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ECOPSYCHOLOGICAL MODEL OF TEACHER AGENCY FORMATION IN THE EDUCATIONAL LANDSCAPE

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Abstract. According to the ecopsychological model, the formation of personal agency in learners' educational activities comprises seven interrelated stages, mathematically determined by the coefficients of coherence and integrity.

Observations of professionally significant teachers' qualities were carried out during advanced training courses from 2021 to 2023 in Samara. The studied profile of teachers' agency reflects the extent to which each stage of personal agency formation is manifested, the coherence between these stages, and the process of interiorization/exteriorization of professional competencies. Correlations were found between the professionals' educational level, age, and the extent of each stage of personal agency formation. Teachers with high and low coherence differ significantly in the communicative level of universal learning actions.

The extent of the stages of personal agency is associated with teachers' coherence indicators, which exhibit a complex factor structure: four factors for each type of integrity.

Keywords: *ecopsychological paradigm, pedagogical environment, stages of agency formation, agency profile, coherence and integrity, interiorization, exteriorization*

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Introduction

The modernization of education, including the withdrawal from the Bologna system, requires a new, in-depth look at the vocational training of professionals and the continuity of the training program and retraining in general. The question of “the psychological and pedagogical conditions and methods to transform the anthropocentric attitude of man

towards the natural and socio-cultural environment and the nature of man himself into an ecocentric one” [1, p. 124] remains open. “...The relevance of ecological-psychological research is determined by the theoretical and practical necessity of the methodological use of the “individual-environment” relationship as a starting condition for the study of a person’s mental development in the context of his interactions with the environment, his mental processes, states and, of course, environmental consciousness” [1, p. 125]. The formation of participants’ agency in the pedagogical environment as a result of pedagogical interaction is considered in the works of V. Panov [2–4], L. Mitina [5; 6], E. Kolesnikova [7–9], I. Plaksina [3, 4, 10], R. Sunnatova [11], M. Selezneva [11] and others [12–14].

According to the concept of V. Panov, the ‘human-environment’ system provides a number of opportunities for a particular person to achieve individuality in their mental processes, states, and consciousness. Thus, it acts as a unique environment for the development (gain) of individuality, which, of course, cannot be reduced only to the individual characteristics of a person and/or only to external environmental objects and socio-cultural conditions. The environment for the development of individuality in this sense should have a system-generative character, the system-forming core of which is the external and internal (mental) activity of a person carried out by a particular individual or community” [2, p. 278]. The role of subject-collaborative and subject-generative forms of interaction for the self-organization of participants in the educational process has already been pointed out [2; 8; 15]. The purposeful organization of a teacher’s evolving, pedagogical, creative educational environment determines students’ interiorization of new knowledge and skills with subsequent exteriorization into educational activities and self-actualization [16, p. 136]. The problem area becomes an investigation of the structure of teachers’ agency [17, p. 59] and the coherence and integrity of the stages of agency formation [18; 19, p. 6]. The novelty of the study is the attempt to determine the role of coherence in the structure of a teacher’s agency development, as well as the use of coherence indicators as an indicator of respondents’ sincerity and social desirability.

Aim of the study: To investigate the coherence and integrity of the stages of formation of teachers’ agency in the pedagogical environment.

Research objectives:

1) Analyze the approaches to the development of participants’ agency in the pedagogical environment;

- 2) Explore the characteristics of the formation of teachers' agency;
- 3) Determine the indicators of coherence and integrity of the stages of the development of teachers' agency and the role of coherence in the structure of the agency development of participants in the educational environment;
- 4) To study the characteristics of teachers with high and low coherence of stages of agency formation;
- 5) To study the characteristics of teachers with low, medium, and high integrity and the factors determining them.

Research hypothesis: The indicators of coherence and integrity in the stages of teachers' agency formation reflect the processes of interiorization and exteriorization of professional competencies in the pedagogical environment.

Research methods and methodology: Following the aim and objectives, a methodological apparatus was used that includes general scientific research methods:

- Scientific method;
- Systems analysis;
- Empirical method;
- Test method;
- Method for analyzing the data obtained;
- Methods of mathematical statistics (cluster analysis, non-parametric correlation analysis of Tau-Kendall, factor analysis).

Methodology of research: Adult Stages of Agency Formation Questionnaire (AAFQ) by A. Kaptssov, V. Panov [12] (Appendix 1).

Ecopsychological paradigm. “The ecopsychological model of the formation of agency allows us to consider the development of agency as an ontological process, the stages of which are characteristic of the development of any subject action <...> for the formation and analysis of universal and universal and meta competences in higher education and universal learning actions in general education” [18, p. 93]. The parallel-sequential model of agency formation combines the cognitive-regulatory abilities of certain levels of universal learning actions (hereinafter referred to as ULA) and types of activities with types of interaction between participants in the educational environment [19, p. 74]. From the perspective of the ecopsychological approach of V. Panov, “the development of agency is considered as <...> within the ontological continuum ‘subject – spontaneous activity – a subject of productive action’” [11, p. 9].

Previous studies have confirmed the role of integrity and coherence in testing the ecopsychological model in the educational process [18, p. 20]. “The importance of these characteristics lies in the fact that, firstly, they allow a holistic assessment of the stages of the formation of agency as a psychological system, and secondly, they identify individual characteristics of the formation of agency in different students and different educational situations” [18, p. 93]. “The integrity of a psychological system in relative units can be defined as the ratio between the sum of coherence indicators and the maximum value of coherence” [20, p. 6], which characterizes “the level of monolithicity/disunity of the stages of performing educational actions within the system<...> in the range from 0 to 1” [18, p. 96]. The interiorization of ULAs relevant to the stages of agency formation is crucial for the professional training of teachers. Subsequent exteriorization in practical pedagogical activity is reflected in students’ educational outcomes and creative professional self-realization. Low indicators of the integrity of the system are characterized in the process of interiorization – by external motivation and difficulties in the training of teachers themselves; in the process of exteriorization – problems of adaptation to the conditions of a specific pedagogical environment, professional crises, and the risk of emotional burnout. “Empirical studies of the relationship between learning success and the coefficient of engagement have shown that the latter has an optimal value in the range from 0.3 to 0.6” in the group of students [18, p. 93].

The coefficient of coherence of the stages of agency formation in the range from 0 to 1 makes it possible to determine the sincerity/social desirability of the respondents’ answers at extremely low or high indicators. The maximum values of coherence indicators (from 0.9 to 1) indicate the impossibility of developing agency qualities and professional skills due to extreme pedantry.

In the context of psychological development, the following seven stages of agency – from a motivated individual to a creative innovator – offer a nuanced framework for understanding how personal initiative, critical thinking, and self-directed behavior evolve over time:

1. Motivated Individual

- Also referred to as the stage of “subject of need.”
- Characterized by the emergence of internal motivation (“I want”).
- The person actively seeks ways to fulfill their needs and goals, demonstrating initial self-driven behavior.

2. Observer

- Focuses on cognitive development: the ability to watch, perceive, and process information about one's own activities and the environment.
- Observation and reflection are present, but active change or critique might be limited.

3. Apprentice

- The individual follows instructions or established rules exactly, often with minimal personal interpretation or innovation.
- There is little to no critical assessment of tasks; the main goal is to complete activities as demonstrated or instructed.

4. Learner

- Engages in typical learning activities, gaining knowledge and skills.
- However, the person struggles to see or correct their own mistakes independently without external guidance.

5. Critic

- Develops the ability to evaluate and critically reflect on personal performance and outcomes.
- Involves self-awareness of mistakes, recognition of areas for improvement, and active problem-solving.

6. Master

- Reaches a high level of skill and competence, executing tasks with quality and consistency.
- Able to self-monitor and self-correct effectively, refining their own expertise.

7. Creator

- Displays creative potential and innovation, going beyond mastered tasks to produce new ideas, approaches, or solutions.
- Represents the highest or most autonomous extent of agency, fully integrating creativity, self-reflection, and initiative.

Presentation of the main results of the study. The teacher agency formation stages were studied using the AAFQ by A. Kaptsov and V. Panov [12] (Appendix 1). One hundred forty-nine teachers ($M = 43.83$; $Sd = 34.68$; 95.30% women) of advanced training courses of the Center for Educational Development of the Samara Urban District took part in the observation on various topics in 2021–2023 (hereinafter Course 1 and Course 2). For secondary processing of the study data, cluster analysis (k-means method) in the STATISTICA 10.0 package, non-parametric correlation analysis according to Kendall's Tau, and

factor analysis (principal component method with orthogonal varimax rotation) were used.

The observation of the pedagogical staff revealed an evolving (emergent) agency in most stages of the formation. Moreover, it can be assumed that 45.6% of teachers have formed the stage of internal motivation (Motivated individual) at the personal level of universal learning actions, which is characterized by exploratory activity (see Fig. 1). V. Panov emphasizes: “The psyche presents itself in different forms of being (emerging, established and objectified/alienated) ... the necessary principle for the analysis of the stages of the formation of psychic reality must be the principle of the unity of interiorization and exteriorization” [21, p. 18].

An insufficiently developed cognitive level of universal learning actions (ULAs) is observed in 38.9% of teachers at the ‘observer’ stage and in 71.8% at the ‘apprentice’ stage (Fig. 1). The situational and superficial nature of their perceptual activity as well as the difficulties in processing and analyzing information are accompanied by an extremely low level of reproductive activity and goal-directed behavior (Fig. 1).

As V. Panov points out, “A subject who reproduces the required sample action through imitation does so by exteriorizing the ‘image’ (the perceptual model) of the sample action in the form of imitation, but without understanding the meaning of the reproduced action or possessing the ability to monitor its correctness independently. At this stage, the perceptual model of the exemplar action, which was formed and interiorized in the previous stage, becomes subjective—that is, it is transformed into an internal subjective mechanism for the imitative execution of the exemplar action” [11, p. 25].

The communicative level of ULAs is closely related to the type of interaction between participants in the educational environment and their effectiveness in the context of a particular educational situation. V. Panov, following A. Asmolov points out that communication and “...joint educational activities create a meaningful, motivating basis for the student’s transition from a practical to a cognitive attitude towards the world and are the basis for the formation of conscious self-regulation and agency” [11, p. 23]. A deficit at the communicative level of ULAs is identified by 61.8% of respondents at the ‘learner’ stage of agency formation and by 79.9% of teachers at the ‘critic’ stage (Fig. 1). Thus, ineffectively organized interaction determines low regularity and productivity of pedagogical and regulatory activity, insufficient independence, difficulties in self-analysis and correction of correct

execution/optimization of actions in the pedagogical and professional sphere. In pedagogical activity, the behavior of professionals can be manifested by agency, bias, and conflict.

A deficit in the regulatory level of ULAs is noted by 46.3% of respondents at the ‘master’ stage, which defines the limited abilities of “planning, predicting, controlling, correcting, and evaluating” [11, p. 23] the pedagogical environment (Fig. 1).

The low personal level of ULAs at the ‘creator’ stage was indicated by 49% of teachers (Fig. 1), which manifests itself in insufficient motivational activity, difficulties in self-determination, self-education, emphasis on the moral aspect of behavior (according to V. Panov) and self-actualization.

These results confirm the previously discovered ontological relationship between the stages of formation of agency with increasing impact [22, 23]: an insufficiently formed personal level of ULAs was noted by 21.5% of respondents at the ‘motivated individual’ stage and by 49% at the ‘creator’ stage.

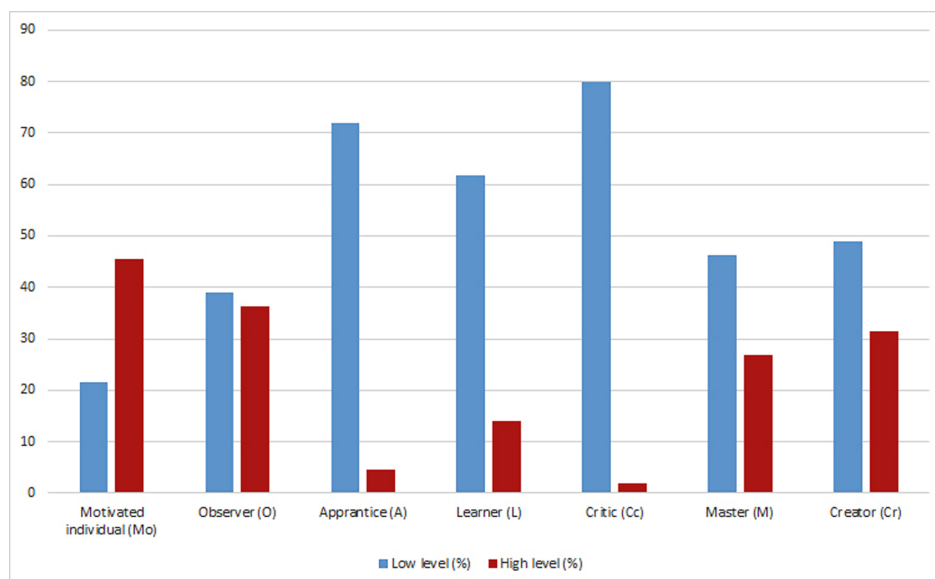


Fig. 1. Extent to which the stages of teacher agency are formed

In the group studied, a correlation was found between the level of teacher training and the extent to which the stages of agency are formed. Among teachers with secondary vocational education (22.8% of the total sample), there is an inverse relationship between the indicators of the ‘motivated individual’ stage ($\tau = -0.18$ at $p < 0.05$) and the ‘creator’ stage ($\tau = -0.11$ at $p < 0.05$). The minimal level of teachers’ professional

training correlates with low motivation and creative self-actualization and with the situational nature of their expression among the respondents.

Among the teachers of course 1 with secondary vocational education, there is a direct correlation with the level of 'learner' stage formation ($\tau = 0.242$ at $p < 0.05$) and an inverse correlation with the coherence indicators of the level of 'learner' ($\tau = -0.32$ at $p < 0.05$) and 'learner' ($\tau = -0.22$ at $p < 0.05$) stages formation with other stages. These results confirm those previously found: earlier stages' cognitive-regulatory abilities correlate with later stages' cognitive-regulatory abilities [22, p. 67], and the fragmentation of cognitive and communicative ULAs is characterized by insufficient internal motivation and learning activity.

For a more in-depth analysis of the results obtained, the subjects in each of the two groups of teachers (courses 1 and 2) were divided into groups according to the type of extent of agency formation in different stages (low, medium, and high indicators) using a cluster analysis.

No significant correlations with coherence indicators were found among course 1 and 2 teachers with low indicators of agency (70 individuals, 46%), and correlations with education and age have already been described [17, p. 59].

For respondents with an average extent of agency formation in course 1 (16 individuals, 22.5%), there is a correlation between age and the extent of the 'apprentice' stage ($\tau = 0.54$, $p < 0.05$) and the coherence indicators between the 'apprentice' stage and other stages ($\tau = 0.47$, $p < 0.05$). For course 2 participants (26 individuals, 32%), there is a correlation with the extent of the 'apprentice' stage formation ($\tau = 0.35$, $p < 0.05$) and with the coherence indicators of the 'motivated individual' ($\tau = -0.36$, $p < 0.05$) and 'apprentice' ($\tau = -0.30$, $p < 0.05$) stages in relation to the other stages (Table 1).

That is, the younger the professional is, the more effectively the cognitive level of universal learning actions (ULAs) is developed in course 1 participants, while both the personal and cognitive levels of ULAs are more effectively developed in course 2 participants.

Teachers with high indicators of the extent to which the stages of agency are formed in course 1 (28 people, 39.4%) are characterized by an inverse relationship between secondary vocational training and the expression of the 'motivated individual' stage ($\tau = -0.27$ at $p < 0.05$), indicators of the coherence of the 'apprentice' stage ($\tau = -0.42$ at $p < 0.05$) and the 'learner' stage ($\tau = -0.33$ at $p < 0.05$) with other stages and course 2 (12 people, 14.8%) – an inverse relationship between

secondary vocational education and the extent of the ‘apprentice’ stage ($\tau = -0.46$ at $p < 0.05$). The teachers of Course 1 with a minimum level of professional training are characterized by low motivation, personal activity, and insufficient development of cognitive and communicative levels of learning skills, which explains the reluctance and difficulties in the learning process. Course 2 teachers with initial professional training, on the other hand, have a better command of the cognitive level of pedagogical skills and reproductive activity, which confirms the need for a system of adaptation of young professionals and patronage of those already established through the modernization of the educational environment in institutions.

Table 1

Indicators of the correlation between the medium and high extent of teachers’ stages of agency formation with their level of education, their age, and their coherence (Cn) to other stages (Kendall’s correlation coefficient τ at $p < 0.05$)

Correlations	Course 1				Course 2				
	Mo	A	CnA	CnL	Mo	A	M	CnMo	CnA
Medium level of the extent to which the stages of the agency are formed									
Age		0,54	0,47			0,35		-0,36	-0,30
High level of the extent to which the stages of the agency are formed									
Education	-0,27		-0,42	-0,33		-0,46			
Age					-0,66		-0,43		

Note: Mo – ‘motivated individual’ stage, A – ‘apprentice’ stage, M – ‘master’ stage, CnMo – coherence of the ‘motivated individual’ stage with other stages, CnA – coherence of the stage ‘apprentice’ with other stages of agency, CnL – coherence of the ‘learner’ stage with other stages.

Figure 2 shows the distribution of indicators of the extent of each stage of agency formation of teachers of low (cluster 2), medium (cluster 3), and high (cluster 1) type. Noteworthy is the fact that the indicators of agency at the stages of ‘apprentice,’ ‘learner,’ and ‘critic’ are lower for teachers of course 1 of the medium type than for teachers with a low type of indicators of agency. Probably, the crisis of the cognitive and communicative level of ULA and the insufficient level of reproductive, pedagogical, and external regulatory activities hinder the formation of agency in general (Fig. 2).

For teachers in course 2 with high levels of agency (12 people, 14.8%), there is an inverse relationship between age and the extent to which the ‘motivated individual’ ($\tau = -0.66$ at $p < 0.05$) and ‘master’ ($\tau = -0.43$ at $p < 0.05$) stages are formed. The youth and inexperience of the specialists are associated with a low level of search and internal

regulation activities and a deficit in personal and regulatory control levels.

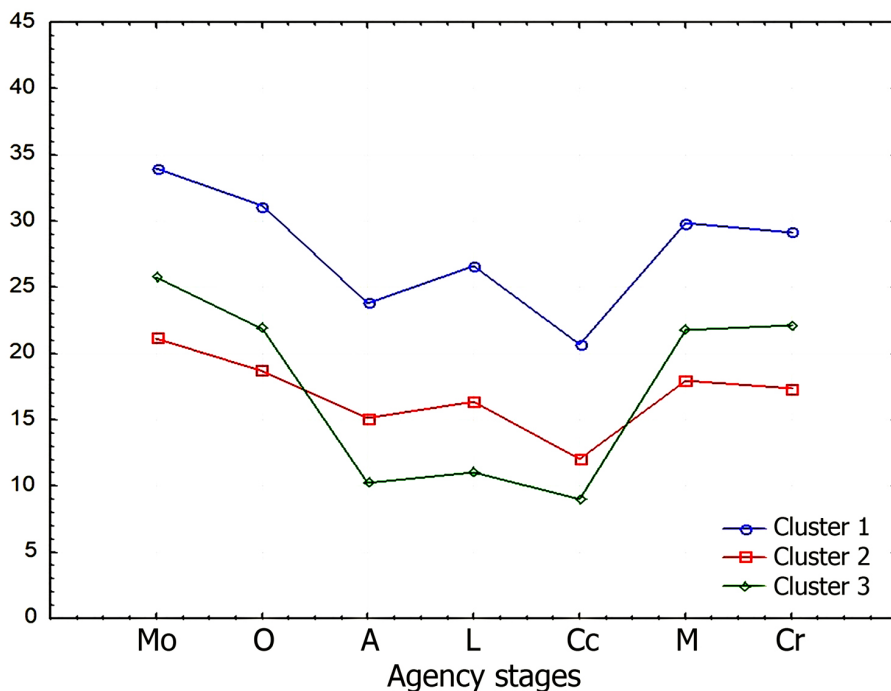


Fig. 2. Extent to which the stages of agency are formed in teachers of the low (cluster 2), medium (cluster 3), and high (cluster 1) type of course 1

Cluster analysis of the coherence of the stages of agency formation with other stages revealed significant differences between the groups with low and high coherence scores. High coherence indicators could describe the formation of necessary cognitive-regulatory skills and the interiorization of educational competencies with subsequent exteriorization into educational and occupational activities. Low coherence scores could explain difficulties in both interiorization and exteriorization. Teachers with high and low coherence of the stages' motivated individual' ($U = 114.50$ at $p < 0.05$), 'learner' ($U = 124.50$ at $p < 0.05$), and 'critic' ($U = 118.00$ at $p < 0.05$) differ significantly from the other stages of agency. The insufficient development of the reproductive stages and their coherence to the other stages may hinder the process of becoming productive due to the absence/inadequacy of the instrumental basis of occupational activity. Table 2 shows the relationship between the coefficients of coherence and the extent to which the stages of agency are formed in teachers with low, medium, and high integrity (integrity indicator hereinafter "Int" [18, p. 96]).

Table 2

Relationships between the coherence (Cn) coefficients and the extent to which the stages of agency are formed in teachers with low, medium, and high integrity (Kendall's correlation coefficient τ at $p < 0.05$)

	CnO	CnA		CnL		CnCc		CnM	CnCr
Types	Low	Low	High	Med.	High	Med.	High	High	Med.
Mo		0,198	-0,350	-0,210			-0,243		
O	0,209		-0,264	-0,243	-0,262				
A								-0,255	-0,273
L						0,214			-0,186
M				-0,243					
Cr			-0,311	-0,208					

The studied teachers were distributed by type of integrity as follows: 60 respondents had a low type of integrity (integrity in the range $C = 0.2-0.26$), 56 had a medium type ($C = 0.41-0.49$), and 33 had a high type ($C = 0.68-0.73$). Among the obtained relationships, no correlations exist between the 'critic' stage and the coherence of the 'motivated individual' stage with other stages. Teachers with a low type of integrity are distinguished by direct correlations of the reproductive stages of the formation of agency, which confirms the formation of agency in ontological sequence [18, p. 93]. Respondents of medium and high integrity types are distinguished by a more significant number of relationships, including productive stages of the formation of agency. The dominance of negative correlations among teachers with high integrity may be partly explained by the smallest representation of this type in the sample. In general, for the sample, the predominance of inverse relationships can characterize the process of developing the agency of specialists, expressed by low indicators of individual stages (Fig. 1).

Four groups of factors for teachers of each type of integrity were discovered. The first factor for the entire sample is represented by direct relationships between the stages of agency formation in a range of values, which confirms the principle of fractality in the ecopsychological paradigm. Table 3 reflects only specific factors for the studied types of integrity.

The composition of the factors of low, medium, and high integrity types of the studied teachers "is determined by the orientation towards long-term goals of pedagogical activities" [18, p. 99] (the 'critic,' 'master' and 'creator' stages) and current needs ('observer,' 'apprentice' and 'learner'), which are determined by the unique conditions of the pedagogical environment that shapes and is shaped by the specialists.

Table 3

Specific factors of coherence in the stages of agency formation in low, medium, and high integrity in teachers

Coherence	Low type (N = 60)			Medium type (N = 56)			High type (N = 33)		
	Factor 2	Factor 3	Factor 4	Factor 2	Factor 3	Factor 4	Factor 2	Factor 3	Factor 4
CnMo			0,802					0,774	
CnO	0,784					0,703			0,738
CnA						0,820			
CnL	0,779				-0,702			0,835	
CnCc		-0,787		0,781					-0,719
CnM			0,815				0,779		
CnCr		-0,846		-0,756			0,789		
Total variance	1,521	1,512	1,493	1,534	1,261	1,264	1,688	1,643	1,540
Proportion of total variance	0,217	0,216	0,213	0,219	0,180	0,181	0,241	0,235	0,220

Achieving high professional standards in today's pedagogical environment is only possible through high-quality specialist training at personal and instrumental levels. The practical significance of this study lies in determining the universal learning actions and the types of pedagogical activities necessary to promote the agency of pedagogical specialists and students.

Conclusions:

1. For most teachers studied, the 'motivated individual' stage is developed at a high level, while the other levels of agency are still emerging.

2. Teachers with high and low coherence indicators within the stages of agency differ significantly on the communicative level of universal learning actions.

3. Significant correlations were found between the extent of agency levels and coherence coefficients between stages.

4. Correlations were found between coherence and the extent of agency stages for low, medium, and high integrity in teachers, and four sets of factors were found for each integrity type of teacher.

Prospects for further research. The formation of agency in the participants of the educational process under the conditions of a changing and transforming bio-psycho-socio-spiritual environment remains a problematic field of scientific research. Promising areas of research from the general to the particular are: 1. Development of

diagnostic [7–9, 22, 24, 25], developmental [26], and corrective methods and techniques for developing the agency of those involved in the educational process; 2. The study of teachers' agency and the processes of interiorization and exteriorization of professional competencies in teaching activities [17, 23, 27]; 3. The study of the formation of students' agency at different ages and the factors that influence it; 4. The study of the process and types of interaction between participants in the educational environment [12, 15, 16]; 5. The development of programs and recommendations for the modernization of professional training of future teachers.

Appendix 1

Instructions: You are presented with ten situations as unfinished sentences. For each situation, there are seven possible answers. Rate each answer in each situation – How often do you behave this way? Enter the number in the form, where each number represents the following:

1 – Very rarely; 2 – Rarely; 3 – Often; 4 – Very often; 5 – Difficult to answer

Try not to avoid using '5 – Difficult to answer' as your answer.

A) When I follow the teacher's recommendations.

- 1) I do the same as the other students without thinking;
- 2) I work independently and strive for a high level of the task to be done;
- 3) I ask the teacher or a classmate to look for mistakes;
- 4) I notice errors in the implementation of teacher recommendations by other students;
- 5) I have an idea of how I can implement the task;
- 6) After I have mastered it, I intend to use it creatively in further lessons;
- 7) I make an effort to implement the task.

B) Completing homework and assignments.

- 1) I use them to complete more complex and creative tasks;
- 2) I repeat the recommended methods;
- 3) I make a plan in my head on how to complete the tasks;
- 4) I show them to the teacher to recognize any mistakes;
- 5) I act independently because I am sure that I am doing everything right;
- 6) I try to find mistakes in those who have already solved the task;
- 7) I want to solve the task.

C) Passing a test or exam.

- 1) I make an answer plan and imagine how I will answer according to this plan;
- 2) I prefer the teacher to point out my weaknesses and mistakes when grading;
- 3) I know how to avoid mistakes to answer the material excellently;
- 4) I will use the knowledge from the subject in which I took the exam in the future;
- 5) I will make a note of any mistakes or inaccuracies that my classmates have made in their answers;
- 6) I will answer as the teacher has instructed me;
- 7) I will pass the exam on the first attempt.

D) When I prepare to speak at a seminar or conference:

- 1) after I prepare my report, I ask my supervisor to review me;
- 2) I try to recognize mistakes in other students' presentations;
- 3) I know how to prepare appropriately so that my presentation is successful;
- 4) I use my acquired knowledge creatively to achieve more originality;
- 5) I do not invent anything of my own, but repeat what others have done;
- 6) I know exactly what and how I am going to report;
- 7) I try my best to perform as well as possible.

E) When I complete a difficult learning task.

- 1) I complete it successfully without asking others for help;
- 2) I find an original way to solve the task;
- 3) I repeat the methods used by others;
- 4) I devise a plan to solve the task;
- 5) I find shortcomings in the way other students solve the task;
- 6) I would like someone to point out my mistakes;
- 7) I would like to argue with them.

F) Working on an individual project.

- 1) I successfully complete the work independently;
- 2) I see further development of this topic;
- 3) I try to copy it from others;
- 4) I first create a plan for working on it;
- 5) I notice mistakes made by other students;
- 6) I work independently but ask others to point out my mistakes;
- 7) I want to finish this project (this work).

G) In mastering practical skills.

- 1) I ask others to tell me what I am doing wrong;
- 2) I notice mistakes that others make;
- 3) I first imagine how I can do it;
- 4) I can do it successfully myself;
- 5) I simply repeat the learning activities after others;
- 6) I already know where and how I will use them in the future to accomplish more complex tasks;
- 7) I want to have a firm grip on them.

H) For the success of my learning activities, the following currently helps me.

- 1) the pointing out of my mistakes by others and my continuous work to correct them;
- 2) the desire and understanding of how I can use the knowledge I have acquired in my future career;
- 3) finding mistakes that others have made;
- 4) the fact that I know how to complete learning tasks correctly on my own;
- 5) the ability to complete tasks like others;
- 6) my preliminary idea of how to complete learning tasks;
- 7) the desire to pursue a good education.

I) Performing tasks in a digital learning environment.

- 1) I visualize a picture of the task in my head;
- 2) I turn to websites and search engines to download the completed version;
- 3) I use different assessment options to find errors;
- 4) I recognize shortcomings in the content of the learning tasks published on the website;
- 5) I work on the learning tasks independently;
- 6) I imagine how I will use the completed tasks in the future;
- 7) I would like to solve these tasks.

J) While I am working on a learning task.

- 1) I visualize in my head the stages and the methods to accomplish them;
- 2) I repeat what others do (teachers or classmates) and the methods they use to solve the task;
- 3) I need the help of others (teachers or classmates) to check the correctness of my actions;

- 4) I always see and notice clearly whether other classmates solve the task correctly or incorrectly;
- 5) I know and am sure that I have solved the task correctly;
- 6) I would like to use the result for something new;
- 7) I enjoy doing the task.

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ПСИХОЛОГИЯ

ЭКОПСИХОЛОГИЧЕСКАЯ МОДЕЛЬ СТАНОВЛЕНИЯ СУБЪЕКТНОСТИ ПЕДАГОГОВ В ОБРАЗОВАТЕЛЬНОЙ СРЕДЕ

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Аннотация. Становление субъектности в учебной деятельности обучающихся согласно экopsихологической модели включает в себя семь взаимосвязанных стадий, что математически определяется коэффициентами связности и целостности.

Мониторинг профессионально значимых качеств педагогов проводился в процессе повышения квалификации на протяжении 2021–2023 гг. в г.о. Самаре. Исследованный профиль субъектности работников образования отражает выраженность каждой стадии становления субъектности, связность стадий становления субъектности между собой и процесс интeриоризации/экстeриоризации профессиональных компетенций.

Обнаружены взаимосвязи уровня образования и возраста специалистов с выраженностью стадий становления субъектности. Педагоги высокой и низкой связности значимо различаются на коммуникативном уровне универсальных учебных действий.

Выраженность стадий субъектности взаимосвязана с показателями связности педагогов, характеризующихся сложной структурой факторов: по четыре фактора для каждого типа целостности.

Ключевые слова: *экopsихологическая парадигма, образовательная среда, стадии становления субъектности, профиль субъектности, связность и целостность, интeриоризация, экстeриоризация.*

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