

The Semantic Shift in Educational Technologies in the Digital Age

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Abstract—The article considers modern transformations of education in the digital age. The main purpose of the article is to provide a critical analysis of the approach based on the formal dominance of competencies. The authors offer a historical perspective and reveal the advantages and disadvantages of the *paideia* model, which combines education, training and culture. Attention is given to the priorities of personal knowledge. Modern transformations of education are analyzed with reliance on the principles of exteriorization and internalization, the principle of development and the activity approach. The focus of attention is shifted to the semantic aspect of transformations in educational practices. With due regard to the collaboration between social and humanitarian disciplines, the article reveals certain drawbacks of the contemporary education system in the digital age. It is also emphasized that in the light of the growing dependence of modern society on the Internet, importance should be assigned to information ethics. As a result, the author comes to a conclusion that the process of combining basic "digital skills" with creative search and critical thinking should be guided by the meanings and principles of humanism.

Keywords—*competence; education; personal knowledge; paidei; meaning; digital age*

I. INTRODUCTION

The modern digital age has a direct impact on the educational process and triggers changes in its entire structure. Nowadays, it is not enough to have a standard knowledge set, known as "dead knowledge". What is important is flexible thinking, the ability to make extensive use of digital technologies, to develop internet skills and to keep an open mind. The educational process serves as a road map to bring modern science and the individual together, to get him ready for the existing forms of social life and to develop mature personality [1]. Since the information openness of the world is recognized as the main priority in the modern era of rapid changes, a new term "digital skills" has appeared. The educational system cannot resist the influence of modern times and must be ready for those challenges that manifest themselves in the digital age.

II. THE DOMINANCE OF FORMAL COMPETENCIES: CRITICAL ANALYSIS

The prior goal of creating the good citizens was set by Plato in his famous work "The Republic". Plato realized that the nature of society depends on its citizens' education. Therefore, good education is needed, and it requires extensive knowledge of moral theory, metaphysics, epistemology, psychology, aesthetics as well as mathematics and natural sciences. However, now, the focus of modern educational practices is shifted to competencies that are aimed at developing practical knowledge, abilities and skills. Professionals have different attitudes toward this situation. Some scholars note that the concept of "competence" came as a shock in the professional and teaching creative environment. It originates from the Latin "compete" - "I achieve, I correspond" and originally meant the ability of a specialist to solve a certain kind of professional tasks, to meet the requirements for the post [2]. Thus, the notion of "competence" initially indicated the need to exclusively match the specific demands of vocational education.

At the same time, the competence-based approach has become so widespread that it has created acute problems for the educational process in general. The knowledge- and experience-transfer system has undergone dramatic changes under the pressure of the competence-based approach. Competences have arrogated to themselves the right to ruthlessly dominate over all other educational practices, value orientations and real-life demands. The formalistic set of competences replaced the idea of the comprehensive development of human personality, which had a historical authority. Disciplinary knowledge remained the basic component of the modern educational paradigm, but it is now accompanied by competences: to know, to be able, and to master. In other words, the formal competence-based approach simplified the creative content of the learning process, making it primitive. It was mistakenly believed that this approach would involve the learner's personality in the rapidly changing world and innovative practices.

In fact, the cognitive process demonstrates the opposite effect. The first thing that catches the eye is the formalization of modern education, which extends to all its components including goals, means, results, principles, forms and methods.

Secondly, active implementation of the competence-based approach clearly reveals the process of implantation of already existing Western models. However, in Western countries, the set of competences changed dynamically. Initially applied to the professional sphere, the set of competences were transformed into a more flexible and universal system. Cognitive competences, which include a variety of knowledge, came to the forefront of education process. Then, functional competencies were identified that indicated the necessary skills and technologies. Individual or behavioral competencies became particularly important. Ethical competencies were viewed as the basic ones, which emphasized the need for ethical code in both professional communication and decision-making. In addition, the importance of metacompetences was justified, which was because they were associated with stress resistance, the ability to respond to constructive criticism, draw correct conclusions and overcome challenges. At present, the competences of critical thinking, creative approach and effective team-work are seen as the most promising ones.

Thirdly, modern scholars emphasize that the educational process must consider the achievements of the entire complex of cognitive sciences, neurophysiological, mental, emotional and volitional characteristics of individuals, rely on their motivation, personal intentions and interests. Now, the focus of attention is shifted from residual knowledge, which is tested, verified and easily found on the Internet, to the personal knowledge. Individual educational paths, that reflect a person's actual abilities, are of particular interest. However, a new problem arises here.

Personal knowledge reveals a person's unique abilities and skills, indicates the true meaning of his achievements, and therefore, cannot be formalized. In this regard, we should recall a well-known aphorism by M. Polanyi: "We can know more than we can tell" [3]. Personal knowledge cannot be fully expressed in words, through clear language, so it was no coincidence that M. Polanyi called it implicit. Reflecting one's real skills and abilities, personal knowledge cannot be articulated and transmitted to others through words and concepts. Imitation, examples, and repetition are import in transmitting personal knowledge. The basic guideline is the principle: "Do as I do!" We can say that personal knowledge is an individual form of human existence. It is an exclusive individual characteristic of a particular person's active abilities. Moreover, personal knowledge cannot be impersonal because they are attached to a specific individual.

III. HISTORICAL COMPARISON OF PLATO'S DOCTRINE AND PAIDEIA MODEL

The semantic analysis of the advantages and disadvantages of the modern educational process presupposes referring to historical analogies and considering those models that have already acquired historical authority and would enable us to make definite conclusions. What catches your eye? Aimed at bringing out the "breed of the good citizens", Plato's doctrine views an individual as a kind of "building material". The same attitude is typical of the modern educational approach based on a set of competences. In Plato's education system, which was developed in VI and

VII books of the "Republic", babies with the best inclinations should be taught gymnastics, military art, geometry, arithmetic, music, dialectics in addition to common subjects. They were seen as predetermined to enter the social stratum of governors and guardians. They were subject to a strict order of life: community of property (prohibition of ownership), community of wives and children, prohibition of sexual activity outside strict rules [4]. We should also note that the idea of selecting "human material" has been known since the times of Sparta. At the same time, according to the humanistic approach, a person is viewed as the highest achievement of the world-historical process. Man is the creator of culture, and his role cannot be reduced to "building material". Striving for self-realization, a person is responsible for both his own actions and events taking place in the world.

Secondly, looking for positive examples of historically authoritative models of education, we should take a fresh look at the unique ancient "paideia" model, which combines education, training and culture. This made it possible to distinguish between a personality and a barbarian. In other words, a human being was evaluated in accordance with the criteria of education, training and culture. "Paideia" as a model of education shows that virtues can be developed, it depends on knowledge and acquired values. It should be emphasized that "paideia" is not reduced to intellectual exercises, or a mere accumulation of knowledge. On the contrary, the development of the ability to judge, aesthetic sense and moral behavior are not separated from each other in this model. This ancient tradition shows the significance of the integrity of education, training and culture. It is also important to emphasize that Plato viewed paideia as the meaning of the life of soul. In "Fedon", he suggests that the only thing that the soul takes with itself to the next world is "paideia." Thus, in historical perspective, the ancient "paideia" is seen as a unique model aimed at forming the whole set of the best human qualities. The advantage of this model consists in the fact that it integrates intellectual abilities and physical perfection as well as honor and personal virtues. Harmonious development of personality is claimed to be the main goal and priority. In our opinion, this model can be also seen as criterion that establishes the social status of an individual in the context of modern culture.

However, professor A. Olson, one of the modern researchers of the "Paideia Project", comes to the following conclusions. According to his opinion, demographic and cultural differences between the small-scale city-states of Plato times and contemporary large-scale national states are so great that it would be wrong to speak of the universal applicability of the paideia model. This approach would come as a shock to Plato and his contemporaries as extremely absurd. Plato was convinced that large-scale, multicultural societies are incompatible with the idea of an enlightened and integral civilization but are perfectly compatible with barbarism and philistinism"[5]. The global large-scale level and multiculturalism are considered as aggressive environments, which undermine the idea of harmonious person development that occupies the main place in the "paideia" model.

We can't fail to agree with these conclusions. However, human intellect has a system of categories that reflect the specificity of the universal and the particular. If we believe unification to be the leading trend of global processes, the Paideia model can be used at the particular level. For example, we can separately consider the conditions at a particular university with its own traditions, a certain educational institution, a city, a region, etc. Implementing this model is directly related to the intellectual initiative aimed at cultivating a harmoniously developed personality and the embodiment of genuinely human values and ideals.

IV. METHODOLOGICAL PRINCIPLES AND METHODS OF RESEARCH

The study of the problem relies on several methodological principles, approaches and methods, including the principles of exteriorization and internalization. The real educational process has always considered the interrelation of the principles of exteriorization and internalization. In other words, transformations of educational process are determined by both external circumstances and internal personal attitudes. The most important methodological principle is the dialectical principle of development, which reveals contradictions in the process of achieving a new quality. The activity approach, which indicates the significance of human activity, is the fundamental basis for understanding the essence of man.

When analyzing transformations of the educational process and their impact on the personality, the special role belongs to personality-oriented cognitive practices. They enable researchers to identify individual educational needs. The principle of integrity is also one of the basic methodological tools. The principle of sociocultural determination with its main thesis that "being determines consciousness" is still relevant. As a rule, the educational process must be based on a system of universal human values. The system of universal values is the main criterion which determines the semantic shifts in educational technologies.

Collaboration of social and humanitarian disciplines is seen as an innovative methodological strategy aimed at achieving holistic knowledge. If we refer to the socio-humanitarian potential of interdisciplinary research, then the leading role belongs to philosophy, sociology, psychology, and linguistics coupled with education paradigm and cognitive studies. The current methodological focus is a critical analysis of the educational process in the digital age.

V. DIGITAL AGE AND NEW PRIORITIES

The mediatized world triggers significant changes in all spheres of our contemporary existence. It generates the so-called "Mediatizing" Human [6]. The most noticeable changes are observed in the educational process. First, we should pay attention to the fact that there is a disproportion, when trainees' digital skills exceed trainers' digital competence, i.e. competence of the old-school teachers. The structure of educational process used to involve two poles: a teacher as a source of information, on the one hand, and a

student to whom this information was transmitted, on the other. Nowadays, this balance has changed. The Internet, computer technology and networking open new opportunities in the distribution of activity. A student's ability to search for and use information can greatly exceed teacher's skills, especially if he represents the "old school".

Secondly, the difference in educators' and learners' adaptive capabilities is very significant. As a rule, a student can get access to information from any computer and get acquainted with the world's Internet resources and sometimes with sensational innovations. A traditional old-school teacher takes a more conservative position and adheres to the "clické" of the established knowledge. Such an innovative term as "digital skills" emphasizes which skills are seen as primary and necessary in the 21st century. "Digital skills", which facilitate independent search for information, should be added to critical and creative thinking. The image of a future specialist without basic digital skills does not reflect the new spirit of our time.

Thirdly, individual behavioral strategies are significantly transformed under the influence of the digital environment and increasing amounts of information. For example, the transition to rapid "screen reading" transforms both the reader's and conceptual culture. Screen reading can only partly transmit information into the focus of consciousness. The information search and skimming dominate over comprehension. Logic, coherence and argumentation are lost.

Fourthly, one should keep in mind the negative effects of the digital age, among which is an obvious desire of an individual to find and use ready-made information resources. Preference is given to visual images. The meaningful immersion in the content is either minimal or absent. Since the style of Internet communication is spontaneous, the language of Internet users is not restricted by any cultural framework [7]. Post-informational epoch brings about modifications to inter-cultural communicative practices. Being intelligent is no longer enough. Being technologically-minded and capable of functioning in the context of a global information civilization seems to be a fundamental requirement [8]. Thus, digital worlds offer an accessible space for education.

The analysis of the digital era shows how ambivalent it is and what paradoxes it generates. On the one hand, a person lives under intense information overload that are harmful to health. On the other hand, digital environment is the real basis for future development. On the one hand, the need for the individual as a source of physical and muscular energy is largely reduced, on the other hand, man retains his natural activity. Its physical type presupposes natural development of the human body, which is impossible in the conditions of "information imprisonment". But while a person strives for self-fulfillment, digital technologies imply a reduction in jobs. Moreover, network interactions aggressively replace real-life communication, offering a new all-consuming type of being. "Digital solipsism" is a new phenomenon that is becoming widespread. The motivation for success is changing, now it is associated with the number of likes

received in social networks. A modern man aims at leaving his "network footprint", regardless of its meaning. The transition to the network community is accompanied by numerous motivational and cognitive deformations.

At the same time, modern scholars have set a bold task, suggesting the search for modern educational technologies "with a human face". Humanitarian-anthropological technologies of education are of particular interest [9]. They need to preserve humanistic ideals of harmonious development of personality and the system of genuinely human values.

VI. CONCLUSION

The study of this problem leads to the following conclusions. The competence-based approach, originally aimed at ensuring compliance with the standards of professional activities, has now become universal. However, a formal set of competencies cannot be a semantic basis of the educational process. Therefore, there is a need for significant change in the declared set of competencies. The focus of attention should be shifted to cognitive, functional, personal, ethical and metacompetences. In a multidimensional system of competencies, priority should be given to the competences of critical thinking, creative approach and collective decision.

The analysis of historical retrospective shows inadmissibility of treating a person as "building material", as well as the potential of "paideia" cultural model, which combines education, training and culture. In our opinion, harmonious personal development under modern conditions involves collaboration of social and humanitarian disciplines, which shape a conscious attitude to reality.

The digital era reveals the difference between the trainee's and the instructor's adaptive capabilities, which shows that "dead knowledge" is being devalued. The ability to read, write and count is now not enough. There is a need to "reassemble" skills for each new situation. The image of a future specialist involves basic digital skills, combined with creative search and critical thinking.

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