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NAS RK is pleased to announce that Bulletin of NAS RK scientific journal has been accepted for indexing in the Emerging Sources Citation Index, a new edition of Web of Science. Content in this index is under consideration by Clarivate Analytics to be accepted in the Science Citation Index Expanded, the Social Sciences Citation Index, and the Arts & Humanities Citation Index. The quality and depth of content Web of Science offers to researchers, authors, publishers, and institutions sets it apart from other research databases. The inclusion of Bulletin of NAS RK in the Emerging Sources Citation Index demonstrates our dedication to providing the most relevant and influential multidiscipline content to our community.

Қазақстан Республикасы Ұлттық ғылым академиясы «ҚР ҰҒА Хабаршысы» ғылыми журналының Web of Science-тің жаңаланған нұсқасы Emerging Sources Citation Index-те индекстелуге қабылданғанын хабарлайды. Бұл индекстелу барысында Clarivate Analytics компаниясы журналды одан әрі the Science Citation Index Expanded, the Social Sciences Citation Index және the Arts & Humanities Citation Index-ке қабылдау мәселесін қарастыруда. Web of Science зерттеушілер, авторлар, баспашылар мен мекемелерге контент тереңдігі мен сапасын ұсынады. ҚР ҰҒА Хабаршысының Emerging Sources Citation Index-ке енуі біздің қоғамдастық үшін ең өзекті және беделді мультидисциплинарлы контентке адалдығымызды білдіреді.

НАН РК сообщает, что научный журнал «Вестник НАН РК» был принят для индексирования в Emerging Sources Citation Index, обновленной версии Web of Science. Содержание в этом индексировании находится в стадии рассмотрения компанией Clarivate Analytics для дальнейшего принятия журнала в the Science Citation Index Expanded, the Social Sciences Citation Index и the Arts & Humanities Citation Index. Web of Science предлагает качество и глубину контента для исследователей, авторов, издателей и учреждений. Включение Вестника НАН РК в Emerging Sources Citation Index демонстрирует нашу приверженность к наиболее актуальному и влиятельному мультидисциплинарному контенту для нашего сообщества.

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L.A. Kondratska¹, L.I. Romanovska², M.B. Natsiuk¹, O.Z. Dovgan¹, T.V. Kravchyna²

¹Ternopil Volodymyr Hnatiuk National Pedagogical University, Ternopil, Ukraine;

²Khmelnitsky National University, Khmelnytsky, Ukraine.

E-mail: luda.kondratska@gmail.com

CURRENT PROJECTS OF EDUCATIONAL DOMAIN: FROM MASK EXPANSION TO LIVE BREATHING

Abstract: The paper presents the results of the study of the anthropological perspectives of the new vocational/professional school didactics. It analyzes the content (regularities, principles, forms, methods and criteria) of an enant postmodern education theory focused on self-centred individualism encouraging the future specialists' reflection on the expediency of a peculiar machine kenosis, namely, transgression into the body of transformer, cyborg, robot-android. As an alternative, the author's model of performative conception of professional training is introduced. The concept implies future specialists' activity above the situation in the moral and meaningful mediation of the organizational principles of complex metasystems, atopic metaxis phenomena in Humanities and Science. The systematic thinking methodology of the proposed research has applied semiotic, phenomenological and hermeneutic approaches, methods of coherent modelling and expert evaluation of the theory of conceptual integration, the connective theory of metaphorical interpretation, the conception of non-linear epistemology, the principles of antinomy, verification, complexity, disjunctive synthesis. The scientific novelty of the paper lies in revealing the strategies of implementing performative higher school didactics and the metanoia technique for their realization in the process of metaphorical cognitivism.

Key words: postmodern methodology of higher school didactics, performative conception of professional education, didactic strategies, metanoia technique, principle of atopic metaxis.

1. Introduction

1.1. Formulation of the problem. We live in the inversion of Orwell's world, at the time of the echo of postmodern non-identification of the so-called anthropological traject [1]. The soul, intellect (νοῦς), mind (rational (λογική θόγος)) and thinking, thought (διάνοια) 'have fallen into unnatural state of despair of ultimate confusion in Plato's cave, not having reached the goal, namely, 'the insight into the limits of Being' [2, p. 143].

One of the primary reasons for this situation is the focus of competence education on human self-actualization as 'homo significans, gnostic mask in a digital world-text' [3, p. 27]. This Foucault-Deleuze deconstructed subject [4; 5], the irresponsible 'machine of desires' [6], willing to 'get free from the slavery' of its existential essence, is directed not by its heart and soul, but a well-promoted credo of postmodern educational philosophy [7].

Concerning this issue, Mykola Berdiaev bitterly stated: 'A person having lost his/her access to the Being began to recognize cognition' [8, p. 119].

However, diacritic ability, sensible discretion (prudentia) is a function of apperception of moral consciousness, and, therefore, it is considered to be the first human virtue, the main soul activity. Thus, the purpose of the paper is to identify and substantiate the considerable differences between post- and metamodern concepts of educational activities of person as anthropological factors.

1.2. Analysis of recent research and publications. Post-non-classical didactics of higher education considers studies to be a complex non-linear, open and self-developmental process, the determining factor of which is the interaction between a student and an educationally professional task. Consequently, the teachers' functions, the meaning of leading didactic principles, forms, methods, techniques have undergone changes. The organization of digital training, especially in a variety of forms (blogs, online encyclopedias, online discussion clubs, online games and simulators, online courses within management systems (Learning management systems, LMS), massive open on-line courses (MOOCs), tablet and smartphone applications and many others) is considered to be a factor that can significantly increase the novelty effect and the corresponding motivation of cognition and amazement, content

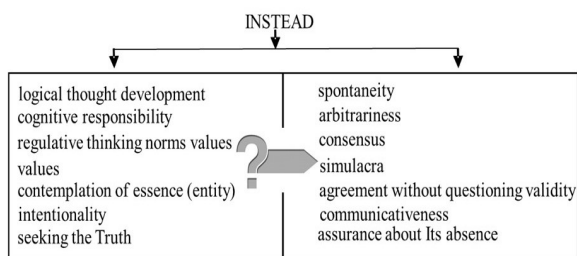


Fig. 1. Credo of postmodern educational philosophy

comprehension and understanding. However, it does not provide the expected effect of encouraging to do conceptual search.

Thus, R. Andrews [9] and M. Janelli [10] insist on the necessity to strengthen the position of the student as a member of educational net-community. E. O. Ivanova and I. M. Osmolovsky foresee the future of didactics in enhancing the role of students' independence and introducing new functions of the learning process: 'orientational, presentational ones' [11]. According to A. I. Uman [12], in new conditions, learning theory is moving towards the differentiation between the didactics of the environment, didactics of the student and didactics of teaching process. M. Simons suggests considering education through scientific researches as a means of preparing students to live in a modern society [13]. 'Subjective didactics' by E. Kösel creates a special culture of learning, aimed to multi-plan competing behavior and thought patterns, specifically, to construct students' knowledge in a problematic environment [14].

Therefore, postmodern educational activities is a decentralized, multi-vector, heterogeneous system that merely mimics something from predictive and transformative self-organization. Its process is caused by the following regulations: 1) antinomic interdependence between alternative and co-evolutionary ways of development of informational structures; 2) permanent acceleration of the uniting process and constant transformation of the ways of circular evolution of these structures; 3) interpenetrating dissemination as a factor of the relationship correlation, specifically, between subject and object, subject and subject in the practice of production and consumption; 4) the heterogeneity of time-space interaction of digital domain texts in the labyrinths of digital culture; 5) establishing 'clipping' as the dominant form of worldview and world comprehension which provides grounds for the conclusion about the convincing victory of the so-called 'intuitive people', 'knights of the seventh sense' over 'the sensor people', 'knights of the sixth sense' [15].

The principles of postmodern didactics, based on these regulations, usually perform only instrumental and orientation functions in the process of selecting the content of education without scrum-projecting the conditions for discovering the learners. As a result, civilly-technical, machine-producing mode of soft-humanity is becoming a dominant metatrand combined with a simulative game as a main feature of socio-humanitarian educational discourse. This approach to education affirms self-centered individualism encouraging future specialists to reflect on the expediency of machine kenosis what means transgression in the 'bodies' of a transformer, cyborg, android robot, so on. In the situation of ontological instability, M. Foucault proposed to remember about epimelia (care for mind transformation) [4], G. Deleuze and F. Guattari developed the practice

of autopoiesis as a result of aporetic thinking of 'opposition without opposition' [5].

These attempts implement the logic of disjunctive synthesis based on the principles of radical anti-essentialism, pluralism and contingency. However, it does not appear to be a spontaneous manifestation of our inherent capacity for divergent thinking, but merely an opportunity gained with efforts to be involved in the game of universal 'swarm' [16]. This metaphor can be found in rhizomatic model of education by Canadian connectivist D. Cormier. In the environment of Neuronet, precisely, this model is obliged to realize new forms of superfast studies by a neuro-group and, consequently, it is due to declare the era of post-psychological auto-didactics. As a result, the major role of nomadological project of non-linear development of transdisciplinary content has arisen in the process of direct communication with the student and reliance on his experience. Thus, professional post-educators' competence is implemented on the basis of Patrick Griffin's "4K" model. That is the environment of continuous changes and creativity that includes:

a) the ability of 1) project development at the world standard level; 2) constant self-development in terms of talents and natural gifts; 3) resource estimation (personal, intellectual, creative and organizational);

b) the possession of 1) sign and symbol typology of text structures (national and world science and culture); 2) multi-way strategies to identify the domain essence; 3) the technique of logical organization of mental search in the process of tracking the emergence and transformation of semantic complexes of the academic courses; 4) the method of systematic opinion specification during the multifunctional justification of the adequacy and integrity of the suggested modelling of internal essence; non-conventional ways to obtain the essential meaning (guessing, grasping, recognition, etc.) due to the development of imaginativeness in divergent, lateral, probabilistic and metaphorical thinking models; 5) semantic flexibility in interpreting the essence of the academic courses; 6) multivariate result production in unregulated and uncertain situations of epistemological substantiation of the internal essence [7].

However, this competence is focused solely on the transformer's egocentrism that continuously attempts to extend the 'limits of existence' in a new way, ignoring the human ability to transform the conscience and heart for the sake of their personal revelation.

Thus, postmodern project of current educational environment of the future specialists' professional development implements the idea of the competitive gnosis. But it seems not to follow the wise advice of St. Maximus the Confessor (580-662): The essence of enlightenment is the episteme of love. It is a live form of inner organic integration of all the aspects of

the Creation [17, p.50], which later was once more emphasized by Thomas Aquinas (1225-1274) “It is known better when it is loved. Love provides with a delicate taste of differentiation” [17, p.25].

2. Methodological platform

A promising solution to the crisis of post-modern methodology of professional education can be the metamodern didactic conception of future specialists’ professional training [18]. The lines of future scientific researches in metamodern educational activities have outlined the participants of the 6th Scenario Forum Symposium in Hanover (21-22 September 2018) [19] agreed on the following recommendations: a) teaching and learning in the context of higher education should follow the UNESCO recommendations for Arts education; b) all disciplines are strongly encouraged to join the discussion of theory and practice that was initiated and strongly influenced by Theatre & Performance Art; c) university educators should strive to integrate artistic perspectives into the curriculum; d) convincing performative concepts, grounded in theory and practice, should be developed for teacher’s education and training, so that a ‘performative teaching and learning culture’ can emerge in all educational institutions; e) the extent (to which innovative impulses from the performing arts, have already permeated the various academic disciplines) should be investigated, in order to determine to what extent performative teaching and learning practices are relevant to them. Efforts to bridge the gap between academic discipline-specific methodologies and the performing arts should be made, in order to increase respect and recognition of the performative in the higher educational contexts; f) ‘performative research’ should be encouraged in various university disciplines. From a performative research perspective (the extent to which discipline-specific practice can be recognized as research) should be examined.

We have conducted research and experimental work to support the suggested hypothesis concerning the reasonability of introducing the proposed approaches. The essence (gist) of the author’s model is a conception of the performative act. The components of the mentioned act are:

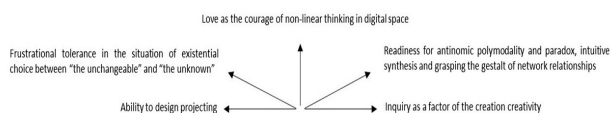


Fig. 2. The components of the performative act.

Therefore, it is focused on future specialists’ above-situational activity in the process of moral and meaningful mediation of the phenomena of atopic metaxis and the principles of complex metasystem organization [17] They can be divided into three groups: principles of complexity (non-additiveness, integrity, additionality (by N. Bor), spontaneous

emergence (by I. Pryhozyn), incompatibility (by L. Zadeh); principles of uncertainty (managing the incompleteness, uncertainty and ambiguity of the knowledge in complex systems; plurality of non-factors (by A. S. Nariniani); principles of evolution (variety of development methods, integrity of interchangeability of chaos and order; pulsing evolution).

Years ago the opportunity of the epistemological contemplation of the internal essence (λόγος ἐνδιάθετος) was ironically rejected. Nowadays, in the atmosphere of meta-modern oscillation [18] the structure of paideia (in Clement of Olexandria’s interpretation) is actualized from genetic and cultural memory. It is meant to raise the observer to concentrated grateful ‘acquisition’ of the meaning as a result of continuous and humble transcendental reflection, ‘synergistic and short-term meeting of the pure with the pure’ [16, p. 92], achieving the state of ‘passing over the self’. The entelechy of inquiry (and, not only in G. H. Marcel or K. Rahner’s meaning) implies: 1) comprehension of self-causation of the thought and its anagogical meaning; the positivistic and exegetical factors of thinking changes as repentance, their causes and results; the reflective aporeticism of the realization of the archetypes of the repentance semantic codification; the essence of love as the highest form of knowledge; 2) skills to distinguish between discrete comprehension of the things and their continuous structuring-creation as ‘essential existence-in-intent’; 3) readiness for sensible (with pure heart) continuous expectation of the insight (in the process of erothematic inquiry) into the internal essence (episteme) of the investigated phenomenon or process; 4) the ability to implement the transformational function of formative estimation of personal achievements and the ways of worldview apperception.

The mentioned author’s model of the performative didactical concept suggests the introduction of the eschatological paradigm of contemplation, which is based on the ideas of ‘circular causality’ and the methodology of humble expectation. The implementation of this methodology requires the introduction of the relevant metanoia (ancient Greek. μετάνοια – ‘pity (about the actions), repentance’, ‘changing one’s mind’) technique.

Two methodological aspects of metanoia are known to exist, namely, the willingness to it and the event itself.

The first aspect of metanoia – involving the soul wandering in a whirling passion in an existential transformation – means encouraging student (without using mantras, alpha-state, stimming, yoga, special meditations, holopotropic breathing, and other popular techniques) to listen to their indifferent absent-mindedness and comprehend the fact of its ‘unattractiveness’, specifically, its state of ‘balancing on the edge of chaos’. The projective reflection of existential choice encourages the future specialists

not only to reveal their uniqueness, orientation to succeeding, desire to be an interesting person; but also to do self-determination – the ability to believe, forgive, tolerate, love.

The second aspect – the event of metanoia – is the focus on the act as the only form of not only mediation of the students' thinking process but also its reconstruction and variation. The role of the act as a mediator of thought transformation in the process of transcendental reflection of the world of things, firstly, at the level of the personal semantic sphere, then, at the level of the “universal semantic field of the humanity” and, finally, at the level of antinomic transcendence of the eidos of being, is determined by the objective self-causation of a thought. Moreover, it is a moral and semantic performative mediation of the value modification of the consciousness. The beginning of this process (and the key to its successful result) is the affective and intellectual amazement by the Truth due to the sincere, honest and courageous development of the incomprehensible inner creative and ultimately victorious power (charisma, God's grace) in the full submission to the law of life named love.

Effectiveness of the realization of this aspect is proved by the experience to depend on the introduction of the art of narrative Socratic maieutics, Megarian eristic and erothematic elenctics into co-existential educational environment.

Thus, the metanoia technique implies developing future specialists' ability of: a) affective experience of the strong need for the cardinal (cordial) change of discrete thinking (closed in the ‘cocoon’ of verbal dogmas by the energy of concepts) into a continuous, ‘circle’ one [16]; b) structuring and creating real meaningful ‘presence’ of the studied things or their ‘essential existence-in-intent’ [16]; c) metaphorically allegorical imaginativeness and creativity during the organization of a mental search for epistemological self-correction; d) implementation of the transformative function of personal achievement evaluation; e) modelling epistemic strategies according to the conditions of socio-cultural context.

Extensive experience of future artists and art teachers' training proves that the strategies created in the para-art space have appeared to be the most efficient of all the performative didactics strategies.

Metareflection is a strategy of going beyond the comprehensible subject matter and immersing in the process of recognizing the engrams (imprints in the mind and heart) of archetypal signs and symbols, and consequently, maieutic of relevant professional experience.

The ‘double frame’ strategy, is focused on encouraging the future specialist to fascinate performatism as a metacultural compensatory responses which cause the so-called ‘external frame of deep emotional experience (joy, admiration, ecstasy), high meanings even in routine situations’ [17] that results in the motivation to: 1) reject the

distorted ideas of the values of the good, freedom, happiness, rules of the game, masks imposed by the society; 2) be open to new professional and inter-professional relationships through the acts of moral self-determination, despite the fears to seem to be weak or ridiculous; 3) to have inner readiness to get changed despite the strong opposition of sociocultural environment.

Design provocation is a strategy of designing disjunctive synthesis (autopoiesis) of contradictory objective interpretations.

Soft-norm – is a strategy of semiotic consolidation, a kind of hashtag (flexibility, fluidity, uncertainty) of metaphorical representations, which, on the one hand, localizes the concept in the network space, and, on the other hand, it indicates the mediative nature of its information reproductions [18].

Constructive pastiche – it is a strategy of contemplating a deliberately deformed copy (palimpsest) of a well-defined definition of the essential meaning and a polyphonic juxtaposition of all dissonant imitations [19].

Norm-core – is a subcultural gesture of ‘digital era’ millennials, based on the contemplation of the outward unpretentiousness of metaphorical interpretations in an attempt to look ‘like everyone’ in the sake of freedom.

Implementation of these strategies in the process of the realization of matanoia technique implies: a) comprehension of the importance of the Apostle's advice: ‘don't adapt to this age but change into the new by your mind’ (Rom., 12, 2); b) revival of the attitude to the intellectual creativity as to a spiritual practice, the ability to treat the paradox as an productive issue; c) continuous orientation to the Beauty as a creative spirit of freedom; d) revival of seeking the Truth based on the intellectual, cordial, never-ending faith; e) defining the additive amount of the studied problem on the basis of motivational alliance of co-existence with its meaning; f) the ability to efficiently co-exist with the alternative opinion in the studied field for the sake of the Truth; g) comprehension of the ambiguity of the pure existence and tolerance of its presence in every act of design thinking; h) the ability to transcend everyday perception and to experience ‘the liminality’ thinking (transformation of ideas of scientific ignorance into the idea of educational ignorance).

It is necessary for the person's internal changes to understand: in the difficult modern world, thanks to the mercy of the Savior, everyone has the opportunity to remain ‘in the status he meant to be without becoming a slave of men’. (1 Kor., 20, 23).

The pedagogical conditions of the efficient implementation of the mentioned strategies of the performative act are: 1) creation of a pious and intellectual environment of seeking the truth (trans-intellectual life obsessed with the truth); 2) motivation to do cognitive self-correction; 3) organization of co-existential contextual learning due to the introduction

of design game technology and reflection; 4) ensuring the favourable conditions for future specialists' self-determination and personal resource actualization [20].

Pedagogical design of the implementation of these conditions includes the consequence of 5 stages:



Fig. 3. The stages of pedagogical design of implementation

- analysis (of the needs and competencies of the target audience, goals and expected learning outcomes, methods and forms of their implementation, interactive tools of the educational process);
- design (of the style and audiovisual scenario, tools and methods of supporting new training versions);
- development (of the content structuring, feedback forms, tools for summarizing practical projects);
- implementation (of the system 'peer-to-peer', adaptivity and personalization of study, downloading studying modules into the systems of learning management (Learning Management System and Moodle), facilitative provision of the chance for a mistake);
- evaluation of the efficiency (of the separate blocks and renewed versions of the courses).

Among the educational approaches that would facilitate the personal revelation in a performative act, the blended learning has been chosen to be implemented. The practical experience of the communication with the students of the Faculty of Arts has proven that it logically combines the results of adaptive, flipped learning, micro-learning, gamification and new formats of full-time learning (meetup, learning journey) with VR-technologies and algorithms of artificial intelligence (chat bot). In order to efficiently use the benefits and reduce or compensate the disadvantages of each approach, the following principles of blended learning should be taken into account: a) organizing an environment of high achievements (the conscious movement towards the goals by the defined route that encourages learning activity); b) complete understanding (before moving on to the new material, the student is willing to fully master the information from the previous units); c) personal responsibility (for the choice of methods and received results); d) the sequence of learning (students' preliminary familiarizing with the material → understanding theoretical knowledge obtained from the teacher → practical approbation) [21]; e) audio and video formation of the methodological base (virtual seminars, content blocks of the course); f)

practical implementation of the acquired professional competence; g) continuous micro-learning; h) tutor online support; i) autonomy of education (students determine for themselves (more or less) where, how and what they will learn); j) continuous spiritual reception.

In the situation of post-truth crisis caused by the process of digitization of the student's educational behavior, we have chosen to focus on changing the role and content of didactics: from providing to formation. The author's concept confidently implements the idea of 'Learn in order to be!' (note: to be not just a person, and not a subject of the social process, but an identified personality). This ascent can be done only by an individual knowing love and loving knowledge, since to love means to be constantly willing to contemplate the Light of Truth (in every sphere of activity).

The tools for implementing this technological model are quite varied.

Table 1. Tools for technological model implementation.

| Types of educational interaction | Modes of education | Technological means |
|----------------------------------|--|---|
| "student → technology" | self-study; self-control; off-line testing; | interactive image collection; online tests; portfolio; online dictionaries and encyclopedias; |
| "student ↔ student" | peer-assessment; assignment discussion; | Wiki-pages; mailing list; E-mail; |
| "lecturer ↔ student" | off-line individual consultations; differentiatinal testing; | Wiki-pages; guestbooks; note boards; mind maps; mailing lists; text forum; E-mail; |
| "lecturer ↔ group" | multimedia lecture; tutorials; off-line virtual seminars; on-line testing; off-line video lecture; off-line laboratory work; | "whiteboards"; blogs; guestbooks; note boards; mind maps; E-mail; |
| "student ↔ group" | off-line individual project presentations; off-line report defence; | text forum; news groups; |
| "group ↔ group" | on-line webinar; on-line virtual creative work; intermedia lecture. | chats; video conference; audio conference; web-forum; Wiki-system. |

3. Results

The effectiveness of metamodern performative didactics was tested during 2017-2020 in the process

of training of higher education specialists (Bachelors) (specialty: Secondary education (Musical art) on the basis of the research laboratory ‘Spiritual formation of a creative personality’ (Headed by Associate Professor B.O. Vodiani) formed at the Faculty of Arts of Ternopil Volodymyr Hnatiuk National Pedagogical University and specialists of higher education (Bachelors) in the specialty of Social Work (Social Pedagogy) on the basis of the research laboratory ‘Creative Pedagogy and Public Relations’, established at the Faculty of Humanities and Education of Khmelnytsky National University.

The experimental work was carried out and based on the two groups of students: the experimental group (EG-28 students) and the control group (KG-24 students). The students of the control group were taught using the postmodern educational concept.

The systematic thinking methodology of the proposed research has applied semiotic, phenomenological and hermeneutic approaches, methods of coherent modeling and expert evaluation of the theory of conceptual integration, the connective theory of metaphorical interpretation, the concept of non-linear epistemology, the principles of antinomy, verification, complexity, disjunctive synthesis.

At the first motivational and goal-setting stage, the task was to formulate the student’s intention of self-realization in a performative act in the situation of frustration tolerance (balance ‘on the edge of chaos’).

The second, educational- designing stage where the performative didactics is implemented, means to master the mentioned educational strategies of performance by students.

During the third, praxeological stage, the students realized the investigated technological model of the performative act in a new frustration situation – the situation of ‘the regret for non-performed meeting’. The reorientation of their thinking into knowing where the truth is accepted in love (with pure heart) was carried out by means of substantial inquiry method and by changing the vector of meaningful reconstruction in the intellectually pious conditions, specially created, of the virtual art-class included.

The fourth stage of the implementation of the technological model of performative didactics involved the diagnosis of the students’ development of the performative act based on the indicators of spiritual activity. After pedagogical interaction, the following results have been revealed: the highest, anagogical level of the students’ readiness for the performative act according to the indicators of the motivational and semantic criteria was reached by 12.1% of the experimental group students and only by 4.3% of the control group students; according to the informational and semantic criteria – 20.2% of the experimental group and 15.7% of the control group; according to the indicators of the operational and correctional criteria – 12,3% of experimental group and 5,9% of control group. According to the

indicators of the formative criterion, the results of the respondents of both groups (18,0% and 11,5%) were equally significant. However, the “postmodernists” wandered in the labyrinths of esoteric Brahmin-Buddhism, of theo- and anthroposophy. The visualization of these results is presented below.

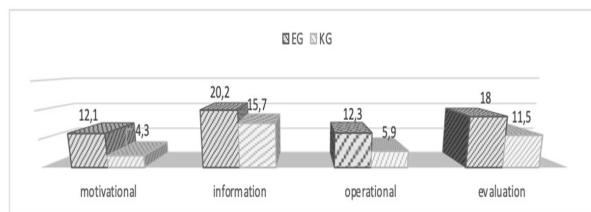


Fig. 4. Comparative visualization of the readiness of experimental and control group of Bachelors for the performative act.

The visualization of the anagogical level of the readiness of experimental and control group of Bachelors for the performative act based on its separate components is demonstrated. The components of the performative act are the following: I – frustration tolerance in the situation of existential choice between ‘the unchangeable’ and ‘the unknown’; II – readiness for antinomic polymodality and paradox, intuitive synthesis and grasping the gestalt of network relationships; III – ability to design projecting; IV – inquiry as a factor in revealing the creativity process; V – love as the courage of non-linear thinking in digital space.

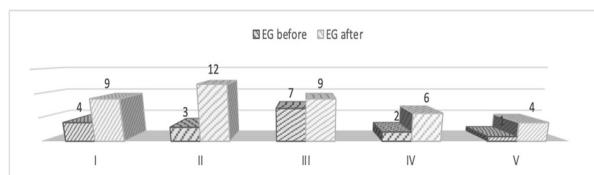


Fig. 5. Realization of the readiness of the experimental group of Bachelors for the performative act based on its separate components.

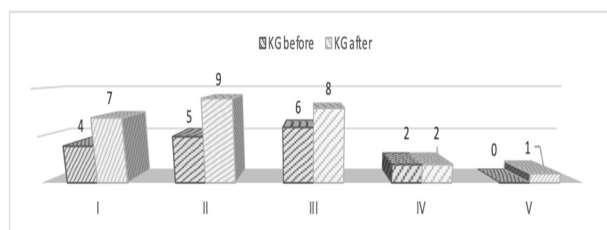


Fig. 6. Realization of the readiness of the control group of Bachelors for the performative act based on its separate components.

4 Conclusions

Performative methodology of the realization of soteriological mission of the educational activities is the chance to prevent the future specialists’ from

‘existential exhaustion and sleepiness’, according to J. Fichte. Thus, an artistic reorientation of universities in learning and research is imperative. We have suggested the model of performative education, which was being elaborated, considering the conceptual idea of didactic as a spiritual creativity. The proposed metanoia technique is a means of the realization of performative concept of future specialists’ training in metamodern environment.

The summarizing stage has allowed us to note: the positive changes in the psychological dimensions of didactic performativity in order to enable some persons to invoke affect for a community of witnesses and others to resist or disavow their interpellations. There is a valuable framework for analyzing who or what is seen as unreasonable and in need of socializing, how this dynamic produces “we” and “they,” and how such divisions have affective consequences in spiritual transformation.

Л.А. Кондратская¹, Л.И. Романовская², М.Б. Нацюк¹, О.З. Довгань¹, Т.В. Кравчина²

¹Владимир Гнатюк атындағы Тернополь Ұлттық педагогикалық университеті, Тернополь, Украина;

²Хмельницкий ұлттық университеті, Хмельницкий, Украина.

E-mail: luda.kondratska@gmail.com

БІЛІМ БЕРУ ЛАНДШАФТЫНЫҢ ЗАМАНАУИ ЖОБАЛАРЫ: ТІРІ ТЫНЫС АЛУҒА ДЕЙІН МАСКАНЫҢ КЕҢЕЮІ

Л.А. Кондратская¹, Л.И. Романовская², М.Б. Нацюк¹, О.З. Довгань¹, Т.В. Кравчина²

¹Тернопольский национальный педагогический университет имени Владимира Гнатюка, Тернополь, Украина;

²Хмельницкий национальный университет, Хмельницкий, Украина.

E-mail: luda.kondratska@gmail.com

СОВРЕМЕННЫЕ ПРОЕКТЫ ОБРАЗОВАТЕЛЬНОГО ЛАНДШАФТА: ОТ ЭКСПАНСИИ МАСКИ К ДЫХАНИЮ ЖИВОГО

Аннотация: В статье анализируется содержание (закономерности, принципы, формы, методы и критерии) теории энантного постмодернистского образования, ориентированного на эгоцентричный индивидуализм, побуждающего будущих специалистов задуматься о целесообразности машинного кеноза. В ситуации кризиса «постправды» в качестве альтернативы этой методологии предлагается метамодернистская дидактическая концепция, что, на наш взгляд, составляет научную новизну исследования. Сущность ее авторской модели составляет перформативный поступок. Его компоненты: любовь как мужество нелинейного мышления; фрустрационная толерантность в ситуации экзистенциального выбора между «неизменностью» и «неизведанностью»; психологическая установка на антиномическую полимодальность и парадоксальность в процессе интуитивного синтеза сетевых соотношений; способность к проектированию в дигитальном пространстве; онтологическая вопрошаемость как фактор креативности.

В статье подробно описан и визуализирован сравнительный анализ результатов внедрения метамодернистской концепции перформативной дидактики для студентов на факультете искусств Тернопольского национального педагогического университета имени Владимира Гнатюка и гуманитарном факультете Хмельницкого национального университета до и после проведения исследования.

Ключевые слова: постмодернистская методология дидактики высшей школы, перформативная концепция профессионального образования, дидактические стратегии, технология метаноии, принципы а-топического метаксиса.

Information about authors:

Kondratska Ludmyla – Doctor of Pedagogical Sciences, Professor, Department of Music and Music Arts Methodology, Faculty of Arts, Ternopil Volodymyr Hnatiuk National Pedagogical University, Ternopil, Ukraine; luda.kondratska@gmail.com; <https://orcid.org/0000-0002-2885-138X>

Romanovska Liudmila – Doctor of Pedagogical Sciences, Professor, Head of Social work and Pedagogics Department, Humanities Faculty, Khmelnytsky National University, Khmelnytsky, Ukraine; Lroman@online.ua; <https://orcid.org/0000-0001-7547-4575>

Natsiuk Maryana – PhD, Associate Professor, Department of English Philology and ESL Teaching, Ternopil Volodymyr Hnatiuk National Pedagogical University, Ternopil, Ukraine; nymaryana@gmail.com; <https://orcid.org/0000-0002-5887-8321>

Dovgan Oksan – PhD, Associate Professor, Department of Music and Music Arts Methodology, the Faculty of Arts, Ternopil Volodymyr Hnatiuk National Pedagogical University, Ternopil, Ukraine; dovhan.violino@i.ua; <https://orcid.org/0000-0002-1757-1016>

Kravchyna Tetiana – PhD in Psychology, Associate Professor, Department of Foreign Languages, International Relations Faculty, Khmelnytsky National University, Khmelnytsky, Ukraine; tkravchyna@gmail.com; <https://orcid.org/0000-0001-8407-6667>

REFERENCES

- [1] Dugin, A. G. (2016) Sociology of imagination. Introduction to structural sociology [Sociologiya vobrazheniya. Vvedenie v strukturnuyu sociologiyu]. Moscow: Akademicheskij Proekt, Triksta. ISBN 978-5-904954-03-1, 978-5-8291-1245-5.
- [2] Styfat, Prp. Mykyta (2013) Ascetic works [Asketychni tvory]. Vol. 5. Lviv: Vydavnytstvo Olega Abishko.
- [3] Griffin, P. (2017) Assessing and Teaching 21st Century Skills: Collaborative Problem Solving as a Case Study. Sprinter International Publishing AG. DOI: 10.1007/978-3-319-33261-1_8
- [4] Foucault, M. (1994). Words and things: Archaeology of humanities [Slova i veschi: Arheologiya gumanitarnih nauk]. Saint-Petersburg: A-cad. ISBN 5-85962-021-7
- [5] Delez, Zh. (2011). Logic of meaning [Logika smysla] / per. s fr. Ya.I.Svirskogo / [transl. from fr. by Fr. J.I.Svirsky]. Moscow : Akademicheskij Proekt. ISBN 978-5-8291-1251-6
- [6] Derrida, Zh. (2000) Letter and difference [Pismo i razlichie] / per. s fr. V. Lapitskiy. Saint Petersburg: Akademicheskij proekt. ISBN 5-7331-0181-4.
- [7] Hassan, I. H. (1987). The Postmodern Turn: Essays in Postmodern Theory and Culture. Columbus: Ohio State University Press. ISBN 0814204198, 9780814204191
- [8] Berdyaev, N. A (2019). The meaning of creativity. The experience of human justification [Smysl tvorchestva. Opyt opravdaniya cheloveka]. Moscow : Yurajt. ISBN 978-5-534-05321-0
- [9] Andrews, R. Kenneth (2011). Does E-Learning Require a New Theory of Learning? Some Initial Thoughts. *Journal for Educational Research Online*, 3(1), 104-121.
- [10] Janelli, M. (2018) E-learning in theory, practice and research [Elektronnoe obuchenie v teorii, praktike i issledovaniyah]. *Voprosy obrazovaniya*, 4, 81-98. ISSN 1814-9545 (Print) ISSN 2412-4354 (Online) DOI: 10.17323/1814-9545-2018-4-81-98
- [11] Ivanova, E. O. (2009) Didactics in information society [Didaktika v informacionnom obshestve]. *Pedagogika*, 10, 8-15.
- [12] Uman, A. I. (2010). Theory of training: from traditional to anthropological didactics [Teoriya obucheniya: ot traditsionnoj k antropologicheskoy didaktike]. *Pedagogika*, 1, 22-30
- [13] Simons, M. (2006). Education Through Research» at European Universities: Notes on the Orientation of Academic Research. *Journal of Philosophy of Education*. Oxford: Blackwell Publishing. 40(1), 33-34. <https://doi.org/10.1111/j.1467-9752.2006.00493.x>
- [14] Edmund Kösel (1997) Die Modellierung von Lernwelten. Ein Handbuch zur subjektiven Didaktik. 3., unveränderte Auflage. Elztal-Dallau.
- [15] Ramo, J. C. (2017) Seventh sense. How to predict and manage changes in the digital age [Sedmoe chuvstvo. Kak prognozirovat i upravlyat izmeneniyami v tsifrovuyu epohu]. Kiev: Forse. ISBN 978-617-7347-62-9
- [16] Cormier, D. (2008). Rhizomatic education: Community as curriculum. *Innovate* 4 (5). URL: <http://www.innovateonline.info/index.php?view=article&id=550&action=synopsis> (accessed June 2, 2008)
- [17] Kondratska, L.A. (2012). Artistic epistemology [Khudozhnia epistemolohiia]. Ternopil: Vektor. ISBN 978-617-595-003-6
- [18] Eshelman, R. (2001). Performatism, or the End of Postmodernism. *Anthropoetics: The Journal of Genetic Anthropology*, 4 (2), 28-40.
- [19] Turner, L. (2015) Metamodernism: A Brief Introduction [Online] 12th January 2015. Available at: <http://www.metamodernism.com/2015/01/12/metamodernism-a-brief-introduction/>. [Accessed: 2nd December 2016]
- [20] Toybazarova, N.A., Nazarova, G. (2018). The modernization of education in Kazakhstan: trends, perspective and problems // *Bulletin of National Academy of sciences of the Republic of Kazakhstan*. 6 (376), 104-114. <https://doi.org/10.32014/2018.2518-1467.33>
- [21] Lavrinenko S.V., Gorelova I.V., Kassymova K.G., Kubantseva O.V., Khudyakova T.L., Yusipova I.V., Arpentieva M.R. (2020) Problems of context and conceptual management in education: psychological, social and economical aspects // *Bulletin the National academy of sciences of the Republic of Kazakhstan*, 1 (383), 264–276. <https://doi.org/10.32014/2020.2518-1467.32>

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