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**MODERN METHODOLOGICAL APPROACHES TO THE USE OF
INTERNET RESOURCES IN THE EDUCATIONAL ENVIRONMENT OF
GENERAL SECONDARY EDUCATION INSTITUTIONS**

The article describes the key methodological approaches to the analysis of Internet resources in general secondary education institutions in the classroom and in extracurricular activities for educational, training and developmental purposes. In particular, the focus is on systemic, personal, activity, competence, synergetic, culturological, axiological and informational approaches. The analysis of each of them gave grounds to group the outlined approaches into complexes. They are system-activity, personality-oriented, competence, resource-environment. The article determined that all the analyzed approaches are complementary, but not interchangeable, as they analyze the subject of research from different aspects.

Keywords: *methodological approaches, Internet resources, general secondary education institution (GSEI), higher educational institutions (HEI), education, informatization, computerization, digitalization.*

General background of the problem in its connection with important scientific and practical tasks. The development of today's information society, the processes of computerization and digitalization of all spheres of human life are changing the life of the world as a whole and the average citizen individually, forcing new approaches to its theoretical interpretation and practical ways of rational implementation.

The previously mentioned processes and the educational sphere were not missed. At the same time, the processes of digitalization and the use of information and communication technologies have affected both general secondary education institutions, vocational schools and institutes, universities, and academies. In particular, the issues of informatization in education are fixed in state documents that regulate their implementation in the work of educational institutions of different levels. Among them: *Laws of Ukraine* “On the National Informatization Program”, “On Education”, “On Higher Education”, “On the Concept of the National Informatization Program”, “On Complete General Secondary Education”; *Order of the Ministry of Education and Science of Ukraine* “On organizational measures to prevent the spread of coronavirus COVID-19”; *Resolutions of the Cabinet of Ministers of Ukraine* “On the State National Program “Education” (“Ukraine of the XXI century”), “On approval of the Comprehensive program to provide secondary, vocational and higher education institutions with modern technical means of teaching natural sciences and mathematics and technical disciplines”; *Letters of the Ministry of Education and Science of Ukraine* “On quarantine”, “On the organization of the educational process in general secondary education during quarantine”.

Knowledge of the laws of informatization and computerization of society, especially the educational environment with various types of Internet services, is based on the use of scientific research methods. It is impossible to fully comprehend any social, philosophical, pedagogical phenomenon without a careful methodological analysis.

Methodologically competently interpreted phenomenon bears much more fruit, becomes rationally justified, balanced, qualitatively significant for further research.

The analysis of the up-to-date researches and publications where the beginning of the solution of the problem and the author’s view on the challenging issues are revealed in the article. Problems of introduction and effective application of information and communication technologies in education

are covered in the works of domestic scientists: V. Bezpalko, V. Bykov, B. Hershunskyi, S. Honcharenko, R. Hurevych, M. Zhaldak, V. Izvozchikov, E. Karpova; the intelligence to the use of information and communication technologies in the educational process is shown by V. Andrushchenko, N. Balyk, V. Bykov, I. Bulakh, R. Hurevych, A. Hurzhii, M. Zhaldak, Yu. Zhuk, V. Monakhov, O. Spivakovskiy, M. Uhrynovych and others.

Analysis of the information and educational environment in education has become the subject of research for A. Andreiev, M. Bashmakov, V. Bykov, S. Hryhoriev, R. Hurevych, Yu. Zhukov, I. Zakharova, D. Kachalov, V. Oliinyk, S. Pozdniakov and others; the problem of informatization and digitalization of general secondary education institutions for higher education institutions is presented in the works of V. Bykov, B. Hershunskyi, S. Honcharenko, R. Hurevych, M. Zhaldak etc.; ideas of using Internet resources in distance and blended learning in GSEI and HEI are covered in the works of such scientists as I. Vdovenko, R. Horbatiuk, O. Konokh, N. Makovetska, V. Rak, Yu. Turanov and others.

Speaking about the methodological aspect of the issue of informatization of education, the use of ICT in general secondary education, we can say about the analysis of only some methodological approaches in the pedagogical literature. Thus, the system approach is analyzed by V. Bezpalko, O. Kuzminska, V. Loboda, etc.; environmental one – H. Polyakova, O. Yaroshynska, etc. ; integrated approach – R. Hurevych, M. Kademiia, M. Koziar, etc.; competence one – O. Ovcharuk, N. Bibik, etc.

Assessing the search for theoretical foundations of the analysis of methodological approaches to the use of ICT in education in the works of domestic and foreign scientists, we have concluded that there is no thorough systematic research that would summarize modern methodological approaches to the use of Internet resources in the educational environment of secondary schools.

The formulation of the objectives of the article. The purpose of this article is to analyze the key modern methodological approaches to the use of Internet

resources in the educational environment of general secondary education institutions.

Summary of the basic material. Modern methodology of science identifies a number of approaches to the analysis of phenomena. We propose to consider those that are necessary in the context of our study subject.

The system approach is an aspect of research that involves the analysis of an object as a complex, multifaceted, diverse phenomenon, consisting of elements, the links between which form a relatively unchanged structure and ensure its integrity [8, p. 18]. We agree with the opinion of Olha Vlasenko that application of this approach in pedagogical researches allows to provide stable sequence of process of research. This aspect of the study, on the one hand, is the perception of the pedagogical phenomenon as a holistic pedagogical system, and on the other – to obtain as complete information about the content and state of each of its components, interaction with other elements of the system [9, p. 269]. We consider the use of Internet resources in education as a system in which all components are interconnected and interdependent. Based on the types of systems proposed by Fedir Chmylenko and Larysa Zhuk [1], we consider Internet resources in the educational space multifunctional, open, complex, dynamic, deterministic, teleological (purposeful) and regulated system. The system approach assumes that its relatively independent components are not considered in isolation, but in their relationship. That is, a systematic approach allows us to consider each aspect of the use of Internet resources in education separately (diversity of Internet sources, the principles of their implementation in the educational process, technical aspect, human potential, etc.), as well as their interaction and complementarity.

Speaking of the concept of “system” as such, we must also consider the concept of synergy (total effect, the result of the interaction of several factors), and accordingly *the synergetic approach* (from the Greek. *Sinergeia* – cooperation) is a set of interrelated principles of different systems capable of self-organization. The synergetic approach is considered in modern science as a general scientific methodology of pedagogy.

Synergetic methodology is a set of mutually exclusive procedural factors, the result of joint and spontaneous influence of which is a continuous change of structural and instrumental basis of methodological relations in its dynamic version and is the interaction of various approaches, principles, norms, ideals, procedures, forms, means, techniques, methods and methods depending on the object of study in static manifestation [11, p. 128]. According to the synergetic vision of the universe, most naturally occurring open-type systems cause a constant exchange of energy or information. Thus, we see the main postulates of the synergetic approach as methodological principles for revealing the essence of the process of digitalization of the educational process of GSEI. The synergetic approach includes methods of mathematical modeling of computational parameters, which are also integral in the analysis of the use of Internet resources in the learning process.

In modern pedagogy, human is seen as the highest value of society and the goal of its development. Values such as life, health, love, education, work, peace, beauty, homeland, have always attracted people's attention at different times. Moral, aesthetic, economic, ecological and other values characterize the personality, and their development is the main task of humanistic pedagogy [6, p. 15]. Therefore, we believe that the analysis of Internet resources in the educational process of GSEI should also use *the axiological (value) approach*. We agree with the interpretation of the concept of "value", voiced by Renata Vynnychuk, as a set of real objects and abstract ideas that are of high importance for society or the individual [10, p. 93]. According to this definition, we conclude that the axiological approach allows us to study the phenomenon in terms of identifying its ability to meet human needs, are a priority for her. Thanks to the axiological approach, the study embodies a key model of teaching and education of the XXI century – the interaction of personality-oriented and professional-oriented aspects. The axiological approach allows to consider informatization and computerization of education as a socio-pedagogical phenomenon, which allows to carry out the processes of teaching and education in GSEI, based on its main ideas – universality and fundamentality of humanistic values, ideas of freedom, unity of goals and means.

The key postulates of the personal approach are closely intertwined with the main provisions of *the personal approach*. It is the orientation in the process of research of the object on the purpose and subject. The educational process of today is a huge picture, where the teacher acts with a brush, and the variety of colors of paint - the methods and forms of influence of the teacher. The key element of the picture itself is the student. The use of computer technology in the educational process allows to reveal both students' and teachers' creative sides, to demonstrate their creativity. Separately, this approach is embodied through project work, as well as differentiated multilevel tasks.

The personal approach, in turn, closely intersects with *the activity approach*, due to which the pedagogical literature increasingly uses the concept of the activity-personality approach (activity is embodied by the individual, and the personality, in turn, cannot exist without activity). We agree with Mykola Sadovyi's opinion that this approach is based on the idea of practicality of education in general secondary education, under the motto of forming students' preparation for life in a competitive society [7, p. 306]. Our opinions also agree with the idea of Valentyna Frytsiuk that the vector of the activity approach is aimed at organizing the learning process, which acquires an activity character [3, p. 164]. In other words, it is a consideration of the use of Internet resources in the educational environment, the functioning of computer technology in GSEI as an individual and collective activity, the concept of "learning through activity" proposed by John Dewey. Thus, all subjects of the educational process (by them we mean students, their parents, teaching staff, the directorate of GSEI) master the activities in its full sense.

Undoubtedly, the use of Internet resources in the educational process is a multifunctional phenomenon. One of its important aspects is the generation of cultural consciousness of the recipients, its humanistic position in the light of its integral connection with culture as a system of values, the formation of basic knowledge about the cultural processes of past, present and future. *The culturological approach* in the study is coming to help. It requires the design of an optimal system of pedagogical education that best meets the existing type of culture

and the demands of society. It assumes that culture in education acts as its content component, a source of knowledge about nature, humanity, ways of its activity, emotional-volitional and value attitude of the person to others, work, communication, rest, etc. Also, the culturological approach is the basis of the basic idea of pedagogy – anthropocentrism – the focus on self-worth and biopsychosocial uniqueness of man [4].

We believe that the outlined approaches require a certain combination, separately systemic, synergetic and activity approaches in one group (because activity is a kind of system of actions that leads to a certain result) – ***system-activity approach***, and personal, axiological and culturological ones in a separate complex – ***personality-oriented approach***.

Competence (competence-oriented) approach is becoming more and more widespread in pedagogical science today. Educational goals define important competencies. They are a set of knowledge, skills, abilities, experience that allows individuals to successfully live and function in the constant realities of today, without losing their own “I” - the formation of which should be aimed at modern training of both teacher and student as an applicant. Competence approach is a conceptual guideline of today's informatized education, which allows to form the key, most important, most integrated knowledge of the individual of the XXI century. This is an aspect of research from the side of multifunctionality, supersubjectivity, interdisciplinarity, multicomponentity, focusing on the formation of critical thinking, reflection, defining one's own position, which has been repeatedly stated by researchers of this approach in pedagogy (Oksana Ovcharuk, Olena Pometun).

Speaking of the informatization of the educational space, the computerization of GSEI and the relentless pace of development of technology as such, it would be illogical to ignore ***the information approach***. It determines that information has become the main resource of scientific, technical and socio-economic development, a constructive factor in the process of teaching and education. This approach significantly affects the accelerated development of science, education, technology,

plays a significant role in the educational process, cultural communication between people, as well as in other social fields [5]. In the context of its analysis as an approach to the study of Internet resources in the educational environment of GSEI, we consider it is appropriate to consider the flow of information on the Internet from the point of view of informativeness, scientificity, reliability, objectivity and expediency.

Due to the analysis of information as a resource of knowledge, skills and abilities that manifests itself in a particular environment, the outlined approach can also be called a resource environment.

Conclusions of the research and prospects for further development in this direction. Thus, as a result of scientific research, key modern methodological approaches to the use of Internet resources in the educational environment of general secondary education institutions with an emphasis on the advanced features of each of them are analyzed. We have identified four sets of such approaches - system-activity, personality-oriented, competence, resource environment. Each of the sets of methodological approaches proposed by the authors of the article in the context of the subject of research requires further analysis.

References

1. Chmylenko F. O. Handbook for studying the discipline “Methodology and organization of scientific research” / F. O. Chmylenko, L. P. Zhuk. – D.: RVV DNU, 2014. – 48 p.
2. Competence approach in modern education: world experience and Ukrainian perspectives: Library on educational policy / Under a general edition of O. V.Ovcharuk. – K.: “K.I.C.”, 2004. – 112 p.
3. Frytsiuk V. A. Methodological approaches to studying the problem of professional self-development of the future specialist / V. A. Frytsiuk // Bulletin of Vynnytsia Polytechnic Institute. – 2017. – No. 6. – P. 160-167. [An electronic resource]. Access mode : http://nbuv.gov.ua/UJRN/vvpi_2017_6_26 (date of the address: 01.08.2021). – The name from the screen.

4. Isaiev I. F. Theory and practice of the formation of professional and pedagogical culture of a teacher of higher education / I. F. Isaiev. – M.: Belgorod: MPGU, BGPI, 1993. – P. 68-74.
5. Kostikova I. I. Modern methodological approaches for the professional training of the teacher using information and communication technologies / I. I. Kostikova // Pedagogy, psychology and medical and biological problems of physical education and sports. – 2008. – No. 8. – P. 79-83.
6. Lozova V. I. Theoretical foundations of education and training: Tutorial / V. I. Lozova, H. V. Trotsko. – Kharkiv : OBS, 2002. – 400 p.
7. Sadovyi M. Activity and system approach in the pedagogical heritage of V. O. Sukhomlynskyi / M. Sadovyi // Scientific notes [Kirovohrad Volodymyr Vynnychenko State Pedagogical University]. Ser. : Pedagogical Sciences. – 2013. – Issue 123(2). – P. 304-308. [An electronic resource]. Access mode : http://nbuv.gov.ua/UJRN/Nz_p_2013_123%282%29__79 (date of the address: 08.08.2021). – The name from the screen.
8. Tarakhonych T. I. Methodological approaches and principles of research of legal regulation / T. I. Tarakhonych // Journal of Kyiv University of Law. – 2009. – No. 3. – P. 15-19.
9. Vlasenko O. M. Practical application of the system approach in modeling of research work of students // Professional pedagogical education: systematic research: Monograph / Under an edition of O. A. Dubaseniuk. – Zhytomyr : Publishing House of Zhytomyr I. Franko State University, 2015. – P. 268-278.
10. Vynnychuk R. V. Axiological and culturological approaches as aspects of the methodology of modern training in higher education / R. V. Vynnychuk // Young scientist. No. 2.2 (54.2), February, 2018. – P. 93-96.
11. Yesimov S. Methodology of synergetic approach in the study of information technology in public administration / Serhii Yesimov // Bulletin of the National University “Lviv Polytechnic”. Ser. : Law Sciences: collection of scientific works. – Lviv : Publishing House of Lviv polytechnic, 2017. – No. 876. – P. 124-130.