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HYGIENIC EVALUATION OF INNOVATIVE EDUCATIONAL TECHNOLOGIES

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Abstract

Social demand for the implementation of innovative technologies in educational process actualizes the problem of their evaluation from the point of view of pedagogical safety for the health of students. The aim of the study is the theoretical and methodological argumentation of hygienic evaluation of innovative educational technologies as a relevant pedagogical concept. Hygienic expertise of innovative educational technologies will be effective if the essential characteristic is justified. On the basis of the interdisciplinary approach and the principle of security, the study identifies and discloses the concepts "safe innovative educational technologies", "hygienic evaluation of innovative educational technologies". The article describes the essential characteristic of the concept "hygienic evaluation of innovative educational technologies" in educational institutions from the standpoint of the principle of safety as the main essential characteristic of hygiene, presents the identified parameters, indicators and safety criteria of innovative educational technologies. The results of the study can be implemented in the practice of the administration and teachers of educational institutions.

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Keywords: Hygienic evaluation, innovative educational technologies, interdisciplinary approach, pedagogical safety.

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1. Introduction

The base of the research is the methodology of an interdisciplinary approach (Bozhkov & Ignatova, 2017; Lai et al., 2015; Novikova, 2009) which is characterized by the establishment of structural and logical connections between different cycles of disciplines and the formation of a holistic view of processes and phenomena, while the boundaries between disciplines become more flexible and mobile. Revealing the essence of understanding an interdisciplinary approach, E.B. Gurevich presents it as a field of integration, synthesis, transfer of ideas, theories, methods, the end result of which is a general theoretical consensus (Gurevich, 2019). These two samples are a harmonious addition, clarifying the meaning and main idea of interdisciplinarity, which is widely represented in science (Bozhkov & Ignatova, 2017; Lai et al., 2015; Lawrence, 2015; Kluppels et al., 2017; McGinley et al., 2012; Tang et al., 2017).

A review of foreign and domestic literature showed the following results. In medical hygiene that studies lessons, the degree of their being tiresome, the favorableness of designing a lesson and curriculum, the use of technical training tools, these and other related issues are widely represented in the works of such researchers as T. P. Usishchev, S. M. Grombakh, V. I. Agarkov, E. K. Glushkova, M. I. Stepanova, M. B. Fedortseva, N. P. Grebnyak, S. A. Shchudro, M. A. Polenova, V. R. Kuchma, M. I. Stepanova, L. M. Teksheva, E. A. Tkachuk, N. V. Efimova, Lai H.-R., Chou W.-L., Sundaravadhanan G., Selvarajan H.G., McPherson (Kuchma et al., 2014, 2016, 2019; Otto & Serido, 2017; Pokrovsky & Polischuk, 2016; Van Leerdam, 2017; Genc, 2014). The obtained data confirm that the load and stress of children and the organization of the educational process are interdependent. Moreover, the analysis showed that the diagnostic procedures used by O. Y. Milushkin, N. A. Skoblin, C. Meilstrup, L. Nielsen, M. Edraki, N. Parvizi, S. Montaseri, S. Pourahmad, are often narrowly targeted, of disciplinary nature, most often from the standpoint of medical hygiene (Kuchma et al., 2014, 2019) without other aspects of safety evaluation of innovative tools used in the educational process (Eggermont, 2017; Genc, 2014; Ivantsova et al., 2018; Kluppels et al., 2017; Lai et al., 2015; Lawrence, 2015; McGinley et al., 2012; Tang et al., 2017; Podlinyayev et al., 2019; Pokrovsky & Polischuk, 2016; Romm, 2017; Shisharina, 2018; Shisharina et al., 2019; Stepanova & Aleksandrova, 2017; Van Leerdam, 2017). These works represent the parameters of the intensity of academic work: intellectual, sensory, emotional stress, the degree of monotonicity of the loads, the mode of studying.

2. Problem Statement

Upbringing and education in digital training accompany the ambiguity of the processes associated with the formation of network culture, network logic, network personality and network society, all these are new forms of development of network educational content for a complex society (A. Asmolov, P. Luksha T. A. Romm, P. Rabinovich and others) (Romm, 2017). Competency “inflation”, network socialization, online identity, the personification of a network, a digital culture social product for interaction and communication without boundaries, all these are the challenges of today's digital education (V.I. Blinov, M.V. Dulinov, E.Y. Yesenina, I.S. Sergeev). On the one hand, innovative pedagogical technologies enhance motivation for education in general, and on the other hand, the intensification of loads causes

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negative changes in the health of students, which is most often seen as the result of the influence of hygienic and physiological factors.

The relevance of the study is in the scientific justification of the hygienic evaluation of innovative educational technologies as a pedagogical concept, a logical presentation of the pedagogical safety understanding level.

3. Research Questions

With regard to the health safety of students, the social request for the implementation of innovative technologies in the educational process actualizes the problem of their evaluation. However, the question of the essence of the hygienic evaluation of innovative pedagogical technologies, determination of the parameters, criteria, content of diagnostic procedures from a pedagogical position remains open.

It is necessary to clarify the conceptual framework of the study for determining the essence of the pedagogical understanding of the innovative educational technology hygienic evaluation. According to Zagvyazinsky and Atakhanov (2005), pedagogical diagnostics allows to record the nature of achievements and shortcomings in the field of education, the degree of opportunities realization, the effectiveness of the approaches and tools applied, the process and methods for determining the degree of development and effectiveness of systems, technologies, techniques, projects. The process of diagnosis acquires the level of pedagogical processes and phenomena development, historical and modern experience in solving similar (or close) problems determination.

4. Purpose of the Study

The purpose of the study is a theoretical and methodological argumentation of the hygienic evaluation of innovative educational technologies in terms of the cognitive meaning of pedagogy. Presumably, a hygienic evaluation will be effective if the essential characteristic of the concept of “hygienic evaluation of innovative educational technologies” in educational organizations is justified from the standpoint of educational safety principle.

The objectives of the study are identification and justification of the concept “hygienic assessment of innovative educational technologies” characteristic regarding the principle of educational safety; the selection, description and characterization of parameters, indicators and safety criteria of innovative educational technologies.

5. Research Methods

We conducted the study in a focus group, aimed at clarifying the significance and importance of solving problems related to student safety in innovative educational technologies, using the following methods of psychological and pedagogical research: conversation and questioning (interviewing and questionnaires) (Zagvyazinskiy & Atakhanov, 2005).

To dentify risk factors and the conditions for the application of innovative educational technologies from the standpoint of educational safety we conducted a pilot study. The study was performed on a sample (N = 55, aged 23 - 60 years): undergraduates (n = 12) would-be teachers, profile “Higher Education” of

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Pedagogical Institute, Irkutsk State University; students of skills development courses on the topic: "Innovative pedagogical technologies in education (for teachers of educational organizations)" (n = 43) (schools, institutions of additional education), Irkutsk.

The authors of this study developed a questionnaire. The main aim of the questionnaire is to identify the safety of the educational work of schoolchildren in the form of questions. It includes three questions:

1. What innovative pedagogical technologies do you use in your work?
2. What factors affect student safety while teacher's using innovative pedagogical technologies?
3. What conditions are necessary to be created by a teacher for students in order to reduce the negative impact of innovative educational technologies?

According to the results of the survey, we evaluated the factors and safety conditions of the applied innovative educational technologies using a qualitative analysis of the study participants' answers, as well as the content of the subsequent discussion.

6. Findings

The answers to the question "What innovative pedagogical technologies do you use in your work?" were: technology of project work; case technology; Internet technology; enriching education technology; teamwork technology; collaborative learning technology; Portfolio technology; health saving technology. Answering to the second question "What factors affect student safety while teacher's using innovative pedagogical technologies?" the participants gave some negative circumstances: noise level, high visual stress, increased emotional stress, and musculoskeletal apparatus stress, stimulation of the nervous system, equipment, lack of teacher's adequate training for the use of innovative technologies, statics, insufficient teaching materials, natural lighting, students age-appropriate information. To the question about what conditions a teacher needs to create for students to reduce the negative impact of innovative pedagogical technologies, the participants highlighted the following: a gradual implementation of innovative technologies into the educational process, using effective methods of communication in teaching students, the acquisition of high-quality equipment and teaching aids, avoidance of static forms of training and education, change of activities (forms, methods, techniques, means), teacher's effective time management in the classroom, the development of training programs for teachers on the safe use of innovative pedagogical technologies in education. A qualitative analysis of the survey results indicates that teachers realize the importance of creating the conditions for safe pedagogical technologies implementation. Safety stands out as the main factor and an indispensable condition for the implementation of a hygienic evaluation of innovative pedagogical technologies in educational institutions.

Safe as a principle of activity involves the creation of conditions in which the impact of external and internal factors does not entail negative effects and meets the needs, knowledge and ideas that exist at this stage. The concept of safe (G. Morgenthau) has the systematic approach basis: any object with considered safety and developed protective equipment can be regarded as a system. In our context, innovative educational technology is a system, a set of interconnected components, parameters identified and justified from the point of view of the state of safe. It is possible if the system is real and potentially in a state of

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stability. The real state of stability we can associate with the preservation of the main qualitative and quantitative parameters in the process of functioning. And the potential state of stability depends on the predictability of external influences in all aspects (quantitative, qualitative, temporary, spatial, situational); from the ability to change the system within itself for the better. Thus, there is something in the system, when exposed from the outside, will force its attributes to change with improved characteristics while maintaining stability: reducing resource costs, strengthening some elements that increase the strength of the system as a whole. Based on this position, we can assume that for the stable operation and implementation of innovative educational technology as a safe system, adaptation resources are necessary. In our study, they can be the parameters of hygienic evaluation of innovative educational technologies.

So, we based on the safety methods when dealing with hygienic evaluation of innovative educational technologies in the context of pedagogy. Method A in the "man-danger" system consists in the spatial or temporal separation of the space in which the person is located. Method B consists in reducing or completely eliminating dangers, harmful and dangerous factors. Method B involves the adaptation of a person to the appropriate environment and his security increase.

Based on the methodology of the interdisciplinary approach and the safety principle, the study attempts to give an understanding of this phenomenon. In this case, the hygienic evaluation of innovative educational technologies can be the process of studying the correlation and interdependence of the actual diagnostic results of various external and internal safety evaluation parameters from a place of well-being and protection of the student vital interests when innovative educational technologies impact (Novikova, 2009). In the research process, the task was to select and justify the parameters of hygienic expertise of innovative pedagogical technologies, where the parameter should be understood as a value that can be quantitatively and qualitatively measured.

The basis for parameters selection of the hygienic evaluation of innovative educational technologies is the essence disclosure of safe innovative educational technologies - beneficial, positive for students and eliminating the negative impact of various internal and external factors. In connection with this statement, it can be assumed that such *parameters may be: physiological, social, personal, psychological*.

Regarding student resources for adaptation in the process of engaging in interaction with innovative educational technology it was possible to carry out the description of the scientific design, the general conceptual framework of parameters for the hygienic evaluation of innovative educational technology in educational institutions.

The reason for the physiological parameter integration in the interdisciplinary structure of the hygienic evaluation of innovative educational technologies was the developed methodology for the medical assessment of the intensity of students' learning activities, presented in the works of I. E. Alexandrova, N. V. Efimova, V. R. Kuchma, E. A. Tkachuk. Monotony, mode of educational activity, sensory and emotional stress. We point out that medical scientists focused on the diagnosis of this parameter according to the factors of the educational process and the educational environment where students are active. It means that they assess the physiological state of a student in the process of education. Offering this parameter in the pedagogical analysis, we draw attention to the fact that the vector of its assessment will not be the physiological state of the student, but the innovative educational technology from the standpoint of its physiological safety for the student.

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This parameter allows us to evaluate the level indicators of the safe, “non-toxic” educational technology effect on the physiological state of the student’s body within the normal range of life processes, their health in the process of internal and external interaction with the innovative educational technology environment. The indicator of the parameter – containment (W. Bion) - is the ability to withstand and live through stress, feelings, impulses, feelings, emotions, energies safely, the ability of a person not to hurt, not to destroy in the process of applying innovative educational technologies. The containment model in the research can be in the form of two main criteria of student adaptation to innovative educational technology:

1) safety - from the position of demobilization of stressful states of the body and emotions (indicator - relaxation);
2) reliability - the production of the hormone "trust" (indicator - positive emotions).

Owing to the developed methodology of social education in the process of socialization of Mudrik (2010), the interdisciplinary structure of the hygienic evaluation of innovative educational technologies includes a social parameter. The parameter describes the humanistic interaction of participants in education (students, teachers, parents), in the process of applying innovative educational technologies. The focus of analysis is the phenomenon of tolerance as an indicator of socialization, manifested in patience towards people, ideas, lifestyles, appropriation of a value attitude and experience of tolerance, the manifestation of this value in active humanistic interaction. It is so-called the social health of all participants in educational relations in the process of implementing innovative pedagogical technologies. Tolerance as a social norm of partnerships is manifested, according to Mudrik (2010), through emotional stability, friendliness, politeness, social responsibility. The results of numerous studies (A.G. Asmolov, S.K. Bondyreva, V.V. Boyko, B.S. Gershunsky, M.T. Gromkova, P.F. Komogorov, A.N. Lutoshkin, L.I. Malenkova, A.V. Mudrik, L.I. Umansky, G.P. Shchedrovitsky and others) showed that tolerance is the main condition for effective interaction between people. Mudrik (2010) proposes to distinguish four main aspects of tolerance: psychological stability; the system of positive attitudes; the set of individual qualities; personal and group values systems.

The most important indicator of this (social) parameter is communicative tolerance. As a resource for student adaptation to innovative educational technology it has the following criteria: 1) such value attitudes as readiness, predisposition of the subject to a certain activity and action with respect to any object. The values attitudes functions are adaptive, protective, expressive, cognitive, coordination: indicator - “personal culture of senses” (G. Frege, M.V. Gureev), the world of human senses, self-expression guarantying modern person success and intellectual investments; 2) the experience of humanistic interaction in the activity with the expression of value attitudes, these are the skills that are formed in the activity: indicator – the cognitive experience of the person, mental structures responsible for the efficient processing of information, including methods of information encoding, cognitive schemes, semantic structures and conceptual structures as a result of the integration of these cognitive experience components (J. Kelly, M. A. Kholodnaya).

We included a personality parameter in the interdisciplinary structure of hygienic evaluation of innovative educational technologies as an adaptation resource based on the theory of personality education developed by L.I. Novikova and N.L. Selivanova (Novikova, 2009). Studying this parameter, personality traits that students demonstrate in the process of implementing one or another innovative educational

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technology are in a focus. The parameter indicators are the learner's personality qualities, traits, personality components, such as autonomy, confidence, creative personality, and sociability. There is a process of "sociocultural identity formation of the student personality" in the process of interaction between the student and innovative educational technology (M.V. Shakurova). The criteria for personality qualities manifestation as a resource for students adaptation to innovative educational technology will be: 1) *individual identity* - a property of a person, as he/she understands his/her belonging to various social, economic, professional and other groups and communities, in other words, identifying with another person; 2) *personality culture* - a set of characteristics, qualities, habits, ways to implement ideas, values, creativity, that allows a person to live in harmony with the universal national culture, to develop both society and the individual identity of a personality; 3) *individual success* is a conscious intention to assert oneself, the ability to do what you can do best, a person's strength manifestation. All these are the components of the new goal-value targets in the space of digital education of the individual. They should be taken into account within evaluating the applied educational technologies as adaptation resources (N. L. Selivanova).

When we consider a psychological parameter in the interdisciplinary space of innovative educational technologies hygienic evaluation we base on the methodology of Vygotskiy (1982) on two interrelated lines of development: biological and socio-psychological. The parameter indicator is the adequacy and reflexivity of innovative educational technology for a student. Such technology should meet the expectations of a student, his/her idea of a successful educational result as a product of their own meaning and activity. The criteria for the manifestation of adequacy and reflexivity as a resource for student adaptation to innovative educational technology will be: 1) correspondence – the degree of adequacy, equal, consistent, correlated with the requirement of the situation in the context of conscience and sense; 2) comprehension - a person's understanding and analysis of his/her inner world: knowledge and emotions, goals and motives, actions and attitudes, as well as understanding and evaluating the attitude of others.

For systematization and ease of perception, the parameters, indicators and criteria for innovative educational technologies hygienic evaluation are presented in the Table1.

Table 01. Pedagogical parameters, indicators and criteria for the hygienic evaluation of innovative educational technologies

Parameter	**Indicator**	**Criterion**
Physiological	Containment	Safety Reliability
Social	Communicative tolerance	Value attitudes The experience of humanistic interaction in activities
Personal	Personality traits	Personality identity Personality culture Individual success
Psychological	Adequacy and reflexivity	Adequacy, comprehension

Consequently, based on these parameters, indicators and criteria for the hygienic evaluation of innovative educational technologies, we can distinguish the levels (markers) of assessment of pedagogical technologies: dangerous (harmful); safe (secure); useful (beneficial).

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Thus, the study of the theoretical justification of the parameters of hygienic evaluation of innovative pedagogical technologies in educational organizations enables to:

- *firstly*, to present the process of hygienic evaluation of innovative educational technologies, in their organic combination from a security position, in an integrated, interdisciplinary context;
- *secondly*, clearly and transparently understand the logic of the process of hygienic evaluation of innovative technologies from a pedagogy position;
- *thirdly*, to select indicators and basic methods for measuring these parameters, taking into account the specifics of the educational organization and student body, and to predict the result.

When evaluating, the combination of the proposed parameters of hygienic evaluation of innovative pedagogical technologies will enable teachers to reduce the level of negative, toxic effects on students from the standpoint of safety.

7. Conclusion

According to the study object, subject, tasks and research hypothesis we formulate the main scientific results: justification and characterization of the concept “hygienic evaluation of innovative educational technologies” in educational organizations from the standpoint of the safety principle. We identified and disclosed the concept, that is in the interdependence of the real diagnostic results of various external and internal safety assessment parameters from the standpoint of well-being and protection of the vital interests of students with innovative educational technologies impact; the parameters of hygienic evaluation of innovative educational technologies in educational organizations: physiological, social, personal, psychological; the significance of these parameters for health assessment and well-being of students in the process of applying innovative pedagogical technologies according to the interpretation of indicators and evaluation criteria.

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References

Bozhkov, O. B., & Ignatova, S. N. (2017). Interdisciplinarity in study of autobiographical data. *Sociological Journal*, *23*(4), 89-103. https://doi.org/10.19181/socjour.2017.23.4.5530

Eggermont, S. (2017). Growing up in a sexualized media culture: effects of media on adolescent`s sexual development. In *Proceedings of the 19th EUSUHM Congress Youth Health Care in Europe* (p. 24). Leuven.

Genc, Z. (2014). Parents’ perceptions about the mobile technology use of preschool aged children. *Procedia - Social and Behavioral Sciences*, *146*, 55–60. https://doi.org/10.1016/j.sbspro.2014.08.086

Gurevich, E. B. (2019). Interdisciplinary integration design of knowledge on issue of socialization. *Siberian Pedagogical Journal*, *3*, 58-70. https://doi.org/10.15293/1813-4718.1903.06

Ivantsova, N., Shilnikova, I., Podlinyaev, O., & Shisharina, N. (2018). Motivation-value component of first year student's subjectivity. *SHS Web of Conference, 50*. https://doi.org/10.1051/shsconf/20185001073

Kluppels, K., Portzky, G., & Hoppenbrouwers, K. (2017). Early detection of adolescent mental health problems through school health care in flanders: a feasibility study with adapted version of the youth health monitor. In *Proceedings of the 19th EUSUHM Congress Youth Health Care in Europe* (p. 46). Leuven.

Kuchma, V. R., Stepanova, M. I., Aleksandrova, I. E., Polenova, M. A., Lashneva, I. P., & Berezina, N. O. (2016). Hygienic assessment of pre-school children using electronic tablets. *Hygiene and Sanitation*, *9*(4), 387-391.

Kuchma, V. R., Tkachuk, E. A., & Efimova, N. V. (2014). *Hygienic assessment of the intensity of students' learning activities. Guidelines*. Irkutsk.

Kuchma, V. R., Tkachuk, E. A., Shisharina, N. V., & Podlinyayev, O. L. (2019). Hygienic assessment of innovative educational technologies in elementary school. *Hygiene and Sanitation*, *98*(3), 288-294.

Lai, H. R., Chou, W. L., & Miao, N. F. (2015). A Comparison of actual and preferred classroom environments as perceived by middle school students. *Journal of School Health*, *85*, 388 – 397. https://doi.org/10.1111/josh.12263

Lawrence, R. J. (2015). Advances in transdisciplinarity: epistemologies, methodologies and processes. *Futures*, *65*(1), 1–9. https://doi.org/10.1016/j.futures.2014.11.007

McGinley, T., Burgess, P., & Berger, J. (2012). Participatory approaches to supporting interdisciplinary research. In *Proceeding of the International Conference "Understanding Interdisciplinarity: Theory and Practice".* Sheffield Hallam University, Sheffield. https://www.coursehero.com/file/36374440/Participatory-approaches-to-supporting-ipdf/

Mudrik, A. V. (2010). *Socialization of person: the study guide*. Moscow.

Novikova, L. I. (2009). *Pedagogy of education: selected pedagogical works*. PER SE.

Otto, A., & Serido, J. (2017). Economic socialization: childhood, adolescence, and early adulthood. *Economic Psychology,* 322–336. https://doi.org/10.1002/9781118926352.ch20

Podlinyayev, O. L., Shisharina, N. V., & Romm, T. A. (2019). Problem of hygienic evaluation of educational technologies in educational school in context of neurodidactics. *The Buryat State University Bulletin*, *1*, 63-70.

Pokrovsky, V. M., & Polischuk, L. V. (2016). Cardiorespiratory synchronism in estimation of regulatory and adaptive organism status. *Journal of Integrative Neuroscience*, *15*(1), 19-35. https://doi.org/10.1142/S0219635216500060

Romm, T. A. (2017). Horizons and boundaries of education. *Domestic and Foreign Pedagogy*, *2*(1), 75-82.

Shisharina, N. V. (2018). Innovations in education as a factor in effective development of educational organization. *Siberian Pedagogical Journal*, *3*, 20-28.

Shisharina, N. V., Romm, T. A., & Podlinyayev, O. L. (2019). Methodology of study of hygienic assessment of innovative educational technologies in educational organizations. *The Science of Person: Humanitarian Researches*, *1*(35),73-80.

Stepanova, M. I., & Aleksandrova, I. E. (2017). The digital environment in educational institutions: how to assure safety for children's health. In *Proceedings of the 19th EUSUHM Congress Youth Health Care in Europe* (p. 192). Leuven. https://doi.org/10.17238/issn1998-5320.2019.35.73

Tang, M., Cheng, Y.J., & Chen, K.H. (2017). A longitudinal study of intellectual cohesion in digital humanities using bibliometric analyses. *Scientometrics*, *113*, 985–1008.

Van Leerdam, F. (2017). Youth health care the move. In *Proceedings of the 19th EUSUHM Congress Youth Health Care in Europe* (p. 26). Leuven.

Vygotskiy, L. S. (1982). *Issues of Theory and History of Psychology*. Moscow.

Zagvyazinskiy, V. I., & Atakhanov, R. (2005). *Methodology and Methods of Psychological and Pedagogical Research: The Study Guide for Students of Pedagogical Universities*. Academy.