively called the pedagogical potential, because what is important for a technocrat from pedagogy, it is the mechanistic craft, mind games aimed at achieving a certain standard rather than developing a student's personality.

This algorithm is suitable for other purposes; any professional potential can be analyzed with the help of the proposed design, and a corresponding measurable construct is created.

Speaking about the pedagogical potential, we realize that its availability does not guarantee the pedagogical success because there are many factors that can hinder its realization.

The mathematical and statistical data processing methods, which we used in our first study, are far from all that mathematical statistics can provide for drawing out information from data. In particular, with the help of factor analysis, it is possible to create additional tools for measuring the pedagogical potential.

5. Conclusions

We started the article with the statement of a global problem of technocratic expansion, the negative impact of which threatens humanity with degradation. The risk of such a development of events is difficult to exaggerate, so it is real. We talked about forecasts, according to which in 30 years half of the population of the developed countries will become unemployed. What will these people do, lead a vegetate life like contemporary American Indians in the reservations built for them? If not, then social tension, riots, and revolutions. How will the authorities behave, will they begin to discard uncomfortable and simply superfluous people? There are also such forecasts. An alternative is a humanism, although many consider the realization of the humanistic idea as a utopia. But modern humanism is evolving, it is called 'changing and multidimensional', its leaders and ideologists no longer call for setting global goals, for the Great Dream. Their appeals resemble the appeals and actions of the Russian Narodniks – supporters of the theory of smaller-scale actions from the nineteenth century. Today, there are millions of supporters of the idea of humanism in the world, and if they 'do what they should' under the covenant of Marcus Aurelius, the effect may turn out to be unexpected.

As for the research and practice of working with the pedagogical potential, against the background of problems in the field of education, this also seems to be a small-scale matter. But given the lack of alternatives for the humanistic paradigm, this case does not seem small-scale any longer.

References

[1] Skolkovo. (2014). The Atlas of New Professions (Atlas novy'x professij.) M.: Agenstvo strategicheskix iniciativ. Retrieved from http://www.skolkovo.ru/public/media/documents/research/sedec/SKOLKOVO_SEDeC_Atlas.pdf *(in Russian)*

[2] Bodnar, A. M. (1993). *Pedagogical potential of a teacher. Personality and humanistic perspective [Pedagogicheskij potencial uchitelya. Lichnostno-gumanisticheskij aspekt]*. Dis. kand. ped. nauk. Ekaterinburg *(in Russian)*.

[3] Voronin, V. (2016). The present conditions and perspectives of the humanitarization of modern engineering education, in *INTED2017 11th International Technology, Education and Development Conference*, pp. 6323–6329.

[4] Ge'lbrejt, Dzh. K. Novoe industrial'noe obshhestvo = The New Industrial State (1967). M.: AST, 2004.

[5] Kudishina, A. A. (2007). Modern humanism as a phenomenon of culture: Philosophic and cultural analysis (Sovremenny'j gumanizm kak fenomen kul'tury': filosofsko-kul'turologicheskij analiz.) aftoref. dis. d. filos. n. M. *(in Russian)*.

[6] Kuvakin, V. A. *On old and new humanism [O starom i novom gumanizme]*. Retrieved from http://rideo.tv/video/40520/ *(in Russian)*

[7] Kuvakin, V. A. *Multidimension of Humanism [Mnogomernost' gumanizma].* Retrieved from http://library.asue.am/open/art2240.pdf *(in Russian)*

[8] Kurtz, P. (2000). *Courage to be: Humanism Virtues [Muzhestvo stat': Dobrodeteli gumanizma]*. M. RGO *(in Russian)*

[9] Mironov, A. V. (2009). *Technocraticity is the Vector of Civilization Development [Texnokratizm – vektor razvitiya globalizacii]*. M.: MAKS Press *(in Russian)*.

[10] Mironov, A. V. (2012*). The Philosophy of Architecture: Works of Le Corbusier [Filosofiya arxitektury': Tvorchestvo Le Korbyuz'e]*, s. 65–101. MAKS-Press M *(in Russian)*.

[11] Pelevin, V. O. (2000). Zatvornik i Shestipaly'j, S. 66–110. Vagrius. Moskva *(in Russian)*.

[12] Permiakova, M., Berzin, B., Ershova, I., et al. (2017). The socio-psychological well-being of teachers 25 years later, in *INTED2017 11th International Technology, Education and Development Conference*, pp. 1813–1820.

[13] Puzdrach, Yu. V. (2015). *The History of Russian Constructivism 19th–20th Century. [Istoriya rossijskogo konstitucionalizma IX-XX vekov].* SPb, Yuridicheskij centr Press.

[14] Markov, S. (March 24, 2017). *On Artificial Intelligence [Ob iskusstvennom intellekte]*. Retrieved from https://www.youtube.com/watch?v=kuRQRoVlo3M *(in Russian)*

[15] Toffler, E'. (2010). *Tret'ya volna = The Third Wave (1980)*. M.: AST *(in Russian)*.

[16] E'llyul', Zh. (1995). Technological bluff (Texnologicheskij blef), in Zh. E'llyul' (ed.) *E'to chelovek: antologiya filosofskix rabot*, s. 265–294, sost. P. S. Gurevich. Moskva: Vy'sshaya shkola *(in Russian)*.