Systemic Nature of Human Psyche and Psychology of Education

Системність психіки людини і психології навчання

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ABSTRACT
The aim of the article is to study the paradigm of systemic nature of human psyche in psychology.

Methods of the research. The following research methods were used to solve the tasks formulated in the article: observation, systematization, analysis, modeling, genetic modeling method.

The results of the research. The article presents the results of a systemic study of the human psyche. Genetic methods and mechanisms of personality design are considered. The methodological component is determined, according to which the personality is a form of existence of the human psyche. It is the integrity to self-development, self-determination, conscious subject activity and self-regulation and has its own unique inner world. The genetically ascending contradictory unit of personality that is constantly evolving and forming is a need (the author’s term «nuzhda» by S. D. Maksymenko). It acts as an information and energy property of a human, which consists in the expansion of life in ontogenesis and phylogeny. The principles of construction of EGM (experimental-genetic method) and Genetic-modeling methods (GMM) are substantiated. It is proved that these methods are the most adequate in psychology (along with longitudinal), which make it possible to study both higher mental functions and personal qualities.

Conclusions. On the basis of theoretical and methodological analysis and experimental-empirical materials the idea of scientific and applied productivity of genetic methods (EGM, GMM), research of a paradigm of system of systemic nature in science is confirmed. It is proved that these methods are the area of
psychological knowledge that can predict the development of the systemic psyche of the personality. The author’s concept of «need» («nuzhda») is singled out, its nature and attributive semantic features of this concept are characterized.

Genetic and psychological analysis of theories of personality, and the most importantly the dynamic unity of biological and social as a contradictory unit of personality, fixed in need («nuzhda»), allows us to talk about the development of real theoretical foundations of the genetic model of existence and psychological growth of personality.

**Key words:** systemic nature of psyche, self-determination, life, personality, mental functions, psyche, psychology of training, principles of construction of EGM methods, experimental-genetic method (EGM), mental processes, genetic-modeling method (GMM), need («nuzhda») (source and driving force of personality development).

**Introduction**

*The personality itself doesn’t arise – it is created.*

*S. D. Maksymenko*

The further improvement of the educational system until its radical reforming is associated with the growing rate of economic and social changes in society, among which, considering the role of the human factor in these processes, the humanistic factor prevails. And when the existing education system followed the needs of the economy and managed to train personnel for all spheres of economic activities, the transition to the post-industrial stage of its development changes the requirements for the function of the education system and, accordingly, for the teaching methods and training: «the product» of the new system of education should not be narrow specialists, but creative individuals with systemic nature of thinking.

The insufficient systemic effect of modern education is caused by the shortcomings in theoretical ideas about educational activities. It is most often seen as an intellectual and
cognitive activity. Hence its purpose is to give students the necessary scientific knowledge and skills.

The rapid growth of the total amount of scientific information, the system of teacher training focused on reproductive transfer of information to students rather than the development of their creative thinking and communication skills have become the main causes of the crisis in the education system. The system of education lacks the possibility to provide the active participation of the subject in social relations and in their own life, the ability for self-realization in a rapidly changing world.

Such a change in conceptual principles requires an in-depth study of the patterns of personality formation.

Different approaches to the study of personality emphasize the quality of self-regulation and self-development to be fundamental for the personality. The level of personality’s self-development is identified with self-determination. Among the principles influencing the formation of self-determination, that is caused by the level of thinking development.

The nature of the human psyche is personality-based. The highest level of development of being has the reflection and therefore is able to reflect all other being and oneself. It becomes the real way of existence of a particular person. We can say the opposite: in the world human life is a real way (form) of existence of higher psyche (Максименко & Кудерміна, 2019). Objectification, i.e. additional transfer of the mental (ideal) into the objective (material) is carried out by individuals, leaving in the subject all the unique originality of this personality – the author.

**Methods of the research**

The following methods of the research were used to solve the tasks formulated in the article: observation, systematization, analysis, modeling, generalization, genetic modeling method.
Results and their discussion

The systemic nature of the human psyche means that any individual mental process acquires a very complex structure. It has its own patterns and qualities, but at the same time it reflects the integrity of the personality. Therefore, when studying a particular mental phenomenon (thinking, emotions, memory, etc.), only special and artificial abstraction allows the researcher to draw conclusions about it in a «pure» form. After all, if we talk about thinking, in fact, its indicators are determined not only by the features of the intellectual sphere: motives, goals, values, inclinations, stable and temporary emotional states, even somatic health – all these patterns determine functioning of any mental function (Максименко, 2013).

The main condition for the purposeful formation of personality is an organized systemic nature of educational activities. This applies, above all, the formation of theoretical thinking, the ability to learn, to master abilities. Among the factors that affect the development of personality, perhaps the most important is systemic thinking (Максименко К., 2015).

Considering the system of the psyche in general, consciousness and unconscious patterns in particular are functional organs of the subject’s activity, which arose during its adaptation to the world. That’s why the studying of the patterns of mental phenomena outside the activity does not have any sense. From the first half of the twentieth century it became the fundamental concept in psychology.

The personality was chosen to study the psychological unit that retained all the basic properties of the whole unit: «And in this form it is not divided further. The human psyche is personality-based, and this means that any study of any partial process or phenomenon will be adequate only when the latter is considered as a meaningful branch of personality, and only then it becomes clear (note that this is not taken into account in psychology rather than a declaration)» (Максименко, 2006: 64).

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The choice of «units» in the system of the psyche is based on the cultural and historical theory of L. S. Vyhotskyi and P. Ya. Halperin, according to which the human psyche is a holistic socio-cultural and semiotic formation being developed in the process of activity and communication (Выготский, 1996; Гальперин, 1976). At the same time, it makes sense to consider «the complex contradictory interaction of biological and social units in two planes – as factors that affect the personality, and as factors that form the personality and ensure its existence and development from inside» (Максименко, 2006: 65).

The development of personality as a systemic psyche occurs in various activities, including the development of new types of cognitive activity, especially in education, and it is possible in compliance with its systemic principles defined by us:

1) the principle of unit analysis should ensure the selection of «cells» – the psychological unit that retains all the basic properties of the whole. The first real «unit» of existence and development of the human psyche is the personality;

2) the principle of historicism «invests» the experience gained by mankind into the subject and educational task as a means of solving a specific educational problem. As a result of such assignment there is a new mental structure of the highest level of complexity (unit of consciousness);

3) the principle of systematization (the principle of holistic consideration of mental formations) is proposed to consider mental phenomena, mental formations as processes, as the transformation of «things in process», ensuring the transition from less developed to more developed units;

4) the principle of designing (principle of active modeling, reproduction of mental forms in special conditions) defines conceptual forms for constructing an experiment to identify patterns of genesis of such mental processes, which does not exist in the inner world of the individual, but they must be formed as a result of logical processing of new cognitive activities (Максименко, 2006; 2014).
The experimental genetic method (EGM) formulated by us is based on these principles — «the method of psychological study of the process of constructing higher mental functions, which are assigned by the subject in the process of transforming a certain content» (Максименко, 2006: 56). The EGM consists of the theory within which it arose, the design (modeling) that transforms the experiment, and the diagnosis (fixation) of both intermediate and the final psychological new formations of the developing personality (Максименко, 2006: 60).

The theoretical understanding of the experience of experimental training, carried out in line with the above approach, leads to the need to identify the system of principles for constructing the experimental genetic research, as well as to identify the sequence of basic logical and operational structures that implement it.

At the same time, conducting experimental research is aimed at finding new ways of developmental and educational learning. The new training criteria have been identified. These studies, in turn, affect the practice of mass school. Recently the efforts of teachers and psychologists have been aimed at identifying patterns of construction of students’ formation of educational activities, its structure.

The qualitatively new stage in the development of psychology is caused by the transition to genetic research methods. It is characterized by the synthesis of psychological research with the design of new forms of appropriation of socio-cultural values, new effective forms of educational process, which makes it possible to reveal patterns of mental development. The genesis of personality is a specific transformation of the structural components of activities mediated by the mechanism of interiorization in the structural properties and qualities of personality (Максименко С. & Орап, 2018). That is, in other words, the personality is both the implementer of activity and the activator of the process of functioning of activity, which is transformed into the mental qualities of the personality.
It is experimentally proved that the difference between the functioning and development is that the latter always and necessarily involves the formation of a new interfunctional system, and this occurs only when the individual is the subject of learning. The development of higher mental structures is indirectly connected with the cultural context, and it means that the objects of culture are assigned in learning by the child (Максименко & Калмиков, 2018).

The object of culture is the product of human activity and in fact is a coded and condensed imprint of the human psyche. The development occurs only when the child in a specific form of his own activity «decodes», «unfolds» and makes his objectified psyche (objectification), thus forming his own (Максименко, Ткач, Литвинчук & Онуфрієва, 2019).

Later (after interiorization), they form constitutive structures in the mind, forming «around themselves» the so-called interfunctional psychological systems, and affect the subsequent behavior of the subject (Лурия, 1974). The so-called personal mediation of educational activity arises in this way. This genetic mechanism, in our opinion, is a real basis for self-development. It is scientifically proved we deal with the phenomenon of designing (self-designing!) of higher mental functions in the unique space of the social situation of development. This leads to the search for a methodological procedure that would allow a more adequate study and understanding of this complex phenomenon. We believe that such a procedure should be a genetic modeling method (as a modification of the genetic).

The proposed unit of analysis of the psyche genesis, namely «functioning-development» (which was established in the experimental research) (Максименко С., 2014), will significantly expand the scope of the genetic method, mainly in its genetic modeling modification.

Thus, in line with the achieved results and new tasks, it becomes possible and necessary not only to work out new modifications of the method, but also to expand the scope of its

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application, which is possible due to our principles of genetic method and procedures. It is impossible to be limited only to research the formation of educational activity in primary school age, and only in the field of mastering theoretical concepts. It is necessary to investigate the specifics of the initial contradictory relationship «functioning-development» in different age groups, including adults; to study the peculiarities of the «interaction» of these phenomena with individual psychological and, even neuro-typological features of man, to develop experimental research in the field of psychology of education and communication. The integrity of the personality is manifested in its ability to self-development, self-determination, conscious substantive activity and self-regulation, to create their own unique inner world (Maksimenko & Serdiuk, 2016). Therefore, fundamentally new mechanisms are formed in the personality, which are consciously controlled by the person and provide self-determination.

The experimental-genetic method developed by L. S. Vyhotskyi and brilliantly implemented by his students and followers remains the only option (except longitude). The new approach requires the new method (L. S. Vyhotskyi). Our continuous theoretical and analytical work on establishing the essence of this method confirms the assumption.

The essence of the genetic modeling method consists in modeling the genesis of a holistic personality. This takes into account the inviolable position of psychology, that any psychological phenomenon (function) can be studied only by studying it in the process of development (formation). The method allows to influence the development of the personality as a whole, although this influence is associated with another, unusual interpretation of this process. The genesis that follows the objective laws, the peculiar activity of the personality and the system of socio-pedagogical conditions of its functioning and development are connected into a single whole. It proves the expediency of using the genetic modeling method.
The principles of construction of the method reflect the nature of the existence of the object of study. The technology of the method (the principle of unity of genetic and experimental lines) involves the research in the most «natural» conditions of existence of the personality and the creation of a relevant space for the implementation of the individual’s numerous opportunities to model their own development and existence. A living being that begins in the womb is the creation of two human beings. The social pattern is embodied in the creature – a new biological being, but not only biological, namely biosocial. The need (the author’s «нужда» by S. Maksymenko) acts as a carrier of the eternal experience of man (both as biological and a social being) and, at the same time, it is the source of personal activity – an activator, the energy of which never fades, as it is embodied and renewed in a new life.

The need («нужда») acts as the only initial intensive force, the activity of which «launches» a complex system of «personality» and ensures its development as self-development. The need («нужда») doesn’t generate the existence, the ontogenesis; it is the need («нужда») to be able to help the unique phenomenon of life and its development. The need («нужда») is the genetically original relationship that constitutes in a single dichotomous pair of the maturation of a biological individual and the psychological manifestation of social influences, which generates personality. In fact, the category of need («нужда») is an explanatory principle in relation to the modeling nature of the human psyche and then we can talk about the method of studying personality.

The analysis of different scientific theories shows that they «cover» certain aspects of the existence and development of needs (H. S. Kostiuk, P. Ya. Halperin, J. Piaget, L. S. Vyhotskyi). Our understanding of the category of need («нужда») allows us to talk about modeling rather than appropriation: mental, driven by need («нужда»), causes a special – personal human action. This action in the beginning (in early
ontogenesis) is exclusively affective (but still it is personal, as unique in both planning and action). It generates the cognition. The cognitive need emerges, which further develops into the intellect, ultimately forming a holistic cognitive sphere of the personality (Максименко, 2013: 7–23).

But pay attention – we say that everything begins with the expression of need («нужда»), that is – with their own activity, and this, but not «pressure» causes the process of interiorization. So, we agree with V. P. Zinchenko, that exteriorization occurs before interiorization. But to investigate this empirically, you need an adequate method – a genetic modeling experiment.

The principles of construction of the method reflect the nature of the existence of the object of study: social, the impossibility of obtaining a final empirical search for the inner world of man (reflexive relativism). We leave unchanged the name of the first principle of our method – the principle of unit analysis (study based on logical and psychological analysis of a contradictory unit of a need («нужда») that includes abstraction in an undeveloped form: biological and social.

Another important principle of the genetic modeling method of studying personality reflects its original nature. This is the principle of unity of biological and social. The status of the principle of the scientific method does not only allow to declare this unity, because in this case it will cease to be a principle.

The third principle is creativity. The correlation of the need («нужда») with numerous and diverse objects and phenomena doesn’t generate needs, but it determines the goal-setting and development of their own and unique means of achieving goals. This is, in fact, creativity. To adhere to the principle of creativity in the analysis (and research) of the personality we mean to «take» its existence as a whole, in its unique directed unity. And this means really taking into account the ambiguity, unexpectedness and unpredictability of the personality (Maksymenko C., Yevtukh, Tskekhmister, Maksymenko K. &
Lazurenko, 2012). The fourth principle is reflexive relativism, which fixes the fundamental impossibility of establishing accurate dimensions and finally fixing the highest unique and creative manifestations of personality.

The last 5th principle of the genetic modeling method of personality research is the unity of experimental and genetic lines of development. In our opinion, this is a very important point of characterization of not only our method, but also of the general state of affairs in cultural-historical theory.

The need is the original energetic principle of the personality, biosocial in nature. The ontogenesis of a person begins much earlier than he/she is born physically. Its beginning – materialization is the embodiment of the needs («nuzhd») of two people who love each other. There is a new form of existence of a need («nuzhda»), that simply cannot exist without a material carrier (at least, modern science does not know any other way of existence of biosocial need («nuzhda»), except its existence as a sociobiological energy basis of human personality).

Conclusions

Thus the first attributive feature of the need («nuzhda») is its heterogeneity: biological and social here initially constitute a contradictory, but absolutely inseparable unity.

The second attributive property of need is its ability to develop (self-development). The analysis of the phylogeny and ontogenesis of the living beings shows that the infinite flow of need («nuzhd»), its self-development is not accidental and chaotic. It is aimed at constant complication and increased integration. This movement ends in the conditions of the Earth with the «exit» of the need («nuzhda») to the position of the possibility of self-awareness (reflection). The third attributive feature of need («nuzhda») is that its development is directed and represents orthogenesis.
The fourth important attributive property of a need («nuzhda») is its ability to generate. This creative quality is manifested in everything connected with life, and it is, indeed, a real miracle (О. Ф. Іосєв). If we talk about a human, we meet the reality: the need («nuzhda») of man can create a new man and a qualitatively new product (creativity).

The fifth attributive property of need («nuzhda») is that it exists only in the form of embodiment in the living being generated by it.

The sixth attributive property of need («nuzhda») should be considered its affiliative nature. The real form of existence of need («nuzhda») is love.

Finally, it should be noted that the seventh important attribute of need («nuzhda») is the infinity of its existence. The existence of the organism is completed (final). But thanks to the meeting and through it, the need («nuzhda») continues to exist and is infinite in time.

The genetic and psychological analysis of theories of personality, and the most important the dynamic unity of biological and social as a contradictory unit of personality, fixed in need («nuzhda»), allows us to notice about the development of real theoretical foundations of the genetic model of existence and psychological growth of personality.

The genesis of personality is a specific transformation of structural components of activity mediated by the mechanism of interiorization into structural properties and qualities of personality (Maksymenko, 2015). That is, in other words, the personality is both the implementer of activity (as a form of manifestation of its potentials), and the activator of the process of functioning of activity, which is transformed into the mental qualities of the personality.

The personality is a form of existence of the human psyche and is a unity capable for self-development, self-determination, conscious substantive activity and self-regulation and has its own unique inner world – subjectively interpreted, satu-
rated with modalities of personal experiences that reflect the outside world (Леонтьев, 1983).

The system and structural and functional methods of analysis can be sufficient tools for research and scientific explanation. But only by studying the conditions of origin and the laws of development of the structures of the psyche and consciousness, we can know their nature and patterns of functioning to carry out a controlled learning process. For mental operations to be reversible (that is, for us to be able to restore their flow from beginning to end), they firstly must be focused on finding a specific solution to a particular problem: «Social life helps to make mental processes reversible and thus cause the emergence of logical thinking» (Piaget, 1969).

The ability of the human psyche to control its cognitive processes and thus control its cognitive activity, to be above the process, «outside it» (meta), is formulated by John Flavell, defining as metacognition – «knowledge of knowledge» (John Flavell, 1976). The researches of J. Flavell and his followers became the subject of theoretical and experimental research in a new direction – «metacognitive psychology» (Taylor, 2002; Brown, 1987; Kluwe, 1987).

In the research, D. Ridley, P. Schuts, R. Glanz and C. Weinstein define metacognition as a process of using reflection for consciously study of thinking, awareness of their own strategies of mental activity (Ridley, Schuts, Glanz & Weinstein, 1992). The ability of the psyche to perform the metacognitive process – the process of managing processes and thus manage their cognitive activities includes active control over the cognitive processes performed by the subject and their interaction towards the goal.

Only such technology of education focused on the art of using knowledge, on developing a style of thinking that allows to analyze problems in any area of life and find their most accurate and economical solution, will be able to provide this ability to the psyche. The educational process should be orga-
ized as a group research activity to «acquire» new knowledge for students and aimed at understanding how the problem is solved.

The key element of such a process is a creative teacher, and it is from his training that the reform of the education system must begin. His / her role is a planned and purposeful organization of problem situations on the material of educational subjects, setting tasks for students and, if necessary, providing them with assistance.

For the purpose to develop the skills of systemic thinking, the tools of the theory of solving inventive problems (TSIP) are developed in technical creativity in the form of non-rigid algorithms, in which creative thinking strategies are concentrated.

These algorithms can be considered as models of systemic thinking, which are actualized in the process of solving specially selected tasks by the subject and they carry directly the methods of constructing higher mental functions, which are assigned by the subject in the process of transforming certain content.

The educational activity organized in this way is the main principle of purposeful formation of the personality. This applies, above all, the formation of theoretical thinking, the ability to learn, to master abilities.

We would like to overcome the simplified logical-mechanistic approach to determining the structure of personality. G. Allport noted concerning this approach that each researcher artificially introduces into the structure of the personality any mental phenomena. It seems to us that this artificiality is overcome by one short but fundamentally significant idea – the structure of personality arises as a kind of reflection of the world where we have to live...

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Максименко Сергій, Максименко Ксенія, Ірхін Юрій. Системність психіки людини і психології навчання

АНОТАЦІЯ

Meta статті – дослідити парадигму системності психіки людини у психології.

Для розв’язання поставлених у роботі завдань використано такі методи дослідження: спостереження, систематизація, аналіз, моделювання, генетико-моделюючий метод.

Результати дослідження. У статті наведено результати системного дослідження психіки людини. Розглянуто генетичні методи та механізми проєктування особистості. Визначено методологічну складову, згідно з якою особистість є формою існування психіки людини, яка є цілісністю до саморозвитку, самовизначення, свідомої предметної діяльності.
ності й саморегуляції та має свій унікальний і неповторний внутрішній світ. Генетично висхідною суперечливою одницею особистості, яка постійно розвивається та формується, є нуджа. Вона виступає як інформаційно-енергетична властивість людини, що полягає в експансії життя в онтогенезі та філогенезі. Обґрунтовано принципи побудови ЕГМ (експериментально-генетичного методу) і ГММ (генетико-моделюючого методу). Доведено, що ці методи є найбільш адекватними у психології (поряд із лонгітюдним) і дають змогу досліджувати як вищі психічні функції, так і особистісні якості.

**Висновки.** На основі теоретико-методологічного аналізу й експериментально-емпірічних матеріалів підтверджено ідею наукової та прикладної продуктивності генетичних методів (ЕГМ, ГММ), дослідження парадигми системності психіки в науці. Доведено, що ці методи є тією галуззю психологічного знання, яка може забезпечити прогнозування розвитку системності психіки особистості. Виокремлено авторське поняття «нуджа», охарактеризовано його природу й атрибутивні змістовні ознаки.

Генетико-психологічний аналіз теорій особистості, а головне – динамічної єдності біологічного і соціального як суперечливої одніці особистості, що фіксується в нуджі, дає підстави говорити про розробку реальних теоретичних підвалин генетичної моделі існування і психологічного зростання особистості.

**Ключові слова:** системність психіки, самодетермінація, життя, особистість, психічні функції, психіка, психологія навчання, принципи побудови методів ЕГМ, експериментально-генетичний метод (ЕГМ), розумові процеси, генетико-моделюючий метод (ГММ), нуджа (джерело і рушійна сила розвитку особистості).

Максименко Сергій, Максименко Ксения, Ирхин Юрій. Системність психики человека и психології обучения

**АННОТАЦІЯ**

Целью статьи является исследование парадигмы системности психики человека в психології.

Для решения поставленных в работе задач использованы следующие методы исследования: наблюдение, систематизация, анализ, моделирование, генетико-моделирующий метод.

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Результаты исследования. В статье приведены результаты системного исследования психики человека. Рассмотрены генетические методы и механизмы проектирования личности. Определено методологическую составляющую, согласно которой личность является формой существования психики человека, являющейся целостностью к саморазвитию, самоопределению, сознательной предметной деятельности и саморегуляции и имеющей свой уникальный и неповторимый внутренний мир. Генетически восходящей противоречивой единицей личности, которая постоянно развивается и формируется, есть нужда. Она выступает как информационно-энергетическое свойство человека, заключающееся в экспанции жизни в онтогенезе и филогенезе. Обоснованы принципы построения экспериментально-генетического метода (ЭГМ) и генетико-моделирующего метода (ГСМ). Доказано, что эти методы являются наиболее адекватными в психологии (наряду с лонгитюдным) и дают возможность исследовать как высшие психические функции, так и личностные качества.

Выводы. На основе теоретико-методологического анализа и экспериментально-эмпирических материалов подтверждено идею научной и прикладной продуктивности генетических методов (ЭГМ, ГСМ), исследование парадигмы системности психики в науке. Доказано, что эти методы являются той областью психологического знания, которая может обеспечить прогнозирование развития системности психики личности. Выделено авторское понятие «нужда», охарактеризовано его природу и атрибутивные содержательные признаки.

Генетико-психологический анализ теорий личности, а главное – динамического единства биологического и социального как противоречивой единицы личности, фиксирующейся в нужде, позволяет говорить о разработке реальных теоретических основ генетической модели существования и психологического роста личности.

Ключевые слова: системность психики, самодетерминация, жизнь, личность, психические функции, психика, психология обучения, принципы построения методов ЭГМ, экспериментально-генетический метод (ЭГМ), мыслительные процессы, генетико-моделирующий метод (ГСМ), нужда (источник и движущая сила развития личности).