

Actualization of metacognitive abilities and archetypal measurement of consciousness in the context of improving the health-preserving competence of physical education teacher

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Published online: October 30, 2021

(Accepted for publication October 15, 2021)

DOI:10.7752/jpes.2021.s5410

Abstract:

The article reveals the features of actualization of metacognitive processes and archetypal measurement of consciousness to improve the health competence of a physical education teacher in postgraduate education which is implemented on the basis of appropriate methods. In accordance with this area of research, we have developed and applied two concepts: "Mythos of health-preserving competence of a physical education teacher" and "Logos of health-preserving competence of a physical education teacher". We present the mythos of health-preserving competence of a physical education teacher, as a purposefully updated, developed and professionally oriented fragment of the teacher's consciousness connected both with the rational beginning and with deep irrational archetypal components of the psyche and interiorized culture, which is aimed at the effective implementation of this competence. To form the mythos of health-preserving competence, a purposefully developed framework-setting narrative "Mythos-narrative" is used, which formally reflects the main ideas of the image, values, directions. The logos of health-preserving competence of a physical education teacher is defined as a purposefully actualized, developed and professionally oriented metacognitive sphere of a teacher, which is aimed at the effective implementation of this competence. Based on the application of the developed questionnaires, a study of the effectiveness of "Methods of actualization of metacognitive abilities and archetypal measurement of consciousness to improve the health competence of physical education teachers" was conducted. Accordingly, the statistical significance of the Physical Education Teacher test results using Wilcoxon's T-test was proved, and the positive dynamics of the results of educational achievements were confirmed. That is, their value after the application of the method is significantly greater than before its implementation. Thus, the positive dynamics in the manifestation, professional orientation and development of metacognitive strategies, as well as health-oriented actualization of the archetypal dimension of the teacher's consciousness and the relative disclosure of personal, existential and cultural potentials of physical education teachers are determined.

Keywords: physical education teacher, health-preserving competence, archetypal pedagogy, health pedagogy, sports, methodological strategies, humanization, anthropologization.

Introduction

The health-preserving competence of a physical education teacher (Fedorets, 2014) is understood and developed as a complex, “multidimensional”, personal-professional phenomenon of “instrumental”, activity and socio-cultural nature and direction. The need for the formation of the teacher's knowledge and understanding of human nature, both in a normal state and in pathology is significant in this aspect. One of these central health problems is the prevention of acute cardiac disorders – sudden cardiac death (Klochko, Fedorets et al., 2020) during physical education.

To implement these demands to the health-preserving competence of a physical education teacher, it is important to develop its "cognition" or through its intellectualization. This aspect, first of all, includes the need for the relative formation of both specialized knowledge, "meta-knowledge" and "metacognitive" strategies, as well as the actualization of mental skills of value and technology-oriented understanding of their optimal competency-based application and further development. Thus, we actualize the need for the formation of metacognitive abilities (thinking, metacognitive strategies, algorithms and knowledge) of physical education

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teachers as those that can fully ensure the implementation of health-preserving competence as effective professional "intellectual and activity tools".

The issue of metacognition (thinking, knowledge, strategies, etc.) as mental processes that are aimed primarily at cognition of inner reality was presented by J. Flavell in the late twentieth century (Flavell, 1987; Flavell et al., 1993). J. Flavell reveals the phenomenon of metacognition as processes of active regulation and coordination of cognitive operations, which are aimed at specific goals (Flavell, 1987). A. Koriat (Koriat, 2007) systematically presented metacognitive phenomena by highlighting – information-based metacognitive judgments, which are conscious and experience-based metacognitive judgments that are unconscious phenomena. Unconscious metacognitions are related to the emotional sphere and can be perceived as sensations and as intellectual feelings. Metacognitive knowledge contributes to the formation of autonomy, independence (Kallio et al., 2018) and the development of metacognitive decision-making strategies. M. Goudas (Goudas, 2017), reveals the importance of emotional intelligence and metacognitive strategies of a physical education teacher for effective psychological interaction with students and formation of a healthy lifestyle. We have taken into account the phenomenon of metacognition in the development of an anthropological model of health competence development (Fedorets, 2017). We have developed the concepts: *mythos*, the *logos* of health-preserving competence of a physical education teacher (Fedorets, 2014).

Taking into account the presence in the metacognitive "sphere" of the unconscious dimension of experience-based metacognitive judgments, as well as taking into account the importance of influence on decision-making, behavior, orientation and emotional state of the teacher's archetypal phenomena, we determine the need to apply knowledge of the archetypal level of consciousness actualization of metacognitive processes (knowledge, thinking, strategies, experiences, etc.) for the development of health-preserving competence of a physical education teacher. The problem of applying the archetypes concept of C. Jung (Jung, 1959; Jung, 1991) in pedagogy is revealed in the works by S. Mayes et al. (Mayes, 2020; Mayes et al., 2021), T. Gitz-Johansen (Gitz-Johansen, 2016), V. Fedorets, (Fedorets, 2014). At the same time, the problem of integrative application of archetypal psychology, metacognitive knowledge and strategies for the development of health competence of physical education teachers in postgraduate education (Fedorets, 2014) is insufficiently disclosed in the scientific pedagogical literature.

From the standpoint of professionalization, the integrative application of metacognitive phenomena and archetypal psychology is important for the formation of a physical education teacher's ability to make optimal decisions in complex pedagogical situations, as well as for the development of his/her health-preserving thinking and appropriate strategies, goal setting, reflection on his/her cognitive sphere, anticipation. Accordingly, it is aimed at improving the effectiveness of maintaining the health and life of students during physical exercise. Based on the methodological-value and conceptual understanding of the above aspects of the problem, we identify the issues of integrative use of metacognitive phenomena (knowledge, strategies) and archetypal psychology and pedagogy to improve the health-preserving competence of physical education teachers in postgraduate education as relevant.

Aim. Development and implementation of methods for updating metacognitive abilities and archetypal measurement of consciousness to improve the health-preserving competence of physical education teachers in postgraduate education.

Material & methods

The following main methods and approaches were used in the study: analysis of scientific literature; competence, axiological (Varnier et al. 2021; Yevtuch, Fedorets, Klochko et al., 2021), anthropological (Mircea, 1995; Fedorets, 2017; Fedorets, 2019), culturological (Mircea, 1995; Durand, 2016), mythological (Mircea, 1995), philosophical, psychological presented in the format of archetypal psychology by C. Jung (Jung, 1959; Jung, 1991; Gitz-Johansen, 2016; Durand, 2016), archetypal pedagogy (Mayes, 2020; Mayes et al., 2021; Fedorets, 2014), metacognitive (Flavell, 1987; Flavell et al., 1993; Schraw et Dennison, 1994; Koriat, 2007; Panadero, 2017; Goudas, et al., 2017; Aktag, 2017; Bulut, 2018; de Boer et al, 2018; Ohtani et Hisasaka, 2018; Kallio et al, 2018), narrative, holistic, epistemological; preventive (Klochko et al., 2020; Fedorets, 2019; Fedorets, 2021), transdisciplinary.

In addition to the above approaches in the study for the development and practical application of the concepts "*Logos*" and "*Mythos*" of health competence of physical education teachers and for the formation of "Methods of actualization of metacognitive abilities and archetypal measurement of consciousness to improve the health-preserving competence of a physical education teacher" the following concepts were used: knowledge transfer (I. Nonaka, H. Takeuchi), anthropologization (K. Ushinsky) (Fedorets, 2017; Fedorets, 2019) existentialization, humanization, critical thinking, tolerance, intercultural communication, nonviolent communication, ecologization (Gore, 1992; Lovelock et al., 2000; Hinds, 2016; Yevtuch, Fedorets, Klochko et al., 2021), ecotherapy (Hinds, 2016; Ranger end Hinds, 2016), the concept of sustainable development, child-centeredness, cordocentrism, gender equality, health propaedeutics (V. Fedorets), health therapy (V. Fedorets), patopedagogy (V. Fedorets), life creativity, creativity, the ideas of J. Durand (Durand, 2016) developed by him in "Sociology of Depths" ("Sociology of Imagination"), "Anthropological Trajectory", the ratio of *Logos* /

Mythos and others. It was important to use Pedagogy-Paideia (Miller, 2007; Foucault, 2008; Zowisto, 2018; Fedorets, 2019) in its modern sense.

Use of own methodological developments. To determine the system-organizing ideas, images, strategies, values and intentions associated with the archetypal level of consciousness and diagnosis of constitutive metacognitive knowledge, goals, strategies aimed at preserving the health of students, revealing their freedom, personal and creative potential, as well as understanding the role of a physical culture teacher in health preservation and actualization of his/her value-semantic sphere, the professional and personal growth 2 questionnaires were developed: № 1 "Analysis of simplifying mythologized notions of health preservation", № 2 "Understanding mental-intellectual strategies of health preservation". We will present these questionnaires and review the features of their semantic structure.

First, in the process of questionnaires, students were presented with Questionnaire № 1, which determine the negative strategies, and then Questionnaire № 2, which reflect the positive ones. Questionnaires № 1 and № 2 attempt to diagnose mythologized, intentional, emotionally "saturated", emotionally-valuable phenomena (intentions, strategies, values, interpretations), which are deep and are connected with the archetypal layer of consciousness. In these phenomena, in addition to the conscious rational component, the irrational – "archetypal-mythological" is actualized. The strategies diagnosed by this questionnaire represent the level of formation and specificity of the personal-existential component of the health-preserving competence of a physical education teacher. These two questionnaires (№ 1 and № 2) are formed on the basis of methodological-value and holistic understanding of this pedagogical system, including the curriculum "Development of health-preserving competence of physical education teachers in postgraduate education". These questionnaires, first of all, reveal such a significant aspect of health-preserving competence as "Mythos of health-preserving competence" (see "Results") (Fedorets, 2017) in which the basic foundations of ideas, images, thoughts, ideals, visions, intentions, values and meanings are laconically, idealized, emotionally-valuable, holistically, figuratively and conceptually represented and ways of practical and technological realization are presented generally and value-oriented.

Questionnaire № 1 reflect negative in meaning and antagonistic strategies to those actualized in Questionnaire № 2. Questionnaire № 1 questions are mainly formed on the basis of communication with some physical education teachers who presented their understanding of health preserving issues. It is clear that the presented ideas about health are not popular, they are quite few, but we take into account the presence of these trends in the questionnaire and, accordingly, in the development of the curriculum. Questionnaire № 1 presents negative strategies by actualizing the archetypal level of consciousness, which we consider in the context of the personal-existential component of health-preserving competence.

Questionnaire № 1. "Analysis of reduction mythologized notions of health preservation"

1. Students in physical education classes should behave seriously and avoid unnecessary jokes and conversations that distract from the proper execution of exercises and the training process.
2. Motor activity is necessary for the formation of a certain level of fitness and health, not for entertainment and fun.
3. The student must understand that if he/she has no desire to actively train in physical education, it is necessary to force himself/herself to do it (train), because physical activity is the path to health, strength and will.
4. You need to train constantly – every day, regardless of holidays or weekends, because only systematic and constant (daily) exercise supports and forms health and develops the necessary physical qualities.
5. Only a well-trained and developed person with developed muscles is strong, handsome/pretty and able to adapt effectively in life, as well as achieve something, so you need to train to ensure your success.
6. Physical culture develops the body, forms physical qualities and health, and the mind must be developed at the lessons of mathematics, language and other disciplines.
7. We understand a person, first of all, from the viewpoint of his/her body, so the more we train, the better, stronger and healthier it becomes.
8. All students have to perform the exercises in the classroom correctly but only as it was previously defined in the training system.
9. Students who constantly train and harden and thus strengthen their body, including the immune system, will not get sick.
10. In a physical education class the main thing for students is to do the exercises better, the ability to be disciplined, rather than "immerse" in themselves, dream and think about all sorts of nonsense.
11. All students in the class should know about a student who has a low level of physical training due to the fact that he/she does not train, as a negative example that indicates that he/she is not working on himself/herself, on his/her health and is not disciplined.
12. Any runny nose, cold, or other minor health problem can be easily cured and prevented by regular exercise and hardening, which strengthen the immune system, improve blood circulation and thus make a person healthy and strong.

Questionnaire № 2. "Understanding the spiritual and intellectual strategies of health preserving"

1. In a physical education class, the training effect is less important than joy, rest, a sense of happiness and security of a student which is primary in maintaining health and forming a harmonious personality.
2. Professional and humane physical education teacher is, first of all, one who is able to create an atmosphere of active communication, harmony, tolerance, joy, ease, interest in physical activity and health, while spending part of the time allocated for training, and his/her own time.
3. In a physical education class, the training effect (strength, endurance, etc.) is not so important as the development of students' physical arete (virtue) – beauty, health and spiritual arete – mind, tolerance, kindness, mercy.
4. In connection with the introduction of inclusive and gender culture, physical education classes reveal the importance and value not only and not so much of achieving a certain level of physical training, but also contribute to the harmonization of competitive strategies between physical and spiritual-intellectual spheres of the student with the formation of a certain dominance of the intellectual-humanistic aspect.
5. An important characterological and behavioral aspect (in terms of quality), which is the result of harmonization of competitive strategies between the physical and spiritual-intellectual spheres and which can be effectively implemented by means of physical culture, is the development of students sophrosyne (moderation, harmony, peace) and self-practice – self-care, which reveals in the child an understanding of himself/herself as a person who is poliontological, physical, spiritual, intellectual, communicative, humane, autopoietic and tolerant.
6. Central to physical education, in addition to the development of physical qualities, is the understanding of motor activity as the secret and meaning of life, as a special self-sufficient existence and happiness, as a way to reveal their physicality and physical identity, as the formation of self-care and self-creation.
7. In addition to the training process in physical education classes, it is crucial to develop children's ability to admire the earth's scenery, sky, plants, animals, as well as learning to care for the Earth and tolerant, kind, pitiful, compassionate and friendly attitude to each other.
8. The most important, system-organizing myth and idea of organizing the training process and health are not to achieve a certain level of training, but to minimize the risks to life and health of students based on the principle of "Do no harm" and understanding the extent and expediency of influences.
9. Not only knowledge of human nature and the implementation of the training process, but the presence of tolerance, mercy, kindness, compassion, responsibility, and care for students are primary in the health-preserving activities of a physical education teacher.

Application of statistical methods. In order to prove the statistical significance of the results of a study conducted on the same sample in two different experimental conditions, we used Wilcoxon's T-test (Sidorenko, 2003).

We proved the statistical significance of the difference in the results of the Physical Education Teacher test before and after the implementation of the "Methods of actualization of metacognitive abilities and archetypal measurement of consciousness to improve the health-preserving competence of a physical education teacher" (MMACCPET). "Typical" is the change in the values of test results in the direction of increasing their respective values after the implementation of this method.

We put forward two hypotheses:

H_0 : The value of the results of testing Physical Education Teacher after the implementation of the MMACCPET significantly lower than the values of test results before the introduction of this methods at the level of significance $p < \alpha$.

H_1 : The value of the results of testing Physical Education Teacher after the implementation of the MMACCPET significantly exceeds than the values of test results before the introduction of this methods at the level of significance $p < \alpha$.

Consider "atypical" shifts. The sum of the ranks of "atypical" shifts R_{atyp} calculated by formula (1):

$$R_{atyp} = \sum_{i=1}^n n_i \quad (1)$$

where n is the number of "atypical" shifts, n_i is the ranks of "atypical" shifts ($i = 1 \dots n$).

Using a statistical table taking into account the level of statistical significance α ($p < \alpha = 0,05$ or $p < \alpha = 0,01$) and the number of studied indicators n we find R_{typ} . Hypothesis H_0 is rejected, hypothesis H_1 is accepted in case of exceeding at the level of significance $p < \alpha$ "typical" shifts over "atypical" $R_{atyp} \leq R_{typ}$. Hypothesis H_1 is rejected, hypothesis H_0 is accepted, in case of exceeding at the level of significance $p < \alpha$ "atypical" shifts over "typical" $R_{atyp} > R_{typ}$ at the level of significance $p < \alpha$.

Results

Based on the methodological and value understanding of innovation-anthropological and culturally appropriate ways to improve the health competence of physical education teachers and the application of methodological and technological potential of archetypal psychology (Jung, 1959; Jung, 1991; Gitz-Johansen, 2016), archetypal pedagogy (Mayes, 2020; Mayes et al. , 2021; Fedorets, 2014), Sociology of Depths (Durand, 2016) of metacognitistics (Flavell, 1987; Flavell et al, 1993; Schraw et Dennison, 1994; Koriat, 2007; Panadero, 2017; Goudas, et al., 2017; Aktag, 2017; Bulut, 2018; de Boer et al., 2018; Ohtani et Hisasaka, 2018; Kallio et al, 2018), cultural anthropology, the concept of knowledge transfer (I. Nonaka, H. Takeuchi), and other

concepts and approaches (for a detailed list of conceptual prerequisites, see the section "Material & methods") developed MMACCPET. This method, along with others, is an educational and methodological condition for training teachers on the basis of educational and professional program "Development of health-preserving competence of physical education teachers in postgraduate education". The method includes 4 components, which are presented in the format of concepts: "Mythos" (Fig. 1) and "Logos" (Fig. 1) of health-preserving competence of a physical education teacher, "Determining health-preserving strategies" and "Metacognitive-semantic context". Accordingly, in this method there is a control of results, which is implemented through the use of questionnaires № 1, 2 (see section "Material & methods").

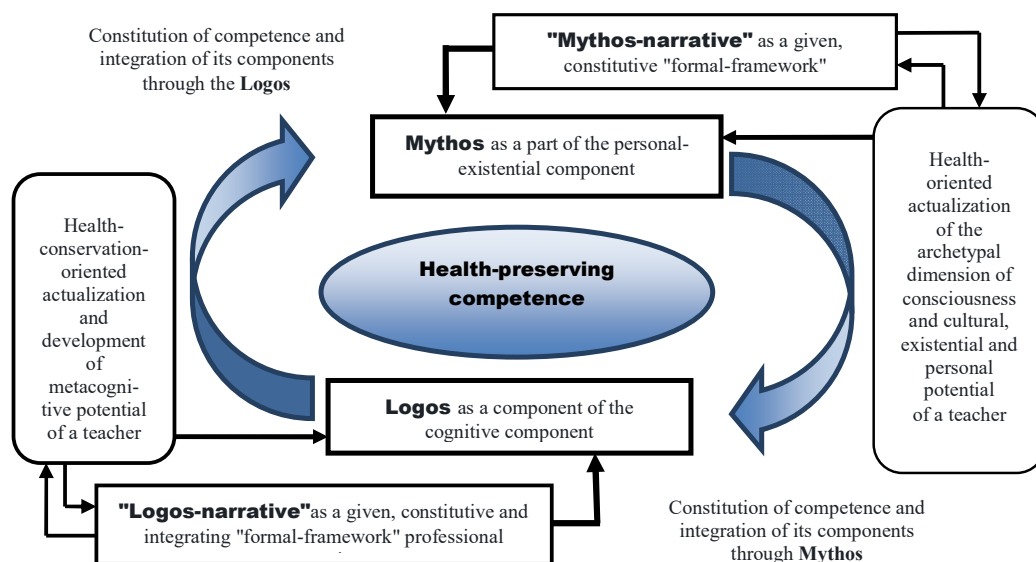


Figure 1. Conceptual and structural scheme of "Mythos" and "Logos" of health-preserving competence of a physical education teacher as components of its cognitive ("Logos") and personal-existential ("Mythos") components and as its systemic factors of constitution and integration

Mythos health-preserving competence of a physical education teacher. The use of the archetypal level potential of consciousness contains the following main aspects: interaction with metacognitive processes (knowledge, goals, experiences, etc.) as an "archetypal", "cultural-archetypal" and affective basis for decision-making and health-preserving activities; development of personal-existential and to a lesser extent anthropocultural component of health-preserving competence; impact on all components of competence; is considered as a factor of the competence components integration; is considered as an "cultural-archetypal prerequisite" for the competence development. This study mainly considers the ways of actualization of archetypal and metacognitive levels of consciousness as metasystems that determine decision-making and the relative formation of appropriate meta-cognitive, emotional-value and professional-personal strategies that underlie health preserving.

This concept of "Mythos" (Fig. 1) was developed taking into account the idea of "Educational goals in the affective sphere" (Krathwohl, Bloom et al., 1964), which is an important component of affective education. Values, meanings, attitudes, motivations, emotions, feelings are reflected in "Educational goals in the affective sphere". At the same time, this concept of "Mythos" in its semantic essence is existentially oriented and somewhat broader and "in-depth" in the archetypal layer of consciousness and the cultural dimension of existence. Thus, the mythos of health-preserving competence is largely consistent with the 5th level ("Internalization" – adaptation of beliefs and life philosophy) of educational goals in the affective spheres and – (internalization of value orientations in activities and their generalization) according to the taxonomy of D. Krathwohl, B. Bloom (Krathwohl, Bloom et al., 1964).

We actualize the archetypal level of consciousness on the basis of the ideas application formed in the framework of classical studies by C. Jung (Jung, 1959; Jung, 1991) and in the system of archetypal pedagogy developed by S. Mayes (Mayes, 2020; Mayes et al., 2021). The works formed within the framework of cultural anthropology, researches of mythology, in particular, classical works by E. Mircha (Mircha, 1995) and the ideas of the mythos/logos of G. Durand's sociology of depths (Durand, 2016) are also applied. Considering the archetype in the system of its understandings in archetypal psychology, we can say that it is the manifestation of collective consciousness (collective unconsciousness). The archetype is formed in the process of historical

development and, accordingly, it regulates and to a large extent can determine typical, stereotypical behavior and worldview, and can also be described as a certain psychological integrity in the form of an image.

We use archetypal psychology and pedagogy to develop the health-preserving competence of a physical education teacher by forming certain professional myths in a way that actualizes a certain archetype (Fedorets, 2014). What do we mean by the concept of myth in the context of this problem? Myth is defined as a story (mostly short and concise), or a short phrase (proverb, expression) that vividly, figuratively, "archetypically", representatively, affectively, value-oriented reveals a certain idea and/or archetype. Myth can be formed on the basis of existing mythologized ideas or myths, or without reliance on them. The concept of myth does not mean that it is unreality, but is understood as a phenomenon that is related to the archetypal level of consciousness (which is a special mental reality) and has significant value-semantic, cultural and emotional potentials.

The use of professional and cultural myths as a tool for actualizing the archetypal layer of consciousness and cultural potential is realized in this pedagogical system (Fedorets, 2014) in the form of short stories, comments, meaningful key phrases, sayings of words that collectively form value-semantic contexts and the corresponding emotional background and intentions.

We are developing the concept of the "Mythos of Health-Preserving Competence of a Physical Education Teacher" (Fedorets, 2014) (for a detailed list of conceptual prerequisites, see the "Material & methods" section) (Fig. 1). In a broad cultural and educational sense we present mythos as a system of culturally defined anthropological values, ideas, images, ideals, thoughts, concepts and narratives about life, child (person) and the preservation of his/her health, movement, professional (in the sense of health activities) of the teacher and his/her role in it, which are associated with the archetypal layer of consciousness and internalized culture, and, accordingly, are aimed at holistic, life-creating, figurative, emotionally rich, existential and mythological representation, interpretation and value understanding of current health-preserving problems.

We define the mythos-health-preserving competence of a physical education teacher as a purposefully actualized fragment of the teacher's professionally oriented consciousness which is aimed at the implementation of this competence and is connected with both the rational beginning and the deep irrational archetypal components of the psyche, with a collective unconscious and existential dimension of the mental, with the phenomenon of culture and, accordingly, is formed on the basis of: interiorization of archetypically, anthropoculturally, existentially oriented images, narratives, knowledge, strategies, values, reflections, which are formally presented in the form of a constituent founding narrative – "Mythos-narrative"; developed dynamic health-preserving observation and intuition; as well as by studying and understanding the entire course, the reception of universal and professional culture, self-knowledge and reflection on the professional, cultural, psychological and life experiences. The mythos of the health-preserving competence of a physical education teacher is formally developed and formed as a component of the personal-existential component of the specified competence (Fig. 1). Functionally, the mythos of health-preserving competence is aimed at: the constitution of this competence into one whole by actualizing the personal-psychological, value-semantic, emotional-volitional spheres of personality and the interiorized potential of culture; solving complex and typical tasks of maintaining health through the use of certain emotional and cognitive attitudes, actualization of intuition, emotional intelligence, cultural potential; formation of health-preserving observation and intuition (as a component of thinking) and intentionality; manifestation and exteriorization of cordiality, mercy, kindness, tolerance, empathy in relation to the application of the ideas of humanism, child-centeredness, anthropologization; formation of the emotional and value context of the practical implementation of health strategies; actualization of cultural, value, ethical, emotional, intellectual and personal potential of the individual.

Mainly health-preserving activities are realized through the logos, which in both cognitive and activity aspects are manifested by a word in the form of a narrative. Thus, through word and narrative, there is a connection and interaction in the system (Latin "Mithos – Logos (naracio)". In practice, this represents the integration of the personal-existential component of competence through which "Mihtos" and intellectual-value as a "system" "Logos" is manifested.

We define two aspects of the concept of myth-health-preserving competence: as a part of competence (competence) – "Mythos of health-preserving competence" (Fig. 1) and formal-constituent, represented as a narrative – "Mythos-narrative" (Fig. 1). The first was considered above. Let's introduce the formal and foundational aspect of the health competence mythos-narrative. "Mythos-narrative" is formed purposefully and is an "idealized figurative-mythological-narrative and emotional-value basis of competence". When considered in the formal aspect, "Mythos-narrative" (Fig. 1) of health-preserving competence is a short, concise narrative. In the specified narrative the basic defining and system organizing images, values, meanings, ideas, ideals, representations, knowledge, metaphors, intentions, myths are represented purposefully, conceptually, generalized, and value-oriented. Mythos-narrative valuably, existentially and culturally oriented problematizes and funds the professional significance and meanings of the following defining phenomena: Person (child), Teacher, life, health, movement (motor activity), prevention of violations, preservation of the Earth.

Mythos-narrative reflects the essence of the pedagogical system and curriculum essentially figuratively, emotionally-intellectually, emotionally-valuable (affectively), and metaphorically. Therefore, we represent it in the format of a short story and clarify in the form of a list of myths. To understand the methodological and

foundational significance of the formal representation of the health competence mythos, it can be metaphorically called a "founding narrative or myth". Mythos-narrative of health-preserving competence (see below) plays a creative, founding, constitutive and integrating role in the construction and formation of this competence. Mythos are the main guidelines on the way to competence formation through the reflection of the heart (kindness, mercy, compassion), through feelings, emotional sphere, vitality, aesthetics, ethics. This representation makes it possible to form and use professional health-preserving myths purposefully, meaningfully, creatively, and not just spontaneously.

Based on the technological and value understanding of the mythos-health-preserving competence and professional-cultural tendencies, stereotypes, "professional myths", values and meanings, two questionnaires № 1 and № 2 were developed (see "Material & methods"). Questionnaire № 1 reveals the presence of simplifying and reducing ideas about a person (child) and his/her health. Questionnaire № 2 presents the ideas, ideals, images, visions, values, meanings, narratives as prerequisites for emotional and value existential, health-preserving (in the sense of professional) attitudes.

Below the "Mythos-narrative of Health-Preserving Competence of a Physical Education Teacher" is represented in the form of a story, and then in the form of a list (abbreviated version) of the main ideas in the format of professional and cultural "Myths" (mostly their names).

Mythos as a constitutive and setting-value narrative about Child (Person), Teacher, health, movement and the Earth (we represent the abridged version). Mythos is seen as an aspect of a physical education teacher's consciousness that defines and consolidates a vital, ontologically, value-based, and emotionally meaningful understanding of the meanings of health-preserving competence. Mythos is aimed at: actualization of deep, anthropological, cultural, professional stereotypes and life as a professional phenomenon; for the development of intentions, appropriate attitudes, intuition, empathy, emotional intelligence and holistic perception and understanding of reality and problems related to health preservation; for the manifestation of aesthetic, ethical and creative principles, cordiality, mercy, tolerance, humanity, sincerity, and responsibility.

Consider the defining and founding ideas that highlight the anthropological-value, humanistic and spiritually oriented understanding by a Teacher of physical culture of Person (child), his/her health and physical activity. The teacher, preserving and forming the health and preserving the lives of students, reveals the meaning and value of professional activity as a special self-sufficient ontology (being) and develops as a creative and humane Teacher. Such professional growth is a way of self-improvement, self-actualization and realization of oneself and one's high mission.

The teacher manifests and reveals movement in children as a whole, as a holistic image, poetry, rhythm and music; as a special self-sufficient "locomotor-spiritual being", happiness, joy, dialogue with oneself and the World; as a way of forming a bodily image, bodily arete – health, strength, beauty and a way to develop spiritual arete – mercy, kindness, reason, sophrosyne (moderation, harmony), tolerance; as care for oneself, care for one's loved people, care for the Earth; as a harmonious being in oneself, in society and on the Earth; as a given, as a gift and prosperity that needs to be valued and that does not need to be interfered with unnecessarily; as a manifestation of creativity, subjectivation, subjectivity, individuality and freedom; as harmony, measure, proportion, value, and success.

Mythos-narrative of health-preserving competence is presented as a list of the main aspects, ideas in the format of myths (abbreviated, only 27 items) (we represent the abridged version).

1. The myth of a Teacher as a person who preserves health and life ("Teacher's Archetype").
2. The myth of the meaning and value of professional health activities as a high mission.
3. The myth of Movement as Being, happiness and joy, poetry, rhythm and music.

Logos of health-preserving competence. The metacognitive aspect (Flavell, 1987; Flavell et al., 1993; Koriat, 2007; Panadero, 2017; Boer et. al, 2018; Ohtani et Hisasaka, 2018; Kallio et al., 2018) of the teacher's professional consciousness is considered as a significant and systemic organizing component of the intellectual-value (cognitive) component of health-preserving competence of a physical education teacher. Accordingly, the metacognitive aspect is also represented as a component of health-preserving thinking, which is part of the cognitive component. Metacognitive phenomena (knowledge, strategies, goals), which we present in the format of the concept of "Logos of health-preserving competencies of a physical education teacher" (Fedorets, 2017) (for a detailed list of conceptual prerequisites, see the section "Material & methods").

Logos of health-preserving competence of a physical education teacher is a developed professionally oriented metacognitive sphere of a teacher, which is aimed at implementing this competence and formed on the basis of: interiorization of metacognitive oriented knowledge, strategies, values which are formally defined in the format of the constituent narrative – "Logos-narrative", developed health-preserving thinking with a clear metacognitive aspect, as well as by studying and understanding the entire training course and reflection on own professional and life experiences. Logos of health-preserving competence of a physical education teacher is formally developed and formed as a component of the cognitive (intellectual-value) component of the specified competence (Fig. 1).

Experimental study. We present the results of the study on the application of. The experiment took place in 2017-2018. 816 physical education teachers are participating in the experiment, of which the experimental

group is represented by 411 teachers. This study was conducted in 9 higher educational institutions of Ukraine. These are the institutions: Communal Higher Educational Establishment «Kherson Academy of Continuing Education» of the Kherson Regional Council, Communal institution of the Lviv regional council "Lviv Regional Institute of Postgraduate Pedagogical Education", Communal institution "Sumy Regional Institute of Postgraduate Pedagogical Education", Municipal Institution "Zaporizhzhia Regional Institute of Continuing Pedagogical Education" of Zaporizhzhia Regional Council, Nikolaev Regional Institute of Postgraduate Pedagogical Education, Drohobych Ivan Franko State Pedagogical University, Donetsk Regional Inservice Teacher Training Institute, Communal institution "Zhytomyr Regional Institute of Postgraduate Pedagogical Education" of the Zhytomyr Regional Council, Chernihiv Regional Postgraduate Institute of Postgraduate Pedagogical Education named after K. D. Ushinsky.

We will analyze the results of testing using Wilcoxon's T-test (Sidorenko, 2003) according to Questionnaire № 1. A positive result is the answer - "No" to the questions of this questionnaire. We will prove a significant excess of the values of test results in Questionnaire № 1 after the implementation of the MMACCPET over the values of test results before the implementation of this methods. According to Figure 2 a), "atypical" shifts R_{atyp} are not observed as a result of Physical Education Teacher testing using Questionnaire № 1 "Analysis of reduction mythologized notions of health preservation". Therefore, the sum of the ranks of "atypical" shifts according to Wilcoxon's T-test (Sidorenko, 2003), calculated by formula (1), $R_{atyp}=0$. According to statistical tables (Sidorenko, 2003) the critical value of Wilcoxon's T-test for $n=12$ and $p<0,01R_{typ}=9$.

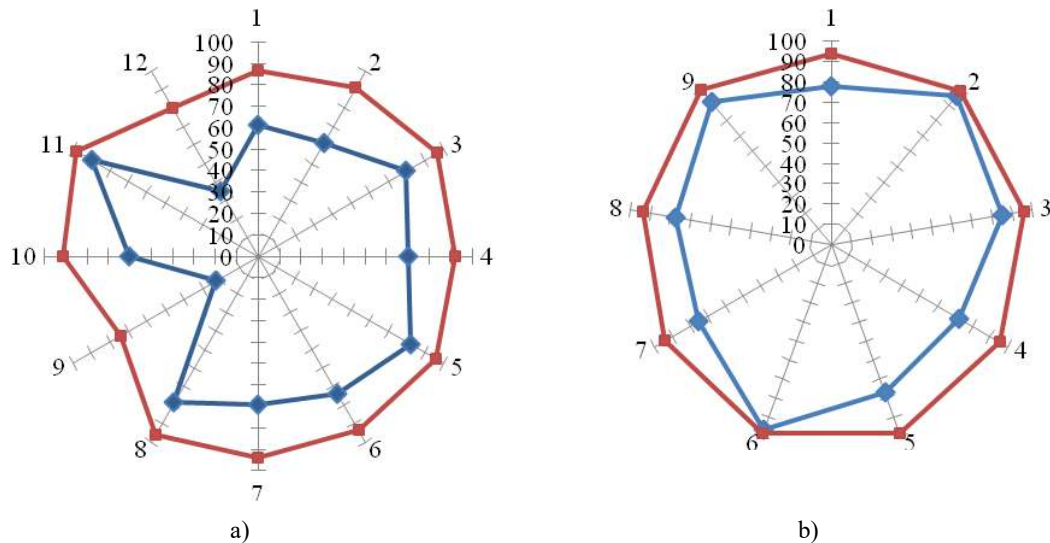


Figure 2. Graphical representation of test results Physical Education Teacher before and after the implementation of the MMACCPET (Blue color on the graph indicates the results of the study before the implementation of this methods, red - after the implementation of this methods): a) using Questionnaire № 1; b) using Questionnaire № 2.

Discussion

Therefore, at the significance level $p<0,01$ $R_{atyp}=0<R_{typ}=9$. Therefore, we reject hypothesis H_0 . We accept hypothesis H_1 : at the level of significance $p<0,01$ value of Physical Education Teacher test results using Questionnaire № 1 after the implementation of the MMACCPET significantly exceed the value of test results before the implementation of this methods. The presence of positive dynamics indicates the need to consider this issue. A slight increase in learning outcomes is observed for questions № 8 and № 11 (see "Material & methods"). This is due to the "dehumanizing" and simplifying human understanding of the specifics of these questions. Therefore, the vast majority of teachers both before and after teaching point to a modern tolerant and humanistically oriented understanding of the issues covered in questions № 8 and № 11.

Consider the results of testing using Wilcoxon's T-test (Sidorenko, 2003) according to Questionnaire № 2 "Understanding the spiritual and intellectual strategies of health preserving". The answer "Yes" to the questions in this questionnaire is correct. We will prove that the value of test results according to Questionnaire № 2 "Understanding the spiritual and intellectual strategies of health preserving" after the implementation of the MMACCPET significantly exceed the value of test results before the implementation of this methods.

Consider Figure 2 b). As a result of Physical Education Teacher testing using Questionnaire № 2, there are no "atypical" shifts R_{atyp} . Accordingly, the sum of the ranks of "atypical" shifts, calculated by formula (1), $R_{atyp}=0$ (Wilcoxon's T-test) (Sidorenko, 2003). The critical value of Wilcoxon's T-test for $n=9$ and $p<0,01R_{typ}=3$

according to statistical tables (Sidorenko, 2003). We reject hypothesis H_0 , because at the significance level $p < 0,01$ $R_{atyp} = 0 < R_{typ} = 3$. Accordingly, hypothesis H_1 is accepted: at the level of significance $p < 0,01$ values of Physical Education Teacher test results using Questionnaire № 2 after the implementation of the MMACCPET significantly exceed the value of test results before the implementation of this methods.

We will note that under the influence of training there is a positive dynamics on all questions. A slight increase is in the results on questions № 2, and № 6. This is due to the fact that these questions are relevant to the determining value and ethically oriented understanding of physical culture, attitude to the child and the role of the teacher. The humanistic, developmental, life-creating meanings that are revealed in these issues are close (essentially identical) to the established traditional for modern Ukrainian education beliefs and understandings of teachers defining moral, ethical and practical-technological aspects of their professional activities.

Conclusions

Purposeful and professionally oriented actualization of metacognitive abilities and archetypal measurement of consciousness using value-semantic and ethical-anthropic bases of culture is presented as a culturally oriented and innovation-anthropological way of improving the health-preserving competence of a physical education teacher. This methodological "metacognitive-archetypal-cultural" strategy, which in this pedagogical system is aimed at revealing the health, humanistic, cultural, personal and intellectual potential of physical education teachers in postgraduate education is implemented on the basis of the author's course "Development of health-preserving competence of a physical education teacher". The system of this author's course uses "Methods of actualization of metacognitive abilities and archetypal measurement of consciousness to improve the health competence of a physical education teacher". In the substantive part of all topics of the course, metacognitive strategies are considered and formed, and the archetypal dimension of the teacher's consciousness and cultural component is updated accordingly in order to solve both specific problems of students' health and development. Within the framework of this methodology, we have developed and introduced as its components two concepts "Mythos of health-preserving competence of a physical education teacher" and "Logos of health-preserving competence of a physical education teacher". These concepts are considered both in the system of health-preserving competence of physical education teachers, being part of its components and as formally set value-semantic and cognitive prerequisites for their formation, which are presented in the form of purposeful concise, meaning-forming, motivating and constitutive competence of framework-setting narratives – "Logos-narrative" and "Mythos-narrative".

We present the mythos of health-preserving competence of a physical education teacher as a purposefully updated, developed and professionally oriented fragment of the teacher's consciousness connected with both the rational beginning and the deep irrational archetypal components of the psyche, which is aimed at effective realization of this competence. The mythos of the health-preserving competence of a physical education teacher is formally developed and formed as a component of the personal-existential component of the specified competence. The logos of health-preserving competence of a physical education teacher is defined as a purposefully actualized, developed and professionally oriented metacognitive sphere of a teacher, which is aimed at the effective implementation of this competence. The logos of the health-preserving competence of a physical education teacher is formally developed and formed as a component of the cognitive (intellectual-value) component of the specified competence. The logos and mythos of the health-preserving competence of a physical education teacher are considered integratively: as complementary systems of constitution and integration of competence into one systemic integrity; and professionally oriented areas (metacognitive and archetypal) of consciousness are aimed at the effective implementation of this competence.

The analysis of the application effectiveness of the "Methods of integrative use of metacognitive and archetypal phenomena to improve the health competence of physical education teachers" was conducted using two questionnaires. The study determined the statistical significance of the Physical Education Teacher test results using these two questionnaires based on Wilcoxon's T-test, confirmed the positive dynamics of learning outcomes, i. e. their value after the application of this methods is significantly greater than before its implementation. Therefore, the application of this methods is effective. Thus, there is a positive dynamics in the manifestation, professional orientation and development of metacognitive strategies, as well as in the health-oriented actualization of the archetypal dimension of the teacher's consciousness and the relative disclosure of personal, existential and cultural potentials of physical education teachers.

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